SCH No. 2015041049

THE GROVE SPECIFIC PLAN PROJECT

DRAFT ENVIRONMENTAL IMPACT REPORT

City of San Buena Ventura, California

Prepared for:
City of San Buenaventura

Prepared by:
Tebo Environmental Consulting, Inc.
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Oxnard, CA 93036
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September 2016

Volume 2
Appendices

Appendix 1.0 Notice of Preparation

City of Ventura

Notice of Preparation

To: Responsible and Trustee Agencies and others on attached distribution list

From: City of Ventura, Community Development Department
501 Poli Street
Ventura, CA 93001

Subject: **Notice of Preparation of a Draft Environmental Impact Report**
City of Ventura – The Grove Specific Plan Project

The City of Ventura will be the Lead Agency and will prepare an environmental impact report to be prepared for the Project identified below. The City needs to know the views of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed Project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the Project.

The project description, location, and the potential environmental effects are described in the attached materials. A copy of the Initial Study (is ☐ is not ☒) attached.

Due to the time limits mandated by state law, your response must be sent to the City within 30 days of receipt of the Notice of Preparation.

Please send your response to Mr. Iain Holt, Senior Planner, Community Development Department, City of Ventura, 501 Poli Street, P.O. Box 99, Ventura, CA 93002. We will need the name for a contact person at your agency.

A scoping meeting regarding The Grove Specific Plan Project EIR will be held April 29, 2015 at 5:00 p.m. at Ventura City Hall, Santa Cruz Conference Room, 501 Poli Street, Ventura, CA 93002.

Project Title: The Grove Specific Plan Project

Date: 4/13/15

Signature: Iain Holt

Iain Holt

Title: Senior Planner

Telephone: (805) 654-7752

Reference: California Administrative Code, Title 14 (CEQA Guidelines), Sections 15082(a), 15103, and 15375.

Project Details

Project Name:	The Grove Specific Plan
Project Number:	0723
Case Number(s):	SP-9, ARB-2983, A-326, Z-915, S-5626, DA-37, EIR-2457
Location:	West terminus of Thille St., North of Copland Drive
APN:	079-0-240-035
Current Zoning:	Ventura County: Agriculture Exclusive (AE-40-AC)
Land Use:	Neighborhood Medium (9-20 du/acre); City of Ventura General Plan

Project Description

The proposed Project consists of a Specific Plan and a Vesting Tentative Tract Map that would enable the future development of a residential neighborhood ranging between 200 and 250 dwellings on approximately 26.51 acres (a density of 9.43 per units per acre) bounded on the north by Highway 126, on the east by the Thille Community Neighborhood, on the south by Telephone Road and Copland Drive, and on the west by the La Posada mobile home park, and farther to the west by the 101/126 highway interchange (see Figure 1). The property is currently within unincorporated area, but is within the City of Ventura's Sphere of Interest, and is designated on the General Plan as Medium Density Residential; 9-20 du/ac.

The Tentative Map (see Figure 2) would create individual lots for 32 front-loaded single-family residences, 26 alley-loaded single-family residences, and 4 larger lots that could accommodate up to 192 units in a combination of alley-loaded single family homes, townhouses, and courtyard or stacked multi-family housing (See Figure 2).

The Specific Plan would be divided into six separate neighborhood blocks containing a mix of residential housing types with a goal to create a traditional neighborhood. It emphasizes the public realm, pedestrian-friendly streets and blocks, and a diversity of building types to generate a distinct sense of neighborhood identity. As a traditional-design neighborhood, the Project has a center and edge linked by a series of walkable connections to the open spaces, includes communal residential services, and functions contained within the site.

The plan area includes up to 4.67 acres of park area, which includes a linear park, public and pocket parks, and an open space area reserved for a potential future pedestrian and bike bridge connection to El Camino Real Park to the north of and over Highway 126. A portion of the open space would serve as storm water detention area located off-site in the Copland Drive vacated right of way.

Figure 1, Location Map

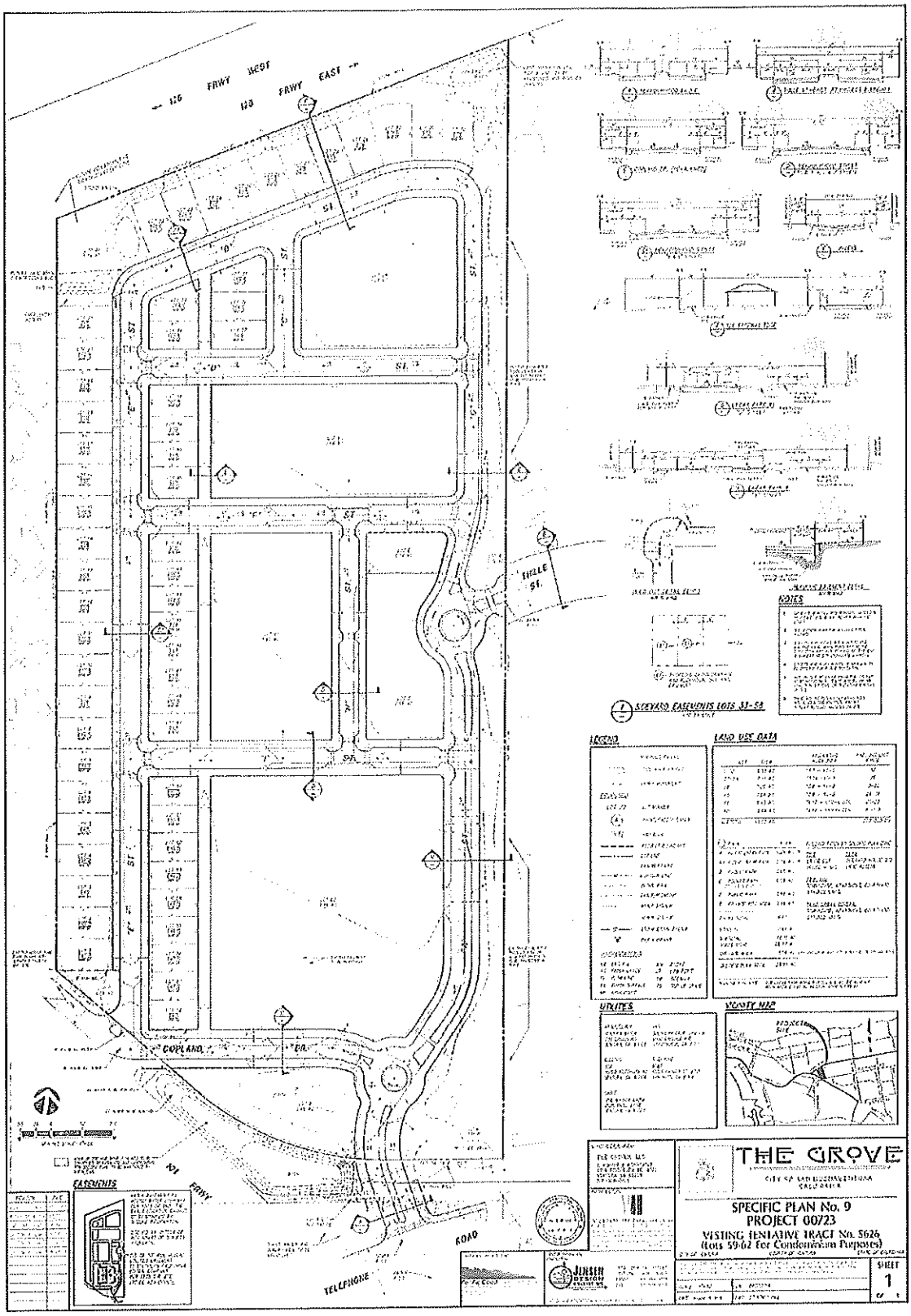


Figure 2, Vesting Tentative Tract Map

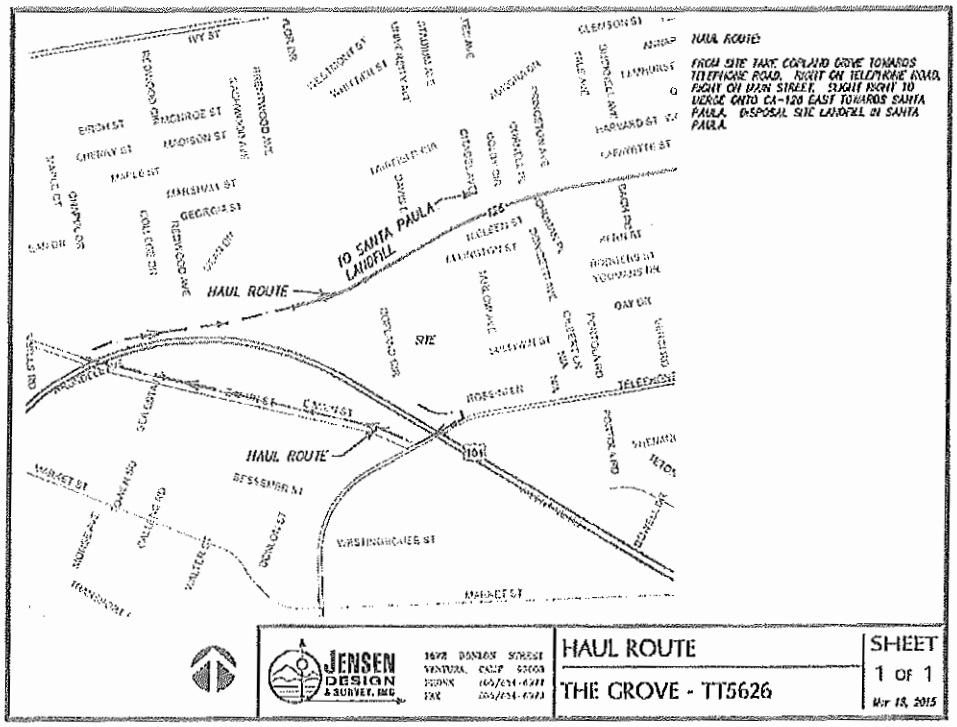
The Project will improve neighborhood connectivity by continuing the linear park system as well as vehicular connection from Thille Road to Telephone Road.

Other Project Characteristics

a. For the physical development of the site, the following exhibit reflects the earthwork required to create the building areas, roads, and parks:

It is anticipated that on-site materials will shrink upon compaction; therefore, the gross volumes show an overage in cut to accommodate for this. The site will balance from a grading standpoint.

b. For Site Demolition and preparation, a haul route is proposed for access to the Toland Landfill, as noted below:



Intended Uses of This EIR

At this time, the City of Ventura has identified the following actions that will need to be taken by the City, acting as lead agency for this Project, and by Responsible Agencies. The list of Responsible Agencies and project actions is preliminary, and the City anticipates that additional actions may be identified as a result of consultation facilitated by the environmental review process.

The ***City of Ventura*** would be responsible for the following actions:

- Pre-Zone and Amendment to the City's Zoning Ordinance to incorporate The Grove Specific Plan
- Approval of the Tentative Tract Map
- Certification of the Final Environmental Impact Report
- File application to amend the sphere of influence and incorporate the project site into the City of Ventura
- Design Review of the proposed Project

The ***Ventura County Local Agency Formation Commission (LAFCO)*** would be responsible for the following actions related to the Project:

- Approval of an amendment to the City's Sphere of Influence to include The Grove Specific Plan site
- Approval of reorganization of Special Districts

Potential Environmental Effects

The City of Ventura has completed a preliminary review, as described in §15060 of the CEQA Guidelines, of the proposed Westside Community Plan, and determined that an EIR should be prepared for this Project. The scope of work for this EIR will involve research, analysis, and study of the following environmental topics:

- Aesthetics
- Agricultural Resources
- Air Quality/Health Risk Assessment
- Biological Resources
- Cultural Resources
- Geology/Soils
- Greenhouse Gas Emissions/Climate Change
- Hazards and Hazardous Materials
- Hydrology/Water Quality
- Land Use
- Noise
- Population/Employment/Housing
- Public Services
- Transportation/Traffic
- Utilities/Service Systems

A brief description of the scope of analysis the City has identified for study related to each of these topics is provided as an attachment to this notice for your information.

The City of Ventura will consider the comments received in response to this Notice of Preparation in determining the scope and content of the Draft EIR the City will prepare for this Project. Any comments provided should identify the potential environmental effects you are requesting the City study and your reason for suggesting the study of these topics in the EIR. In addition, a public scoping meeting will be held on April 29, 2015 at 5:00 p.m. in the Santa Cruz Conference Room, City Hall, located at 501 Poli Street in Ventura.

Please provide your comments in writing to:

Mr. Iain Holt
Senior Planner
Community Development Department
City of Ventura, 501 Poli Street, P.O. Box 99
Ventura, CA 93002

Thank you for your participation in the environmental review of this Project.

Preliminary Scope of Study

City of Ventura
The Grove Specific Plan Project Draft EIR

Aesthetics

This section will characterize the existing aesthetics environment and visual resources, including a discussion of views within the site and views from surrounding areas to the site, particularly from adjacent uses. Project construction impacts will be addressed based on changing on-site aesthetics visible from surrounding roadways and locations. This section will include a discussion of architectural and design specifications for the Project provided by the Applicant. Mitigation measures such as perimeter landscaping, screening, and setbacks may be recommended to reduce the significance of potential visual impacts and wall treatment at SR-126. Color site photographs will be provided that will show on-site and surrounding views. This section will incorporate the visual simulations prepared by the Project architect to analyze potential view impairments, if any, to adjacent uses as a result of Project implementation·. The compatibility of the Project's architectural features, height, and building materials with the on-site uses and the surrounding area will be studied.

This section will also address potentially significant impacts generated by the introduction of light and glare associated with the development of the proposed Project. This analysis will include a light and glare impact discussion on neighboring sensitive uses from such things as street lights, vehicle headlights, and building lights. Consultant will review and incorporate existing City policies and guidelines regarding light and glare and dark sky for inclusion within the EIR. Consultant will recommend mitigation measures to reduce potential aesthetic and light and glare impacts to the maximum extent possible.

Agricultural Resources

The EIR will evaluate the impacts of development on active Class 1 agricultural land and agricultural resources. The removal of Class 1 Prime agricultural resources on the Project site would be considered a significant and unavoidable impact. State of California maps will be reviewed to determine how much of the site is Class 1 agricultural land or whether there are other agricultural designations on the Project site. Coordination with the Ventura County Agricultural Commission will be conducted to determine what mitigation has been previously applied to Prime farmland holdings and its corresponding effectiveness. Mitigation measures will be proposed to mitigate the loss of Class 1 designated agricultural resources. Mitigation measures evaluated may include, but are not limited to, off-site conservation easements, in-lieu mitigation fees, and agricultural mitigation land.

Air Quality

The impacts of the proposed Project on air quality will be evaluated in accordance with the Guidelines for the Preparation of Air Quality Impact Analyses prepared by the Ventura County Air Pollution Control District (VCAPCD). This section will examine the consistency of the Project with the Ventura County Air Quality Management Plan, the effects of the Project on

attainment status for regulated pollutants, and any potential impacts related to emissions from existing and planned surrounding uses. A detailed Health Risk Assessment (HRA) will also be prepared based on industry-accepted methodology recommendations of the California Air Resources Board and the Ventura County Air Pollution Control District.

Biological Resources

A Biological Resources section will be prepared utilizing existing biological documentation for the site and area. Because the site has been under agricultural production for so long, it is highly doubtful that any biological resources exist on the Project site. Special attention will be afforded to nesting birds (including raptors) in trees located on and along the perimeter of the site.

Cultural Resources

The cultural resources historical and archaeological reports shall be reviewed, analyzed, and if satisfactory, incorporated into the Draft EIR.

Geology and Soils

A review of the geotechnical report prepared by the Applicant for the Project will be undertaken. Because the site is relatively flat, there would be no concerns from a technical standpoint with regard to slopes and stability issues.

Greenhouse Gas Emissions

The potential for development allowed by The Grove Specific Plan to generate greenhouse gases (GHG) in excess of current GHG emissions will be analyzed in this section, along with the consistency of the Specific Plan with applicable plans and policies.

Hazards and Hazardous Materials

This section will review the Phase I Preliminary Site Assessment for the Project site. This section will evaluate potential hazards, such as hazardous and toxic materials, high fire hazards, and emergency evacuation and/or emergency responses that may impact or be generated by future development.

Hydrology and Water Quality

Ventura Water will perform a peer review of the existing technical data, reference plans, and previous reports prepared by the Applicant's engineer.

The reports shall be reviewed based upon the following criteria:

- Design methodology and assumptions
- Existing and proposed land uses
- Existing and proposed improvements and mitigation measures
- Technical competency
- Adequacy of the data to complete the EIR
- Levels of significance as defined by CEQA and identification of possible impacts and mitigation

Land Use

The EIR will evaluate the appropriateness of the proposed Project plan in consideration of on-site and surrounding land uses and will analyze the relationship of the Project to all applicable planning policies and proposed annexation. These policies will be identified from the 2005 General Plan, the Zoning Code, and other City regulations.

The EIR will evaluate the proposed Specific Plan with regard to compatibility of existing and proposed land uses. The EIR will also assess impacts to existing and potential future land uses in the planning area for construction (short-term) and operational (long-term) phases. City reference documents are anticipated to include the General Plan and the Municipal Development Code. The regional planning review will include consistency with the Southern California Association of Governments' (SCAG) Regional Comprehensive Plan and Guide policies, Regional Transportation Plan/Sustainable Communities Strategy, and the principles of the SCAG Southern California Compass Growth Visioning Program, as applicable.

Noise

The noise study prepared for the Project would be analyzed to determine increase in ambient noise levels and potential impacts to nearby sensitive residential units. The existing noise environment is characterized by vehicular noise from SR-126 and Telegraph Avenue.

Population/Employment/Housing

Analysis of the consistency of projected growth with adopted local and regional demographic projections will be provided. This section will also consider the short-term construction employment opportunities.

Public Services

The EIR will address the need for police, fire, solid waste disposal, recreation, and other public services from the City of Ventura to serve the additional development that would be allowed by The Grove Specific Plan, and the ability of the City and other agencies to meet this increased demand for services. The increased demand for school services provided by Ventura Unified School District will also be analyzed. Standards of service for police and fire departments and student generation rates provided by the school district will be used to determine impacts to

these services. The potential for solid waste generated by additional development to impact landfill capacity will also be assessed.

Transportation/Traffic

The traffic study prepared for the proposed Project will be reviewed and analyzed for adequacy in accordance with the City's Traffic Impact Study Guidelines based on the City's transportation model. Impacts to state and county facilities, including SR-126 and US Highway 101, will be assessed using the methodologies and standards of these agencies. Impacts on transit service in the area will also be addressed. The relationship of The Grove Specific Plan to current plans addressing alternate modes of transportation, including pedestrian and bicycle use, will be evaluated.

Utilities/Service Systems

Project water, sewer, and hydrology (storm drain) studies will be evaluated for adequacy and potential impacts on existing and planned sewer, water, and storm drain facilities in the area. Potential impacts to energy demand and service in the area will be evaluated.

VENTURA LOCAL AGENCY FORMATION COMMISSION
COUNTY GOVERNMENT CENTER ● HALL OF ADMINISTRATION
800 S. VICTORIA AVENUE ● VENTURA, CA 93009-1850
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WWW.VENTURA.LAFCO.CA.GOV

May 27, 2015

Mr. Iain Holt, Senior Planner
Community Development Department
City of San Buenaventura
501 Poli Street, P.O. Box 99
Ventura, CA 93002

SENT VIA E-MAIL

Subject: Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for The Grove Specific Plan

Dear Mr. Holt:

Thank you for providing the Ventura Local Agency Formation Commission (LAFCo) with the opportunity to review the NOP for The Grove Specific Plan Draft EIR. As a responsible agency under the California Environmental Quality Act (CEQA), LAFCo is charged with ensuring that environmental documents prepared by lead agencies address the issues that relate to LAFCo's scope of authority. Please note that the Commission has not reviewed the NOP, and these comments are solely those of the LAFCo staff.

Project Description

The City of Ventura is the lead agency for the project involving the approval of the Specific Plan and Vesting Tentative Tract Map. If approved, the project would enable the future development of a residential neighborhood consisting of a maximum of 250 dwellings on an approximately 26.51-acre property located adjacent to and east of the intersection of Highways 101 and 126 (Assessor's Parcel Number 079-0-240-035). Development would include a mix of residential types (e.g., single-family dwellings and townhomes), up to 4.67 acres of park area, and potentially a pedestrian and bike bridge crossing Highway 126 to the north to El Camino Real Park. Proposed earthwork consists of 75,000 cubic yards (c.y.) of cut and 63,000 c.y. of fill. An off-site storm water detention area is also included in the project description.

The project site has historically been used for crop production, and contains some development isolated to the southwest portion of the site. The territory has a County General Plan designation of *Agricultural – Urban Reserve* and a zoning designation of *Agricultural*. The City's General Plan currently designates the project area as *Neighborhood Medium 9-20 Units/Acre*. The project description should identify the proposed pre-zoning designation(s) for the proposal area.

Request to LAFCo

In order for the project site to be developed as proposed, the project area must be annexed to the City. The City would provide municipal services to the proposal area, once the territory is annexed. Annexation of the proposal area to the City requires LAFCo approval of several changes of organization, collectively called a reorganization. The project description should include the following LAFCo actions that would be necessary components of the reorganization:

- Annexation to the City of Ventura
- Detachment from the Ventura County Resource Conservation District
- Detachment from the Ventura County Fire Protection District
- Detachment from Ventura County Service Area No. 32
- Detachment from Ventura County Service Area No. 33

Note that annexation of the proposal area to the Ventura Port District would occur automatically if the territory is annexed to the City.

Pursuant to the information above and consistent with information in the NOP prepared for the project, the EIR should identify LAFCo as a responsible agency whose approval is required in conjunction with the development of the project.

LAFCo Law and Ventura LAFCo Policies

LAFCo's purposes are to (1) discourage urban sprawl, (2) preserve open space and prime agricultural land, (3) ensure efficient provision of government services, and (4) encourage the orderly formation and development of local agencies, such as cities (Government Code § 56301). The Ventura LAFCo has adopted local policies that it must consider when making decisions on reorganization proposals. Specifically, the policies found in Division 3 of the Ventura LAFCo Commissioner's Handbook (Handbook) apply to the proposed project. The Handbook is available on the Ventura LAFCo website at www.ventura.lafco.ca.gov, and can be found by clicking on the "Policies" tab.

Based on information provided in the NOP, several topics have been identified for study in the EIR. To adequately address the subjects that are within LAFCo's scope of authority (pursuant to Government Code § 56668), the EIR should include an analysis of the following:

Agricultural Resources

The NOP states that the EIR will include an evaluation of the proposed development on agricultural land and agricultural resources. In evaluating impacts to agricultural resources, LAFCo must apply the definition of prime agricultural land found in LAFCo law (Government Code § 56064), which includes standards relating to the value of agricultural products and the soils classification determined by the Natural Resources Conservation Service. While it appears that the evaluation will adequately address this issue, the analysis should specifically address

potential impacts pursuant to the LAFCo definition of prime agricultural land, so that the analysis may be used at such time as LAFCo takes action on the proposal.

Water Supply and Demand [Government Code §§ 56668(b), (k), and (l)]

The NOP states that a water study will be evaluated. The evaluation of water service to the project site should include an analysis of the project as it relates to the City's 2015 Comprehensive Water Study. In particular, the analysis should address water demand from the new development during a period of drought when water supply is limited and conservation mandates have been imposed by both the State and the City. Additionally, the discussion should specify the water source(s) that will be used by the City to supply both potable and non-potable water to the project site.

Sewer Service [Government Code §§ 56668(b) and (k)]

The Municipal Service Review (MSR) prepared by LAFCo in 2012 states that the City's wastewater collection system contains 339 deficient pipe segments throughout the City, and that this number is expected to grow. The EIR should include an evaluation of both the demand for and supply of wastewater service, explain whether the proposal area is located in an area that would be served by deficient infrastructure, and if so, whether any improvements are planned as part of the proposal.

Public Services [Government Code §§ 56668(b) and (k)]

The NOP explains that the City plans to conduct an evaluation of project impacts related to the public services to be provided by the City.

The MSR identified the potential for substantial funding decreases in the City's fire protection services in 2015 and beyond, unless funding sources were established to keep existing fire stations operational. The evaluation of public services should include an analysis of available long-term fire protection services to the project site at build-out.

Additionally, the MSR reported an increase in the ratio of sworn police officers to residents leading up to 2012, and a correlating increase in violent crime in the City. The analysis of law enforcement should include a discussion of current officer-to-resident ratios as well as the anticipated ratio at project build-out.

The MSR also determined that street maintenance within the City is underfunded and is likely to result in continued deterioration of City streets. The EIR should discuss the project's contribution toward deterioration of City streets as well as toward street maintenance improvements.

Finally, the MSR stated that the City does not contain a sufficient amount of park space, based on its goal to provide 10 acres per 1,000 residents. The EIR should discuss the project's contribution toward population growth and park space, as it relates to the City's park space goals.

Population/Housing [Government Code §§ 56668(a) and (m)]

The environmental analysis should explain how the proposed development affects the City's ability to meet its Regional Housing Needs Assessment allocation (as determined by the Southern California Association of Governments).

Additional Comments

The Ventura LAFCo encourages prospective applicants to meet with LAFCo staff early in the planning process (see the attached letter from the Commission). We find that such consultation and ongoing communication is helpful to clarify the nuances of LAFCo requirements and to avoid delays later in the process.

LAFCo staff requests to be notified when the Draft EIR is available for review, and will provide further comments at that time, if necessary.

Please feel free to contact me if you have any questions.

Sincerely,

Andrea Ozdy

Andrea Ozdy
Analyst

Attachment

c: Kim Prillhart, Ventura County Planning Division

Appendix 4.2 Agricultural Resources Information

THE GROVE PROJECT
AGRICULTURAL RESOURCES INFORMATION

HISTORICAL AND CURRENT AGRICULTURAL USE

The current owners purchased this property in 1953 and 1954 and planted a lemon orchard on the original site of approximately 54 acres. Portions of this site were acquired for the widening of Telephone Road and the construction of the adjacent Santa Paula Freeway (SR-126) in the 1960s.

The lemon orchard, at 50 +/- years old, had declined in productivity and was removed in approximately late 2003. The trees were ground up as wood chips and spread on the site as mulch. Various vegetable crops were raised on the property from approximately 2004 until approximately 2007 when the property was leased to a flower grower. The use as a flower growing operation continues through the present time.

CALIFORNIA ENVIRONMENTAL QUALITY ACT FARMLAND CLASSIFICATIONS

The standard Environmental Checklist Form provided in Appendix G of the California Environmental Quality Act (CEQA) Guidelines identifies two approaches for use in determining when a proposed project may have a significant impact on agricultural resources. First, a project may be considered to have a significant impact on agricultural resources if it would "convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use". These classifications are described in further detail below.

State Important Farmland Map Designation

The California Department of Conservation Division of Land Resource Protection Farmland Mapping and Monitoring Program (FMMP) produces maps and statistical data used for analyzing impacts on California's agricultural resources. Agricultural land is categorized according to soil quality and irrigation status. The maps are updated every two years through the review of aerial photographs, a computer mapping system, public review, and field reconnaissance.

The Department of Conservation utilizes the following categories to designate farmland:

a) **Prime Farmland** has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

b) **Farmland of Statewide Importance** is similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

c) **Unique Farmland** is farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.

d) **Farmland of Local Importance** is land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee. Ventura County defines Farmland of Local Importance as Soils that are listed as Prime or Statewide that are not irrigated, and soils growing dryland crops such as beans, grain, dryland walnuts, or dryland apricots.

e) **Grazing Land** is land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities.

f) **Urban and Built-up Land** is land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

g) **Other Land** is land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than forty acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

According to the FMMP, the proposed project site is considered to be Prime Farmland. **Figure 1, FMMP Classification Map**, shows the proposed project site identified as Prime Farmland and completely surrounded by Urban and Built-Up Land.

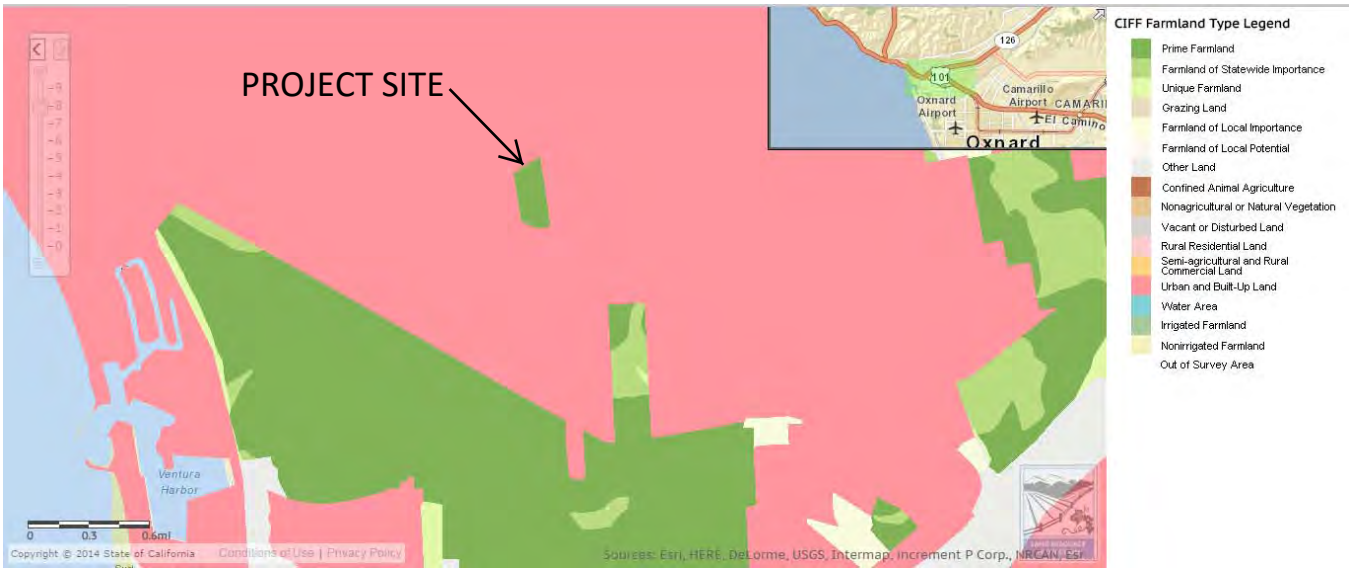

Figure 1 **FMMP Classification Map**

California Department of Conservation Land Evaluation and Site Assessment Model

The standard Environmental Checklist Form provided in Appendix G of the California Environmental Quality Act (CEQA) Guidelines identifies an optional method for determining the significance of impacts to agricultural resources, evaluation using the Land Evaluation and Site Assessment (LESA) model developed the State Department of Conservation which rates the relative quality of land resources, based on specific measurable features. The LESA model is comprised of six relatively-weighted factors:

a) Two Land Evaluation (LE) factors are based on measures of soil resource quality

b) Four Site Assessment (SA) factors are based on a project's size, water resource availability, surrounding agricultural lands, and surrounding protected-resource lands

Each of these factors is separately rated on a 100 point scale. The factors are then weighted relative to one another and combined, resulting in a single numeric score for a given project, with a maximum attainable score of 100 points. It is this project score that becomes the basis for making a determination of a project's potential significance, based upon a range of established scoring thresholds.

The Grove site was evaluated using the LESA Model was performed on the proposed project site, and was determined to have a final score of 71.4 out of 100. Under the scoring thresholds for LESA analysis, if the final rating is between 60 and 79 points, the impact to agricultural resources is considered significant unless either the LE or SA category subscore is less than 20 points. For the Grove site, the SA subscore was 22.5 and the LE subscore was 48.5. Because the SA subscore is slightly above 20, the impact is marginally significant. **Attachment A, LESA Worksheets,** contains the completed LESA worksheets.

CALIFORNIA GOVERNMENT CODE FARMLAND CLASSIFICATION

The Ventura County LAFCo uses the following definition for prime agricultural land in Section 56064 of the Government Code:

"Prime agricultural land" means an area of land, whether a single parcel or contiguous parcels, that has not been developed for a use other than an agricultural use and that meets **any** of the following qualifications:

a) *Land that qualifies, if irrigated, for rating as class I or class II in the USDA Natural Resources Conservation Service land use capability classification, whether or not land is actually irrigated, provided that irrigation is feasible.*

The two soil types present on the Grove site are both rated as class I in the USDA Natural Resources Conservation Service land use capability classification. Therefore, the proposed project meets this qualification.

b) *Land that qualifies for rating 80 through 100 Storie Index Rating.*

The proposed project site has land with a Storie Index Rating of 95.79. Therefore, the proposed project meets this qualification.

c) *Land that supports livestock used for the production of food and fiber and that has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture in the National Range and Pasture Handbook, Revision 1, December 2003.*

The proposed project site does not support livestock used for the production of food and fiber. Therefore, this qualification does not apply to the proposed project.

d) *Land planted with fruit or nut-bearing trees, vines, bushes, or crops that have a nonbearing period of less than five years and that will return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than four hundred dollars ($400) per acre.*

The proposed project site is not planted with fruit or nut-bearing trees, vines, bushes, or crops. Therefore, this qualification does not apply to the proposed project.

e) *Land that has returned from the production of unprocessed agricultural plant products an annual gross value of not less than four hundred dollars ($400) per acre for three of the previous five calendar years.*

The proposed project site is used to grow flowers and the annual gross value of the flowers produced has been above the amount in this qualification. Therefore, the proposed project meets this qualification.

Because the parcel meets qualifications (a), (b) and (e), the site would be considered "Prime agricultural land" under California Government Code Section 56064.

VENTURA COUNTY LAFCO HANDBOOK POLICIES

The Ventura County LAFCo Commissioner's Handbook contains the following policies on agriculture preservation that are considered by the Commissioners in reviewing annexation requests.

Section 3.3.5 Agriculture and Open Space Preservation

3.3.5.1 Findings and Criteria for Prime Agricultural and Open Space Land Conversion

LAFCo will approve a proposal for a change of organization or reorganization which is likely to result in the conversion of prime agricultural or open space land use to other uses only if the Commission finds that the proposal will lead to planned, orderly, and efficient development. For the purposes of this policy, a proposal for a change of organization or reorganization leads to planned, orderly, and efficient development only if **all** of the following criteria are met:

a) *The territory involved is contiguous to either lands developed with an urban use or lands which have received all discretionary approvals for urban development.*

    The proposed project site is contiguous with lands developed with urban uses. Therefore, the proposed project meets this criterion.

b) *The territory is likely to be developed within 5 years and has been pre-zoned for nonagricultural or open space use. In the case of very large developments, annexation should be phased wherever possible.*

    The City of Ventura General Plan identifies the site as zoned for a designation of Neighborhood Medium. This planning designation anticipates a mixture of detached and attached dwellings and higher building types at approximately 9 to 20 dwelling units per acre. Approval of the Grove Specific Plan will pre-zone the site for non-agricultural use. Therefore, the proposed project meets this criterion.

c) *Insufficient non-prime agricultural or vacant land exists within the existing boundaries of the agency that is planned and developable for the same general type of use.*

    The Commission will not make affirmative findings that insufficient non-prime agricultural or vacant land exists within the boundaries of the agency unless the applicable jurisdiction has prepared a detailed alternative site analysis. More information on this can be found in section 3.3.5.2 below.

d) *The territory involved is not subject to voter approval for the extension of services or for changing general plan land use designations. Where such voter approval is required by local ordinance, such voter approval must be obtained prior to LAFCo action on any proposal unless exceptional circumstances are shown to exist.*

The proposed project is not subject to voter approval for the extension of services or for changing general plan land use designations because it is located within the City of Ventura's Sphere of Influence and is not affected by the City's voter approved SOAR initiative. Therefore, the proposed project meets this criterion.

e) *The proposal will have no significant adverse effects on the physical and economic integrity of other prime agricultural or open space lands.*

The proposed project will have no significant adverse effects on the physical and economic integrity of other prime agricultural or open space lands. The proposed project site is located adjacent to non-agricultural uses such as residences, and the nearest agricultural site is located approximately 0.50 miles (2,600 feet) to its southeast. Therefore, the proposed project meets this criterion.

3.3.5.2 Findings that Insufficient Non-Prime Agricultural or Vacant Land Exists

The Commission will not make affirmative findings that insufficient non-prime agricultural or vacant land exists within the boundaries of the agency unless the applicable jurisdiction has prepared a detailed alternative site analysis which at a minimum includes:

a) *An evaluation of all vacant, non-prime agricultural lands within the boundaries of the jurisdiction that could be developed for the same or similar uses.*

b) *An evaluation of the re-use and redevelopment potential of developed areas within the boundaries of the jurisdiction for the same or similar uses.*

c) *Determinations as to why vacant, non-prime agricultural lands and potential re-use and redevelopment sites are unavailable or undesirable for the same or similar uses, and why conversion of prime agricultural or open space lands are necessary for the planned, orderly, and efficient development of the jurisdiction.*

The Grove site is an unincorporated island, and annexation of islands is encouraged by both state law and Ventura LAFCo policies. The City has no other vacant, non-prime land within its sphere of influence available for annexation and development for the type of residential units proposed.

3.3.5.3 Impacts on Adjoining Prime Agricultural or Open Space Lands

In making the determination whether conversion will adversely impact adjoining prime agricultural or open space lands, the Commission will consider the following factors:

a) *The prime agricultural and open space significance of the territory and adjacent areas relative to other agricultural and open space lands in the region.*

b) *The economic viability of the prime agricultural lands to be converted.*

c) *The health and well-being of any urban residents adjacent to the prime agricultural lands to be converted.*

d) *The use of the territory and the adjacent areas.*

e) *Whether public facilities related to the proposal would be sized or situated so as to facilitate the conversion of prime agricultural or open space land outside of the agency's sphere of influence, or will be extended through prime agricultural or open space lands outside the agency's sphere of influence.*

f) *Whether natural or man-made barriers serve to buffer prime agricultural or open space lands outside of the agency's sphere of influence from the effects of the proposal.*

g) *Applicable provisions of local general plans, applicable ordinances that require voter approval prior to the extension of urban services or changes to general plan designations, Greenbelt Agreements, applicable growth-management policies, and statutory provisions designed to protect agriculture or open space.*

h) *Comments and recommendations by the Ventura County Agricultural Commissioner.*

Land adjoining the proposed site is not designated as Prime Agricultural or Open Space Land. Therefore, annexation of the Grove site would be consistent with this policy.

3.3.5.4 Territory Subject to a Land Conservation Act (Williamson Act) Contract

LAFCo will not approve a proposal which includes the annexation of territory subject to an active Land Conservation Act contract to a city or special district that provides or would provide facilities and/or services other than those that support the land uses that are allowed under the contract. For purposes of this section, an active Land Conservation Act contract includes a contract for which a notice of non-renewal has been filed.

The proposed site is not subject to a Land Conservation Act (Williamson Act) Contract. Therefore, annexation of the Grove site would be consistent with this policy.

Section 3.1.2 Applications

3.1.2.1 Proposals Involving Conversion of Agricultural Lands

Unless specifically waived by the LAFCo Executive Officer, for any proposal which could reasonably be expected to lead to the conversion of agricultural lands (as defined by Government Code Section 56016) to nonagricultural uses, information regarding the effects of the proposal on maintaining the physical and economic integrity of agricultural lands shall be submitted in conjunction with the application. Specifically, the information should address the following:

a) The location of, and acreage totals for, prime and nonprime agricultural land involved in the area and adjacent areas. This analysis shall be based on the definition of "prime" agricultural land pursuant to Government Code Section 56064.

The Grove site contains approximately 25 acre of land that meets the definition of "prime" agricultural land in Government Code Section 56064. There is no agricultural land, prime or nonprime, located adjacent to the proposed site. The nearest agricultural land to the proposed site lies approximately 0.50 miles (2,600 feet) to its southeast.

b) The effects on agricultural lands within the proposal area.

a. The proposed project is not adjacent or near to other agricultural lands and will not result in any adverse effects on other agricultural land in the area.

c) The effects on adjacent agricultural lands.

a. The proposed site is not any adjacent to other agricultural land.

d) The effects on the economic integrity of the agricultural industry in Ventura County.

a. The proposed project is not expected to have an adverse effect on the economic integrity of the agricultural industry in Ventura County. Due to the fact that the proposed site is contiguous to non-agricultural sites such as residences and commercial structures, the site cannot be used to grow fruits or other crops that would require certain pesticides and fungicides that would be incompatible with the existing surrounding urban uses. The site is currently being used to grow flowers and the removal of this use from the site will not significantly affect the economic integrity of the agricultural industry.

In addition, the Handbook requests that information be provided about any measures adopted to reduce the effects identified.

Mitigation Measures

2005 Ventura General Plan

Policy 3C of the 2005 General Plan states that the City will "[m]aximize the use of land in the city before considering expansion."

To implement this policy, General Plan Actions 3.16 and 3.17 direct the City to renew and modify greenbelt agreements as necessary to direct development to already urbanized areas and continue to support the Guidelines for Orderly Development, which generally direct future urban development to the urban areas. Action 3.20 directs the City to adopt development code provisions to "preserve agricultural and open space lands as a desirable means of shaping the City's internal and external form and size."

The Grove Project Site is not located in a greenbelt area and as an incorporated island surrounded by urban uses, annexation and development would be consistent with both the Guidelines for Orderly Development and LAFCo law and policies in the Ventura LAFCo Commissioner's Handbook and would not impact the desired external form of the City of Ventura as defined in the General Plan.

General Plan Policy 3D directs the City to "Continue to preserve agricultural and other open space lands within the City's Planning Area." To that end, Action 3.21 directs the City to adopt performance standards for non-farm activities in agricultural areas to protect and support farm operations, including requiring non-farm uses to provide all necessary buffers.

The existing residential uses adjacent to the Grove site and other nearby urban uses were developed prior to the adoption of this policy and do not include any buffers from the Grove site. This lack of buffers combined with the small size and configuration of the approximate 25 acre Grove site result in severe limitations to the use of the site for agriculture, which has resulted in the current use of the site to produce flowers.

The City's General Plan determined that Implementation of these policies and actions would minimize the premature conversion of agricultural land and no additional mitigation was available. The conversion of some agricultural land, inluding the Grove site, within the City's Planning Area was identified as an unavoidable significant impact in the Final General Plan EIR as certified by the City and a Statement of Overriding Considerations addressing this impact was adotped with approval of the General Plan.

Other Mitigation Measures

CEQA Guidelines Section 15364 defines "Feasible" as meaning capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

The other mitigation measure the State Department of Conservation requests that lead agencies evaluate is the purchase of an agricultural land conservation easements to preserve other agricultural lands to compensate for the impact of converting agricultural land to a non-agricultural use. Guidance for consideration of this mitigation approach in EIRs was provided in two appellate court decisions issued in the last two years: *Friends of Kings River v. County of Fresno* (Court of Appeal of California, Fifth Appellate District, December 8, 2014) and *Masonite Corp. v. County of Mendocino*. (Court of Appeal of California, Fifth Appellate District, July 25, 2013).

The Friends of Kings River v. County of Fresno decision considered the Masonite decision and determined that an agency is only required to consider, but not adopt, agricultural conservation easements to mitigate loss of farmland. To be consistent with the guidance in both of these decisions, the City's EIR should include discussion and evaluation of the feasibility of purchasing an agricultural conservation easement.

While there are organizations that will accept agricultural conservation easements, there is no established program or mechanism to facilitate the purchase of such an easement. It is not reasonable to assume the applicant could acquire such an easement or, if an easement was available for purchase, that the cost of acquiring this easement would be financially feasible. For these reasons, the acquisition of this type of easement is not feasible under CEQA as the City cannot determine if the this mitigation could be implemented in a successful manner within a reasonable period of time, considering the availability and cost of this easement cannot be reasonably determined.

Attachment A

LESA Worksheets

Table 1A.
Land Evaluation Worksheet

Land Capability Classification (LCC) and Storie Index Scores

A	B	C	D	E	F	G	H
Soil Map Unit	Project Acres	Proportion of Project Area	LCC	LCC Rating	LCC Score	Storie Index	Storie Index Score
MoA	14.982	0.579	1	100	57.9	100	57.9
SxA	10.883	0.421	1	100	42.1	90	37.89
Totals	25.865	(Must Sum to 1.0)		***LCC Total***	100	***Storie Index Total***	95.79

Table 1B.
Site Assessment Worksheet 1.

Project Size Score

	I	J	K
	LCC Class I - II	LCC Class III	LCC Class IV - VIII
	14.982	0	0
	10.883		
Total Acres	25.865	0	0
Project Size Scores	50	0	0

Highest Project Size Score 50

Table 4. Site Assessment Worksheet 2. - Water Resources Availability

A	B	C	D	E
Project Portion	Water Source	Proportion of Project Area	Water Availability Score	Weighted Availability Score (C x D)
1	On-site well	1.00	100	100
2				
3				
4				
5				
6				
		(Must Sum to 1.0)	***Total Water Resource Score***	100

Table 8. Final LESA Scoresheet

A	B		C		D
Factor Name	Factor Rating (0-100 points)	X	Factor Weighting (Total = 1.00)	=	Weighted Factor Rating
Land Evaluation					
1. Land Capability Classification	<Line 1> 100	X	0.25	=	25
2. Storie Index Rating	<Line 2> 95.79	X	0.25	=	23.9
					LE Subtotal 48.9
Site Assessment					
1. Project Size	<Line 3> 50	X	0.15	=	7.5
2. Water Resource Availability	<Line 4> 100	X	0.15	=	15
3. Surrounding Agricultural Lands	<Line 5> 0	X	0.15	=	0
4. Protected Resource Lands	<Line 6> 0	X	0.05	=	0
					SA Subtotal 22.5
			Total LESA Score (sum of weighted factor ratings)		71.4

Section IV. California Agricultural LESA Scoring Thresholds - Making Determinations of Significance Under CEQA

A single LESA score is generated for a given project after all of the individual Land Evaluation and Site Assessment factors have been scored and weighted as detailed in Sections 2 and 3. Just as with the scoring of individual factors that comprise the California Agricultural LESA Model, final project scoring is based on a scale of 100 points, with a given project being capable of deriving a maximum of 50 points from the Land Evaluation factors and 50 points from the Site Assessment factors.

The California Agricultural LESA Model is designed to make determinations of the potential significance of a project's conversion of agricultural lands during the Initial Study phase of the CEQA review process. Scoring thresholds are based upon both the total LESA score as well as the component LE and SA subscores. In this manner the scoring thresholds are dependent upon the attainment of a minimum score for the LE and SA subscores so that a single threshold is not the result of heavily skewed subscores (i.e., a site with a very high LE score, but a very low SA score, or vice versa). Table 9 presents the California Agricultural LESA scoring thresholds.

Table 9. California LESA Model Scoring Thresholds

Total LESA Score	Scoring Decision
0 to 39 Points	Not Considered Significant
40 to 59 Points	Considered Significant only if LE and SA subscores are each greater than or equal to 20 points
60 to 79 Points	Considered Significant unless either LE or SA subscore is less than 20 points
80 to 100 Points	Considered Significant

Appendix 4.3 Air Quality Technical Report prepared by Pomeroy Environmental Services dated January 2016

Air Quality Technical Report
The Grove Specific Plan Project
San Buenaventura, California

Prepared by:

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January 2016

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Appendix A: Ambient Air Quality Data
Appendix B: Construction & Operational Air Quality Data

INTRODUCTION

The purpose of this report is to examine the degree to which the Project may result in significant environmental impacts with respect to air quality. Both short-term construction emissions occurring from activities such as demolition, site grading and truck trips, and long-term effects related to the ongoing operation of the Project are discussed in this report. The potential for the Project to conflict with or obstruct implementation of the applicable air quality plan, to violate an adopted air quality standard or contribute substantially to an existing or projected air quality violation, to result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is designated to be in non-attainment, to expose sensitive receptors to substantial pollutant concentrations, or to create objectionable odors affecting a substantial number of people are discussed herein.

PROJECT OVERVIEW

Project Location

The City of San Buenaventura is located in Ventura County, California. The Grove Specific Plan area is located in the western portion of the City, specifically at the western terminus of Thille Street, north of Copland Drive. The project site is bounded on the north by Highway 126 (SR-126), on the east by the Thille Community neighborhood, on the south by Telephone Road and Copland Drive, and on the west by the La Posada mobile home park, and farther to the west by the 101/SR 126 highway interchange (see Figure 1, Aerial Photograph of the Project Site). The plan area is approximately 26.51 acres in area and is currently within unincorporated area, but is within the City of Ventura's Sphere of Influence and is designated on the General Plan Map as Medium Density Residential; 9-20 du/acre. The site is currently used for seasonal floral agricultural production.

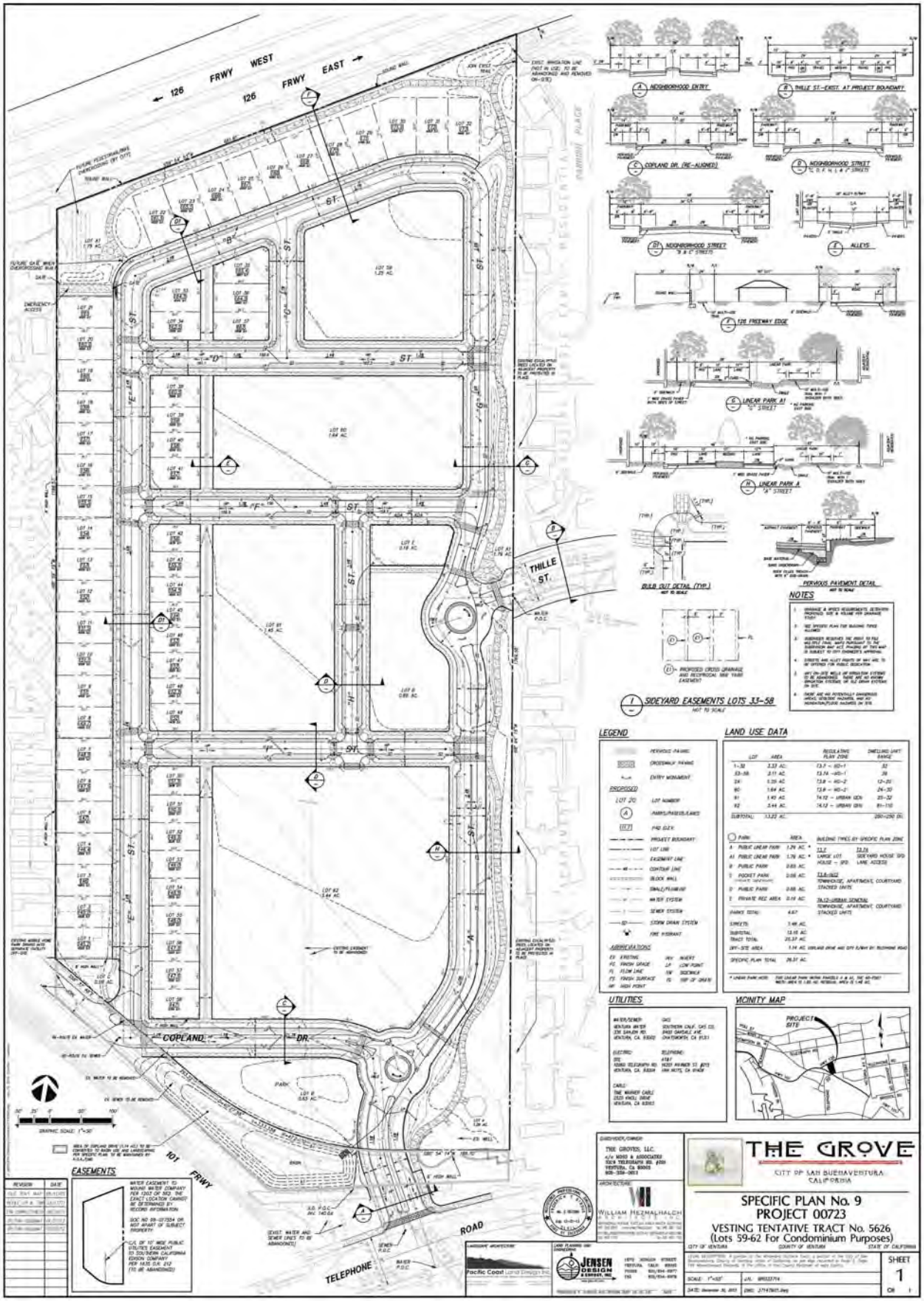
Project Characteristics

The proposed Project consists of a Specific Plan and a Vesting Tentative Tract Map that would enable the future development of a residential neighborhood ranging between 200 and 250 dwellings on approximately 26.51 acres (a density of 9.43 per units per acre). The Tentative Map (see Figure 2, Vesting Tentative Tract Map) would create individual lots for 32 front-loaded single-family residences, 26 alley-loaded single-family residences, and 4 larger lots that could accommodate up to 192 units in a combination of alley-loaded single family homes, townhouses, and courtyard or stacked multi-family housing.

Source: Figure 1.1 (page 3), The Grove Specific Plan No. 9; January 2015.

POMEROY ENVIRONMENTAL SERVICES

Figure 1
Aerial Photograph of the Project Site



Source: Figure 3.2, The Grove Specific Plan No. 9; January 2015.

POMEROY ENVIRONMENTAL SERVICES

Figure 2
Vesting Tentative Tract Map

ENVIRONMENTAL SETTING

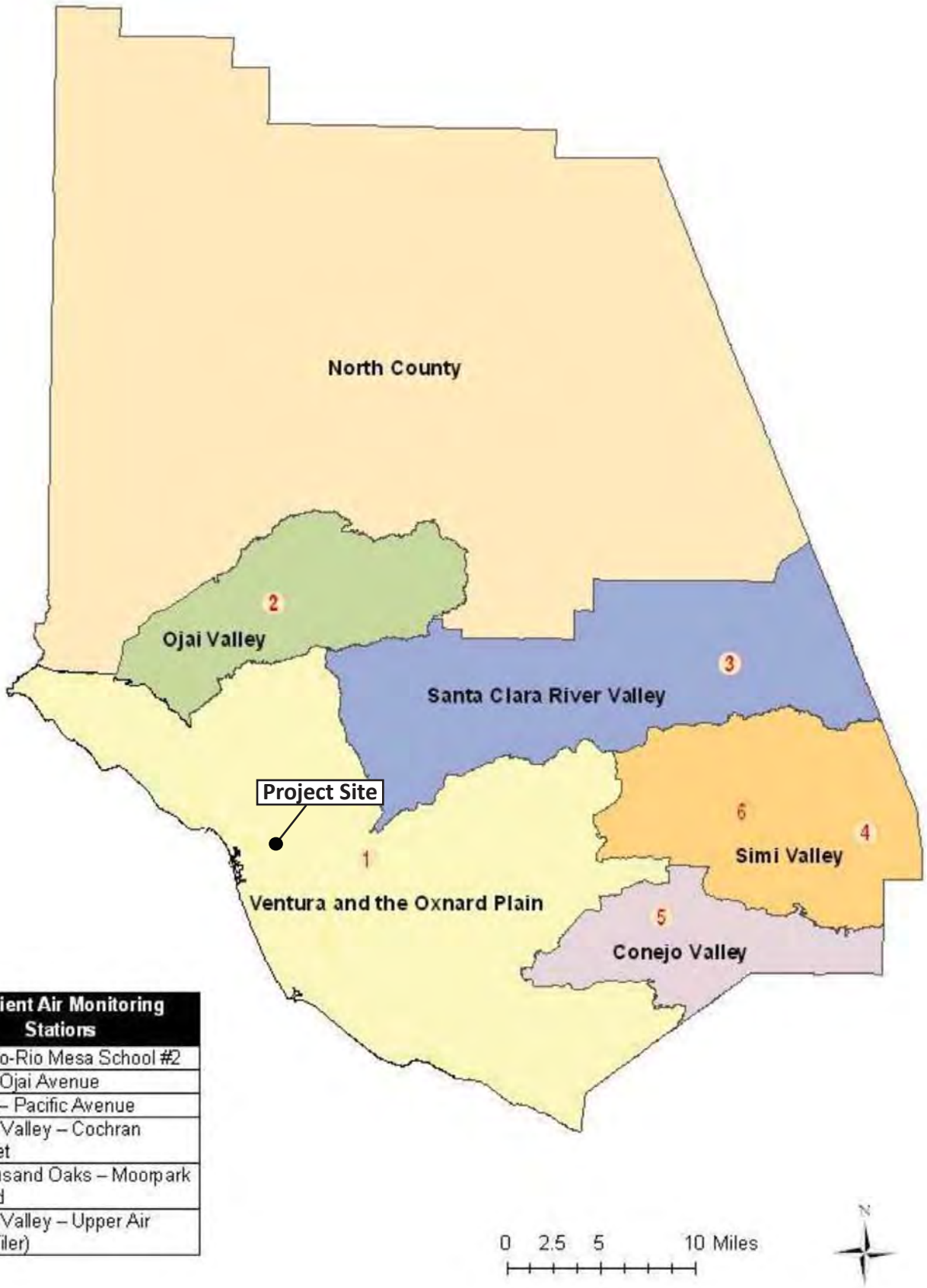
The Project Site, located within the Ventura County Air Pollution Control District (VCAPCD), is located in the South Central Coast Air Basin which is comprised of Ventura County, Santa Barbara County, and San Luis Obispo County.

Ventura County is located along the southern portion of the central California coast between Santa Barbara and Los Angeles Counties. Its diverse topography is characterized by mountain ranges to the north, two major river valleys (the Santa Clara, which trends east-west, and the Ventura, which trends roughly north-south), and the Oxnard Plain to the south and west. As pollutants are carried into the inland valleys by prevailing winds, they are frequently trapped against the mountain slopes by a temperature inversion layer, generally occurring between 1,500 and 2,500 feet above sea level. Above the temperature inversion layer, pollutants are allowed to disperse freely. The air monitoring stations are therefore found between the coast and the inland valley mountain foothills up to approximately 1,000 feet.

The purposes of the VCAPCD's air monitoring network are: 1) to determine Ventura County's attainment status for the National and California standards for ozone, $PM_{2.5}$ and PM_{10}; 2) to track Ventura County's air quality trends; 3) to provide information to the public about the quality of Ventura County's air (i.e., reporting of the Air Quality Index (AQI) and ozone and particulate episode forecasting); and, 4) for data in air quality modeling efforts.

Ambient concentration data are collected for a wide variety of pollutants. The most important of these in Ventura County are ozone, $PM_{2.5}$, and PM_{10}. Other pollutants measured include oxides of nitrogen (NOx), nitric oxide (NO), nitrogen dioxide (NO_2), toxics (hexavalent chromium, total metals and aldehydes), and volatile organic compounds (VOC). Measurement of meteorological parameters is also conducted at all monitoring stations. Data for all of the pollutants is used to better understand the nature of the ambient air quality in Ventura County, as well as to inform the public about the quality of the air.

The majority of the population resides in the southern half of Ventura County – the VCAPCD has focused its air monitoring efforts there. The south half of Ventura County is divided into five air monitoring regions: Ventura and the Oxnard Coastal Plain, Ojai Valley, Santa Clara River Valley, Simi Valley, and the Conejo Valley. The air monitoring network has been designed to provide air monitoring coverage to those regions of Ventura County. The Project Site is located in the Ventura and the Oxnard Coastal Plain (see Figure 3, VCAPCD Monitoring Regions and Ambient Monitoring Stations).



Ambient Air Monitoring Stations
1) El Rio-Rio Mesa School #2
2) Ojai-Ojai Avenue
3) Piru – Pacific Avenue
4) Simi Valley – Cochran Street
5) Thousand Oaks – Moorpark Road
6) Simi Valley – Upper Air (Profiler)

Source: VCAPCD Ambient Air Monitoring Network Plan, 2014.

POMEROY ENVIRONMENTAL SERVICES

Figure 3
VCAPCD Monitoring Regions & Ambient Monitoring Stations

The Ventura and the Oxnard Coastal Plain is a broad coastal area stretching from the Pacific Ocean to several inland valleys, covering 405 square miles, and having a population of 433,245 people. This area encompasses the cities of Port Hueneme, Ventura, Oxnard and Camarillo. The Oxnard plain area is a relatively flat plain area with foothills and mountains at its northern border. This area is home to considerable agricultural activities and includes a deepwater port and a number of Ventura County's major stationary sources, including two natural gas-fired electric generating units, two naval bases, several natural gas-fired cogeneration facilities, several oil and gas production and processing facilities, and a paper products manufacturer. The area is impacted by mobile sources and marine shipping operations occurring off Ventura County's coast.

Effects of Air Pollution[1]

Health Effects

Both the federal and state governments have established ambient air quality standards for outdoor concentrations of various pollutants in order to protect public health and welfare. These pollutants are referred to as "criteria air pollutants" as a result of the specific standards, or criteria, that have been adopted for them. The national and state standards have been set at levels considered safe to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly with a margin of safety; and to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

Ambient air pollution is a major public health concern. The most well-known acute air pollution episodes occurred in the Meuse Valley, Belgium in 1930 (60 deaths); in Donora, Pennsylvania in 1948 (20 deaths); and London, England in 1952 (4,000 deaths). Although acute air pollution episodes with such readily evident excess deaths are now unlikely in the United States, air pollution continues to be linked to respiratory illness and a slight increase in death rates.

According to the ARB, 80,000 deaths that occur each year in California may be attributed to illnesses aggravated by air pollution. While air pollution affects everyone, some people are more susceptible to its effects than others. Research has established that air pollution:

- Aggravates heart and lung illnesses.
- Adds stress to the cardiovascular system, forcing the heart and lungs to work harder to provide oxygen to the body.
- Speeds the aging process of the lungs, accelerating the loss of lung capacity.
- Damages respiratory system cells even after symptoms of minor irritation disappear.
- May cause immunological changes.
- Causes lung inflammation.

[1] *Information contained herein regarding air pollution and health effects, effects on plants, criteria pollutants, TACs, odors and fugitive dust has been summarized from the Ventura County Air Quality Assessment Guidelines (October 2003).*

- Increases health care utilization (hospitalization, physician, and emergency room visits).
- May contribute to the development of diseases such as asthma, bronchitis, emphysema, and cancer.
- May cause a reduction in life span.

The federal government estimates that between 10 and 12 percent of United States total health costs are attributable to air pollution-related illnesses. Air pollution is thought to be responsible for a two percent loss in United States worker efficiency. If ozone pollution were reduced in urban areas, there would be approximately 49.9 million fewer cases of air pollution-related illnesses annually in the United States; asthma attacks alone would decrease by 1.9 million annually.

On a per-capita basis, the health benefits measured in dollars from reducing ozone concentrations to federal and state one-hour standards are estimated to be $196 and $214 each year, respectively, for every person living in the South Coast Air Basin (the greater Los Angeles area). Per capita annual health benefits associated with meeting federal and state particulate standards are estimated to be $575 and $972, respectively. Assuming the per capita savings in the South Coast Air Basin are applicable to Ventura County, the projected health cost savings for achieving the PM_{10} standard in Ventura County is estimated to be $45 to $69 million per year. According to the U.S. EPA, for every dollar spent on air pollution controls since 1970, $45 has been gained in health and environmental benefits.

Effects on Plants

Damage to Agriculture

Increased health costs are only one portion of the total economic effects that result from air pollution. Many of the major agricultural crops grown in California, including Ventura County, are significantly damaged by air pollution, with from 20 to 50 percent of losses in some crop yields. Studies on the effects of smog exposure on fruit trees (specifically orange trees, ornamental plants, and home garden plants) have shown reductions in fruit yield and visible plant damage resulting from smog. One study showed that productivity of Valencia orange trees can be reduced by 30 percent when exposed to ozone levels that frequently occur in Southern California. Another study showed that naval orange trees produced about 50 percent more fruit when protected from smog. In addition, trees protected from smog dropped fewer leaves. The statewide average yield loss for citrus due to air pollution was about 11 percent in 1988.

Smog and particulates interfere with photosynthesis and can injure leaves, reduce growth, reduce crop quality, reduce reproductive capacity, increase weed and pest infestation, and/or kill the plant, thereby reducing crop yield. Damage often occurs before visible symptoms of injury are noticed. Particulates also can interfere with beneficial biological pest control by preventing beneficial insects from preying on agricultural crop-eating pests.

Areas in California where plant damage from air pollution has been reported coincides with the areas of highest population density. These areas include a triangular zone extending from the Mexican border to approximately 80 miles north and eastward of Ventura. Some of the greatest plant damage from air pollution is seen on fruit and vegetable crops, and flowers.

According to a 1987 study by the ARB, a number of important statewide crops suffer substantial yield losses due to ozone. Air pollution has been estimated to cost the agricultural industry in California between $150 million and $1 billion a year. An economic analysis of the costs of air pollution to agriculture attributes 90 percent of direct crop losses from air pollution to ozone. Nationally, ozone is estimated to account for a five to ten percent loss in agricultural production. The cost of this loss from ozone is about $5 billion each year. The greatest agricultural losses due to air pollution are in those crops in which the foliage is the marketed portion of the plant, such as lettuces, alfalfa, and spinach. Beans are no longer commercially grown in Southern California because of their susceptibility to air pollution.

Damage to agricultural crops from air pollution is an economic concern in Ventura County. According to the ARB, several agricultural crops grown in Ventura County suffer from exposure to air pollution. One study concluded that ozone exposure in Ventura County caused a reduction in orange crop yield of 19 percent in 1991. For that same year, lemon crops suffered an eight percent yield reduction, sweet corn seven percent, and dry beans 19 percent yield reductions, respectively.

Damage to Natural Vegetation

Air pollution is known to harm all major native plant groups, including flowering plants, conifers, ferns, mosses, lichens, and fungi. The effects on native vegetation are similar to those of agricultural crops. In the Geysers region of Napa, Lake, and Sonoma counties, injury to native plants, such as oaks and maples, has taken place downwind of geothermal power plants. Trees and other plant life in the San Joaquin Valley and adjacent Sierra Nevada Mountains suffer from air pollution generated in the upwind urban areas. Ozone damage has been observed in the forests of Southern California and in the Sierra Nevada mountains. Certain species of oak and pine trees are sensitive to air pollution.

Studies on Ponderosa and Jeffrey Pines trees in the 1980s revealed that two out of every five Ponderosa and Jeffrey Pine trees exhibited needle damage from air pollution. The National Park Service has measured an eleven percent reduction in the growth rate of selected Jeffrey Pine trees since 1965. Pine needles exposed to ozone develop yellow, blotchy marks and needles older than two years fall off, giving branches a whiskbroom appearance. Needles and debris from trees killed by smog not only increase the risk of forest fire, but reduce seed germination and the chances of seedling survival.

Coastal sage scrub and chaparral also are sensitive to air pollutants. The most important effect is a reduced ability to cope with drought, disease, and insects. Air pollution may put these plants at a

reproductive disadvantage by causing them to produce fewer seeds. These conditions can lead to changes in succession, resulting in a totally different plant community occupying a site.

Total yield and quality of forage and range are all affected by air pollution. This presents serious consequences for the state's livestock industry. Compared to grasses grown in clean air, loss in yield of grasses grown in smoggy air is as high as 10 to 20 percent. Moreover, ozone reduces carbohydrate levels of grasses by up to 56 percent.

Damage to Materials

In addition to human health and vegetation, air pollution also damages materials such as plastics, rubber, paint, and metals. Damage includes erosion and discoloration of paint, cracking of rubber, corrosion of metals and electrical components, soiling and decay of building stone and concrete, fading, a reduction of tensile strengths of fabrics, and soiling and crumbling of nonmetallic building materials. High smog concentrations significantly shorten the lifespan of materials, which increases maintenance and replacement costs. The national cost of damage to materials caused by ozone is estimated to range from $1.5 to $3.9 billion every year.

Criteria Air Pollutants

A criteria air pollutant is any air pollutant for which ambient air quality standards have been set by the U.S. EPA or the ARB. Criteria pollutants include ozone (O_3), fine particulate matter ($PM_{2.5}$), respirable particulate matter (PM_{10}), carbon monoxide (CO), nitrogen dioxide (NO_2), lead (Pb), sulfur dioxide (SO_2), visibility-reducing particles, sulfates, and hydrogen sulfide. The sections below provide more detail about the criteria pollutants of concern in Ventura County.

Ozone

Ozone is formed in the atmosphere by a series of complex chemical reactions and transformations in the presence of sunlight. Oxides of nitrogen (NOx) and reactive organic compounds (ROC) are the principal constituents in these reactions. Ozone is a pungent, colorless, toxic gas and is the major air pollutant of concern in Ventura County.

Sources: Ozone is known as a secondary pollutant because it is formed in the atmosphere through a complex series of chemical reactions, rather than emitted directly into the air. The major sources of NOx in Ventura County are motor vehicles and other combustion processes. The major sources of ROC in Ventura County are motor vehicles, cleaning and coating operations, petroleum production and marketing operations, and solvent evaporation.

Effects: Ozone is a strong irritating gas that can chemically burn and cause narrowing of airways, forcing the lungs and heart to work harder to provide oxygen to the body. A powerful oxidant, ozone is capable

of destroying organic matter – including human lung and airway tissue; it essentially burns through cell walls. Ozone damages cells in the lungs, making the passages inflamed and swollen. Ozone also causes shortness of breath, nasal congestion, coughing, eye irritation, sore throat, headache, chest discomfort, breathing pain, throat dryness, wheezing, fatigue, and nausea. It can damage alveoli, the individual air sacs in the lungs where oxygen and carbon dioxide are exchanged. Ozone has been associated with a decrease in resistance to infections. People most likely to be affected by ozone include the elderly, the young, and athletes. Ozone may pose its worst health threat to people who already suffer from respiratory diseases such as asthma, emphysema, and chronic bronchitis.

Particulate Matter 10 Microns or Smaller in Diameter (PM_{10})

PM_{10} consists of particulate matter (fine dusts and aerosols) ten microns or smaller in aerodynamic diameter. Ten microns is about one-seventh the width of a human hair. When inhaled, particles larger than ten microns generally are caught in the nose and throat and do not enter the lungs. PM_{10} gets into the large upper branches of the lungs just below the throat, where they are caught and removed (by coughing, spitting, or swallowing).

Sources: The primary sources of PM_{10} include: dust, paved and unpaved roads, diesel exhaust, acidic aerosols, construction and demolition operations, soil and wind erosion, agricultural operations, residential wood combustion, and smoke. Secondary sources of PM_{10} include tailpipe emissions and industrial sources. These sources have different constituents, and therefore, varying effects on health. Road dust is compost of many particles other than soil dust. It also includes engine exhaust, tire rubber, oil, and truck load spills. Diesel exhaust contains many toxic particle and elemental carbon (soot), and is considered a toxic air contaminant in California. Airborne particles absorb and adsorb toxic substances and can be inhaled and lodge in the lungs. Once in the lungs, the toxic substances can be adsorbed into the bloodstream and carried throughout the body.

PM_{10} concentrations tend to be lower during the winter months because meteorology greatly affects PM_{10} concentrations. During rain, concentrations are relatively low, and on windy days, PM_{10} levels can be high. Photochemical aerosols, formed by chemical reactions with manmade emissions, may also influence PM_{10} concentrations.

Effects: Elevated ambient particulate levels are associated with premature death, an increased number of asthma attacks, reduced lung function, aggravation of bronchitis, respiratory disease, cancer, and other serious health effects.

Short-term exposure to particulates can lead to coughing, minor throat irritation, and a reduction in lung function. Long-term exposure can be more harmful. The U.S. EPA estimates that eight percent of urban non-smoker lung cancer risk is due to PM_{10} in soot from diesel trucks, buses, and cars. Additional studies by the U.S. EPA and the Harvard School of Public Health estimate that 50,000 to 60,000 deaths per year

in the United States are caused by particulates. PM_{10} particles collect in the upper portion of the respiratory system, affecting the bronchial tubes, nose, and throat. They contribute to aggravation of asthma, premature death, increased number of asthma attacks, bronchitis, reduced lung function, respiratory disease, aggravation of respiratory and cardiovascular disease, alteration of lung tissue and structure, changes in respiratory defense mechanisms, and cancer.

Particulate Matter 2.5 Microns or Smaller in Diameter ($PM_{2.5}$)

$PM_{2.5}$ is a mixture of particulate matter (fine dusts and aerosols) 2.5 microns or smaller in aerodynamic diameter. 2.5 micrometers is approximately 1/30 the size of a human hair; so small that several thousand of them could fit on the period at the end of this sentence. Particles 2.5 microns or smaller get down into the deepest portions of the lungs where gas exchange occurs between the air and the blood stream. These are the most dangerous particles because the deepest portions of the lungs have no efficient mechanisms for removing them. If these particles are soluble in water, they pass directly into the blood stream within minutes. If they are not soluble in water, they are retained deep in the lungs and can remain there permanently.

Sources: $PM_{2.5}$ particles are emitted from activities such as industrial and residential combustion processes, wood burning, and from diesel and gasoline-powered vehicles. They are also formed in the atmosphere from gases such as sulfur dioxide, nitrogen oxides, ammonia, and volatile organic compounds that are emitted from combustion activities, and then become particles as a result of chemical transformations in the air (secondary particles).

Effects: $PM_{2.5}$ infiltrates the deepest portions of the lungs and remains there longer, increasing the risks of long-term disease, including chronic respiratory disease, cancer, and increased and premature death. Other effects include increased respiratory stress and disease, decreased lung function, alterations in lung tissue and structure, and alterations in respiratory tract defense mechanisms.

Carbon Monoxide

Carbon monoxide is a common colorless, odorless, highly toxic gas. It is produced by natural and anthropogenic combustion processes.

Sources: The major source of CO in urban areas is incomplete combustion of carbon containing fuels (primarily gasoline, diesel fuel, and natural gas). However, it also results from combustion processes, including forest fires and agricultural burning. Over 80 percent of the CO emitted in urban areas is contributed by motor vehicles.

Ambient CO concentrations are generally higher in the winter, usually on cold, clear days and nights with little or no wind. Low wind speeds inhibit horizontal dispersion, and surface inversions inhibit vertical mixing.

Traffic-congested intersections have the potential to result in localized high levels of CO. These localized areas of elevated CO concentrations are termed CO "hotspots." CO hotspots are defined as locations where ambient CO concentrations exceed the State Ambient Air Quality Standards (20 ppm, 1-hour; 9 ppm, 8-hour).

Effects: When inhaled, CO does not directly harm the lungs. The impact from CO is on oxygenation of the entire body. CO combines chemically with hemoglobin, the oxygen-transporting component of blood. This diminishes the ability of blood to carry oxygen to the brain, heart, and other vital organs. Red blood cells have 220 times the attraction for CO than for oxygen. This affinity interferes with movement of oxygen to the body's tissues. Effects from CO exposure include headaches, nausea, and death. People with heart ailments are at risk from low-level exposure to CO. Also sensitive are people with chronic respiratory disease, the elderly, infants and fetuses, and people suffering from anemia and other conditions that affect the oxygen-carrying capacity of blood. High levels of CO in a concentrated area can result in asphyxiation. Studies show a synergistic effect when CO and ozone are combined.

Nitrogen Dioxide

Nitrogen dioxide is formed in the atmosphere primarily by the rapid reaction of the colorless gas nitric oxide (NO) with atmospheric oxygen. It is a reddish brown gas with an odor similar to that of bleach. NO_2 participates in the photochemical reactions that result in ozone.

Sources: The greatest source of NO, and subsequently NO_2, is the high-temperature combustion of fossil fuels such as in motor vehicle engines and power plant boilers. NO_2 and NO are referred to collectively as NOx.

Effects: NO_2 can irritate and damage the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections such as influenza. Researchers have identified harmful effects similar to those caused by ozone, with progressive changes over four hours of exposure. Negative health effects are apparent after exposure to NO_2 levels as low as 0.11 ppm for a few minutes. This level of exposure may elicit or alter sensory responses. Higher concentrations (0.45 - 1.5 ppm) may cause impaired pulmonary function, increased incidence of acute respiratory disease, and difficult breathing for both bronchitis sufferers and healthy persons.

Lead

Lead is a bluish-gray metal that occurs naturally in small quantities. Lead also occurs in a variety of compounds such as lead acetate, lead chloride, lead chromate, lead nitrate, and lead oxide. Pure lead is insoluble in water. However, some lead compounds are watersoluble.

Sources: Lead and lead compounds in the atmosphere often come from fuel combustion sources, such as the burning of solid waste, coal, and oils. Historically, the largest source of lead in the atmosphere

resulted from the combustion of leaded gasoline in motor vehicles. However, with the phase-out of leaded gasoline, concentrations of lead in the air have substantially decreased. Industrial sources of atmospheric lead include steel and iron factories, lead smelting and refining, and battery manufacturing. Atmospheric lead may also result from lead in entrained dust and dirt contaminated with lead. Lead-based paints were commonly used in the past, and lead paint chips or dust can be inhaled or ingested.

Effects: Acute health effects of lead may include gastrointestinal distress (such as colic), brain and kidney damage, and even death. Lead also has numerous chronic health effects, including anemia, central nervous system damage, and male and female reproductive dysfunction, as well as effects on blood pressure, kidney function, and vitamin D metabolism. Developing fetuses and children are particularly sensitive to lower concentrations of blood lead, and the effects may include increased risk of pre-term delivery, low birth weight, and the impairment of hearing, growth, and mental development. The U.S. EPA's Office of Air Quality Planning and Standards ranks lead as a "high concern" pollutant based on its severe chronic toxicity. Human studies regarding the cancer risks of lead have been inconclusive. However, the U.S. EPA considers lead to be a probable human carcinogen.

Sulfur Dioxide

Sulfur dioxide is a colorless gas with a sharp, irritating odor. It can react in the atmosphere to produce sulfuric acid and sulfates, which contribute to acid deposition and atmospheric visibility reduction. It also contributes to the formation of PM_{10}.

Sources: Most of the SO_2 emitted into the atmosphere is from burning sulfur-containing fossil fuels by mobile sources such as marine vessels and farm equipment, and stationary fuel combustion.

Effects: SO_2 irritates the mucous membranes of the eyes and nose, and may also affect the mouth, trachea, and lungs. Healthy people may experience sore throats, coughing, and breathing difficulties when exposed to high concentrations. SO_2 causes constriction of the airways and poses a health hazard to asthmatics, who are very sensitive to SO_2. Research indicates that normally-breathing asthmatics performing moderate to heavy exercise will experience SO_2-induced bronchoconstriction (breathing difficulties) when breathing SO_2 for at least five minutes at concentrations lower than one part per million. Consecutive SO_2 exposures (repeated within 30 minutes or less) result in a diminished response compared with the initial exposure. Children often experience more respiratory tract infections when they are exposed to SO_2.

Toxic Air Contaminants

Toxic air contaminants (TACs), also referred to as hazardous air pollutants, are air pollutants (excluding O_3, CO, SO_2, and NO_2) that may reasonably be anticipated to cause cancer, developmental effects,

reproductive dysfunction, neurological disorders, heritable gene mutations, or other serious or irreversible acute or chronic health effects in humans.

TACs are regulated under different federal and state regulatory processes than ozone and the other criteria air pollutants. Health effects of TACs may occur at extremely low levels and it is typically difficult to identify levels of exposure that do not produce adverse health effects.

TACs generally consist of four types: organic chemicals, such as benzene, dioxins, toluene, and percholorethylene; inorganic chemicals such as chlorine and arsenic; fibers such as asbestos; and metals such as mercury, cadmium, chromium, and nickel. These air contaminants are defined by the U.S. EPA, the State of California, and other governmental agencies. Currently, more than 900 substances are regulated TACs under federal, state, and local regulations.

Sources: Toxic air contaminants are produced by a great variety of sources, including industrial facilities such as refineries, chemical plants, chrome plating operations, and surface coating operations; commercial facilities such as dry cleaners and gasoline stations, motor vehicles, especially diesel-powered vehicles; and, consumer products. TACs can be released as a result of normal industrial operations, as well as from accidental releases during process upset conditions.

Effects: Health effects from TACs vary with the type of pollutant, the concentration of the pollutant, the duration of exposure, and the exposure pathway. TACs usually get into the body through breathing, although they can also be ingested, or absorbed through the skin.

Adverse effects on people tend to be either acute (short-term) or chronic (long-term). Acute effects result from short-term, high levels of airborne toxic substances. These effects may include nausea, skin irritation, caridiopulomary distress, and even death. Chronic effects result from long-term, low level exposure to airborne toxic substances. Effects can range from relatively minor to life-threatening. Less serious chronic effects can include skin rashes, dry skin, coughing throat irritation, and headaches. More serious chronic effects can include lung, liver, and kidney damage; nervous system damage; miscarriages, and genetic and birth defects; and, cancer. Many TACs can have both carcinogenic and non-carcinogenic health effects.

Odors

Odors are substances in the air that pose a nuisance to nearby land uses such as residences, schools, daycare centers, and hospitals. Odors are typically not a health concern, but can interfere with the use and enjoyment of nearby property.

Sources: Odors may be generated by a wide variety of sources. Following are examples of facilities and operations that may generate significant odors: wastewater treatment facilities, sanitary landfills, transfer stations, composting facilities, asphalt batch plants, painting and coating operations, fiberglass

operations, food processing facilities, feed lots/ dairies, petroleum (extraction, transfer, processing, and refining operations and facilities), chemical manufacturing operations and facilities, and rendering plants.

Effects: Objectionable odors created by a facility or operation may cause a nuisance or annoyance to surrounding populations.

Fugitive Dust

Fugitive dust refers to solid particulate matter that becomes airborne because of wind action and human activities. Fugitive dust particles are mainly soil minerals, but also can be sea salt, pollen, spores, tire particles, etc. About half of fugitive dust particles (by weight) are larger than 10 microns and settle quickly. Fugitive dust particles 10 microns or smaller can remain airborne for weeks.

Sources: The primary sources of fugitive dust are grading and excavation operations associated with road and building construction, aggregate mining and processing operations, and sanitary landfill operations. Unpaved roadways also are a large source of fugitive dust. Other sources of fugitive dust include demolition activities, unpaved roadway shoulders, vacant lots, material stockpiles, abrasive blasting operations, and offroad vehicles. The amount of fugitive dust created by such activities is dependent largely on the type of soil, type of operation taking place, size of the area, degree of soil disturbance, soil moisture content, and wind speed.

Effects: When fugitive dust particles are inhaled, they can travel easily to the deep parts of the lungs and may remain there, causing respiratory illness, lung damage, and even premature death in sensitive people. Fugitive dust also may be a nuisance to those living and working nearby. Dust blown across roadways can lead to traffic accidents by reducing visibility. Fugitive dust can soil and damage materials and property, such as fabrics, vehicles, and buildings. Particulates deposited on agricultural crops can lower crop quality and yield. Additionally, fugitive dust can lead to the spread of San Joaquin Valley Fever, a potential health hazard caused by a fungus that lives in the soil.

Ambient Air Quality Conditions

Local Air Quality

As stated previously, the majority of the population resides in the southern half of Ventura County – the VCAPCD has focused its air monitoring efforts there. The south half of Ventura County is divided into five air monitoring regions: Ventura and the Oxnard Coastal Plain, Ojai Valley, Santa Clara River Valley, Simi Valley, and the Conejo Valley. The air monitoring network has been designed to provide air monitoring coverage to those regions of Ventura County. The Project Site is located in the Ventura and the Oxnard Coastal Plain. This area is served by the VCAPCD's monitoring station at Rio Mesa School #2, Central Avenue, in Oxnard (see Figure 3, previously). This station currently monitors for O_3, NO_2, PM_{10} and $PM_{2.5}$.

Table 1, Summary of Ambient Air Quality in the Project Vicinity, identifies the ambient pollutant concentrations that were measured from 2012 to 2014 (2014 is the latest year of available data per CARB).

Table 1
Summary of Ambient Air Quality in the Project Vicinity

Air Pollutants Monitored At Rio Mesa School #2, Central Avenue, Oxnard	Year		
	2012	2013	2014
O_3			
Maximum 1-hour concentration measured	0.082 ppm	0.067 ppm	0.112 ppm
Number of days exceeding national 0.12 ppm 1-hour standard	0	0	0
Number of days exceeding State 0.09 ppm 1-hour standard	0	0	1
Maximum 8-hour concentration measured	0.065 ppm	0.063 ppm	0.077ppm
Number of days exceeding national 0.075 ppm 8-hour standard	0	0	1
Number of days exceeding State 0.07 ppm 8-hour standard	0	0	2
NO_2			
Maximum 1-hour concentration measured	0.057 ppm	0.040 ppm	0.039 ppm
Number of days exceeding national 0.10 ppm standard	0	0	0
Number of days exceeding State 0.18 ppm standard	0	0	0
PM_{10}			
Maximum 24-hour concentration measured	56.9 µg/m^3	46.7 µg/m^3	51.3 µg/m^3
Number of days exceeding national 150 µg/m^3 24-hour standard	0	0	--
Number of days exceeding State 50 µg/m^3 24-hour standard	1	0	2
State Annual Average	21.0	24.3	--
Does measured average exceed State 20 µg/m^3 standard?	Yes	Yes	--
$PM_{2.5}$			
Maximum 24-hour concentration measured	30.8 µg/m^3	22.2 µg/m^3	22.2 µg/m^3
Number of days exceeding national 35 µg/m^3 24-hour standard	0	0	0

Notes: ppm = parts by volume per million of air; µg/m^3=micrograms per cubic meter.
CARB, iADAM Air Quality Data Statistics: http://www.arb.ca.gov/adam/topfour/topfourdisplay.php, accessed January 2016.

Sensitive Receptors

As defined in the Ventura County Air Quality Assessment Guidelines (October 2003), sensitive receptors are facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples include schools, hospitals, and daycare centers. In addition, recreational areas are considered moderately sensitive to poor air quality because vigorous exercise associated with recreation places a high demand on human respiratory function. The nearest sensitive receptors to the Project Site include residential uses immediately adjacent to the west and east (less than 10 feet from site), residential uses to the north across Highway 126 (approximately 300 feet from site), and Camino Real Park to the northwest across Highway 126 (approximately 280 feet from the site).

REGULATORY FRAMEWORK

Air quality in the United States is governed by the federal Clean Air Act (CAA). In addition to being subject to the requirements of the CAA, air quality in California is also governed by more stringent regulations under the California Clean Air Act (CCAA). At the federal level, the CAA is administered by the U.S. EPA. In California, the CCAA is administered by the CARB at the state level and by the Air Quality Management and Pollution Control Districts at the regional and local levels. Air quality within the county is addressed through the efforts of various federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for improving the air quality within the county are discussed below.

Federal Standards

United States Environmental Protection Agency (U.S. EPA)

The U.S. EPA is responsible for setting and enforcing the federal ambient air quality standards for atmospheric pollutants. It regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. The U.S. EPA also has jurisdiction over emissions sources outside state waters (outer continental shelf) and establishes various emissions standards for vehicles sold in states other than California. As part of its enforcement responsibilities, the U.S. EPA requires each state with nonattainment areas to prepare and submit a State Implementation Plan (SIP). The SIP is a plan for each state which identifies how that state will attain and/or maintain the primary and secondary National Ambient Air Quality Standards (NAAQS) set forth in section 109 of the CAA. These plans are developed through a public process, formally adopted by the state, and submitted by the Governor's designee to the U.S. EPA. The CAA requires the U.S. EPA to review each plan and any plan revisions and to approve the plan or plan revisions if consistent with the CAA.

State Standards

California Air Resources Board (CARB)

The CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, the CARB conducts research, sets California Ambient Air Quality Standards, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. The CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hair spray, aerosol paints, and lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. In some cases, the state standards are more restrictive than the federal standards established under the CAA.

Off-road diesel vehicles, which include construction equipment, are also regulated by the CARB for both in-use (existing) and new engines. Four sets of standards implemented by the CARB for new off-road diesel engines, known as Tiers. Tier 1 standards began in 1996. Tiers 2 and 3 were adopted in 2000 and were more stringent than the Tier 1 standards. Tier 2 and Tier 3 standards were completely phased in by 2006 and 2008, respectively. Tier 4 standards became effective in 2011. Tier 4 emission standards will reduce particulate matter and NO_X emissions of late model cars to 90 percent below current levels. Since off-road vehicles that are used in construction and other related industries can last 30 years or longer, most of those that are in service today are still part of an older fleet that do not have emission controls. On July 26, 2007, the CARB approved a regulation to reduce emissions from existing (in-use) off-road diesel vehicles that are used in construction and other industries. This regulation became effective on June 15, 2008, and sets an anti-idling limit of five minutes for all off-road vehicles 25 horsepower and up. It also establishes emission rates targets for the off-road vehicles that decline over time to accelerate turnover to newer, cleaner engines and require exhaust retrofits to meet these targets. The regulation on the larger fleets started in 2010, while medium and small fleet requirements targeted compliance in 2013 and 2015, respectively.

The U.S. EPA and the CARB use different standards for determining whether the county is in attainment. Federal and state standards are summarized in Table 2, Ambient Air Quality Standards and Attainment Status for the VCAPCD.

Regional Standards

Southern California Association of Governments (SCAG)

SCAG is a Joint Powers Authority under California state law, established as an association of local governments and agencies that voluntarily convene as a forum to address regional issues. Under federal law, SCAG is designated as a Metropolitan Planning Organization (MPO) and under state law as a Regional Transportation Planning Agency and a Council of Governments. The SCAG region encompasses six counties (Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura) and 191 cities in an area covering more than 38,000 square miles. The agency develops long-range regional transportation plans including sustainable communities strategy and growth forecast components, regional transportation improvement programs, regional housing needs allocations and a portion of the AQMP. SCAG's Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), which was adopted on April 4, 2012, identifies growth forecasts that are used in the development of air quality-related land use and transportation control strategies.

Table 2
Ambient Air Quality Standards and Attainment Status for the VCAPCD

Air Pollutant	Averaging Time	State Standard	Federal Standard	VCAPCD Attainment Status	
				California Standard	Federal Standard
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	Revoked	Nonattainment	Nonattainment
	8 Hour	0.070 ppm (137µg/m^3)	0.070 ppm (137µg/m^3)		
Carbon Monoxide (CO)	1 Hour	20.0 ppm (23,000 µg/m^3)	35.0 ppm (40,000 µg/m^3)	Attainment	Attainment
	8 Hour	9.0 ppm (10,000 µg/m^3)	9.0 ppm (10,000 µg/m^3)		
Nitrogen Dioxide (NO_2)	1 Hour	0.18 ppm (339 µg/m^3)	0.10 ppm (188 µg/m^3)	Attainment	Unclassified/ Attainment
	Annual	0.03 ppm (57 µg/m^3)	0.0534 ppm (100 µg/m^3)	Attainment	Unclassified/ Attainment
Lead (Pb)	30 Day Avg.	1.5 µg/m^3	--	Attainment	Unclassified/ Attainment
	Calendar Qtr.	--	1.5 µg/m^3		
Sulfur Dioxide (SO_2)	1 Hour	0.25 ppm	0.075 ppm	Attainment	Attainment
	24 Hour	0.04 ppm	--		
Particulate Matter 10 (PM_{10})	24 Hour	50.0 µg/m^3	150.0 µg/m^3	Nonattainment	Unclassified
	Annual	20.0 µg/m^3	Revoked		
Particulate Matter 2.5 ($PM_{2.5}$)	24 Hour	--	35.0 µg/m^3	Unclassified/ Attainment	Unclassified/ Attainment
	Annual	12.0µg/m^3	12.0 µg/m^3		

[a] *Notes: ppm = parts by volume per million of air; µg/m^3=micrograms per cubic meter*
Sources: California Air Resources Board, Ambient Air Quality Standards website: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf (accessed January 2016); and, California Air Resources Board, State Area Designation Maps website: http://www.arb.ca.gov/desig/adm/adm.htm (accessed January 2016).

Ventura County Air Pollution Control District (VCAPCD)

The VCAPCD is the air pollution control agency for Ventura County and, along with CARB, is charged by state law to protect the people and the environment of Ventura County from the harmful effects of air pollution. To that end, the VCAPCD works directly with the Southern California Association of Governments (SCAG), county transportation commissions and local governments, and cooperates actively with all state and federal government agencies. The VCAPCD develops rules and regulations, establishes permitting requirements, inspects emissions sources, and provides regulatory enforcement through such measures as educational programs or fines, when necessary.

Although the VCAPCD is responsible for regional air quality planning efforts, VCAPCD does not have the authority to directly regulate the air quality issues associated with plans and new development projects within the county. Instead, the VCAPCD has prepared the Ventura County Air Quality Assessment Guidelines (October 2003) as an advisory document that provides lead agencies, consultants, and

project applicants with a framework and uniform methods for preparing air quality evaluations for environmental documents under CEQA. The Guidelines recommend specific criteria and threshold levels for determining whether a proposed project may have a significant adverse air quality impact. The Guidelines also provide mitigation measures that may be useful for mitigating the air quality impacts of proposed projects. It should be noted, however, that these are guidelines only, and their use is not required or mandated by the VCAPCD. The final decision of whether to use these Guidelines rests with the lead agency responsible for approving the project.

Local Standards

City of Ventura

The City of Ventura's General Plan, adopted in 2005, provides goals, policies, and actions developed to guide future development in the City through the 2025 planning horizon, with an emphasis on a more intense "Infill First" strategy designed to preserve open space and prevent unsustainable growth. The General Plan establishes the following goals relevant to air quality:

- Our Sustainable Infrastructure – Our goal is to safeguard public health, well-being, and prosperity by providing and maintaining facilities that enable the community to live in balance with natural systems.
    - Policy 5A: Follow an approach that contributes to resource conservation.
        - Action 5.1: Require low flow fixtures, leak repair, and drought tolerant landscaping (native species if possible), plus emerging water conservation techniques, such as reclamation, as they become available.
        - Action 5.5: Provide incentives for new residences and businesses to incorporate recycling and waste diversion practices, pursuant to guidelines provided by the Environmental Services Office.
- Our Healthy and Safe Community – Our goal is to build effective community partnerships that protect and improve the social well-being and security of all our citizens.
    - Policy 7D: Minimize exposure to air pollution and hazardous substances.
        - Action 7.20: Require air pollution point sources to be located at safe distances from sensitive sites such as homes and schools;
        - Action 7.21: Require analysis of individual development projects in accordance with the most current version of the Ventura County Air Pollution Control District Air Quality Assessment Guidelines and, when significant impacts are identified, require implementation of air pollutant mitigation measures determined to be feasible at the time of project approval.
        - Action 7.22: In accordance with Ordinance 93-37, require payment of fees to fund regional transportation demand management (TDM) programs for all

projects generating emissions in excess of Ventura County Air Pollution Control District adopted levels.

- Action 7.23: Require individual contractors to implement the construction mitigation measures included in the most recent version of the Ventura County Air Pollution Control District Air Quality Assessment Guidelines.
- Action 7.27: Require proponents of projects on or immediately adjacent to lands in industrial, commercial, or agricultural use to perform soil and groundwater contamination assessments in accordance with American Society for Testing and Materials standards, and if contamination exceeds regulatory action levels, require the proponent to undertake remediation procedures prior to grading and development under the supervision of the County Environmental Health Division, County Department of Toxic Substances Control, or Regional Water Quality Control Board (depending upon the nature of any identified contamination).

ENVIRONMENTAL IMPACTS

Methodology

This analysis focuses on the nature and magnitude of the change in the air quality environment due to implementation of the Project. Air pollutant emissions associated with the Project would result from Project operations and from Project-related traffic volumes. Construction activities would also generate air pollutant emissions at the Project Site and on roadways resulting from construction-related traffic. The increase in Project Site emissions generated by these activities and other secondary sources have been quantitatively estimated and compared to thresholds of significance recommended by the VCAPCD (see Project Impacts subheading, below).

Construction Emissions

The regional construction emissions associated with the Project were calculated using the California Emissions Estimator Model (CalEEMod 2013.2.2) recommended by the VCAPCD. CalEEMod was developed in collaboration with the air districts of California as a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects. CalEEMod provides several improvements compared to Urban Emissions (URBEMIS) 2007, including but not limited to the latest factors, survey data, and calculation methodologies for criteria pollutants and GHGs.

Construction activities associated with demolition, site preparation, grading, and building construction would generate pollutant emissions. Specifically, these construction activities would temporarily create

emissions of dusts, fumes, equipment exhaust, and other air contaminants. These construction emissions were compared to the thresholds established by the VCAPCD.

Operational Emissions

Operational emissions associated with the Project were also calculated using CalEEMod 2013.2.2 and the information provided in the traffic study prepared for the Project. Operational emissions associated with the Project would be comprised of mobile source emissions, energy demand, and other area source emissions. Mobile source emissions are generated by the increase in motor vehicle trips to and from the Project Site associated with operation of the Project. Area source emissions are generated by natural gas consumption for space and water heating, and landscape maintenance equipment. To determine if a regional air quality impact would occur, the increase in emissions is compared with the VCAPCD's recommended regional thresholds for operational emissions.

Thresholds of Significance

Appendix G of the State CEQA Guidelines

In accordance with guidance provided in Appendix G to the state CEQA Guidelines, the Project would have a significant impact on air quality if it would cause any of the following to occur:

(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 release in 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.

VCAPCD Thresholds (per Ventura County Air Quality Assessment Guidelines, October 2003)

The VCAPCD reviews and comments on the adequacy and accuracy of environmental documents for projects that may affect air quality in Ventura County. Such documents include Notices of Preparation, Initial Studies, Negative Declarations, Mitigated Negative Declarations (MND), and Environmental Impact Reports (EIR). The VCAPCD recommends that an MND or an EIR be prepared for projects that meet one or more of the significance criteria listed below. It should be noted, as stated previously, these criteria are guidelines only. The final decision on the significance of air quality impacts, the

appropriate environmental document, and mitigation measures, lies with the lead agency for the project.

Criteria Pollutants

Ozone (based on emission levels of reactive organic compounds and oxides of nitrogen)

The following are the reactive organic compounds (ROC) and nitrogen oxides (NOx) thresholds that the Ventura County Air Pollution Control Board has determined will individually and cumulatively jeopardize attainment of the federal one-hour ozone standard, and thus have a significant adverse impact on air quality in Ventura County.

(a) Ojai Planning Area
Reactive Organic Compounds: 5 pounds per day
Nitrogen Oxides: 5 pounds per day

(b) Remainder of Ventura County
Reactive Organic Compounds: 25 pounds per day
Nitrogen Oxides: 25 pounds per day

The Project Site is not located in the Ojai Planning area, thus the thresholds under subheading (b) for the remainder of Ventura County are applicable to the Project.

Criteria Pollutants – General

A project that may cause an exceedance of any ambient air quality standard (state or federal), or may make a substantial contribution to an existing exceedance of an air quality standard will have a significant adverse air quality impact. “Substantial” is defined as making measurably worse an existing exceedance of a state or federal ambient air quality standard. For example, a project that directly or indirectly produces large quantities of carbon monoxide (CO) could cause an exceedance of the state or federal CO standards. Such a determination may require the use of an appropriate air quality model.

Ozone – Cumulative Impacts Based on Project-Specific AQMP Consistency

A project with emissions of two pounds per day or greater of ROC, or two pounds per day or greater of NOx that is found to be inconsistent with the AQMP will have a significant cumulative adverse air quality impact. A project with emissions below two pounds per day of ROC, and below two pounds per day of NOx, is not required to assess consistency with the AQMP. Inconsistent projects are usually those that cause the existing population to exceed the population forecasts contained in the most recently adopted AQMP.

Ozone – Cumulative Impacts Based on General Plan AQMP Consistency

Any General Plan Amendment or revision that would provide directly or indirectly for increased population growth above that forecasted in the most recently adopted AQMP will have a significant cumulative adverse air quality impact.

Fugitive Dust

(a) A project that may be reasonably expected to generate fugitive dust emissions in such quantities as to cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which may endanger the comfort, repose, health, or safety of any such person or the public, or which may cause, or have a natural tendency to cause, injury or damage to business or property (see California Health and Safety Code, Division 26, §41700) will have a significant adverse air quality impact.

(b) A project for which an appropriate air dispersion modeling analysis shows a possible violation of an ambient particulate standard will have a significant adverse air quality impact.

Toxic Air Contaminants

Impacts from toxic air contaminants (TACs) may be estimated by conducting a health risk assessment (HRA). The HRA procedure involves the use of an air quality model and a protocol approved by the APCD. Following are the recommended significance thresholds:

(a) Lifetime probability of contracting cancer is greater than 10 in one million (as identified in an HRA).

(b) Ground-level concentrations of non-carcinogenic toxic air pollutants would result in a Hazard Index of greater than 1 (as identified in an HRA).

Odors

A qualitative assessment indicating that a project may reasonably be expected to generate odorous emissions in such quantities as to cause detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which may endanger the comfort, repose, health, or safety of any such person or the public, or which may cause, or have a natural tendency to cause, injury or damage to business or property (see California Health and Safety Code, Division 26, §41700) will have a significant adverse air quality impact.

Project Impacts

Construction Air Quality Impacts

This analysis assumes construction would be undertaken with the following primary construction phases: (1) Demolition/Site Clearing, (2) Grading, and (3) Structural Building, Finishing and Paving. Each primary construction phase has been further detailed below. This analysis assumes construction would begin in 2017 and residential uses could be occupied by 2018.

Demolition/Site Clearing

The Project would require the demolition of the existing house and barn (approximately 50 cubic yards or 24 tons of demolition debris), the removal of trees, fences, and other existing debris. This analysis estimates demolition and site clearing would occur for approximately one week and a maximum total of 16 truck trips would be required. This analysis assumes the daily on-site demolition activities would require the following equipment (or generally equivalent mix): three excavators, two rubber tired dozers, and one concrete/industrial saw.

Grading and Site Preparation

After the completion of demolition/site clearing, grading and site preparation activities would occur for approximately 6 months and would involve the cut and fill of land to ensure the proper base and slope for the entire site, including building pads and foundations. At this time, no soil import or export activities are anticipated. This analysis assumes daily grading activities would require the following equipment (or generally equivalent mix): two excavators, one grader, one rubber tired dozer, two scrapers, and two tractors/loaders/backhoes.

Structural Building, Finishing and Paving

As discussed previously, the proposed Project consists of a Specific Plan and a Vesting Tentative Tract Map that would enable the future development of a residential neighborhood ranging between 200 and 250 dwellings on approximately 26.51 acres (a density of 9.43 per units per acre). For purposes of this analysis, it is estimated that building construction would occur in two phases. The first buildout phase would include the construction of up to 150 residential units over approximately 9 months with occupied units in 2018. At the completion of the first buildout phase, the second buildout phase would include the construction of up to 100 residential units over approximately 9 months with occupied units in 2019. Thus, this analysis assumes 250 residential units would be built out over an approximate 18-month building construction period. While the buildout phases may take longer in reality, this analysis represents the fastest buildout potential resulting in a conservative worst-case daily impact scenario. Upon completion of the building shells, finishing (coatings) and paving of parking areas and streets would follow. This analysis assumes that the maximum daily construction building activities would require the following equipment for each phase (or generally equivalent mix): one crane, three forklifts,

one generator set, three tractors/loaders/backhoes, one welder, one air compressor, two pavers, two pieces of paving equipment, and two rollers.

These construction activities would temporarily create emissions of dusts, fumes, equipment exhaust, and other air contaminants. Construction activities involving grading and site preparation would primarily generate $PM_{2.5}$ and PM_{10} emissions. Mobile sources (such as diesel-fueled equipment onsite and traveling to and from the Project Site) would primarily generate NOx emissions. The application of architectural coatings would primarily result in the release of ROC emissions. The amount of emissions generated on a daily basis would vary, depending on the amount and types of construction activities occurring at the same time. The estimate of regional daily construction emissions has been prepared utilizing the CalEEMod computer model recommended by the VCAPCD. Table 6, Estimated Peak Daily Construction Emissions, identifies daily emissions that are estimated to occur on the peak construction day for each year of construction activity.

Table 3
Estimated Peak Daily Construction Emissions

Construction Phase & Year	Emissions in Pounds per Day					
	ROC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Phase 1 – Year 2017	6.17	69.67	47.58	0.06	6.29	4.60
Phase 1 – Year 2018	25.45	44.19	40.45	0.07	3.78	2.76
Phase 2 – Year 2018	2.96	24.38	21.18	0.04	2.11	1.58
Phase 2 – Year 2019	22.64	38.85	37.65	0.06	3.07	2.32

Note: Emissions reflect the maximum daily total for each phase/year. It is assumed Phase 2 would begin after the completion of Phase 1 and there would be no overlap between the buildout phases. Calculations assume watering twice daily for fugitive dust suppression.
CalEEMod data provided in Appendix A to this report.

Consistent with the Ventura County Air Quality Assessment Guidelines (October 2003), construction-related emissions (including portable engines and portable engine-driven equipment subject to the ARB's Statewide Portable Equipment Registration Program, and used for construction operations or repair and maintenance activities) of ROC and NOx are not counted towards the two significance thresholds, since these emissions are temporary. However, construction-related emissions should be mitigated if estimates of ROC and NOx emissions from the heavy-duty construction equipment anticipated to be used for a particular project exceed the 25 pounds per day threshold for the county areas not located in the Ojai Planning Area. As Table 3 illustrates construction emissions could exceed 25 pounds per day of ROC and NOx, mitigation measures to reduce such emissions have been identified at the end of this report.

With respect to fugitive dust, the VCAPCD states a project's construction emissions are considered to cause a significant impact to air quality if fugitive dust emissions are generated in such quantities as to cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which may endanger the comfort, repose, health, or safety of any such person or the public. Thus, as

stated the Ventura County Air Quality Assessment Guidelines (October 2003), the VCAPCD recommends minimizing fugitive dust, especially during grading and excavation operations, rather than quantifying fugitive dust emissions. Control techniques for fugitive dust generally involve watering, chemical dust control agents for soil stabilization, scheduling of activities, and vehicle speed control. Therefore, such mitigation measures to reduce project related dust-generating operations and activities have been identified at the end of this report.

In conclusion, the VCAPCD has not adopted quantitative thresholds of significance for construction emissions since such emissions are temporary. Rather, the VCAPCD recommends implementation of emission and dust control requirements for all construction projects with ROC or NOx emissions over 25 pounds per day. As shown above, construction emissions from the proposed project would exceed 25 pounds per day for ROC and NOx. Therefore, Mitigation Measure 1 is necessary to reduce the construction emissions. With implementation of Mitigation Measure 1 construction related impacts would be less than significant.

Operational Air Quality Impacts

As discussed previously, the proposed Project consists of a Specific Plan and a Vesting Tentative Tract Map that would enable the future development of a residential neighborhood ranging between 200 and 250 dwellings on approximately 26.51 acres (a density of 9.43 per units per acre). For purposes of this analysis, it is estimated that buildout and operations would occur in two phases. The first buildout phase would include the construction of up to 150 residential units with occupied units in 2018. At the completion of the first buildout phase, the second buildout phase would include the construction of up to 100 residential units with occupied units in 2019. Thus, this analysis assumes 250 residential units would be operational (58 single-family detached units and 192 condominiums). While the buildout phases may take longer in reality, this analysis represents the fastest buildout potential resulting in a conservative worst-case daily impact scenario. The Project's operational air quality emissions associated with area sources, energy demand, and mobile sources (motor vehicles) have been calculated with CalEEMod. These results are presented in Table 4, Daily Operational Emissions. According to the VCAPCD, a project's operational emissions are considered to cause a significant impact to air quality if ROC and NOx emissions exceed the 25 pounds per day threshold for the county areas not located in the Ojai Planning Area. As shown in Table 4, the Project would not exceed the thresholds of significance set by the VCAPCD for ROC or NOx. Therefore, impacts associated with operational air quality emissions would be considered less than significant.

Table 4
Daily Operational Emissions

Emissions Source	Emissions in Pounds per Day					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Phase 1 Emissions (150 units in 2018)						
Area Sources	4.69	0.14	12.46	<0.01	0.07	0.07
Energy Demand	0.07	0.57	0.24	<0.01	0.05	0.05
Mobile (Motor Vehicles)	3.21	7.76	32.35	0.08	5.98	1.66
Total Phase 1 Emissions	*7.97*	*8.48*	*45.06*	*0.08*	*6.09*	*1.77*
Phase 2 Emissions (100 units in 2019)						
Area Sources	3.12	0.10	8.29	<0.01	0.05	0.05
Energy Demand	0.04	0.38	0.16	<0.01	0.03	0.03
Mobile (Motor Vehicles)	2.01	4.80	20.07	0.05	3.98	1.10
Total Phase 2 Emissions	*5.17*	*5.27*	*28.53*	*0.06*	*4.05*	*1.18*
Total Emissions (Both Phases - 250 units)	**13.14**	**13.75**	**73.59**	**0.14**	**10.14**	**2.95**

Notes: Assumes all hearth would be natural gas. Data reflects highest emissions from either summer or winter. Columns may not add due to model rounding.
CalEEMod data provided in Appendix A to this report.

Criteria Pollutants – General (Carbon Monoxide)

A project that may cause an exceedance of any ambient air quality standard (state or federal), or may make a substantial contribution to an existing exceedance of an air quality standard will have a significant adverse air quality impact. "Substantial" is defined as making measurably worse an existing exceedance of a state or federal ambient air quality standard. For example, a project that directly or indirectly produces large quantities of carbon monoxide (CO) could cause an exceedance of the state or federal CO standards.

As stated in the Ventura County Air Quality Assessment Guidelines (October 2003), a CO hotspot screening analysis using the screening procedure in Caltrans' CO Protocol should be conducted for any project with indirect emissions greater than the applicable ozone project significance thresholds discussed previously that may significantly impact roadway intersections that are currently operating at, or are expected to operate at, Levels of Service E, or F. As discussed above, the Project would not exceed the thresholds of significance set by the VCAPCD for ROC or NOx. In addition, based on a review of the Project's Traffic Study, none of the analyzed intersections operate at LOS E or F under existing or future conditions. Therefore, according to the VCAPCD guidelines, none of the intersections qualified for a CO hotspot screening analysis and these impacts would be less than significant.

TAC Impacts

The Project would not include the operations of any land uses routinely involving the use, storage, or processing of carcinogenic or non-carcinogenic toxic air contaminants. Thus, no appreciable

operational-related toxic airborne emissions would result from Project implementation. With respect to construction, the construction activities associated with the Project would be typical of other similar land use development projects in the region, and would be subject to the regulations and laws relating to toxic air pollutants at the regional, state, and federal level that would protect sensitive receptors from substantial concentrations of these emissions. Therefore, impacts associated with the release of toxic air contaminants would be less than significant.

Odor Impacts

The Project does not include any of the land uses identified by the VCAPCD as being associated with odors (such as wastewater treatment facilities, sanitary landfills, transfer stations, composting facilities, asphalt batch plants, painting and coating operations, fiberglass operations, food processing facilities, feed lots/ dairies, petroleum facilities, chemical manufacturing operations and facilities, and rendering plants). Potential sources that may emit odors during construction activities include the use of architectural coatings and solvents as well as asphalt paving. However, the Project would be consistent with all applicable rules and regulations governing construction equipment and processes. As such, the Project would not create objectionable odors affecting a substantial number of people during construction or long-term operation. Therefore, a less than significant impact would occur with respect to the creation of objectionable odors.

AQMP Consistency

The primary objective of the *Ventura County Air Quality Management Plan (AQMP)* is to provide continuous air pollutant emission reductions over time, with the goal of attaining the federal and state standards. The VCAPCD's most recent AQMP was adopted in 2007 and establishes a comprehensive air pollution control program leading to the attainment of state and federal air quality standards in the Basin, which is in non-attainment for ozone (O_3) and particulate matter (PM_{10}). The AQMP also addresses the requirements set forth in the state and federal Clean Air Acts. As discussed previously, the Project's air quality emissions would be below the VCAPCD significance thresholds and mitigation measures have been identified where appropriate consistent with VCAPCD recommendations.

As stated in the Ventura County Air Quality Assessment Guidelines (October 2003), project consistency with the AQMP can be determined by comparing the actual population growth in the county with the projected growth rates used in the AQMP. The projected growth rate in population is used as an indicator of future emissions from population-related emission categories in the AQMP. These emission estimates are used, in part, to project the date by which Ventura County will attain the federal ozone standard. Therefore, a demonstration of consistency with the population forecasts used in the most recently adopted AQMP should be used for assessing project consistency with the AQMP.

As discussed in greater detail in Chapter 4.12 – Population and Housing of the Project's Draft EIR, new residential uses associated with the Project would result in approximately 250 more households and 653 more persons within the City than anticipated by the General Plan. However, the Project's population represents 0.56% of SCAG's 2020 forecast and 0.58% of the General Plan 2025 forecast, and the Project's households represent 1.45% of SCAG's 2020 forecast and 1.26% of the General Plan 2025 forecast. Thus, the Project would not exceed the SCAG RTP/SCS population growth forecast for the City of 116,900 residents in 2020 or the City's General Plan forecast of 133,160 households in 2025.

In addition, the 2005 Ventura General Plan contains numerous other goals, policies, and actions supporting the creation of housing opportunities within the City. The 2005 Ventura General Plan also includes various policies that encourage infill development and would be expected to reduce vehicle miles traveled (VMT) and associated air pollutant emissions compared to previous low density development within the City. The Project is considered an infill development, as the site is surrounded on all sides by urban development. Thus, impacts related to population growth would therefore be less than significant.

As such, the Project would not increase population figures over those that have been planned for the area, and would not jeopardize attainment of state and federal ambient air quality standards. Therefore, for these reasons, the proposed project would not conflict with or obstruct implementation of the applicable AQMP and this impact would be less than significant.

CUMULATIVE IMPACTS

As stated in the Ventura County Air Quality Assessment Guidelines (October 2003), a project with emissions of two pounds per day or greater of ROC, or two pounds per day or greater of NOx that is found to be inconsistent with the AQMP will have a significant cumulative adverse air quality impact. A project with emissions below two pounds per day of ROC, and below two pounds per day of NOx, is not required to assess consistency with the AQMP. Inconsistent projects are usually those that cause the existing population to exceed the population forecasts contained in the most recently adopted AQMP.

While the Project would exceed two pounds per day or greater of ROC and two pounds per day or greater of NOx, the Project would be consistent with the AQMP as discussed previously. It should also be noted, as discussed previously, the Project's air quality emissions would be below the VCAPCD significance thresholds (25 pounds per day for ROC and NOx) and mitigation measures have been identified where appropriate consistent with VCAPCD recommendations. As such, cumulative air quality impacts would be less than significant.

MITIGATION MEASURES

MM-1 The following control measures provided in the most recent version of the Ventura County Air Quality Assessment Guidelines (October 2003) pursuant to Mitigation Measure AQ-3 of the 2005 General Plan Final EIR would minimize the generation of fugitive dust (PM_{10} and $PM_{2.5}$), ROC, and NO_X during construction activities and shall be implemented during construction:

1. In order to reduce impacts associated with NOx emissions (a precursor to ozone) the following measures shall be implemented:
    a. Equipment idling time should be minimized;
    b. Equipment engines should be maintained in good condition and in proper tune, as per manufacture's specifications;
    c. During the smog seasons (May through October), the construction period should be lengthened so as to minimize the number of vehicles and equipment operating at the same time;
    d. Alternatively fueled construction equipment, such as compressed natural gas, liquefied natural gas, or electric, should be used if feasible.
2. During clearing, grading, earth moving, or excavation operation, excessive fugitive dust emissions shall be controlled by regular watering, paving construction roads, or other dust preventive measures using the following procedures:
    a. All material excavated or graded shall be sufficiently watered to prevent excessive amounts of dust. Watering shall occur at least twice daily with complete coverage, preferably in the late morning and after work is done for the day, so that water penetrates sufficiently to minimize fugitive dust during grading activities. Reclaimed water should be used if available;
    b. All graded and excavated material, exposed soil areas, and active portions of the construction site, including unpaved roadways onsite, should be treated to prevent fugitive dust. Measures may include watering, application of environmentally-safe soil stabilization materials, and/or roll-compaction as appropriate;
    c. Graded and/or excavated inactive areas of the construction site should be monitored at least weekly for dust stabilization. If a portion of the site is inactive for over four days, soil onsite should be stabilized;
    d. Signs should be posted limiting onsite traffic to 15 miles per hour;
    e. All clearing, grading earth moving, or excavation activities shall cease during period of high winds (i.e., greater than 20 mph averaged over one hour) so as to prevent excessive amounts of dust;
    f. All material transported off site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust pursuant to California Vehicle Code §23114;

g. Respiratory protection shall be used by all employees in accordance with California Division of Occupational Safety and Health regulations;
h. Measures to reduce the fungus that causes Valley Fever should include the following:
    i. Facemasks should be worn on employees involved in grading or excavation operations during dry period to reduce inhalation of dust.
    ii. Employment should be restricted to persons with positive coccidioidin skin tests.
    iii. Crews should be hired from local populations where possible, since it is more likely that they have previously been exposed to the fungus and are therefore immune.
    iv. Cabs of grading and construction equipment should be air-conditioned.
    v. Crews should work upwind from excavation sites.
    vi. Construction roads should be paved.
    vii. Weed growth should be controlled by mowing instead of discing.
    viii. The access way into the Project site should be paved or treated with environmentally-safe dust control agents during rough grading and construction.
    ix. The area disturbed by clearing, grading, earth moving, or excavation operations should be minimized so as to prevent excessive amounts of dust.

3. After clearing, grading, earth moving, or excavation operations, and during construction activities, fugitive dust emissions shall be controlled using the following procedures:
    a. All inactive portions of the construction site shall be seeded and watered until grass cover is grown;
    b. All active portions of the construction site shall be sufficiently watered to prevent excessive amounts of dust.
4. At all times, fugitive dust emissions shall be controlled by assuring that streets adjacent to the project site shall be swept as needed to remove silt, which may be accumulated from construction activities so as to prevent excessive amounts of dust. Construction activities should utilize new technologies to control ozone precursor emissions as they become available and feasible. Streets must be swept at least once a day, preferably at the end of the day, if visible soil material is carried over to adjacent streets and roads.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

The VCAPCD has not adopted quantitative thresholds of significance for construction emissions since such emissions are temporary. Rather, the VCAPCD recommends implementation of emission and dust control requirements for all construction projects with ROC or NOx emissions over 25 pounds per day.

As shown above, construction emissions from the proposed project would exceed 25 pounds per day for ROC and NOx. Therefore, Mitigation Measure 1 is necessary to reduce the construction emissions. With implementation of Mitigation Measure 1 construction related impacts would be less than significant.

The Project's operational air quality emissions would not exceed the established VCAPCD thresholds of significance and the Project would be consistent with the AQMP. Thus, air quality impacts would be less than significant.

Appendix A

Ambient Air Quality Data

California Environmental Protection Agency
Air Resources Board

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

at El Rio-Rio Mesa School #2

	2012		2013		2014	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National:						
First High:	Oct 17	0.065	May 3	0.062	Oct 5	0.077
Second High:	Apr 8	0.061	Aug 15	0.060	May 2	0.073
Third High:	May 6	0.056	Sep 29	0.060	Oct 6	0.070
Fourth High:	Apr 7	0.054	May 4	0.059	May 15	0.067
California:						
First High:	Oct 17	0.065	May 3	0.063	Oct 5	0.077
Second High:	Apr 8	0.061	Aug 15	0.061	May 2	0.074
Third High:	May 6	0.056	May 4	0.060	Oct 6	0.070
Fourth High:	Jun 10	0.055	Sep 29	0.060	May 15	0.067
National:						
# Days Above the Standard:		0		0		1
Nat'l Standard Design Value:		0.060		0.059		0.060
National Year Coverage:		99		98		98
California:						
# Days Above the Standard:		0		0		2
California Designation Value:		0.065		0.065		0.066
Expected Peak Day Concentration:		0.066		0.065		0.066
California Year Coverage:		99		98		98

Notes:

Eight-hour ozone averages and related statistics are available at El Rio-Rio Mesa School #2 between 1980 and 2014. Some years in this range may not be represented.
All averages expressed in parts per million.
An exceedance of a standard is not necessarily related to a violation of the standard.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
* means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

California Environmental Protection Agency
Air Resources Board

Top 4 Summary: Highest 4 Daily Maximum Hourly Ozone Measurements

at El Rio-Rio Mesa School #2

	2012		2013		2014	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Oct 17	0.082	May 4	0.067	Oct 5	0.112
Second High:	Apr 8	0.072	Sep 29	0.067	May 2	0.092
Third High:	Sep 22	0.069	May 3	0.066	Oct 6	0.082
Fourth High:	Sep 30	0.068	Jun 27	0.066	May 16	0.079
California:						
# Days Above the Standard:		0		0		1
California Designation Value:		0.07		0.07		0.08
Expected Peak Day Concentration:		0.073		0.071		0.075
National:						
# Days Above the Standard:		*0*		*0*		*0*
Nat'l Standard Design Value:		*0.080*		*0.072*		*0.082*
Year Coverage:		99		100		98

Notes:

Hourly ozone measurements and related statistics are available at El Rio-Rio Mesa School #2 between 1980 and 2014. Some years in this range may not be represented.
All concentrations expressed in parts per million.
The national 1-hour ozone standard was revoked in June 2005 and is no longer in effect. Statistics related to the revoked standard are shown in *italics* or *italics* .
An exceedance of a standard is not necessarily related to a violation of the standard.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
* means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

California Environmental Protection Agency
Air Resources Board

Top 4 Summary: Highest 4 Daily Maximum Hourly Nitrogen Dioxide Measurements

at El Rio-Rio Mesa School #2

	2012		2013		2014	
	Date	Measurement	Date	Measurement	Date	Measurement
National:						
First High:	Sep 6	57.0	Jan 22	40.0	Jan 17	39.0
Second High:	Feb 23	42.0	Jan 23	40.0	Jan 18	36.0
Third High:	Feb 6	38.0	Dec 26	37.0	Jan 16	35.0
Fourth High:	Nov 5	37.0	Jan 18	35.0	Jan 19	35.0
California:						
First High:	Sep 6	57	Jan 22	40	Jan 17	39
Second High:	Feb 23	42	Jan 23	40	Jan 18	36
Third High:	Feb 6	38	Dec 26	37	Jan 16	35
Fourth High:	Nov 5	37	Jan 18	35	Jan 19	35
National:						
1-Hour Standard Design Value:		36		34		32
1-Hour Standard 98th Percentile:		33.0		33.0		30.0
# Days Above the Standard:		0		0		0
Annual Standard Design Value:		7		7		6
California:						
1-Hour Std Designation Value:		50		50		40
Expected Peak Day Concentration:		51		49		42
# Days Above the Standard:		0		0		0
Annual Std Designation Value:		7		7		7
Annual Average:		7		7		6
Year Coverage:		98		99		97

Notes:

Hourly nitrogen dioxide measurements and related statistics are available at El Rio-Rio Mesa School #2 between 1982 and 2014. Some years in this range may not be represented.

All concentrations expressed in parts per billion.

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

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

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

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

California Environmental Protection Agency
Air Resources Board

Top 4 Summary: Highest 4 Daily 24-Hour PM10 Averages

at El Rio-Rio Mesa School #2

	2012		2013		2014	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Aug 31	56.3	Jun 21	45.9	Apr 29	51.1
Second High:	Aug 8	43.8	May 22	40.2	Mar 12	50.4
Third High:	May 9	34.0	Feb 15	39.4	Jan 23	40.8
Fourth High:	Jun 8	33.8	May 4	37.4	Mar 18	37.0
California:						
First High:	Aug 31	56.9	Jun 21	46.7	Mar 12	51.3
Second High:	Aug 8	44.2	May 22	41.2	Apr 29	51.2
Third High:	May 9	34.8	Feb 15	40.3	Jan 23	42.6
Fourth High:	Jun 8	34.4	May 4	38.2	Mar 18	38.1
National:						
Estimated # Days > 24-Hour Std:		0.0		0.0		*
Measured # Days > 24-Hour Std:		0		0		0
3-Yr Avg Est # Days > 24-Hr Std:		0.0		0.0		*
Annual Average:		*20.4*		*23.6*		*18.1*
3-Year Average:		*21*		*22*		*21*
California:						
Estimated # Days > 24-Hour Std:		5.7		0.0		*
Measured # Days > 24-Hour Std:		1		0		2
Annual Average:		21.0		24.3		*
3-Year Maximum Annual Average:		22		24		24
Year Coverage:		96		100		25

Notes:

Daily PM10 averages and related statistics are available at El Rio-Rio Mesa School #2 between 1988 and 2014. Some years in this range may not be represented.
All averages expressed in micrograms per cubic meter.
The national annual average PM10 standard was revoked in December 2006 and is no longer in effect. Statistics related to the revoked standard are shown in *italics* or *italics* .
An exceedance of a standard is not necessarily related to a violation of the standard.
All values listed above represent midnight-to-midnight 24-hour averages and may be related to an exceptional event.
State and national statistics may differ for the following reasons:
State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.
State statistics for 1998 and later are based on local conditions (except for sites in the South Coast Air Basin, where State statistics for 2002 and later are based on local conditions). National statistics are based on standard conditions.
State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.
Measurements are usually collected every six days. Measured days counts the days that a measurement was greater than the level of the standard; Estimated days mathematically estimates how many days concentrations would have been greater than the level of the standard had each day been monitored.
3-Year statistics represent the listed year and the 2 years before the listed year.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
* means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

California Environmental Protection Agency
Air Resources Board

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

at El Rio-Rio Mesa School #2

	2012		2013		2014	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Dec 9	30.8	Oct 24	19.9	Feb 24	22.2
Second High:	May 10	21.0	Aug 16	19.6	Feb 25	21.7
Third High:	Dec 8	20.4	Oct 22	19.1	Feb 23	21.5
Fourth High:	Sep 21	17.7	Oct 21	19.0	Jul 5	19.9
California:						
First High:	Dec 9	30.8	Oct 25	22.2	Feb 24	22.2
Second High:	Jan 1	21.8	May 4	20.3	Feb 25	21.7
Third High:	May 10	21.0	Oct 24	19.9	Feb 23	21.5
Fourth High:	Dec 8	20.4	Aug 16	19.6	Jul 5	19.9
National:						
Estimated # Days > 24-Hour Std:		0.0		0.0		0.0
Measured # Days > 24-Hour Std:		0		0		0
24-Hour Standard Design Value:		17		17		18
24-Hour Standard 98th Percentile:		17.0		17.7		17.8
Annual Standard Design Value:		8.7		9.0		9.2
Annual Average:		8.7		9.4		9.3
California:						
Annual Std Designation Value:		11		9		9
Annual Average:		*		*		9.4
Year Coverage:		100		100		100

Notes:

Daily PM2.5 averages and related statistics are available at El Rio-Rio Mesa School #2 between 1999 and 2014. Some years in this range may not be represented.
All averages expressed in micrograms per cubic meter.
An exceedance of a standard is not necessarily related to a violation of the standard.
State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
* means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

Appendix B

Construction & Operational Air Quality Data

The Grove - Phase 1

Ventura County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	35.00	Dwelling Unit	15.00	63,000.00	107
Condo/Townhouse	115.00	Dwelling Unit	12.00	115,000.00	352

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Site is approximately 27 acres.

Construction Phase - see report for construction phases discussion.

Grading - site is approximately 27 acres

Demolition -

Trips and VMT - approximately 16 haul trucks during demolition.

Vehicle Trips - trip rates per project traffic study.

Construction Off-road Equipment Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	35.00	89.00
tblConstructionPhase	NumDays	440.00	198.00
tblConstructionPhase	NumDays	30.00	6.00
tblConstructionPhase	NumDays	45.00	130.00
tblConstructionPhase	NumDays	35.00	23.00
tblConstructionPhase	PhaseEndDate	2/5/2019	10/3/2018
tblConstructionPhase	PhaseEndDate	12/29/2017	12/31/2017
tblConstructionPhase	PhaseEndDate	11/5/2018	10/3/2018
tblConstructionPhase	PhaseStartDate	10/4/2018	6/1/2018
tblConstructionPhase	PhaseStartDate	7/1/2017	7/2/2017
tblConstructionPhase	PhaseStartDate	10/4/2018	9/3/2018
tblGrading	AcresOfGrading	325.00	27.00
tblLandUse	LotAcreage	11.36	15.00
tblLandUse	LotAcreage	7.19	12.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	HaulingTripNumber	2.00	32.00
tblVehicleTrips	ST_TR	7.16	5.86
tblVehicleTrips	ST_TR	10.08	9.57
tblVehicleTrips	SU_TR	6.07	5.86
tblVehicleTrips	SU_TR	8.77	9.57
tblVehicleTrips	WD_TR	6.59	5.86

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	6.1683	69.6708	47.5823	0.0636	6.4066	3.3184	9.7251	3.3776	3.0530	6.4305	0.0000	6,463.0783	6,463.0783	1.9418	0.0000	6,503.8565
2018	25.4544	44.1865	40.4532	0.0676	1.1650	2.6119	3.7769	0.3110	2.4451	2.7561	0.0000	6,409.5862	6,409.5862	1.4110	0.0000	6,439.2167
Total	**31.6227**	**113.8573**	**88.0355**	**0.1312**	**7.5716**	**5.9304**	**13.5020**	**3.6886**	**5.4981**	**9.1867**	**0.0000**	**12,872.6645**	**12,872.6645**	**3.3528**	**0.0000**	**12,943.0732**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	6.1683	69.6708	47.5823	0.0636	2.9734	3.3184	6.2918	1.5439	3.0530	4.5968	0.0000	6,463.0783	6,463.0783	1.9418	0.0000	6,503.8565
2018	25.4544	44.1865	40.4532	0.0676	1.1650	2.6119	3.7769	0.3110	2.4451	2.7561	0.0000	6,409.5862	6,409.5862	1.4110	0.0000	6,439.2167
Total	**31.6227**	**113.8573**	**88.0355**	**0.1312**	**4.1384**	**5.9304**	**10.0687**	**1.8549**	**5.4981**	**7.3530**	**0.0000**	**12,872.6644**	**12,872.6644**	**3.3528**	**0.0000**	**12,943.0732**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**45.34**	**0.00**	**25.43**	**49.71**	**0.00**	**19.96**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.6892	0.1447	12.4627	6.5000e-004		0.0680	0.0680		0.0680	0.0680	0.0000	22.2828	22.2828	0.0221	0.0000	22.7466
Energy	0.0836	0.7147	0.3041	4.5600e-003		0.0578	0.0578		0.0578	0.0578		912.4310	912.4310	0.0175	0.0167	917.9839
Mobile	3.2146	7.7627	32.3512	0.0784	5.8828	0.0950	5.9777	1.5682	0.0875	1.6557		6,442.3810	6,442.3810	0.2484		6,447.5983
Total	**7.9875**	**8.6221**	**45.1181**	**0.0836**	**5.8828**	**0.2208**	**6.1035**	**1.5682**	**0.2134**	**1.7816**	**0.0000**	**7,377.0948**	**7,377.0948**	**0.2880**	**0.0167**	**7,388.3288**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.6892	0.1447	12.4627	6.5000e-004		0.0680	0.0680		0.0680	0.0680	0.0000	22.2828	22.2828	0.0221	0.0000	22.7466
Energy	0.0667	0.5703	0.2427	3.6400e-003		0.0461	0.0461		0.0461	0.0461		728.0807	728.0807	0.0140	0.0134	732.5117
Mobile	3.2146	7.7627	32.3512	0.0784	5.8828	0.0950	5.9777	1.5682	0.0875	1.6557		6,442.3810	6,442.3810	0.2484		6,447.5983
Total	**7.9706**	**8.4776**	**45.0566**	**0.0827**	**5.8828**	**0.2091**	**6.0919**	**1.5682**	**0.2017**	**1.7699**	**0.0000**	**7,192.7445**	**7,192.7445**	**0.2845**	**0.0134**	**7,202.8566**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.21**	**1.67**	**0.14**	**1.10**	**0.00**	**5.29**	**0.19**	**0.00**	**5.47**	**0.66**	**0.00**	**2.50**	**2.50**	**1.23**	**20.20**	**2.51**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/23/2017	6/30/2017	5	6	
2	Grading	Grading	7/2/2017	12/31/2017	5	130	
3	Building Construction	Building Construction	1/1/2018	10/3/2018	5	198	
4	Architectural Coating	Architectural Coating	6/1/2018	10/3/2018	5	89	
5	Paving	Paving	9/3/2018	10/3/2018	5	23	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 27

Acres of Paving: 0

Residential Indoor: 360,450; Residential Outdoor: 120,150; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	3	8.00	162	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	32.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	95.00	16.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	19.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0867	0.0000	0.0867	0.0131	0.0000	0.0131			0.0000			0.0000
Off-Road	4.0482	42.6971	33.8934	0.0399		2.1252	2.1252		1.9797	1.9797		4,036.4674	4,036.4674	1.1073		4,059.7211
Total	**4.0482**	**42.6971**	**33.8934**	**0.0399**	**0.0867**	**2.1252**	**2.2119**	**0.0131**	**1.9797**	**1.9928**		**4,036.4674**	**4,036.4674**	**1.1073**		**4,059.7211**

3.2 Demolition - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0868	1.4530	1.2633	3.8400e-003	0.0925	0.0203	0.1128	0.0253	0.0187	0.0440		380.4761	380.4761	2.2700e-003		380.5238
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0518	0.0591	0.5829	1.4000e-003	0.1232	9.2000e-004	0.1241	0.0327	8.5000e-004	0.0335		112.2819	112.2819	5.5600e-003		112.3988
Total	**0.1386**	**1.5121**	**1.8462**	**5.2400e-003**	**0.2157**	**0.0213**	**0.2370**	**0.0580**	**0.0196**	**0.0775**		**492.7581**	**492.7581**	**7.8300e-003**		**492.9226**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0390	0.0000	0.0390	5.9100e-003	0.0000	5.9100e-003			0.0000			0.0000
Off-Road	4.0482	42.6971	33.8934	0.0399		2.1252	2.1252		1.9797	1.9797	0.0000	4,036.4674	4,036.4674	1.1073		4,059.7211
Total	**4.0482**	**42.6971**	**33.8934**	**0.0399**	**0.0390**	**2.1252**	**2.1642**	**5.9100e-003**	**1.9797**	**1.9856**	**0.0000**	**4,036.4674**	**4,036.4674**	**1.1073**		**4,059.7211**

3.2 Demolition - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0868	1.4530	1.2633	3.8400e-003	0.0925	0.0203	0.1128	0.0253	0.0187	0.0440		380.4761	380.4761	2.2700e-003		380.5238
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0518	0.0591	0.5829	1.4000e-003	0.1232	9.2000e-004	0.1241	0.0327	8.5000e-004	0.0335		112.2819	112.2819	5.5600e-003		112.3988
Total	**0.1386**	**1.5121**	**1.8462**	**5.2400e-003**	**0.2157**	**0.0213**	**0.2370**	**0.0580**	**0.0196**	**0.0775**		**492.7581**	**492.7581**	**7.8300e-003**		**492.9226**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2423	0.0000	6.2423	3.3340	0.0000	3.3340			0.0000			0.0000
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518		6,313.3690	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**6.2423**	**3.3172**	**9.5595**	**3.3340**	**3.0518**	**6.3858**		**6,313.3690**	**6,313.3690**	**1.9344**		**6,353.9915**

3.3 Grading - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0691	0.0788	0.7772	1.8600e-003	0.1643	1.2300e-003	0.1655	0.0436	1.1300e-003	0.0447		149.7092	149.7092	7.4200e-003		149.8650
Total	**0.0691**	**0.0788**	**0.7772**	**1.8600e-003**	**0.1643**	**1.2300e-003**	**0.1655**	**0.0436**	**1.1300e-003**	**0.0447**		**149.7092**	**149.7092**	**7.4200e-003**		**149.8650**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8091	0.0000	2.8091	1.5003	0.0000	1.5003			0.0000			0.0000
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518	0.0000	6,313.3690	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**2.8091**	**3.3172**	**6.1262**	**1.5003**	**3.0518**	**4.5521**	**0.0000**	**6,313.3690**	**6,313.3690**	**1.9344**		**6,353.9915**

3.3 Grading - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0691	0.0788	0.7772	1.8600e-003	0.1643	1.2300e-003	0.1655	0.0436	1.1300e-003	0.0447		149.7092	149.7092	7.4200e-003		149.8650
Total	**0.0691**	**0.0788**	**0.7772**	**1.8600e-003**	**0.1643**	**1.2300e-003**	**0.1655**	**0.0436**	**1.1300e-003**	**0.0447**		**149.7092**	**149.7092**	**7.4200e-003**		**149.8650**

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048		2,609.9390	2,609.9390	0.6387		2,623.3517
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**		**2,609.9390**	**2,609.9390**	**0.6387**		**2,623.3517**

3.4 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1341	1.2962	2.0416	3.5400e-003	0.1053	0.0207	0.1260	0.0299	0.0191	0.0490		343.4982	343.4982	2.2500e-003		343.5454
Worker	0.2986	0.3395	3.3363	8.8400e-003	0.7804	5.7000e-003	0.7861	0.2070	5.2800e-003	0.2123		684.4647	684.4647	0.0326		685.1498
Total	**0.4328**	**1.6356**	**5.3779**	**0.0124**	**0.8857**	**0.0264**	**0.9121**	**0.2369**	**0.0243**	**0.2613**		**1,027.9629**	**1,027.9629**	**0.0349**		**1,028.6952**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048	0.0000	2,609.9389	2,609.9389	0.6387		2,623.3517
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**	**0.0000**	**2,609.9389**	**2,609.9389**	**0.6387**		**2,623.3517**

3.4 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1341	1.2962	2.0416	3.5400e-003	0.1053	0.0207	0.1260	0.0299	0.0191	0.0490		343.4982	343.4982	2.2500e-003		343.5454
Worker	0.2986	0.3395	3.3363	8.8400e-003	0.7804	5.7000e-003	0.7861	0.2070	5.2800e-003	0.2123		684.4647	684.4647	0.0326		685.1498
Total	**0.4328**	**1.6356**	**5.3779**	**0.0124**	**0.8857**	**0.0264**	**0.9121**	**0.2369**	**0.0243**	**0.2613**		**1,027.9629**	**1,027.9629**	**0.0349**		**1,028.6952**

3.5 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	20.3361					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	**20.6347**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.0102**

3.5 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0597	0.0679	0.6673	1.7700e-003	0.1561	1.1400e-003	0.1572	0.0414	1.0600e-003	0.0425		136.8929	136.8929	6.5200e-003		137.0300
Total	**0.0597**	**0.0679**	**0.6673**	**1.7700e-003**	**0.1561**	**1.1400e-003**	**0.1572**	**0.0414**	**1.0600e-003**	**0.0425**		**136.8929**	**136.8929**	**6.5200e-003**		**137.0300**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	20.3361					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.0102
Total	**20.6347**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.0102**

3.5 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0597	0.0679	0.6673	1.7700e-003	0.1561	1.1400e-003	0.1572	0.0414	1.0600e-003	0.0425		136.8929	136.8929	6.5200e-003		137.0300
Total	**0.0597**	**0.0679**	**0.6673**	**1.7700e-003**	**0.1561**	**1.1400e-003**	**0.1572**	**0.0414**	**1.0600e-003**	**0.0425**		**136.8929**	**136.8929**	**6.5200e-003**		**137.0300**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6114**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**		**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

3.6 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0472	0.0536	0.5268	1.4000e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		108.0734	108.0734	5.1500e-003		108.1816
Total	**0.0472**	**0.0536**	**0.5268**	**1.4000e-003**	**0.1232**	**9.0000e-004**	**0.1241**	**0.0327**	**8.3000e-004**	**0.0335**		**108.0734**	**108.0734**	**5.1500e-003**		**108.1816**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635	0.0000	2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6114**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**	**0.0000**	**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

3.6 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0472	0.0536	0.5268	1.4000e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		108.0734	108.0734	5.1500e-003		108.1816
Total	**0.0472**	**0.0536**	**0.5268**	**1.4000e-003**	**0.1232**	**9.0000e-004**	**0.1241**	**0.0327**	**8.3000e-004**	**0.0335**		**108.0734**	**108.0734**	**5.1500e-003**		**108.1816**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.2146	7.7627	32.3512	0.0784	5.8828	0.0950	5.9777	1.5682	0.0875	1.6557		6,442.3810	6,442.3810	0.2484		6,447.5983
Unmitigated	3.2146	7.7627	32.3512	0.0784	5.8828	0.0950	5.9777	1.5682	0.0875	1.6557		6,442.3810	6,442.3810	0.2484		6,447.5983

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	673.90	673.90	673.90	1,862,035	1,862,035
Single Family Housing	334.95	334.95	334.95	925,491	925,491
Total	1,008.85	1,008.85	1,008.85	2,787,526	2,787,526

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	7.30	7.50	32.90	18.00	49.10	86	11	3
Single Family Housing	10.80	7.30	7.50	32.90	18.00	49.10	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.475011	0.063009	0.180574	0.158011	0.069740	0.010288	0.013503	0.017378	0.000770	0.000675	0.005608	0.000318	0.005113

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0667	0.5703	0.2427	3.6400e-003		0.0461	0.0461		0.0461	0.0461		728.0807	728.0807	0.0140	0.0134	732.5117
NaturalGas Unmitigated	0.0836	0.7147	0.3041	4.5600e-003		0.0578	0.0578		0.0578	0.0578		912.4310	912.4310	0.0175	0.0167	917.9839

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	2769.65	0.0299	0.2552	0.1086	1.6300e-003		0.0206	0.0206		0.0206	0.0206		325.8413	325.8413	6.2500e-003	5.9700e-003	327.8243
Condo/Townhouse	4986.01	0.0538	0.4595	0.1955	2.9300e-003		0.0372	0.0372		0.0372	0.0372		586.5897	586.5897	0.0112	0.0108	590.1596
Total		**0.0836**	**0.7147**	**0.3041**	**4.5600e-003**		**0.0578**	**0.0578**		**0.0578**	**0.0578**		**912.4310**	**912.4310**	**0.0175**	**0.0167**	**917.9839**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	3.97195	0.0428	0.3660	0.1558	2.3400e-003		0.0296	0.0296		0.0296	0.0296		467.2884	467.2884	8.9600e-003	8.5700e-003	470.1322
Single Family Housing	2.21673	0.0239	0.2043	0.0869	1.3000e-003		0.0165	0.0165		0.0165	0.0165		260.7923	260.7923	5.0000e-003	4.7800e-003	262.3794
Total		**0.0667**	**0.5703**	**0.2427**	**3.6400e-003**		**0.0461**	**0.0461**		**0.0461**	**0.0461**		**728.0807**	**728.0807**	**0.0140**	**0.0134**	**732.5117**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.6892	0.1447	12.4627	6.5000e-004		0.0680	0.0680		0.0680	0.0680	0.0000	22.2828	22.2828	0.0221	0.0000	22.7466
Unmitigated	4.6892	0.1447	12.4627	6.5000e-004		0.0680	0.0680		0.0680	0.0680	0.0000	22.2828	22.2828	0.0221	0.0000	22.7466

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4959					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.8092					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.3842	0.1447	12.4627	6.5000e-004		0.0680	0.0680		0.0680	0.0680		22.2828	22.2828	0.0221		22.7466
Total	**4.6892**	**0.1447**	**12.4627**	**6.5000e-004**		**0.0680**	**0.0680**		**0.0680**	**0.0680**	**0.0000**	**22.2828**	**22.2828**	**0.0221**	**0.0000**	**22.7466**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4959					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.8092					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.3842	0.1447	12.4627	6.5000e-004		0.0680	0.0680		0.0680	0.0680		22.2828	22.2828	0.0221		22.7466
Total	**4.6892**	**0.1447**	**12.4627**	**6.5000e-004**		**0.0680**	**0.0680**		**0.0680**	**0.0680**	**0.0000**	**22.2828**	**22.2828**	**0.0221**	**0.0000**	**22.7466**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Vegetation

The Grove - Phase 2

Ventura County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	23.00	Dwelling Unit	7.47	41,400.00	70
Condo/Townhouse	77.00	Dwelling Unit	4.81	77,000.00	236

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - see report for construction phase discussion.

Vehicle Trips - trip rates per project traffic study.

Construction Off-road Equipment Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	66.00
tblConstructionPhase	NumDays	300.00	198.00
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	PhaseEndDate	10/8/2019	7/8/2019
tblConstructionPhase	PhaseEndDate	8/6/2019	7/8/2019
tblConstructionPhase	PhaseStartDate	7/9/2019	4/8/2019
tblConstructionPhase	PhaseStartDate	7/9/2019	6/8/2019
tblProjectCharacteristics	OperationalYear	2014	2019
tblVehicleTrips	ST_TR	7.16	5.86
tblVehicleTrips	ST_TR	10.08	9.57
tblVehicleTrips	SU_TR	6.07	5.86
tblVehicleTrips	SU_TR	8.77	9.57
tblVehicleTrips	WD_TR	6.59	5.86

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	2.9621	24.3806	21.1839	0.0352	0.5981	1.5124	2.1105	0.1600	1.4214	1.5815	0.0000	3,307.2070	3,307.2070	0.6622	0.0000	3,321.1138
2019	22.6387	38.8521	37.6512	0.0631	0.8282	2.2420	3.0702	0.2211	2.0991	2.3201	0.0000	5,944.8890	5,944.8890	1.3819	0.0000	5,973.9086
Total	**25.6008**	**63.2328**	**58.8350**	**0.0983**	**1.4263**	**3.7544**	**5.1807**	**0.3811**	**3.5205**	**3.9016**	**0.0000**	**9,252.0960**	**9,252.0960**	**2.0441**	**0.0000**	**9,295.0224**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	2.9621	24.3806	21.1839	0.0352	0.5981	1.5124	2.1105	0.1600	1.4214	1.5815	0.0000	3,307.2070	3,307.2070	0.6622	0.0000	3,321.1138
2019	22.6387	38.8521	37.6512	0.0631	0.8282	2.2420	3.0702	0.2211	2.0991	2.3201	0.0000	5,944.8889	5,944.8889	1.3819	0.0000	5,973.9086
Total	**25.6008**	**63.2328**	**58.8350**	**0.0983**	**1.4263**	**3.7544**	**5.1807**	**0.3811**	**3.5205**	**3.9016**	**0.0000**	**9,252.0960**	**9,252.0960**	**2.0441**	**0.0000**	**9,295.0224**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.1174	0.0960	8.2910	4.4000e-004		0.0454	0.0454		0.0454	0.0454	0.0000	14.8552	14.8552	0.0146	0.0000	15.1614
Energy	0.0556	0.4754	0.2023	3.0300e-003		0.0384	0.0384		0.0384	0.0384		606.8843	606.8843	0.0116	0.0111	610.5777
Mobile	2.0118	4.7957	20.0734	0.0523	3.9148	0.0616	3.9764	1.0436	0.0568	1.1004		4,171.6630	4,171.6630	0.1559		4,174.9375
Total	**5.1848**	**5.3671**	**28.5667**	**0.0558**	**3.9148**	**0.1454**	**4.0602**	**1.0436**	**0.1406**	**1.1843**	**0.0000**	**4,793.4026**	**4,793.4026**	**0.1821**	**0.0111**	**4,800.6766**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.1174	0.0960	8.2910	4.4000e-004		0.0454	0.0454		0.0454	0.0454	0.0000	14.8552	14.8552	0.0146	0.0000	15.1614
Energy	0.0444	0.3793	0.1614	2.4200e-003		0.0307	0.0307		0.0307	0.0307		484.2578	484.2578	9.2800e-003	8.8800e-003	487.2050
Mobile	2.0118	4.7957	20.0734	0.0523	3.9148	0.0616	3.9764	1.0436	0.0568	1.1004		4,171.6630	4,171.6630	0.1559		4,174.9375
Total	**5.1735**	**5.2711**	**28.5258**	**0.0552**	**3.9148**	**0.1377**	**4.0525**	**1.0436**	**0.1329**	**1.1765**	**0.0000**	**4,670.7761**	**4,670.7761**	**0.1798**	**8.8800e-003**	**4,677.3038**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.22**	**1.79**	**0.14**	**1.09**	**0.00**	**5.34**	**0.19**	**0.00**	**5.52**	**0.66**	**0.00**	**2.56**	**2.56**	**1.29**	**20.22**	**2.57**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	10/4/2018	7/8/2019	5	198	
2	Architectural Coating	Architectural Coating	4/8/2019	7/8/2019	5	66	
3	Paving	Paving	6/8/2019	7/8/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 239,760; Residential Outdoor: 79,920; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	64.00	11.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048		2,609.9390	2,609.9390	0.6387		2,623.3517
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**		**2,609.9390**	**2,609.9390**	**0.6387**		**2,623.3517**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0922	0.8911	1.4036	2.4400e-003	0.0724	0.0143	0.0866	0.0206	0.0131	0.0337		236.1550	236.1550	1.5400e-003		236.1875
Worker	0.2012	0.2287	2.2476	5.9600e-003	0.5257	3.8400e-003	0.5296	0.1395	3.5500e-003	0.1430		461.1130	461.1130	0.0220		461.5746
Total	**0.2934**	**1.1198**	**3.6512**	**8.4000e-003**	**0.5981**	**0.0181**	**0.6162**	**0.1600**	**0.0167**	**0.1767**		**697.2681**	**697.2681**	**0.0235**		**697.7621**

3.2 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048	0.0000	2,609.9389	2,609.9389	0.6387		2,623.3517
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**	**0.0000**	**2,609.9389**	**2,609.9389**	**0.6387**		**2,623.3517**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0922	0.8911	1.4036	2.4400e-003	0.0724	0.0143	0.0866	0.0206	0.0131	0.0337		236.1550	236.1550	1.5400e-003		236.1875
Worker	0.2012	0.2287	2.2476	5.9600e-003	0.5257	3.8400e-003	0.5296	0.1395	3.5500e-003	0.1430		461.1130	461.1130	0.0220		461.5746
Total	**0.2934**	**1.1198**	**3.6512**	**8.4000e-003**	**0.5981**	**0.0181**	**0.6162**	**0.1600**	**0.0167**	**0.1767**		**697.2681**	**697.2681**	**0.0235**		**697.7621**

3.2 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3516	20.9650	17.1204	0.0268		1.2850	1.2850		1.2083	1.2083		2,580.7618	2,580.7618	0.6279		2,593.9479
Total	**2.3516**	**20.9650**	**17.1204**	**0.0268**		**1.2850**	**1.2850**		**1.2083**	**1.2083**		**2,580.7618**	**2,580.7618**	**0.6279**		**2,593.9479**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0855	0.8143	1.3534	2.4400e-003	0.0724	0.0133	0.0857	0.0206	0.0122	0.0328		232.5980	232.5980	1.5300e-003		232.6300
Worker	0.1868	0.2102	2.0667	5.9700e-003	0.5257	3.8300e-003	0.5296	0.1395	3.5500e-003	0.1430		445.9882	445.9882	0.0207		446.4233
Total	**0.2723**	**1.0244**	**3.4201**	**8.4100e-003**	**0.5982**	**0.0171**	**0.6153**	**0.1600**	**0.0158**	**0.1758**		**678.5862**	**678.5862**	**0.0223**		**679.0533**

3.2 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3516	20.9650	17.1204	0.0268		1.2850	1.2850		1.2083	1.2083	0.0000	2,580.7618	2,580.7618	0.6279		2,593.9479
Total	**2.3516**	**20.9650**	**17.1204**	**0.0268**		**1.2850**	**1.2850**		**1.2083**	**1.2083**	**0.0000**	**2,580.7618**	**2,580.7618**	**0.6279**		**2,593.9479**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0855	0.8143	1.3534	2.4400e-003	0.0724	0.0133	0.0857	0.0206	0.0122	0.0328		232.5980	232.5980	1.5300e-003		232.6300
Worker	0.1868	0.2102	2.0667	5.9700e-003	0.5257	3.8300e-003	0.5296	0.1395	3.5500e-003	0.1430		445.9882	445.9882	0.0207		446.4233
Total	**0.2723**	**1.0244**	**3.4201**	**8.4100e-003**	**0.5982**	**0.0171**	**0.6153**	**0.1600**	**0.0158**	**0.1758**		**678.5862**	**678.5862**	**0.0223**		**679.0533**

3.3 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	18.2408					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		281.9473
Total	**18.5073**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**281.9473**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0379	0.0427	0.4198	1.2100e-003	0.1068	7.8000e-004	0.1076	0.0283	7.2000e-004	0.0291		90.5914	90.5914	4.2100e-003		90.6797
Total	**0.0379**	**0.0427**	**0.4198**	**1.2100e-003**	**0.1068**	**7.8000e-004**	**0.1076**	**0.0283**	**7.2000e-004**	**0.0291**		**90.5914**	**90.5914**	**4.2100e-003**		**90.6797**

3.3 Architectural Coating - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	18.2408					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288	0.0000	281.4481	281.4481	0.0238		281.9473
Total	**18.5073**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**281.9473**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0379	0.0427	0.4198	1.2100e-003	0.1068	7.8000e-004	0.1076	0.0283	7.2000e-004	0.0291		90.5914	90.5914	4.2100e-003		90.6797
Total	**0.0379**	**0.0427**	**0.4198**	**1.2100e-003**	**0.1068**	**7.8000e-004**	**0.1076**	**0.0283**	**7.2000e-004**	**0.0291**		**90.5914**	**90.5914**	**4.2100e-003**		**90.6797**

3.4 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4259	14.9353	14.3652	0.0223		0.8094	0.8094		0.7447	0.7447		2,208.9731	2,208.9731	0.6989		2,223.6499
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4259**	**14.9353**	**14.3652**	**0.0223**		**0.8094**	**0.8094**		**0.7447**	**0.7447**		**2,208.9731**	**2,208.9731**	**0.6989**		**2,223.6499**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0438	0.0493	0.4844	1.4000e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		104.5285	104.5285	4.8600e-003		104.6305
Total	**0.0438**	**0.0493**	**0.4844**	**1.4000e-003**	**0.1232**	**9.0000e-004**	**0.1241**	**0.0327**	**8.3000e-004**	**0.0335**		**104.5285**	**104.5285**	**4.8600e-003**		**104.6305**

3.4 Paving - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4259	14.9353	14.3652	0.0223		0.8094	0.8094		0.7447	0.7447	0.0000	2,208.9731	2,208.9731	0.6989		2,223.6499
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4259**	**14.9353**	**14.3652**	**0.0223**		**0.8094**	**0.8094**		**0.7447**	**0.7447**	**0.0000**	**2,208.9731**	**2,208.9731**	**0.6989**		**2,223.6499**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0438	0.0493	0.4844	1.4000e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		104.5285	104.5285	4.8600e-003		104.6305
Total	**0.0438**	**0.0493**	**0.4844**	**1.4000e-003**	**0.1232**	**9.0000e-004**	**0.1241**	**0.0327**	**8.3000e-004**	**0.0335**		**104.5285**	**104.5285**	**4.8600e-003**		**104.6305**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.0118	4.7957	20.0734	0.0523	3.9148	0.0616	3.9764	1.0436	0.0568	1.1004		4,171.6630	4,171.6630	0.1559		4,174.9375
Unmitigated	2.0118	4.7957	20.0734	0.0523	3.9148	0.0616	3.9764	1.0436	0.0568	1.1004		4,171.6630	4,171.6630	0.1559		4,174.9375

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	451.22	451.22	451.22	1,246,754	1,246,754
Single Family Housing	220.11	220.11	220.11	608,180	608,180
Total	671.33	671.33	671.33	1,854,934	1,854,934

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	7.30	7.50	32.90	18.00	49.10	86	11	3
Single Family Housing	10.80	7.30	7.50	32.90	18.00	49.10	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.475160	0.062821	0.180756	0.157858	0.069481	0.010201	0.013548	0.017639	0.000764	0.000681	0.005618	0.000317	0.005153

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0444	0.3793	0.1614	2.4200e-003		0.0307	0.0307		0.0307	0.0307		484.2578	484.2578	9.2800e-003	8.8800e-003	487.2050
NaturalGas Unmitigated	0.0556	0.4754	0.2023	3.0300e-003		0.0384	0.0384		0.0384	0.0384		606.8843	606.8843	0.0116	0.0111	610.5777

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	3338.46	0.0360	0.3077	0.1309	1.9600e-003		0.0249	0.0249		0.0249	0.0249		392.7601	392.7601	7.5300e-003	7.2000e-003	395.1503
Single Family Housing	1820.06	0.0196	0.1677	0.0714	1.0700e-003		0.0136	0.0136		0.0136	0.0136		214.1243	214.1243	4.1000e-003	3.9300e-003	215.4274
Total		**0.0556**	**0.4754**	**0.2023**	**3.0300e-003**		**0.0384**	**0.0384**		**0.0384**	**0.0384**		**606.8843**	**606.8843**	**0.0116**	**0.0111**	**610.5777**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	1.45671	0.0157	0.1343	0.0571	8.6000e-004		0.0109	0.0109		0.0109	0.0109		171.3778	171.3778	3.2800e-003	3.1400e-003	172.4208
Condo/Townhouse	2.65948	0.0287	0.2451	0.1043	1.5600e-003		0.0198	0.0198		0.0198	0.0198		312.8800	312.8800	6.0000e-003	5.7400e-003	314.7842
Total		**0.0444**	**0.3793**	**0.1614**	**2.4200e-003**		**0.0307**	**0.0307**		**0.0307**	**0.0307**		**484.2578**	**484.2578**	**9.2800e-003**	**8.8800e-003**	**487.2050**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.1174	0.0960	8.2910	4.4000e-004		0.0454	0.0454		0.0454	0.0454	0.0000	14.8552	14.8552	0.0146	0.0000	15.1614
Unmitigated	3.1174	0.0960	8.2910	4.4000e-004		0.0454	0.0454		0.0454	0.0454	0.0000	14.8552	14.8552	0.0146	0.0000	15.1614

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3298					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.5338					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2538	0.0960	8.2910	4.4000e-004		0.0454	0.0454		0.0454	0.0454		14.8552	14.8552	0.0146		15.1614
Total	**3.1174**	**0.0960**	**8.2910**	**4.4000e-004**		**0.0454**	**0.0454**		**0.0454**	**0.0454**	**0.0000**	**14.8552**	**14.8552**	**0.0146**	**0.0000**	**15.1614**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3298					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.5338					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2538	0.0960	8.2910	4.4000e-004		0.0454	0.0454		0.0454	0.0454		14.8552	14.8552	0.0146		15.1614
Total	**3.1174**	**0.0960**	**8.2910**	**4.4000e-004**		**0.0454**	**0.0454**		**0.0454**	**0.0454**	**0.0000**	**14.8552**	**14.8552**	**0.0146**	**0.0000**	**15.1614**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Vegetation

The Grove - Phase 1

Ventura County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	35.00	Dwelling Unit	15.00	63,000.00	107
Condo/Townhouse	115.00	Dwelling Unit	12.00	115,000.00	352

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Site is approximately 27 acres.

Construction Phase - see report for construction phases discussion.

Grading - site is approximately 27 acres

Demolition -

Trips and VMT - approximately 16 haul trucks during demolition.

Vehicle Trips - trip rates per project traffic study.

Construction Off-road Equipment Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	35.00	89.00
tblConstructionPhase	NumDays	440.00	198.00
tblConstructionPhase	NumDays	30.00	6.00
tblConstructionPhase	NumDays	45.00	130.00
tblConstructionPhase	NumDays	35.00	23.00
tblConstructionPhase	PhaseEndDate	2/5/2019	10/3/2018
tblConstructionPhase	PhaseEndDate	12/29/2017	12/31/2017
tblConstructionPhase	PhaseEndDate	11/5/2018	10/3/2018
tblConstructionPhase	PhaseStartDate	10/4/2018	6/1/2018
tblConstructionPhase	PhaseStartDate	7/1/2017	7/2/2017
tblConstructionPhase	PhaseStartDate	10/4/2018	9/3/2018
tblGrading	AcresOfGrading	325.00	27.00
tblLandUse	LotAcreage	11.36	15.00
tblLandUse	LotAcreage	7.19	12.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	HaulingTripNumber	2.00	32.00
tblVehicleTrips	ST_TR	7.16	5.86
tblVehicleTrips	ST_TR	10.08	9.57
tblVehicleTrips	SU_TR	6.07	5.86
tblVehicleTrips	SU_TR	8.77	9.57
tblVehicleTrips	WD_TR	6.59	5.86

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	6.1635	69.6593	47.5793	0.0637	6.4066	3.3184	9.7251	3.3776	3.0530	6.4305	0.0000	6,470.6301	6,470.6301	1.9418	0.0000	6,511.4084
2018	25.4078	44.0834	39.8562	0.0683	1.1650	2.6117	3.7767	0.3110	2.4449	2.7559	0.0000	6,459.3539	6,459.3539	1.4109	0.0000	6,488.9828
Total	**31.5712**	**113.7427**	**87.4355**	**0.1319**	**7.5716**	**5.9301**	**13.5018**	**3.6886**	**5.4978**	**9.1864**	**0.0000**	**12,929.9841**	**12,929.9841**	**3.3527**	**0.0000**	**13,000.3912**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	6.1635	69.6593	47.5793	0.0637	2.9734	3.3184	6.2918	1.5439	3.0530	4.5968	0.0000	6,470.6301	6,470.6301	1.9418	0.0000	6,511.4084
2018	25.4078	44.0834	39.8562	0.0683	1.1650	2.6117	3.7767	0.3110	2.4449	2.7559	0.0000	6,459.3539	6,459.3539	1.4109	0.0000	6,488.9828
Total	**31.5712**	**113.7427**	**87.4355**	**0.1319**	**4.1384**	**5.9301**	**10.0685**	**1.8549**	**5.4978**	**7.3527**	**0.0000**	**12,929.9841**	**12,929.9841**	**3.3527**	**0.0000**	**13,000.3912**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**45.34**	**0.00**	**25.43**	**49.71**	**0.00**	**19.96**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.6892	0.1447	12.4627	6.5000e-004		0.0680	0.0680		0.0680	0.0680	0.0000	22.2828	22.2828	0.0221	0.0000	22.7466
Energy	0.0836	0.7147	0.3041	4.5600e-003		0.0578	0.0578		0.0578	0.0578		912.4310	912.4310	0.0175	0.0167	917.9839
Mobile	2.9922	7.1798	29.8012	0.0816	5.8828	0.0945	5.9773	1.5682	0.0871	1.6553		6,694.8111	6,694.8111	0.2483		6,700.0249
Total	**7.7651**	**8.0392**	**42.5680**	**0.0868**	**5.8828**	**0.2203**	**6.1031**	**1.5682**	**0.2129**	**1.7811**	**0.0000**	**7,629.5249**	**7,629.5249**	**0.2879**	**0.0167**	**7,640.7554**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.6892	0.1447	12.4627	6.5000e-004		0.0680	0.0680		0.0680	0.0680	0.0000	22.2828	22.2828	0.0221	0.0000	22.7466
Energy	0.0667	0.5703	0.2427	3.6400e-003		0.0461	0.0461		0.0461	0.0461		728.0807	728.0807	0.0140	0.0134	732.5117
Mobile	2.9922	7.1798	29.8012	0.0816	5.8828	0.0945	5.9773	1.5682	0.0871	1.6553		6,694.8111	6,694.8111	0.2483		6,700.0249
Total	**7.7482**	**7.8948**	**42.5066**	**0.0859**	**5.8828**	**0.2087**	**6.0914**	**1.5682**	**0.2012**	**1.7694**	**0.0000**	**7,445.1746**	**7,445.1746**	**0.2843**	**0.0134**	**7,455.2832**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.22**	**1.80**	**0.14**	**1.06**	**0.00**	**5.30**	**0.19**	**0.00**	**5.49**	**0.66**	**0.00**	**2.42**	**2.42**	**1.23**	**20.20**	**2.43**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/23/2017	6/30/2017	5	6	
2	Grading	Grading	7/2/2017	12/31/2017	5	130	
3	Building Construction	Building Construction	1/1/2018	10/3/2018	5	198	
4	Architectural Coating	Architectural Coating	6/1/2018	10/3/2018	5	89	
5	Paving	Paving	9/3/2018	10/3/2018	5	23	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 27

Acres of Paving: 0

Residential Indoor: 360,450; Residential Outdoor: 120,150; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	3	8.00	162	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	32.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	95.00	16.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	19.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0867	0.0000	0.0867	0.0131	0.0000	0.0131			0.0000			0.0000
Off-Road	4.0482	42.6971	33.8934	0.0399		2.1252	2.1252		1.9797	1.9797		4,036.4674	4,036.4674	1.1073		4,059.7211
Total	**4.0482**	**42.6971**	**33.8934**	**0.0399**	**0.0867**	**2.1252**	**2.2119**	**0.0131**	**1.9797**	**1.9928**		**4,036.4674**	**4,036.4674**	**1.1073**		**4,059.7211**

3.2 Demolition - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0778	1.4013	0.9723	3.8400e-003	0.0925	0.0203	0.1128	0.0253	0.0187	0.0439		381.4032	381.4032	2.2300e-003		381.4501
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0483	0.0505	0.5807	1.4700e-003	0.1232	9.2000e-004	0.1241	0.0327	8.5000e-004	0.0335		117.9458	117.9458	5.5600e-003		118.0627
Total	**0.1261**	**1.4517**	**1.5530**	**5.3100e-003**	**0.2157**	**0.0212**	**0.2369**	**0.0580**	**0.0195**	**0.0775**		**499.3491**	**499.3491**	**7.7900e-003**		**499.5128**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0390	0.0000	0.0390	5.9100e-003	0.0000	5.9100e-003			0.0000			0.0000
Off-Road	4.0482	42.6971	33.8934	0.0399		2.1252	2.1252		1.9797	1.9797	0.0000	4,036.4674	4,036.4674	1.1073		4,059.7211
Total	**4.0482**	**42.6971**	**33.8934**	**0.0399**	**0.0390**	**2.1252**	**2.1642**	**5.9100e-003**	**1.9797**	**1.9856**	**0.0000**	**4,036.4674**	**4,036.4674**	**1.1073**		**4,059.7211**

3.2 Demolition - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0778	1.4013	0.9723	3.8400e-003	0.0925	0.0203	0.1128	0.0253	0.0187	0.0439		381.4032	381.4032	2.2300e-003		381.4501
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0483	0.0505	0.5807	1.4700e-003	0.1232	9.2000e-004	0.1241	0.0327	8.5000e-004	0.0335		117.9458	117.9458	5.5600e-003		118.0627
Total	**0.1261**	**1.4517**	**1.5530**	**5.3100e-003**	**0.2157**	**0.0212**	**0.2369**	**0.0580**	**0.0195**	**0.0775**		**499.3491**	**499.3491**	**7.7900e-003**		**499.5128**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2423	0.0000	6.2423	3.3340	0.0000	3.3340			0.0000			0.0000
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518		6,313.3690	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**6.2423**	**3.3172**	**9.5595**	**3.3340**	**3.0518**	**6.3858**		**6,313.3690**	**6,313.3690**	**1.9344**		**6,353.9915**

3.3 Grading - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0643	0.0673	0.7743	1.9600e-003	0.1643	1.2300e-003	0.1655	0.0436	1.1300e-003	0.0447		157.2611	157.2611	7.4200e-003		157.4169
Total	**0.0643**	**0.0673**	**0.7743**	**1.9600e-003**	**0.1643**	**1.2300e-003**	**0.1655**	**0.0436**	**1.1300e-003**	**0.0447**		**157.2611**	**157.2611**	**7.4200e-003**		**157.4169**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8091	0.0000	2.8091	1.5003	0.0000	1.5003			0.0000			0.0000
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518	0.0000	6,313.3690	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**2.8091**	**3.3172**	**6.1262**	**1.5003**	**3.0518**	**4.5521**	**0.0000**	**6,313.3690**	**6,313.3690**	**1.9344**		**6,353.9915**

3.3 Grading - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0643	0.0673	0.7743	1.9600e-003	0.1643	1.2300e-003	0.1655	0.0436	1.1300e-003	0.0447		157.2611	157.2611	7.4200e-003		157.4169
Total	**0.0643**	**0.0673**	**0.7743**	**1.9600e-003**	**0.1643**	**1.2300e-003**	**0.1655**	**0.0436**	**1.1300e-003**	**0.0447**		**157.2611**	**157.2611**	**7.4200e-003**		**157.4169**

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048		2,609.9390	2,609.9390	0.6387		2,623.3517
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**		**2,609.9390**	**2,609.9390**	**0.6387**		**2,623.3517**

3.4 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1142	1.2605	1.4364	3.5600e-003	0.1053	0.0205	0.1258	0.0299	0.0188	0.0488		346.3355	346.3355	2.1700e-003		346.3811
Worker	0.2790	0.2898	3.3423	9.2900e-003	0.7804	5.7000e-003	0.7861	0.2070	5.2800e-003	0.2123		719.0259	719.0259	0.0326		719.7110
Total	**0.3932**	**1.5503**	**4.7787**	**0.0129**	**0.8857**	**0.0262**	**0.9119**	**0.2369**	**0.0241**	**0.2611**		**1,065.3614**	**1,065.3614**	**0.0348**		**1,066.0921**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048	0.0000	2,609.9389	2,609.9389	0.6387		2,623.3517
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**	**0.0000**	**2,609.9389**	**2,609.9389**	**0.6387**		**2,623.3517**

3.4 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1142	1.2605	1.4364	3.5600e-003	0.1053	0.0205	0.1258	0.0299	0.0188	0.0488		346.3355	346.3355	2.1700e-003		346.3811
Worker	0.2790	0.2898	3.3423	9.2900e-003	0.7804	5.7000e-003	0.7861	0.2070	5.2800e-003	0.2123		719.0259	719.0259	0.0326		719.7110
Total	**0.3932**	**1.5503**	**4.7787**	**0.0129**	**0.8857**	**0.0262**	**0.9119**	**0.2369**	**0.0241**	**0.2611**		**1,065.3614**	**1,065.3614**	**0.0348**		**1,066.0921**

3.5 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	20.3361					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	**20.6347**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.0102**

3.5 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0558	0.0580	0.6685	1.8600e-003	0.1561	1.1400e-003	0.1572	0.0414	1.0600e-003	0.0425		143.8052	143.8052	6.5200e-003		143.9422
Total	**0.0558**	**0.0580**	**0.6685**	**1.8600e-003**	**0.1561**	**1.1400e-003**	**0.1572**	**0.0414**	**1.0600e-003**	**0.0425**		**143.8052**	**143.8052**	**6.5200e-003**		**143.9422**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	20.3361					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.0102
Total	**20.6347**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.0102**

3.5 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0558	0.0580	0.6685	1.8600e-003	0.1561	1.1400e-003	0.1572	0.0414	1.0600e-003	0.0425		143.8052	143.8052	6.5200e-003		143.9422
Total	**0.0558**	**0.0580**	**0.6685**	**1.8600e-003**	**0.1561**	**1.1400e-003**	**0.1572**	**0.0414**	**1.0600e-003**	**0.0425**		**143.8052**	**143.8052**	**6.5200e-003**		**143.9422**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6114**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**		**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

3.6 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0441	0.0458	0.5277	1.4700e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		113.5304	113.5304	5.1500e-003		113.6386
Total	**0.0441**	**0.0458**	**0.5277**	**1.4700e-003**	**0.1232**	**9.0000e-004**	**0.1241**	**0.0327**	**8.3000e-004**	**0.0335**		**113.5304**	**113.5304**	**5.1500e-003**		**113.6386**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635	0.0000	2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6114**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**	**0.0000**	**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

3.6 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0441	0.0458	0.5277	1.4700e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		113.5304	113.5304	5.1500e-003		113.6386
Total	**0.0441**	**0.0458**	**0.5277**	**1.4700e-003**	**0.1232**	**9.0000e-004**	**0.1241**	**0.0327**	**8.3000e-004**	**0.0335**		**113.5304**	**113.5304**	**5.1500e-003**		**113.6386**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.9922	7.1798	29.8012	0.0816	5.8828	0.0945	5.9773	1.5682	0.0871	1.6553		6,694.8111	6,694.8111	0.2483		6,700.0249
Unmitigated	2.9922	7.1798	29.8012	0.0816	5.8828	0.0945	5.9773	1.5682	0.0871	1.6553		6,694.8111	6,694.8111	0.2483		6,700.0249

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	673.90	673.90	673.90	1,862,035	1,862,035
Single Family Housing	334.95	334.95	334.95	925,491	925,491
Total	1,008.85	1,008.85	1,008.85	2,787,526	2,787,526

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	7.30	7.50	32.90	18.00	49.10	86	11	3
Single Family Housing	10.80	7.30	7.50	32.90	18.00	49.10	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.475011	0.063009	0.180574	0.158011	0.069740	0.010288	0.013503	0.017378	0.000770	0.000675	0.005608	0.000318	0.005113

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0667	0.5703	0.2427	3.6400e-003		0.0461	0.0461		0.0461	0.0461		728.0807	728.0807	0.0140	0.0134	732.5117
NaturalGas Unmitigated	0.0836	0.7147	0.3041	4.5600e-003		0.0578	0.0578		0.0578	0.0578		912.4310	912.4310	0.0175	0.0167	917.9839

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	2769.65	0.0299	0.2552	0.1086	1.6300e-003		0.0206	0.0206		0.0206	0.0206		325.8413	325.8413	6.2500e-003	5.9700e-003	327.8243
Condo/Townhouse	4986.01	0.0538	0.4595	0.1955	2.9300e-003		0.0372	0.0372		0.0372	0.0372		586.5897	586.5897	0.0112	0.0108	590.1596
Total		**0.0836**	**0.7147**	**0.3041**	**4.5600e-003**		**0.0578**	**0.0578**		**0.0578**	**0.0578**		**912.4310**	**912.4310**	**0.0175**	**0.0167**	**917.9839**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	3.97195	0.0428	0.3660	0.1558	2.3400e-003		0.0296	0.0296		0.0296	0.0296		467.2884	467.2884	8.9600e-003	8.5700e-003	470.1322
Single Family Housing	2.21673	0.0239	0.2043	0.0869	1.3000e-003		0.0165	0.0165		0.0165	0.0165		260.7923	260.7923	5.0000e-003	4.7800e-003	262.3794
Total		**0.0667**	**0.5703**	**0.2427**	**3.6400e-003**		**0.0461**	**0.0461**		**0.0461**	**0.0461**		**728.0807**	**728.0807**	**0.0140**	**0.0134**	**732.5117**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.6892	0.1447	12.4627	6.5000e-004		0.0680	0.0680		0.0680	0.0680	0.0000	22.2828	22.2828	0.0221	0.0000	22.7466
Unmitigated	4.6892	0.1447	12.4627	6.5000e-004		0.0680	0.0680		0.0680	0.0680	0.0000	22.2828	22.2828	0.0221	0.0000	22.7466

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4959					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.8092					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.3842	0.1447	12.4627	6.5000e-004		0.0680	0.0680		0.0680	0.0680		22.2828	22.2828	0.0221		22.7466
Total	**4.6892**	**0.1447**	**12.4627**	**6.5000e-004**		**0.0680**	**0.0680**		**0.0680**	**0.0680**	**0.0000**	**22.2828**	**22.2828**	**0.0221**	**0.0000**	**22.7466**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4959					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.8092					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.3842	0.1447	12.4627	6.5000e-004		0.0680	0.0680		0.0680	0.0680		22.2828	22.2828	0.0221		22.7466
Total	**4.6892**	**0.1447**	**12.4627**	**6.5000e-004**		**0.0680**	**0.0680**		**0.0680**	**0.0680**	**0.0000**	**22.2828**	**22.2828**	**0.0221**	**0.0000**	**22.7466**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Vegetation

The Grove - Phase 2

Ventura County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	23.00	Dwelling Unit	7.47	41,400.00	70
Condo/Townhouse	77.00	Dwelling Unit	4.81	77,000.00	236

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - see report for construction phase discussion.

Vehicle Trips - trip rates per project traffic study.

Construction Off-road Equipment Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	66.00
tblConstructionPhase	NumDays	300.00	198.00
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	PhaseEndDate	10/8/2019	7/8/2019
tblConstructionPhase	PhaseEndDate	8/6/2019	7/8/2019
tblConstructionPhase	PhaseStartDate	7/9/2019	4/8/2019
tblConstructionPhase	PhaseStartDate	7/9/2019	6/8/2019
tblProjectCharacteristics	OperationalYear	2014	2019
tblVehicleTrips	ST_TR	7.16	5.86
tblVehicleTrips	ST_TR	10.08	9.57
tblVehicleTrips	SU_TR	6.07	5.86
tblVehicleTrips	SU_TR	8.77	9.57
tblVehicleTrips	WD_TR	6.59	5.86

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	2.9351	24.3227	20.7719	0.0355	0.5981	1.5122	2.1103	0.1600	1.4213	1.5813	0.0000	3,332.4410	3,332.4410	0.6622	0.0000	3,346.3466
2019	22.6095	38.7859	37.2583	0.0636	0.8282	2.2419	3.0701	0.2211	2.0989	2.3200	0.0000	5,979.2068	5,979.2068	1.3818	0.0000	6,008.2253
Total	**25.5446**	**63.1086**	**58.0301**	**0.0991**	**1.4263**	**3.7541**	**5.1804**	**0.3811**	**3.5202**	**3.9013**	**0.0000**	**9,311.6477**	**9,311.6477**	**2.0440**	**0.0000**	**9,354.5719**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	2.9351	24.3227	20.7719	0.0355	0.5981	1.5122	2.1103	0.1600	1.4213	1.5813	0.0000	3,332.4410	3,332.4410	0.6622	0.0000	3,346.3466
2019	22.6095	38.7859	37.2583	0.0636	0.8282	2.2419	3.0701	0.2211	2.0989	2.3200	0.0000	5,979.2068	5,979.2068	1.3818	0.0000	6,008.2253
Total	**25.5446**	**63.1086**	**58.0301**	**0.0991**	**1.4263**	**3.7541**	**5.1804**	**0.3811**	**3.5202**	**3.9013**	**0.0000**	**9,311.6477**	**9,311.6477**	**2.0440**	**0.0000**	**9,354.5719**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.1174	0.0960	8.2910	4.4000e-004		0.0454	0.0454		0.0454	0.0454	0.0000	14.8552	14.8552	0.0146	0.0000	15.1614
Energy	0.0556	0.4754	0.2023	3.0300e-003		0.0384	0.0384		0.0384	0.0384		606.8843	606.8843	0.0116	0.0111	610.5777
Mobile	1.8775	4.4371	18.4859	0.0545	3.9148	0.0613	3.9761	1.0436	0.0565	1.1001		4,334.5183	4,334.5183	0.1558		4,337.7904
Total	**5.0505**	**5.0085**	**26.9792**	**0.0579**	**3.9148**	**0.1451**	**4.0599**	**1.0436**	**0.1404**	**1.1840**	**0.0000**	**4,956.2579**	**4,956.2579**	**0.1820**	**0.0111**	**4,963.5295**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.1174	0.0960	8.2910	4.4000e-004		0.0454	0.0454		0.0454	0.0454	0.0000	14.8552	14.8552	0.0146	0.0000	15.1614
Energy	0.0444	0.3793	0.1614	2.4200e-003		0.0307	0.0307		0.0307	0.0307		484.2578	484.2578	9.2800e-003	8.8800e-003	487.2050
Mobile	1.8775	4.4371	18.4859	0.0545	3.9148	0.0613	3.9761	1.0436	0.0565	1.1001		4,334.5183	4,334.5183	0.1558		4,337.7904
Total	**5.0393**	**4.9124**	**26.9383**	**0.0573**	**3.9148**	**0.1374**	**4.0522**	**1.0436**	**0.1326**	**1.1762**	**0.0000**	**4,833.6314**	**4,833.6314**	**0.1797**	**8.8800e-003**	**4,840.1567**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.22**	**1.92**	**0.15**	**1.05**	**0.00**	**5.35**	**0.19**	**0.00**	**5.53**	**0.66**	**0.00**	**2.47**	**2.47**	**1.29**	**20.22**	**2.49**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	10/4/2018	7/8/2019	5	198	
2	Architectural Coating	Architectural Coating	4/8/2019	7/8/2019	5	66	
3	Paving	Paving	6/8/2019	7/8/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 239,760; Residential Outdoor: 79,920; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	64.00	11.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048		2,609.9390	2,609.9390	0.6387		2,623.3517
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**		**2,609.9390**	**2,609.9390**	**0.6387**		**2,623.3517**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0785	0.8666	0.9875	2.4500e-003	0.0724	0.0141	0.0865	0.0206	0.0130	0.0335		238.1057	238.1057	1.4900e-003		238.1370
Worker	0.1879	0.1952	2.2517	6.2600e-003	0.5257	3.8400e-003	0.5296	0.1395	3.5500e-003	0.1430		484.3964	484.3964	0.0220		484.8579
Total	**0.2664**	**1.0618**	**3.2392**	**8.7100e-003**	**0.5981**	**0.0179**	**0.6161**	**0.1600**	**0.0165**	**0.1765**		**722.5020**	**722.5020**	**0.0235**		**722.9949**

3.2 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048	0.0000	2,609.9389	2,609.9389	0.6387		2,623.3517
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**	**0.0000**	**2,609.9389**	**2,609.9389**	**0.6387**		**2,623.3517**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0785	0.8666	0.9875	2.4500e-003	0.0724	0.0141	0.0865	0.0206	0.0130	0.0335		238.1057	238.1057	1.4900e-003		238.1370
Worker	0.1879	0.1952	2.2517	6.2600e-003	0.5257	3.8400e-003	0.5296	0.1395	3.5500e-003	0.1430		484.3964	484.3964	0.0220		484.8579
Total	**0.2664**	**1.0618**	**3.2392**	**8.7100e-003**	**0.5981**	**0.0179**	**0.6161**	**0.1600**	**0.0165**	**0.1765**		**722.5020**	**722.5020**	**0.0235**		**722.9949**

3.2 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3516	20.9650	17.1204	0.0268		1.2850	1.2850		1.2083	1.2083		2,580.7618	2,580.7618	0.6279		2,593.9479
Total	**2.3516**	**20.9650**	**17.1204**	**0.0268**		**1.2850**	**1.2850**		**1.2083**	**1.2083**		**2,580.7618**	**2,580.7618**	**0.6279**		**2,593.9479**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0734	0.7923	0.9416	2.4500e-003	0.0724	0.0132	0.0856	0.0206	0.0121	0.0327		234.5199	234.5199	1.4700e-003		234.5508
Worker	0.1749	0.1794	2.0799	6.2800e-003	0.5257	3.8300e-003	0.5296	0.1395	3.5500e-003	0.1430		468.5245	468.5245	0.0207		468.9596
Total	**0.2482**	**0.9717**	**3.0215**	**8.7300e-003**	**0.5982**	**0.0170**	**0.6151**	**0.1600**	**0.0157**	**0.1757**		**703.0444**	**703.0444**	**0.0222**		**703.5104**

3.2 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3516	20.9650	17.1204	0.0268		1.2850	1.2850		1.2083	1.2083	0.0000	2,580.7618	2,580.7618	0.6279		2,593.9479
Total	**2.3516**	**20.9650**	**17.1204**	**0.0268**		**1.2850**	**1.2850**		**1.2083**	**1.2083**	**0.0000**	**2,580.7618**	**2,580.7618**	**0.6279**		**2,593.9479**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0734	0.7923	0.9416	2.4500e-003	0.0724	0.0132	0.0856	0.0206	0.0121	0.0327		234.5199	234.5199	1.4700e-003		234.5508
Worker	0.1749	0.1794	2.0799	6.2800e-003	0.5257	3.8300e-003	0.5296	0.1395	3.5500e-003	0.1430		468.5245	468.5245	0.0207		468.9596
Total	**0.2482**	**0.9717**	**3.0215**	**8.7300e-003**	**0.5982**	**0.0170**	**0.6151**	**0.1600**	**0.0157**	**0.1757**		**703.0444**	**703.0444**	**0.0222**		**703.5104**

3.3 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	18.2408					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		281.9473
Total	**18.5073**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**281.9473**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0355	0.0364	0.4225	1.2800e-003	0.1068	7.8000e-004	0.1076	0.0283	7.2000e-004	0.0291		95.1690	95.1690	4.2100e-003		95.2574
Total	**0.0355**	**0.0364**	**0.4225**	**1.2800e-003**	**0.1068**	**7.8000e-004**	**0.1076**	**0.0283**	**7.2000e-004**	**0.0291**		**95.1690**	**95.1690**	**4.2100e-003**		**95.2574**

3.3 Architectural Coating - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	18.2408					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288	0.0000	281.4481	281.4481	0.0238		281.9473
Total	**18.5073**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**281.9473**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0355	0.0364	0.4225	1.2800e-003	0.1068	7.8000e-004	0.1076	0.0283	7.2000e-004	0.0291		95.1690	95.1690	4.2100e-003		95.2574
Total	**0.0355**	**0.0364**	**0.4225**	**1.2800e-003**	**0.1068**	**7.8000e-004**	**0.1076**	**0.0283**	**7.2000e-004**	**0.0291**		**95.1690**	**95.1690**	**4.2100e-003**		**95.2574**

3.4 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4259	14.9353	14.3652	0.0223		0.8094	0.8094		0.7447	0.7447		2,208.9731	2,208.9731	0.6989		2,223.6499
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4259**	**14.9353**	**14.3652**	**0.0223**		**0.8094**	**0.8094**		**0.7447**	**0.7447**		**2,208.9731**	**2,208.9731**	**0.6989**		**2,223.6499**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0410	0.0421	0.4875	1.4700e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		109.8104	109.8104	4.8600e-003		109.9124
Total	**0.0410**	**0.0421**	**0.4875**	**1.4700e-003**	**0.1232**	**9.0000e-004**	**0.1241**	**0.0327**	**8.3000e-004**	**0.0335**		**109.8104**	**109.8104**	**4.8600e-003**		**109.9124**

3.4 Paving - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4259	14.9353	14.3652	0.0223		0.8094	0.8094		0.7447	0.7447	0.0000	2,208.9731	2,208.9731	0.6989		2,223.6499
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4259**	**14.9353**	**14.3652**	**0.0223**		**0.8094**	**0.8094**		**0.7447**	**0.7447**	**0.0000**	**2,208.9731**	**2,208.9731**	**0.6989**		**2,223.6499**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0410	0.0421	0.4875	1.4700e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		109.8104	109.8104	4.8600e-003		109.9124
Total	**0.0410**	**0.0421**	**0.4875**	**1.4700e-003**	**0.1232**	**9.0000e-004**	**0.1241**	**0.0327**	**8.3000e-004**	**0.0335**		**109.8104**	**109.8104**	**4.8600e-003**		**109.9124**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.8775	4.4371	18.4859	0.0545	3.9148	0.0613	3.9761	1.0436	0.0565	1.1001		4,334.5183	4,334.5183	0.1558		4,337.7904
Unmitigated	1.8775	4.4371	18.4859	0.0545	3.9148	0.0613	3.9761	1.0436	0.0565	1.1001		4,334.5183	4,334.5183	0.1558		4,337.7904

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	451.22	451.22	451.22	1,246,754	1,246,754
Single Family Housing	220.11	220.11	220.11	608,180	608,180
Total	671.33	671.33	671.33	1,854,934	1,854,934

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	7.30	7.50	32.90	18.00	49.10	86	11	3
Single Family Housing	10.80	7.30	7.50	32.90	18.00	49.10	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.475160	0.062821	0.180756	0.157858	0.069481	0.010201	0.013548	0.017639	0.000764	0.000681	0.005618	0.000317	0.005153

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0444	0.3793	0.1614	2.4200e-003		0.0307	0.0307		0.0307	0.0307		484.2578	484.2578	9.2800e-003	8.8800e-003	487.2050
NaturalGas Unmitigated	0.0556	0.4754	0.2023	3.0300e-003		0.0384	0.0384		0.0384	0.0384		606.8843	606.8843	0.0116	0.0111	610.5777

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	3338.46	0.0360	0.3077	0.1309	1.9600e-003		0.0249	0.0249		0.0249	0.0249		392.7601	392.7601	7.5300e-003	7.2000e-003	395.1503
Single Family Housing	1820.06	0.0196	0.1677	0.0714	1.0700e-003		0.0136	0.0136		0.0136	0.0136		214.1243	214.1243	4.1000e-003	3.9300e-003	215.4274
Total		**0.0556**	**0.4754**	**0.2023**	**3.0300e-003**		**0.0384**	**0.0384**		**0.0384**	**0.0384**		**606.8843**	**606.8843**	**0.0116**	**0.0111**	**610.5777**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	1.45671	0.0157	0.1343	0.0571	8.6000e-004		0.0109	0.0109		0.0109	0.0109		171.3778	171.3778	3.2800e-003	3.1400e-003	172.4208
Condo/Townhouse	2.65948	0.0287	0.2451	0.1043	1.5600e-003		0.0198	0.0198		0.0198	0.0198		312.8800	312.8800	6.0000e-003	5.7400e-003	314.7842
Total		**0.0444**	**0.3793**	**0.1614**	**2.4200e-003**		**0.0307**	**0.0307**		**0.0307**	**0.0307**		**484.2578**	**484.2578**	**9.2800e-003**	**8.8800e-003**	**487.2050**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.1174	0.0960	8.2910	4.4000e-004		0.0454	0.0454		0.0454	0.0454	0.0000	14.8552	14.8552	0.0146	0.0000	15.1614
Unmitigated	3.1174	0.0960	8.2910	4.4000e-004		0.0454	0.0454		0.0454	0.0454	0.0000	14.8552	14.8552	0.0146	0.0000	15.1614

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3298					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.5338					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2538	0.0960	8.2910	4.4000e-004		0.0454	0.0454		0.0454	0.0454		14.8552	14.8552	0.0146		15.1614
Total	**3.1174**	**0.0960**	**8.2910**	**4.4000e-004**		**0.0454**	**0.0454**		**0.0454**	**0.0454**	**0.0000**	**14.8552**	**14.8552**	**0.0146**	**0.0000**	**15.1614**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3298					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.5338					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2538	0.0960	8.2910	4.4000e-004		0.0454	0.0454		0.0454	0.0454		14.8552	14.8552	0.0146		15.1614
Total	**3.1174**	**0.0960**	**8.2910**	**4.4000e-004**		**0.0454**	**0.0454**		**0.0454**	**0.0454**	**0.0000**	**14.8552**	**14.8552**	**0.0146**	**0.0000**	**15.1614**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Vegetation

Appendix 4.5 **1) Archaeological Survey Report prepared by Dudek dated January 2015; 2) Historical Resources Evaluation Report prepared by Greenwood and Associated dated January 2011**

ARCHAEOLOGICAL SURVEY REPORT

THE GROVE LLC
4515 COPLAND DRIVE, VENTURA
VENTURA COUNTY, CALIFORNIA

Prepared by:

David Stone, M.A., RPA

Heather McDaniel, M.A., RPA

DUDEK
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Prepared for:

Mr. Kioren Moss, MAI
Moss & Associates
3319 Telegraph Road, Suite 201
Ventura, CA 93003

USGS Saticoy, California 7.5 Minute Quadrangles
25.65 Acres Surveyed

January 2015

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SUMMARY OF FINDINGS

Moss and Associates proposes to construct The Grove residential project on 25.65 acres in the City of Ventura, within the County of Ventura. This report presents an evaluation of potential archaeological resources within The Grove Project at 4515 Copland Drive in the City of Ventura, Ventura County, California (see Figure 1). This Phase 1 archaeological investigation included background research and an intensive, systematic surface survey of the proposed project site.

An archaeological literature and records search was conducted at the California Historical Resources Information System (CHRIS), South Central Coastal Information Center (SCCIC), California State University, Fullerton for the proposed Project on November 19, 2014. Ten investigations have been undertaken within the proposed Project Area of Potential Effects (APE). No previously recorded archaeological sites exist within 0.5 miles of the proposed project site and only one investigation occurred partially located within the project site itself (Wlodarski, 1982).

The proposed 25.65-acre Project APE was the subject of an intensive archaeological survey by Dudek staff archaeologists on December 5, 2014 using 3-meter (9.8-foot) meandering transect intervals when dense ground cover or structural obstructions were not present. The intensive archaeological surface survey of the proposed project site was characterized by excellent ground surface visibility, and did not identify any prehistoric or historic archaeological resources. Given the favorable survey conditions, these results are considered very reliable. The absence of any prehistoric or historic materials within The Grove Project indicates that any potential development of the proposed project site will not have any impacts on cultural resources.

1.0 INTRODUCTION

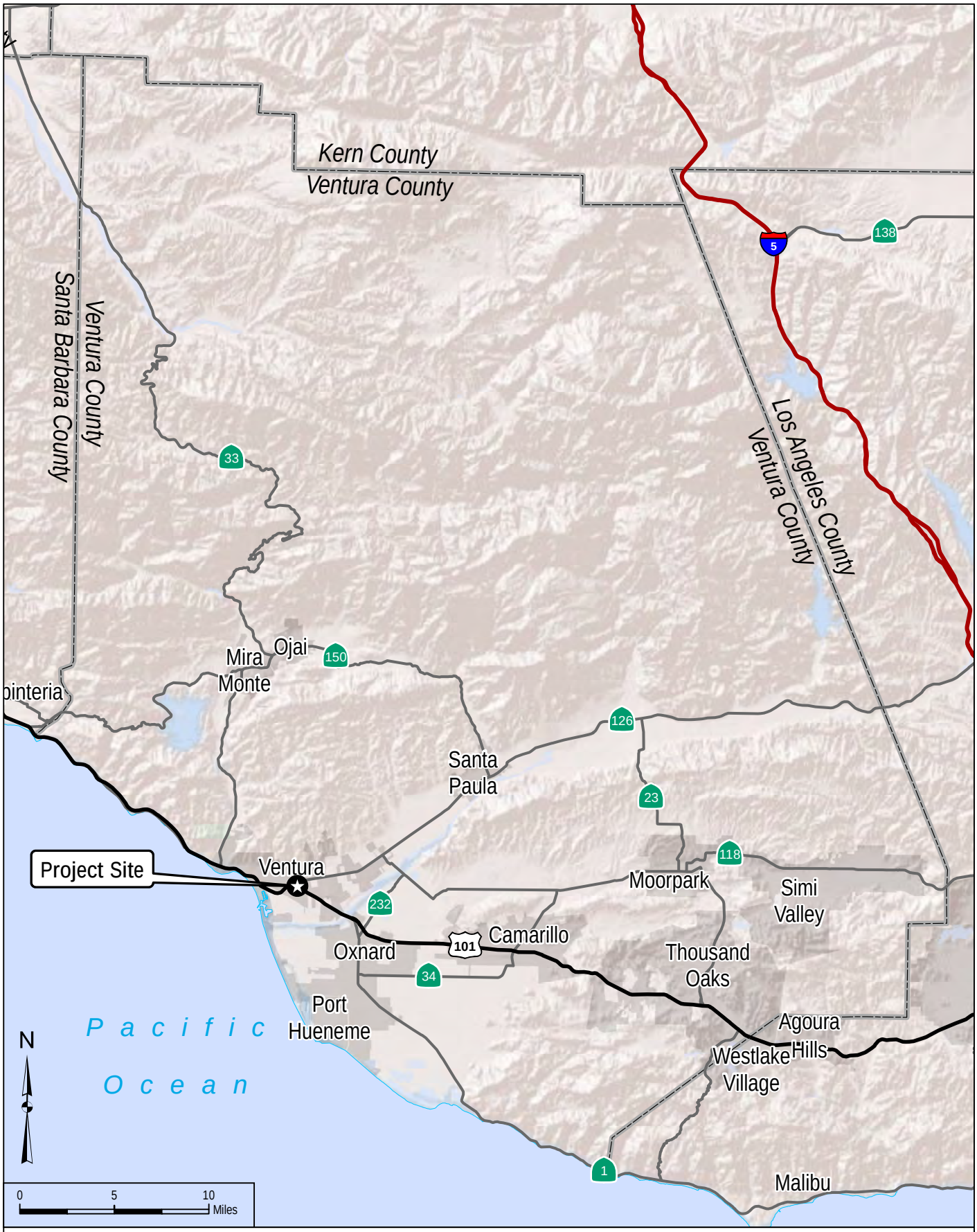
Moss & Associates proposes to construct The Grove residential project on 25.65 acres in the City of Ventura, in the County of Ventura (see Figures 1 and 2). The proposed Project Area of Potential Effects (APE) (see Figure 3) includes the entire Project site.

This report documents the background research, Native American consultation, and archaeological survey conducted for the proposed Project. The report was prepared by Dudek archaeologists David Stone, M.A., RPA, and Heather McDaniel, M.A., RPA. Mr. Stone has over 30 years' experience in central and southern California and Ms. McDaniel has over 8 years' experience.

2.0 PROJECT LOCATION AND DESCRIPTION

The proposed Project site is located in Sections 7 and 18 of Township 2 North, Range 22 West of the Saticoy, California U.S. Geological Service (USGS) 7.5' topographic quadrangles, in the City of Ventura, within the County of Ventura (see Figure 2) on the north side of Copland Drive, directly east of the Ventura 101 Freeway and Santa Paula Freeway interchange. The existing plans for development include the following: demolition and removal of all existing agricultural buildings and asphalt roads; construction of residential units; new internal access roads and driveways; installation of utilities including wastewater, water, gas, and electricity; and connection extension to Copland Drive and bicycle paths (Figure 2).

The 25.65-acre parcel is considered the project Area of Potential Effects (APE) (Figure 3) in which all permanent areas of ground disturbance, as well as temporary areas of construction activity including project laydown areas and equipment storage would occur.

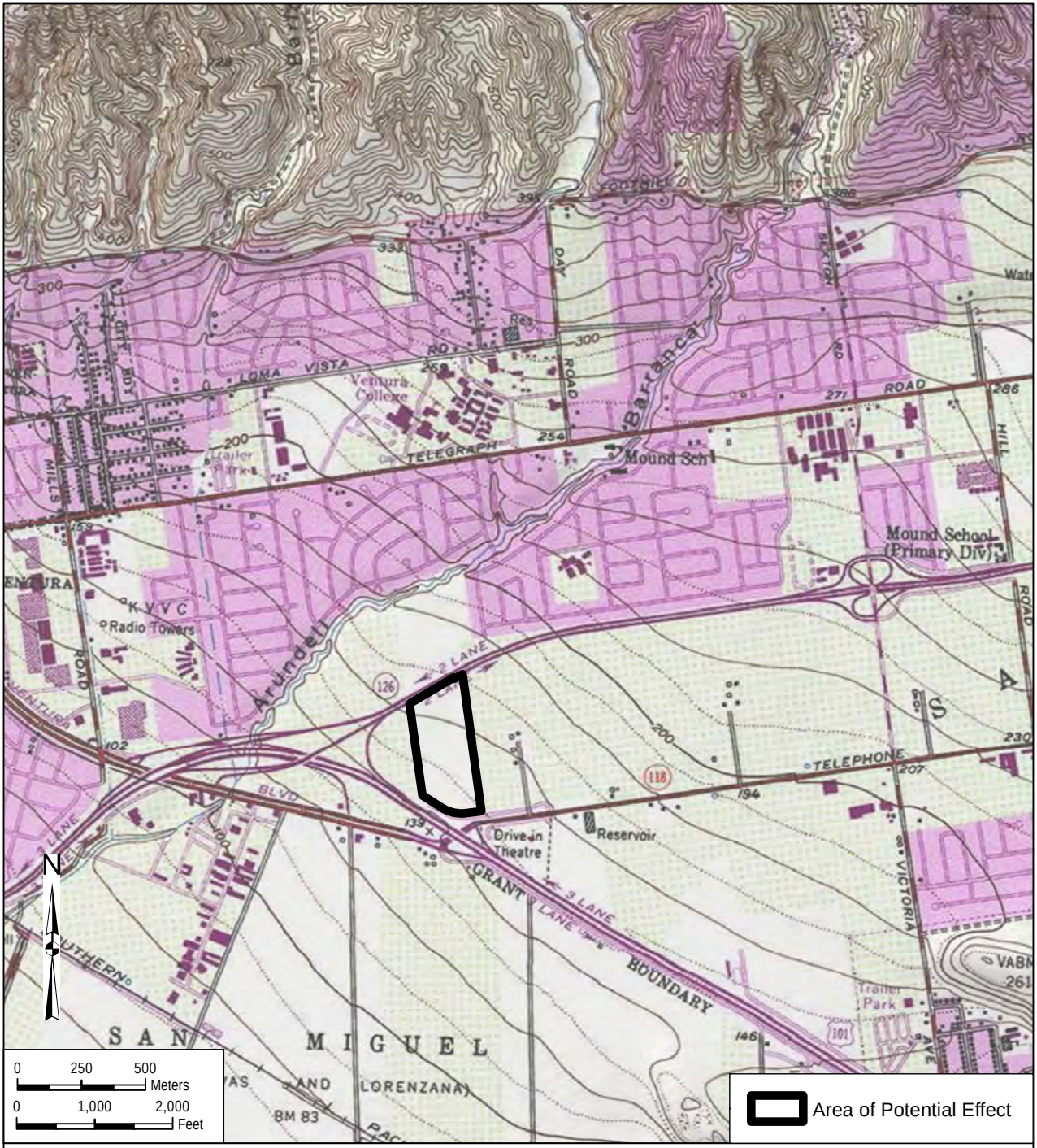


SOURCE: World Shaded Relief 2014

DUDEK

The Grove LLC

FIGURE 1
Regional Map



SOURCE: USGS Topo 7.5 Minute Series - Saticoy Quadrangle
Township 2N / Range 22W/ Sections 7&18

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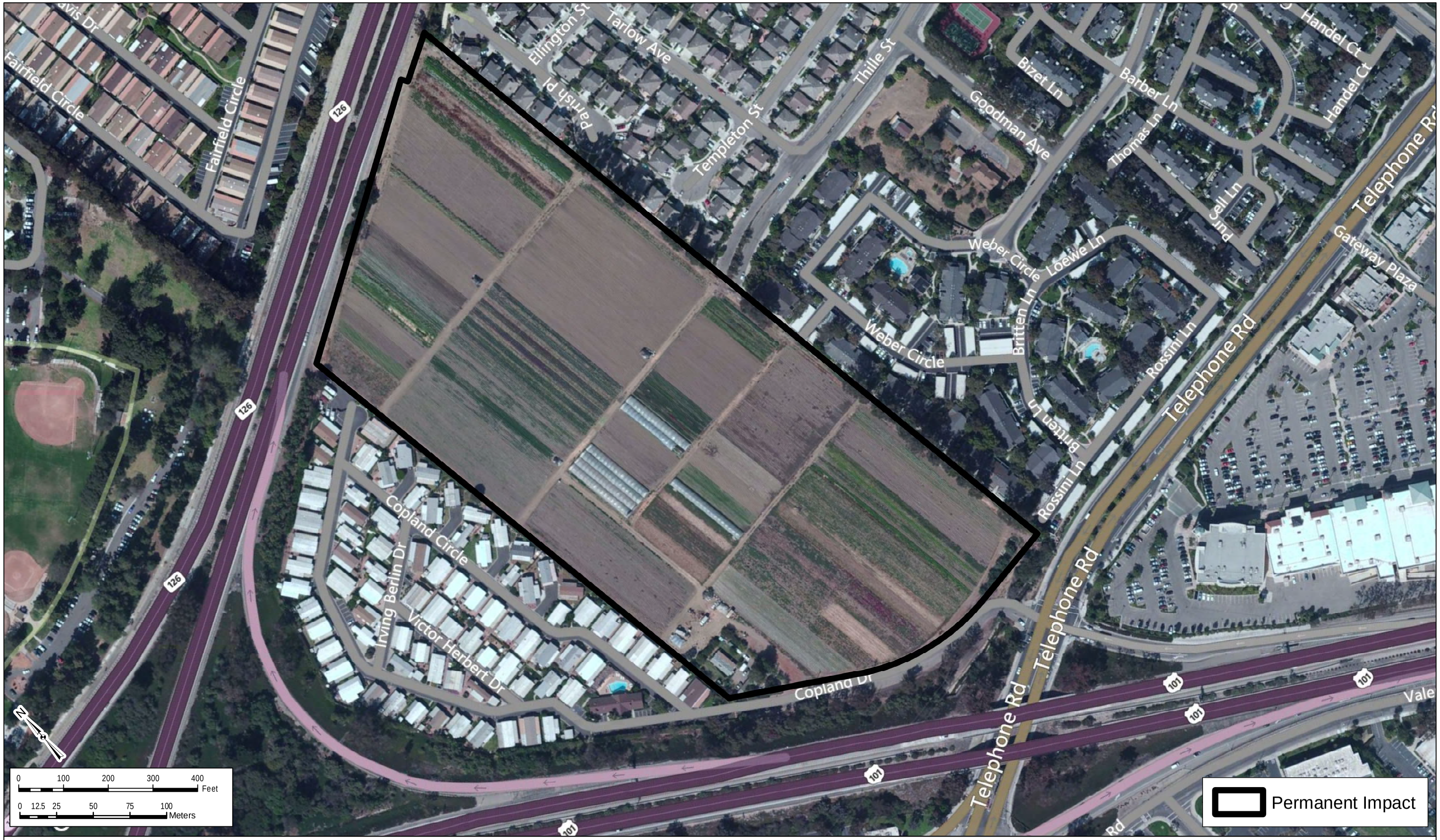
FIGURE 2

Vicinity Map



SOURCE: Bing Maps

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FIGURE 3
Area of Potential Effect

3.0 SOURCES CONSULTED

This section describes the methods and results of the archaeological records search conducted at the California Historical Resources Information System (CHRIS) for the proposed Project APE, and summarizes the consultation undertaken with the California State Native American Heritage Commission (NAHC).

3.1 Cultural Resources Records Search

An archaeological site records and literature search at the SCCIC, California State University, Fullerton, was conducted on November 19, 2014, by Lindsey Noyes, SCCIC Lead Staff Researcher, to identify all previous cultural resource investigations, recorded archaeological sites and , built architectural resources within the proposed Project APE and a 0.5-mile vicinity (see Appendix A). The records search identified all known archaeological sites, historic resources, and previous cultural resource surveys within this distance. The SCCIC records indicate that 10 investigations have been undertaken within 0.5 miles of the project site (see Table 1). Of those investigations, one report accounts potential for historic site designation with the reported boundary of the studied property partially overlapping the proposed The Grove project site. The report *An Evaluation of the Impacts to Cultural Resources by the Proposed Development of 147 Acres of Land As Part of Ranch Placerita East and West (Victoria Avenue-Highway 126), Ventura County, California* (VN-00420), by Robert Wlodarski in 1982, describes what the author identified as three historic structures that are not located within the proposed The Grove project site. Important to note, no archaeological site designation was made as a result of this report.

Although the site boundaries explicated in the report VN-00420 do minimally overlap the proposed project site, they do so by a margin of no more than 200 feet (60 meters) and the alleged historic structures, said by Wlodarski (1982) to validate the property as having possible historical significance, do not occur within said margin or the proposed The Grove project site. Nine other investigations evaluated areas surrounding the proposed project site within a 0.5 miles radius include (see Table 1, below): one approximately 1,000 feet (305 meters) to the southwest with its northern edge adjacent to Telephone Road and west of Freeway 101(Pence, 1977), one approximately 1,500 feet (450 meters) to the southeast with

Table 1. Previous Investigations within the Project APE (0.5-mile radius)

Date	Author	Title (Area)	SCCIC No.
1977	Pence, Robert	Archaeological Assessment of the Donion Plaza Business Park, Ventura County, California	VN-00106
1977	Lopez, Robert	An Archaeological Assessment of the Area of the Proposed Vencom Industrial Park, Ventura County, California	VN-00373
1985	Allen, Mark	An Archaeological Resource Survey and Impact Assessment of a 76 acre Parcel of Property Near San Buenaventura Business Park, Ventura County, California	VN-00454
1997	Maki, Mary K.	Negative Archaeological Survey Report for the Northern Half of the 126 Pedestrian Overcross Project:07-VEN-126, Pm 0.10, Ea 17490k	VN-01497
2001	McLean, Deborah K.	Archaeological Assessment for Pacific Bell Mobile Services Telecommunications Facility La 363-19, 1264 Callens Road, City and County of Los Angeles	VN-01606
2001	McKenna, Jeanette A.	California Environmental Quality Act Compliance/mitigation of Adverse Impacts to the 101 Drive in Theater, Ventura County, California	VN-02180
2009	Fortier, Jana	TEA-21 Rural Roadside Inventory: Native American Consultants and Ethnographic Study for Caltrans District 7, Ventura County	VN-02872
2009	Fortier, Jana	(also LA10578) TEA-21 Native American Consultants and Ethnographic Study for Caltrans District 7, County of Los Angeles	VN-02902
2010	Bonner, Wayne	Cultural Resources Record Search, Site Visit Results, and Direct APE Historic Architectural Assessment for Clearwire Candidate CA-VTA0102 (Ventura Townhouse), 4900 Telegraph Road, Ventura County	VN-02902

its northern margin adjacent to Freeway 101 (Lopez, 1977), one approximately 2,600 feet (800 meters) to the southeast with its southern margin adjacent to the Southern Pacific Railway (Allen, 1985), one approximately 80 feet (24 meters) north of the northwest corner of the proposed project site (Maki, 1997), one approximately 2,600 feet (800 meters) to the southwest (McLean, 1998), one approximately 80 feet (24 meters) to the southeast with its northern boundary adjacent to Telephone Road and Southern boundary adjacent to Freeway 101 (McKenna, 2001), two approximately 2,600 feet (800 meters) due west of the proposed project site (Fortier, 2009), one approximately 2,500 feet (760 meters) to the northwest of

the proposed project site (Bonner, 2010). The nearest of the investigations not located within the proposed project area, located adjacent to the eastern boundary of the proposed project site and extending to the northeast along Telephone Road (Pence Archaeological Consulting, 1982), did not identify any prehistoric archaeological resources, but did identify "potentially significant historical resources" in the form of a "Foreman's house apparently constructed in the 1920s", a cistern "apparently abandoned before the 1920s or 1930s", and a "1900-1901 homestead".

3.2 Native American Consultation

A search of the Native American Heritage Commission's (NAHC's) Sacred Land File was requested on January 12, 2015, and was conducted on January 20, 2015 (Katy Sanchez, Associate Government Program Analyst) to determine the presence of any Native American cultural resources within the proposed Project site (see Appendix B). The NAHC indicated that no known Native American heritage resources are identified within the proposed Project site.

4.0 BACKGROUND

4.1 Environment

The proposed project site is situated on an island of unincorporated land located approximately 3.5 miles southeast of the downtown area of the city of Ventura. The parcel is bound by the SR 126 Santa Paula Freeway to the north, Telephone Road to the south, a mobile home park to the west, and a residential tract development to the east. The property is currently dedicated to the cultivation of flowers for commercial use and contains a small residential compound (single family home, garage/large equipment shed, and two small, temporary equipment sheds) located on the southwest corner of the property. The property has historically supported various agricultural uses and has gradually been surrounded by residential, commercial, and municipal buildings dating from ca. 1920 through the present. Other than residential compound situated on the southeast corner and the mature, ornamental trees growing along the eastern and western proposed project site boundaries, the proposed project site consists of level agricultural crop land.

The proposed project site lies south of the Santa Ynez Mountains, a portion of the Transverse Ranges of the Pacific Coast Ranges, and approximately five miles east of the Pacific Ocean. It is located on the relatively level flood plain of the Santa Clara River with an elevation of 142-170 feet above mean sea level. The proposed project parcel lies north of the Santa Clara River, west of the Harmon Barranca watershed and east of the Arundell Barranca watershed, and is dominated by a gentle northeast-southwest sloping alluvial fan. According to the United States Department of Agriculture Soil Conservation Service (1970), soils in the proposed project site are characterized as belonging to two major soil zones: Mocho loam and Sorrento loam.

4.2 Prehistory

The local prehistoric chronology is divided into four major periods – Paleoindian, Early Period, Middle Period, and Late Period.

Paleoindian

It is generally accepted that humans entered the New World during the latter part of the Wisconsin glaciation between 40,000 and 20,000 years before present (B.P.). The earliest unquestioned evidence of human occupation in southern Santa Barbara and Ventura counties is dated to between 10,000 to 8,000 B.P. (Erlandson and Colten 1991). Paleoindian groups during this time focused on hunting Pleistocene megafauna, including mammoth and bison. Plants and smaller animals were undoubtedly part of the Paleoindian diet as well, and when the availability of large game was reduced by climatic shifts near the end of the Pleistocene, the subsistence strategy changed to a greater reliance on these resources.

Early Period

Post-Pleistocene changes in climate and environment are reflected in the local archaeological record by approximately 8,000 B.P., the beginning of the Early Period, as defined by Chester King (1981). The Early Period of the Chumash cultural sphere was originally defined by Rogers (1929), who called it the “Oak Grove” Period. The diagnostic feature of this period is the mano and metate milling stones, which were used to grind hard seeds such as sage for consumption. Toward the end of the Early Period, sea mammal hunting appears to have

supplemented subsistence strategies (Glassow et al. 1990).

Middle Period

The Middle Period (3,350 to 800 B.P.) is characterized by larger and more permanent settlements, related to a generally wetter environment. Materials from Middle Period sites reflect a greater reliance on marine resources and include marine shells, fish remains, and fishhooks. A major shift in vegetable food exploitation occurred, as the mano and metate milling stones were replaced by stone mortars and pestles. This indicates a transition from seed gathering to oak tree acorn gathering and processing, a result of cooler temperatures and more expansive oak woodland habitats. Toward the end of this period, the plank canoe was developed, making ocean fishing and trade with the Channel Islands safer and more efficient (Arnold 1987). Terrestrial resources continued to be exploited as evidenced by the presence of contracting-stemmed and corner-notched projectile points from Middle Period sites (Bamforth 1984).

Late Period

The Late Period (800 to 150 B.P. or approximately A.D. 1150 to 1800) was a time of increased social and economic complexity. The increased number of permanent and semi-permanent villages clustered along the coastline of the Santa Barbara Channel south past Ventura and on the Channel Islands, and the diversity of environmental site settings in which sites have been identified, indicates a substantial increase in prehistoric population. Intensification of terrestrial as well as marine resources occurred. Acorns continued to be processed, and land mammals were hunted with the bow and arrow, rather than exclusively by spear. Trade networks, probably controlled by village chiefs, expanded and played an important part in local Chumash culture, reinforcing status differences and encouraging craft specialization. Shell beads, found throughout the Early and Middle Periods, increased in number and variety, related to status and social value.

4.3 Ethnohistory

In 1542, the explorer Juan Rodriguez Cabrillo visited the Chumash village of *Shisholop* located very near the present foot of Figueroa Street. Cabrillo named the settlement Pueblo de las

Canoas in his awe of the abundance of large canoes he observed there. Another explorer, Sebastian Vizcàino, visited *Shisholop* in 1602. Vizcàino and his crew were also impressed with the size and superior construction of Chumash canoes and the intelligence and communication skills of the local native peoples (Engelhardt 1930). During this time of initial European contact, several Chumash settlements existed within the current boundaries of the city of Ventura (Kroeber, 1925) and were primarily situated along the Ventura and Santa Clara Rivers. The protohistoric culture of the Chumash was terminated by the arrival of a Spanish expedition led by Gaspar de Portola in 1769, who renamed the settlement *Shisholop, La Asumpta*. Portola's party characterized the settlement as being the largest and most organized they had witnessed during their travels. Chumash population estimates vary considerably, but all agree in the fact that the population declined dramatically after European contact. The everyday lives and cultural experience of Chumash peoples living within the project area vicinity changed dramatically with the establishment of the San Buenaventura Mission in 1782, one of five missions located within the Chumash territory.

4.4 Historic Setting

The historic occupation of the project vicinity can be divided into three settlement periods: the Mission Period (A.D. 1769 – 1830), the Rancho Period (ca. A.D. 1830 -1865), and the American Period (ca. A.D. 1865 – 1915). Construction of Mission San Buenaventura in 1782 altered both the physical and cultural landscape of the region. The missions were the center of Spanish influence in the region and affected native patterns of settlement, culture, trade, industry, and agriculture. In 1821, California became a part of the country of Mexico as a result of Mexico's successful fight for independence from the Spanish Empire. Secularization of the Missions by the Mexican Government was soon to follow occurring between 1834 and 1836. Mission properties and goods were now controlled by appointed government agents, but political deliberations delayed the secularization of the Ventura mission until 1837, allowing it to fare better than most of the other missions. The lands associated with the Ventura mission were spared the looting that occurred at many other missions leaving much of the land untouched for decades.

Secularization of lands and a focus on cattle raising marked the Rancho Period, where large

land grants of Mission lands were ceded to wealthy, prominent Spanish families. Native Americans continued to work as laborers on ranchos during this period. With California statehood in 1850 and the advent of the American Period, farming and more intensive land uses steadily replaced cattle stock ranching. Contrary to the romanticized perception of the Rancho Period, ranching life was arduous and unpredictable and much more complex than what has been portrayed in film and literature. Cattle ranching was substantially curtailed by a prolonged drought in the 1860s causing rancheros to lose their lands or being compelled, over the following decades, to sell to the growing American population.

Although California Statehood occurred in 1950, there was not an immediate influx of Americans into Ventura County keeping the majority of the population as having Mexican or Native American origins. It wasn't until soon after Ventura County separated from Santa Barbara County in 1873 that Americans began to move to Ventura in significant numbers changing the area from rural agricultural lands to a thriving, ethnically diverse town with a growing retail environment and handsome municipal structures (Treim 1980). A building boom occurred from 1869-1905 comprised of residential and commercial efforts in the downtown areas. However, the central and eastern sections of Ventura, such as the proposed project area, remained primarily agricultural and were sparsely populated. Change to the vicinity in which the project area is situated came relatively slow despite the consistent growth experienced in the eastern portions of Ventura allowing it to remain agricultural land until now. Since statehood, major forces of regional change during the last 150 years have been railroads, maritime shipping, agribusiness concerns, the oil industry, and the military.

5.0 FIELD METHODS

The APE incorporates all 25.3 acres of the proposed Project site. An intensive archaeological survey of the proposed The Grove APE was completed on December 5, 2014. All exposed ground surfaces were walked in 3-meter (10-foot) parallel transects when dense ground cover or structural obstructions were not present. The proposed APE is situated on an island of unincorporated land located approximately 3.5 miles southeast of the downtown area of the city of Ventura. The APE is bound by the SR 126 Santa Paula Freeway to the north, Telephone Road to the south, a residential tract development to the east, and a mobile home park to the

west. The land is currently dedicated to the cultivation of flowers for commercial use and contains a small residential compound (single family home, garage/large equipment shed, and 2 small, temporary equipment sheds) located on the southwest corner of the property. The property has historically supported various agricultural uses and has gradually been surrounded by a moderately to dense suburban environment in its immediate vicinity beginning in the 1970's. However, the surrounding community comprised of residential, commercial, and municipal buildings began its development in the 1920's and has continued through the present. Other than the mature, ornamental trees growing along the boundary of the small residential compound situated on the southwest corner and the compound itself, the APE consists solely of level agricultural land free from any large structures or natural features such as outcrops or trees.

The proposed APE consists of agricultural land with bare soil and an excellent ground surface visibility of 80 to 100 percent. The southwest corner possessing the small residential compound consisting of one house, one garage/large maintenance shed, and two small maintenance sheds is covered with grass, structures, and equipment, rendering the ground surface visibility in these areas poor (less than 10 percent). In addition, the undeveloped road shoulders along Copland Drive, adjacent to the southern The Grove property line, were surveyed. These undeveloped road shoulders also afforded excellent (90 to 100 percent) ground surface visibility.

Soils observed in the proposed APE were dark-gray, silty-clay loam extending from the surface to at least 10 inches visible as a result of the tilled condition of the land, generally consistent with the Mocho loam and Sorrento loam designation (USDA/SCS 1970). No prehistoric or historic cultural materials were identified during the survey. Given the excellent ground surface visibility within the vast majority of the proposed project site boundaries, these results are considered very reliable.

6.0 STUDY FINDINGS AND CONCLUSIONS

Based on the excellent ground surface visibility within almost the entirety of the proposed Project site boundaries, the intensive archaeological survey results are considered reliable. Due to the absence of any prehistoric or historic remains identified during the survey, the

reliable conditions, and the absence of prehistoric cultural materials identified by one other previous investigation adjacent to and overlapping (by 200 feet or 61 meters) along the eastern property boundary of The Grove project, the potential for prehistoric and/or historic archaeological resources within the proposed project site is considered low.

7.0 RECOMMMENDATIONS

As no potentially significant resources as defined by CEQA Guidelines were identified within the proposed The Grove project site, future development within the proposed project site would not have the potential to result in a significant impact on cultural resources as defined by CEQA Guidelines Section 15064.5(c)(4). As a result, no mitigation measures are required. In the highly unlikely event that isolated cultural resources are encountered during future excavations, a qualified archaeologist should be notified immediately to assess the significance of the find. This standard discovery process would ensure that the potential for impacts to cultural resources during project construction activities would remain less than significant.

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APPENDIX A

Cultural Resources Records Search

(CONFIDENTIAL, BOUND SEPARATELY)

APPENDIX B

Native American Consultation

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

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January 20, 2015

Heather McDaniel
Dudek
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Sent by Fax: (805) 963-2074
Number of Pages: 4

Re: The Grove LLC, Ventura County.

Dear Ms. McDaniel,

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 373-3712.

Sincerely,

Katy Sanchez

Katy Sanchez
Associate Government Program Analyst

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January 20, 2015

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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.

This list s only applicable for contacting locative Americans with regard to cultural resources for the proposed The Grove LLC, Ventura County.

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January 20, 2015

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This list is only applicable for contacting locative Americans with regard to cultural resources for the proposed The Grove LLC, Ventura County.

The Grove Project
Ventura, CA
Historic Resources Evaluation Report

Prepared for

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Dana N. Slawson, M. Arch.

January 2011

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APPENDIX A

Record Search Results

1.0 Introduction

Greenwood and Associates has conducted an historic resources evaluation for the proposed The Grove Specific Plan Project, located in Ventura County, California (Figure 1-1). This document assesses the environmental consequences of the project on historical resources, based on background research and field investigation. The information contained in this report is prepared to provide environmental compliance pursuant to the California Environmental Quality Act (CEQA) and municipal enactments.

1.1 Project Location and Description

The Grove Specific Plan is master planned residential development that will occupy a 25.3-acre parcel situated on the north side of Copland Drive, directly east of the 101 Ventura Freeway/126 Santa Paula Freeway interchange. Referred to in the City of Ventura's planning documents as SP-9, the site is presently an island of unincorporated land situated approximately 3.5 miles southeast of downtown Ventura (Figure 1-2). When the Grove Specific Plan is adopted, jurisdiction over the parcel will be transferred to the City of Ventura.

The subject parcel is bounded on the south and southwest by Copland Drive, on the west by a mobile home park, on the east by a residential tract development, and on the north by the SR 126 Santa Paula Freeway. Telephone Road, a major commercial thoroughfare, is located immediately south of the project site. Currently, the subject parcel is devoted to commercial flower cultivation. At the southwest corner of the property is a small residential compound comprising a single family dwelling and an equipment shed. These are the only permanent structures on the property.

The subject parcel is located within an unsectioned area of Township 2 North, Range 3 West of the Saticoy, California 7.5' USGS topographic quadrangle map (Figures 1-1). It occupies assessor’s parcel number 079-0-240-035. Current development plans call for removal of all existing buildings and construction of residential units that will cover most of the property. The precise mix of unit types has not been determined, but it will incorporate apartments, condominiums, and single family dwellings. When completed, the project will also connect Thille Street to Telephone Road via Copland Drive and extend the existing linear park and bicycle paths.

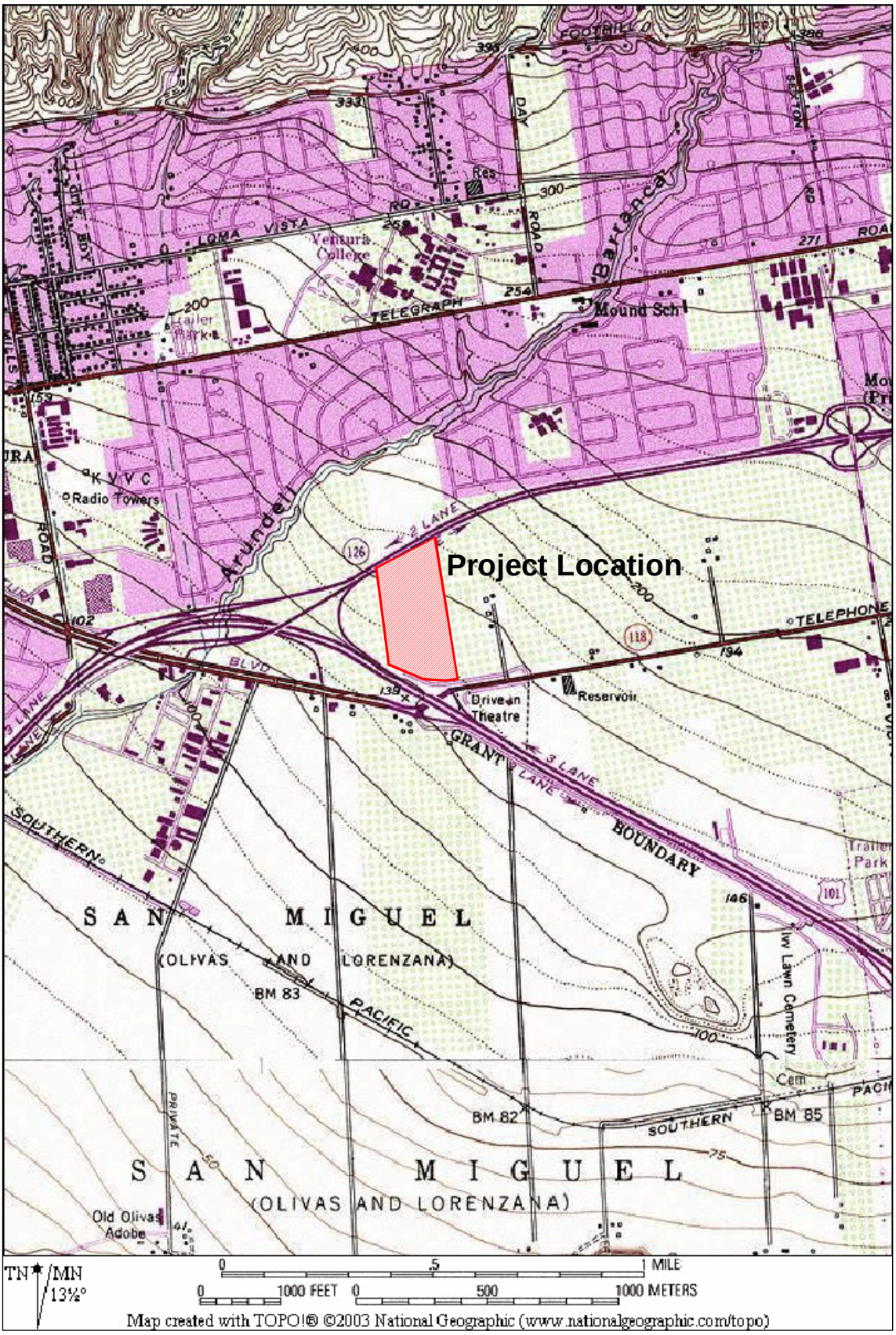


Figure 1-1. Project Vicinity Map: USGS Saticoy, CA 7.5 Min. Quadrangle.

Figure 1-2. Project Location Map

2.0 Environmental Setting

2.1 Methods

2.1.1 Area of Study

For this historical resources investigation, the study area is recognized to include the approximately 25.3-acre The Grove Project site in its entirety.

2.1.2 Research Sources Consulted

A records search was performed at the South Central Coastal Information Center, CSU Fullerton, by Information Center staff on September 27, 2011. The search consisted of a check for any previously recorded cultural resource sites and isolates within a 0.5-mile radius of the project area. The records search examined topographic maps for previous surveys or study locations, as well as locations of previously recorded historic and archaeological sites. Photocopies of positive-finding reports (revealing any analytical information) and regional overviews were made, and a bibliography of all negative-finding reports was generated.

Current inventories of the National Register of Historic Places, the California Register of Historical Resources, the California Historical Landmarks, and California Points of Historical Interest were also consulted. The database of the California State Historic Resources Inventory (HRI) for Ventura County was reviewed to identify any local resources previously evaluated for historic significance, and historical maps were inspected for information regarding historical development in the vicinity of the project area. Additional research included review of local histories and regional overviews, along with other manuscripts and archival materials obtained from private, library, and internet sources.

Specialized research was conducted by architectural historian Dana N. Slawson at the County of Ventura Assessor's Office, Building and Safety Department, Office of the Recorder, and County Clerk. Also visited were the Los Angeles Central Public Library and the E.P. Foster Library. Individuals contacted regarding the property include Mr. Steven Schafer, San Buenaventura Conservancy; Ms. Gina Nichols, NBVC/Seebees Museum; Mr. Charles Johnson, Museum of Ventura County; Mr. David Esquivel, tenant; and Mr. Kioren Moss, Moss & Associates.

2.2 Regional Setting

The following summary is based on a literature search conducted for the vicinity of The Grove Project area. It is intended both to indicate the potential for the presence of historical resources within the project area, and to provide a context for any cultural data that may be present within the project area.

2.2.1 Environment

Situated in the east central area of the coastal community of Ventura, the project as proposed will occupy approximately 25.3 acres bounded on the north by SR 126 Santa

Paula Freeway, private property on the east and west, and on the south and southwest by Copland Drive. Historically, the parcel has supported a variety of agricultural uses. Development on the parcel is limited to one single family residence and an associated outbuilding, located at the southwest corner of the property.

The surrounding environment may be characterized as moderately to densely built up and suburban, with commercial, residential, and municipal buildings typically dating from ca. 1920 through the 1990s. It is situated on the relatively level flood plain of Santa Clara River at an elevation of 142-170 ft amsl.

2.2.2 Regional History

At the time of initial European contact, a number of Chumash settlements existed within the present limits of the City of Ventura (Kroeber 1925:48), generally clustered along the Ventura and Santa Clara Rivers. Juan Rodríguez Cabrillo visited the Native American village of *Shisholop* in 1542 at the foot of what became Figueroa Street. He called the settlement Pueblo de las Canoas in admiration of the many large canoes observed there. In 1602, another Spanish explorer, Sebastian Vizcáino, visited *Shisholop*. Again, the visitors were greatly impressed with the speed and fine construction of the canoes, as well as the intelligence and communication skills of their makers (Engelhardt 1930:6-7). During his 1769 trek from San Diego to Monterey, Capt. Gaspar de Portolá also stopped at *Shisholop*, which he renamed *La Asumpta*. His party reported that the community was the largest and best organized they had seen in their travels. Population estimates vary widely, but all of them document a precipitous decline after European contact. It has been estimated that the total Chumash population in 1770 was between 10,000 and 22,000. There were 2,788 Chumash registered at the five missions in their territory in 1831. By 1920, there were 74 known Chumash still living (Grant 1978:506-507).

The 1782 founding of Mission San Buenaventura by Fray Junipero Serra marks the beginning of the Historic Period in Ventura. This was the ninth mission in a series of 21 such spiritual outposts established by the Franciscan order in Alta California. The first Mission structure is believed to have been at the San Miguel Chapel site on the southwest corner of Palm Street and Thompson Boulevard. Construction of San Buenaventura Mission on its present site occurred from 1792 until 1809 (Hastings 1975; Triem 1985).

In 1834, the government of Mexico, now independent of Spain, decreed that the California missions be secularized. Mission properties and goods were to be administered by appointed government agents. Political considerations delayed implementation of the decree at Ventura until 1837. The Mission survived secular administration in better condition than many. Although most of the Mission's lands were granted as ranchos, its lands and goods were not utterly looted, as happened to many of the other missions.

In 1843, Governor Micheltorena restored mission administration to the padres, only to have his successor, Pio Pico, launch an effort to lease, and later sell, all remaining mission lands to private individuals in 1845 (Engelhardt 1930:70-85). After the Treaty of Guadalupe Hidalgo in 1848, and the American take-over of California, the United States Lands Commission heard petitions for claims to mission lands and voided many of the transactions concluded under Pico's effort.

The Rancho Period has been romanticized in literature and film as a time of easy wealth and leisure notable for dashing horsemanship and Hispanic hospitality on a grand scale. The reality was the more prosaic work of making a living in the cattle business (Greenwood

1989:451-466). Some of the rancheros lost their lands to bad luck or adverse legal rulings; some sold to the small but growing American population.

There was no immediate influx of Americans to Ventura County. Only nine American voters were registered in Ventura in 1850, the majority of the population being of Mexican or Native American origin. The City of Ventura, a small agricultural community, was incorporated in 1864, and Ventura County was separated from Santa Barbara County and became its own entity in 1873. By 1874, the population had grown to approximately 1,000, still predominantly Hispanic and Indian, but including 200 Chinese and immigrants from Europe and South America. Americans did not move to Ventura in significant numbers until the 1870s and early 1880s (Triem 1980).

A building boom during the mid-1870s turned the City of Ventura into a thriving town with handsome municipal structures, notably a school, hospital, and library. Retail establishments and hotels sprang up and generated jobs. Traditional American churches and civic clubs proliferated. The population of Ventura County rose from 5,073 in 1880 to 10,071, with 3,869 in the City of Ventura, in 1890 (Triem 1985:76).

Development in Ventura during the first and second Land Boom periods (1869-1905) was concentrated within the current downtown area, comprising both residential and commercial building types. Extant properties from this time are overwhelmingly residential, consisting of one- and two-story single family houses and representing a range of Romantic and Victorian-era architectural styles. Surviving commercial buildings from this period are rare.

The present day central and eastern sections of Ventura, including the vicinity of the current project area, remained sparsely populated and agricultural in character well into the twentieth century. Amid the orchards, and the corn, flax, and flower fields of the Santa Clara River Valley, the community of Saticoy was established in 1868 on the north bank of the Santa Clara River. Early Saticoy consisted of a schoolhouse, blacksmith shop, and several dwellings, to which a post office was added in 1873. When a branch of the Southern Pacific Railroad was extended through the Santa Clara River Valley in 1887, Saticoy became a major shipping point for the area's farmers. The town supported several warehouses, a hotel, and numerous other businesses by the turn of the century. To the southwest of Saticoy, the small community of Montalvo arose at the crossing of the South Pacific Railroad's Santa Barbara and Somis branch lines during the real estate boom of the late 1880s. By 1899, it boasted a Methodist church, post office, school, several stores, and "many neat and pretty cottages" (Thompson and West 1961:393-405; Triem 1985:87, 92)

Agriculture remained the Ventura area's economic mainstay through the first decades of the twentieth century. Prior to the 1880s, agriculture was based on feed grains and livestock. Americans introduced crop diversification, first into orchard crops such as fruits and nuts. In the 1890s, sugar beets became an important local crop. By the early 1920s, field crops such as vegetables and feed grasses were being raised and marketed, and poultry and dairy production were in place by the 1930s (Sheridan 1940:40-54).

Reflecting the city's increasing complexity and sophistication after the turn of the 20th century, development in Ventura was more diverse. The 1900-1920 period witnessed the construction of many of Ventura's first civic, social, institutional, and industrial buildings. Commercial construction along Main Street continued, replacing older adobe and wooden structures with more permanent masonry buildings, and expanding eastward. Residential development from this period was concentrated in the area immediately to the east of the commercial core. Single family residences were more modest in size, commonly one-story bungalows, displaying American Colonial Revival and Craftsman architectural styles.

Oil had been discovered in the region in the 1860s and new finds near Ventura Avenue sparked an oilfield boom that was in full swing by 1922 (Triem 1980). Ventura became a center for oil shipping and the oilfield supply and support industry. The city's face changed markedly during the oil and real estate booms of the 1920s, its population more than doubling from 4,160 in 1920 to 11,500 by the onset of the Great Depression in 1929. New commercial construction in the downtown area saw buildings with a stronger presence on the street, assuming a larger scale and occupying prominent sites within the downtown area. Banks, hotels, theaters, and even churches, begin to reflect a broader range of architectural styles, including those with Mediterranean and Classical influences. Development from this period also responded to the increasing popularity of the private automobile, with the construction of garages, showrooms, and service stations.

Continued single-family residential development and the introduction of multi-story apartment buildings increased densities immediately outside the commercial core. Much of Ventura's present downtown area was built out during this period, causing substantial residential development to locate in other parts of the city. Residential construction continued in the Craftsman style, while many Period Revival styles achieved great popularity here and throughout Southern California, particularly the Spanish Colonial Revival style.

Although the 1929 stock market crash and subsequent depression hit Ventura hard, most of its agricultural base survived and the local government worked to assist the unemployed (Triem 1985:128-129). Very little development took place during the Great Depression and World War II period (1930-1945). Construction in Ventura virtually halted during the Depression. Available funds were largely devoted to public improvement projects, including parks, roads, and bridges. Construction within the downtown area during this period was extremely limited, consisting mostly of retail shops and office buildings, typically reflecting the Art Deco and Streamline Moderne styles.

Ventura returned to prosperity and development surged during the post World War II era. Following the war, residential subdivisions and commercial centers were built in previously undeveloped areas of the city. Between 1950 and 2000 the population of Ventura grew from 16,650 to 102,000. The establishment of military bases at Port Hueneme, Oxnard, and Point Mugu provided civilian jobs and the impetus for development of aerospace and electronics industries in the Ventura area. Freeway construction in the early 1960s served to strengthen economic ties with Los Angeles. The City of Ventura remains the county's cultural and economic center.

2.3 Project Setting

2.3.1 The Grove Project Site History

The subject parcel was historically part of Rancho Santa Paula y Saticoy, a 17,773-acre tract lying within the Santa Clara River Valley that was granted by Mexican governor Manuel Micheltorena to Manuel Jimeno Casarin in 1840. The parcel is situated along the rancho's southwestern boundary, adjacent to Rancho San Miguel. Casarin had served as Secretary of State for Alta California and was a member of the state Assembly. In addition to Rancho Santa Paula y Saticoy, Casarin was the recipient of three other land grants. He never resided on this rancho, nor did he use it for cattle ranching or agriculture. In 1852, soon after California's entry into the Union, Manuel Jimeno Casarin sold the rancho to a syndicate led by Levi Parsons, Eugene Casserly, J. B. Crocket, and David Mahoney.

The group grazed cattle on the rancho, but apparently did not hold the property for long; by the late1850s, the rancho had passed into the hands of brothers T. Wallace, Andrew, and Henry More, who also owned the neighboring Rancho Sespe. By 1860, the More brothers were the largest landowner in Santa Barbara County (which then included present day Ventura County). Besides Rancho Santa Paula y Saticoy and Rancho Sespe, the Mores owned Santa Rosa Island, Rancho Lompoc, and Rancho Mission Vieja de la Purisma.

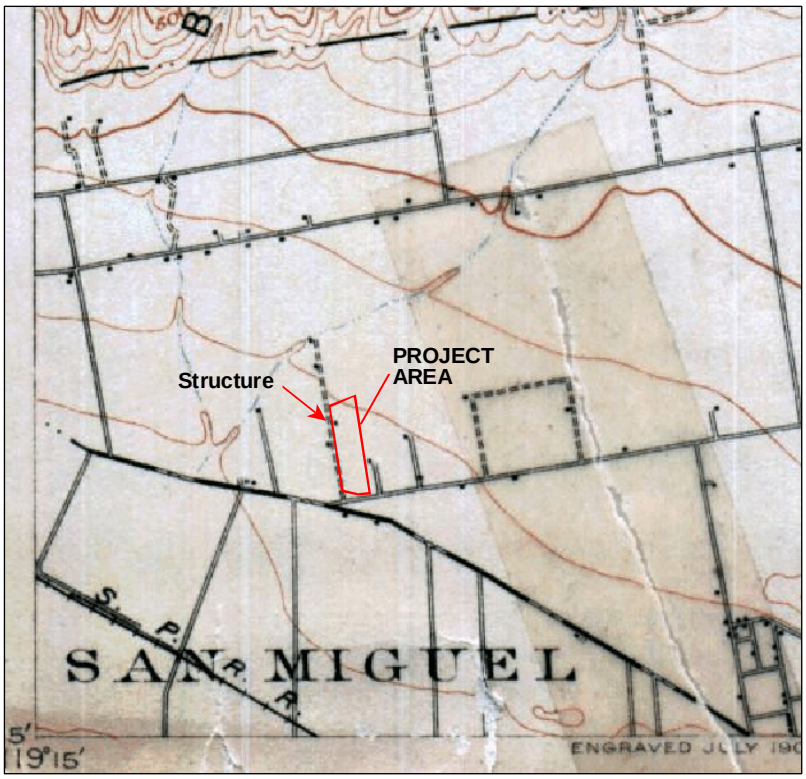
The great drought and floods of the early 1860s forced the More brothers to dissolve their partnership and divide up their lands. Rancho Santa Paula y Saticoy was acquired by George G. Briggs, of Marysville, California, in 1862. Briggs plans to plant the rancho in fruit orchards were thwarted and he ultimately subdivided much of the property into 150-acre farm tracts, which he put up for sale in 1867. Nathan Blanchard purchased the largest portion of the rancho in 1872 -- 2,700 acres on which he founded the community of Santa Paula – but in the vicinity of the current project area, smaller parcels were typically sold to family farmers.

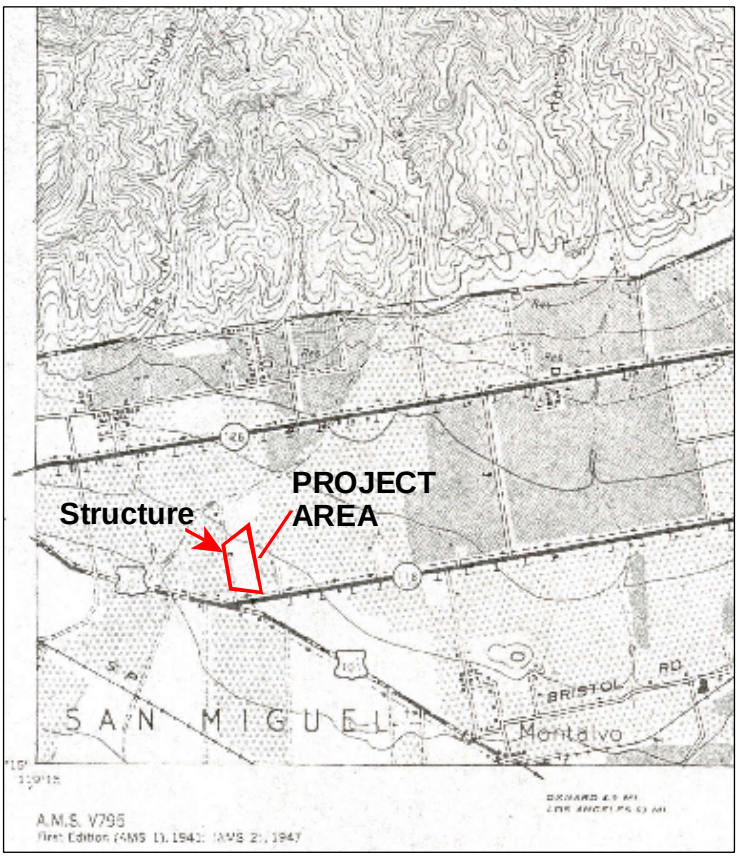
The farming community of Saticoy was established on the north bank of the Santa Clara River, four miles east of the current project area in 1868, and by the late 1880s, the small community of Montalvo had grown up along the Southern Pacific tracks a mile to the southeast (Thompson and West 1961: 393-405).

The project area is first depicted in detail on the 1903 USGS topographic map. Telephone Road, which immediately parallels Copland Drive and the subject property's south boundary, was in place by that date, as was East Main Street/Ventura Boulevard which intersected Telephone nearby to the west. Both were well travelled routes through the Santa Clara River Valley, the former connecting Saticoy to Ventura and the later, Montalvo and Ventura. Another major roadway was Telegraph Road, which ran parallel to Telephone Road north of the project area. The project area itself had an unimproved dirt road (Alhambra Avenue) along its western boundary which extended from Telephone Road as far north as the Arundell Barranca, about half way to Telegraph Road. Along the east side of this road, near the north end of the present project area, stood a single dwelling.

The project area is next illustrated on the 1947 USGS map, which was surveyed in 1941. At that time, the surrounding area was completely rural and agricultural with only a few scattered dwellings indicated. On the 1947 map, Telephone Road is designated Route 118, E. Main Street/Ventura Boulevard is Route 101, and Telegraph Road is Route 126. Along the western edge of the project area, the dirt road and dwelling were still present. The project area is indicated as the only property in the area not to be planted in either orchards or row crops. This was apparently due to the lack of a readily available water supply to support such crops on this parcel, a problem that has limited the agricultural use of the parcel to the present day (Moss, pers. com. 2011).

Between the early 1940s and the next USGS mapping in 1967, significant changes occurred in the vicinity of the subject property. The area remained substantially rural, agricultural, and largely undeveloped; however, new highway construction had significantly impacted this parcel and reestablished its boundaries. The post World War II population explosion in southern California, the growth of Ventura, Los Angeles, and other urban centers, infrastructural improvement initiatives, and the decline of rail transportation, brought a wave of new highway construction in the post war years. Beginning in the late 1950s, the 101 Ventura Freeway was constructed through the Ventura area. It was completed in 1961. The freeway's alignment generally followed the old Ventura Boulevard/East Main Street surface route, although in the vicinity of the project area, the alignment was shifted to the northeast, clipping the southwest corner of what had been a rectangular parcel. Several years later,





Figures 2-1 and 2-2. 1903 (top) and 1947 USGS maps showing current project area and historic structure location.

State Route 126, the Santa Paula Freeway, was constructed parallel to and midway between Telephone and Telegraph Road. This time, the road building removed a portion of the parcel's northern limits. It was during the early to mid 1960s time period that Copland Drive was constructed, providing direct access to the subject parcel (Caltrans 2011).

Since the 1960s, the acreage surrounding the subject parcel has been steadily subdivided and developed for residential and commercial uses, and incorporated into the City of Ventura. The project area remains a small pocket of unincorporated land. A mobile home park was established on the parcel directly west of the subject property in the 1970s, and the adjacent tract to the east was developed with single and multi-family/townhouses in the 1980s (Moss, Esquivel, pers. coms. 2011). On the subject property itself, the earlier dwelling and dirt road were removed sometime after 1941, and the existing residence and equipment shed were present at the southwest corner of the parcel by the early 1950s.

County records indicate that the subject parcel belonged to the California Ranch Company until 1953. In April of that year, the property was sold to John Spoor Broome and his wife, Patricia Broome. Mr. Broome, owner of nearby Rancho Guadalasca, referred to the parcel as the "Dingaling Ranch," alluding to its location on "Telephone" Road (Moss, pers. com. 2011).

There is no original building permit on file for either the residence at 4515 Copland Drive, or the associated tractor shed. Indeed, the only county permit of any kind is a plumbing permit from 1970. Records of the County Assessor indicate that the dwelling was constructed ca. 1942. Its assessed value increased following a remodeling in 1955.

The dwelling's present occupant, whose family has resided there since the late 1970s, has stated that the house was moved from a more southerly location on the alignment of the 101 Freeway to its present location prior to freeway construction in the late 1950s. The first occupant of the house in this location was a Broome Ranch foreman, and it was occupied by Broome Ranch employees prior to the current residency (Esquivel, pers. com. 2011). This information could not be corroborated.

The form and details of this house – rigidly rectangular, low gabled roof, steel casement windows – suggest a standardized military or institutional design. There are several military bases and former installations located nearby, and this speculated origin is a possibility. It was common practice in the years following World War II for the military to dispense with surplus equipment and structures by offering them for sale to the public, in whole or in part.

Through their common owner, John S. Broome, the property has ties to the Broome Ranch/Rancho Guadalasca, and there is also a possibility that the structure was built as a ranch tenant house to a standardized design. There are six dwellings nearly identical in construction to the subject structure located on Broome Ranch/Rancho Guadalasca property on Laguna Peak Access Road near Caryl Drive in Oxnard. The differences in the subject structure correspond principally to recent alterations. All of the dwellings display original appearing partial width shed porches on their principal long/eave elevation, whereas the subject structure has a full porch on that elevation – an apparent variation or alteration. The location of the Laguna Peak Access Road structures – on Broome Ranch and in close proximity to Port Hueneme Naval Construction Battalion Center and Point Mugu Naval Air Missile Test Center (now combined as Naval Base Ventura County/NBVC) – could support either of the two speculated sources. Consultation with staff members and review of photographs and archival materials maintained by both the Seabee Museum at NBVC and the Museum of Ventura County did not identify any records of similar naval base housing dating to the World War II or immediate post war period.

Associated Individuals: John Spoor Broome

The subject property was acquired by John S. Broome and his wife Patricia in 1953. John S. Broome was born into a successful ranching family who had acquired 23,000 acres of Mexican era land grant Rancho Guadalasca in southern Ventura County in 1871. The Broome family has maintained control of a substantial portion of the original rancho acreage through the present day.

John S. Broome served as an Army Air Force pilot during World War II and flew as a commercial pilot with American Airlines for several years. Upon the death of his father in 1946, Broome assumed management of Rancho Guadalasca. Historically, the ranch was known principally for cattle ranching and later, citrus production. However, its agricultural activities through the twentieth century have covered a broad range of production on the Oxnard plain. John Broome also expanded his farming and ranching interests to Kern and Monterey counties. Through his ownership of Rancho Gaudalasca and other endeavors, Broome played an influential role in Ventura County.

John S. Broome was involved in numerous non-agricultural ventures locally as well. He was a founder of the Conejo Savings and Loan Association in Thousand Oaks, was on numerous boards and commissions, including the Ventura County Harbor Commission, and the boards of Pepperdine University and the House Ear Institute in Los Angeles. He also served as director of the Southern California Aeronautic Association. Broome was a noted philanthropist who donated $5 million to establish a library at the developing California State University Channel Islands campus in 1999. One of the largest donations in Ventura County history, the library was subsequently named in his honor (LAT 2009).

2.4 Findings

2.4.1 Cultural Resources Literature Review

The records search conducted for the project at the South Central Coastal Information Center revealed that, prior to these investigations, there had been six cultural resource studies conducted within a 0.5-mile radius of the 4515 Copland Drive property. There have been eight additional cultural resource investigations that are potentially within 0.5 mile of the project area, but for which insufficient locational information exists. These were studies conducted for a range of public and private development projects. One of the previous studies adjoined the subject property and may have taken in the eastern margin of the project area. Another investigation recorded an historic resource within 0.5 mile of the project area that was subsequently determined ineligible for historic designation (Bonner 2010). There are no properties currently designated as national, state, or local historic landmarks located within 0.5-mile of the project area, nor have any prehistoric or historic archaeological resources been recorded. The record search results are included in Appendix A.

The historical research conducted for the project also included review of all available historical maps depicting the project area. Inspection of the 1903 and 1947 USGS topographic maps revealed that the west side of the subject property was historically bounded by an unimproved road (Alhambra Road). Depicted on both of the USGS maps is a single dwelling along the east side of Alhambra Road, within the northwestern section of the project area. No additional information concerning this dwelling was uncovered. Because of the likelihood of foundations, privies, wells, cisterns, trash pits and other buried features being associated with residential properties in excess of 100 years old, the

northwest portion of the project area is viewed as possessing moderate to high sensitivity for historic archaeological resources.

2.4.2 Historic Resources Field Investigations

2.4.2.1 Field Methods

A pedestrian reconnaissance of the 4515 Copland Drive/The Grove Project site was completed by Greenwood and Associates architectural historian Dana Slawson, M. Arch., on September 30, 2011. The reconnaissance examined all buildings, structures, built features, and landscape elements within and surrounding the proposed project boundaries. The existing features of the subject parcel were photographed, and the architectural details recorded, as were all landscape features. The survey results are reported below.

2.4.2.2 Historic Resources

4515 Copland Drive

4515 Copland Drive is a 25.3-acre parcel situated on the north side of Copland Drive between the 101 and 126 Freeways. The parcel is bounded on the west by a trailer park developed in the 1970s, and on the east by a residential tract development dating to the mid 1980s. The parcel is level and presently devoted to commercial flower cultivation. At the southwest corner of the parcel is a small residential compound comprising a single family dwelling, a “tractor shed,” and several small prefabricated storage sheds. The house and tractor shed are the only permanent structures on the property.

Residence

The dwelling is a single story wood frame mid twentieth century vernacular structure which is rectangular in plan, measuring 20 x 50 feet, covered by a low sloped front-gabled roof (Figures 2-3 to 2-6). The proportions of the house’s regular rectangular form and steel casement windows impart an institutional/military feeling. It rests on a cast in place concrete foundation and is clad with painted sand textured stucco. There is a partial width gabled porch on the front (south) façade with a lower roofline that matches the slope of the principal roof. A second, shed roofed, porch spans the full length of the east elevation. The front porch rests on a cast in place concrete base and its roof is supported by square section (4 x 4 in) posts. It has a solid railing of v-groove tongue and groove boards. The porch gable is clad with the same material.

The side porch also has square posts and a tongue and groove deck on a cast in place concrete foundation. Both porches have open ceilings. All of the structures’ roof sections display moderately overhanging open eaves with exposed rafter tails and are covered with composition roll roofing.

The principal entrance is centered in the front elevation and accessed from the front porch. It is a three-panel wooden door with narrow trim. A second entrance at the center of the east elevation has comparable details. There is a single window in the façade to the east of the door. It is a steel two-sash casement window with four horizontal lights per sash and narrow wooden trim, a type commonly used in 1940s-1950s construction. Similar steel double casement windows in two sizes and in irregular placement are located on all but the north elevation, which is windowless. Additional wall openings include rectangular louvered vents

Figure 2-3. 4515 Copland Drive, south and east elevations.

Figure 2-4. 4515 Copland Drive, east elevation.

Figure 2-5. 4515 Copland Drive, west elevation.

Figure 2-6. 4515 Copland Drive, detail of east and north elevations.

located in both gables. There is a three sided wooden hot water heater enclosure attached to the west elevation.

Containing five rooms – three bedrooms, kitchen, bath, and living room – the interior of the house displays painted plasterboard walls and ceilings, narrow window and door trim, and slender cove crown moldings and low rectilinear baseboard trim. These are all characteristic of World War II era and later construction. The floors are covered with vinyl sheet flooring in kitchen and bath, and marbled asphalt (?) tiles in the other rooms. The interior doors are typically of the wooden hollow-core type. The room configuration, as well as the built-in features such as kitchen counters and cabinets, appear to be original and unaltered.

Tractor Shed

The tractor shed is a one-story, wood framed structure with a side gabled roof and board and batten exterior cladding (Figures 2-7 and 2-8). Originally used for farm equipment storage, the shed is rectangular in plan, measuring 32 x 20 feet. It rests on a cast in place concrete foundation. The structure is oriented with its long, eave, sides east-west, and there are three equipment bay doors facing northward toward the dwelling and onto a graveled driveway. These two leaf side-swing doors are crafted of vertical tongue and groove boards and secured with strap hinges. They occupy the entire elevation and constitute the only wall openings in the structure. The low sloped gabled roof is covered with corrugated steel panels and has moderately overhanging open eaves with exposed rafter tails. An open sided shed with steel pipe roof supports attached to the west end of the building appears to be the only substantial alteration to the original building.

The interior of the tractor shed offers an open clear-span space. The walls are unfinished wood boards with the structural framing left exposed. Framing members are typically 2” x 4” and 2” x 6” lumber with diagonal bracing. The ceiling is open and the “V” trusses supporting the roof are exposed. The shed has a dirt floor.

Figure 2-7. 4515 Copland Drive, tractor shed, east and north elevations.

Figure 2-8. 4515 Copland Drive, tractor shed, north elevation.

3.0 Environmental Impacts

3.1 Standards of Significance

Adopted standards of significance that are applicable to cultural resources are provided in the State *Guidelines for Implementation of the California Environmental Policy Act* (2007).

3.1.1 Historical Resources

As defined by Section 15064.5(a) of the *CEQA Guidelines*, the term "historical resource" includes the following:

A resource listed in, or determined eligible for, listing in the California Register of Historical Resources (PRC Sections 5024.1);

A resource included in a local register of historical resources, or identified as significant in an historical resource survey meeting the requirements Section 5024.1(g) of the PRC. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant;

Any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency's determination is supported by substantial evidence in light of the historical record.

Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets at least one of the four criteria for listing on the California Register of Historical Resources (PRC Section 5024.1[a]).

1. It is associated with events that have made a significant contribution to the broad patterns of California history and cultural heritage;
2. It is associated with the lives of persons important in our past;
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, important information in prehistory or history.

Historical significance may be determined at the national, state, or local levels. In order for a property to qualify for listing in the National Register of Historic Places (NRHP), the California Register of Historical Resources, or as a locally significant property, it must meet one or more of the identified criteria and retain sufficient integrity to continue to evoke the sense of place and time with which it is historically associated. The criteria for historic designation, as well as factors which affect the property's potential to meet these criteria, are discussed below.

National Register of Historic Places

The National Register of Historic Places is the official list of properties recognized for their significance and deemed worthy of preservation. The Criteria for Evaluation offer "an authoritative guide to be used by federal, state, and local governments, private groups, and citizens to identify the nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment" (36CFR60.2). As established by the National Historic Preservation Act of 1966, to be listed in the National Register, or determined eligible for listing, properties must meet certain criteria for historical significance. Qualities of significance may be found in aspects of American history, architecture (interpreted in the broadest sense to include landscape architecture and planning), archaeology, engineering, and culture. A property is eligible for the NRHP if it is significant under one or more of the following criteria:

A. It is associated with events that have made a significant contribution to the broad patterns of our history; or

B. It is associated with the lives of persons significant in our past; or

C. It embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or possess high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction; or

D. It has yielded, or may be likely to yield, information important in prehistory or history.

To be eligible, qualities of integrity must also be evident in the resource, measured by the degree to which it retains its historic location, design, setting, materials, workmanship, feeling, and association. In general, the resource must be 50 years of age to be considered for the NRHP, although there are exceptions and overriding considerations to the criteria.

The NRHP criteria have been employed as a model for the California Register of Historical Resources (California Register), as well as many local preservation ordinances, and provide the highest standard for evaluating the significance of historical resources. While a resource may still be considered historically significant at a local or state level even if it does not meet the NRHP criteria, one that does is clearly significant.

California Register of Historical Resources (CRHR)

As provided in California Public Resources Code Section 5020.4, the California Legislature established the CRHR in 1992. The CRHR is used as a guide by state and local agencies, private groups, and citizens to identify the state historical resources and to include which properties are to be protected, to the extent prudent and feasible, from substantial adverse change. The CRHR, as instituted by the California Public Resources Code, automatically includes all California properties already listed in the NRHP. It also includes those formally determined to be eligible for listing in the NRHP (Categories 1 and 2 in the State Inventory of Historical Resources), as well as specific listings of the State Historical Landmarks and in the State Inventory of Historical Resources, and specific listings of State Historical Landmarks and State Points of Historical Interest. The CRHR may also include various other types of historical resources that meet the criteria for eligibility, including the following:

- Individual historic resources;

- Resources that contribute to a historic district;
- Resources identified as significant in historic resource surveys; or
- Resources with a significance rating of Category 3 through Category 5 in the State Inventory (Categories 3 and 4 refer to potential eligibility for the NRHP; Category 5 indicates a property with local significance).

The CRHR follows the lead of the NRHP in utilizing the 50-year threshold. A resource is usually considered potentially historically significant after it reaches the age of 50 years. This threshold is not absolute, but was selected as a reasonable span of time after which a professional evaluation of historical value and importance can be made.

County of Ventura Historic Designation

Section 1365-5 of the Ventura County Cultural Heritage Ordinance establishes the criteria for designation of Cultural Heritage Sites. The Ordinance establish three levels of County historic designation, Landmarks, Sites of Merit, and Points of Interest. The criteria formulated for County Landmark listing correspond closely with criteria established for State and National Register eligibility. To be eligible for County Landmark, Site of Merit, or Point of Interest designation, a property must satisfy at least one of the following criteria:

Landmarks

(1) It exemplifies or reflects special elements of the County's social, aesthetic, engineering, architectural or natural history;

(2) It is associated with events that have made a significant contribution to the broad patterns of Ventura County or its cities, regional history, or the cultural heritage of California or the United States;

(3) It is associated with the lives of persons important to Ventura County or its cities, California, or national history;

(4) It has yielded, or has the potential to yield, information important to the prehistory or history of Ventura County or its cities, California or the nation.

(5) It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values;

(6) Integrity: Establish the authenticity of the resource's physical identity by evidence of lack of deterioration and significant survival of the characteristics that existed during its period of importance. This shall be evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling and association.

Sites of Merit

(1) Sites of historical, architectural, community or aesthetic merit which have not been designated as Landmarks or Points of Interest, but which are deserving of special recognition; and

(2) County approved surveyed sites with a National Register status code of 5 or above.

Points of Interest

(1) That is the site of a building, structure or object that no longer exists, but was associated with historic events, important persons or embodied a distinctive character or architectural style; or

(2) That it has historical significance, but has been altered to the extent that the integrity of the original workmanship, materials or style has been substantially compromised; or

(3) That the site of a historic event which has no distinguishable characteristics other than that a historic event occurred at that site, and the site is not of sufficient historical significance to justify the establishment of a landmark.

City of Ventura Historic Designation

The City of Ventura's Historic Preservation Regulations are presented in Chapter 24.455 of the City's Municipal Code. The Regulations establish three levels of local historic designation, Landmarks, Points of Interest, and Historic Districts. The criteria formulated for Landmark listing correspond closely with criteria established for State and National Register eligibility, as follows:

Landmark

Any real property such as building, structure, or archaeological excavation, or object that is unique or significant because of its location, design, setting, materials, workmanship or aesthetic feeling, and is associated with:

(a) Events that have made a meaningful contribution to the nation, state or community;

(b) Lives of persons who made a meaningful contribution to national, state or local history;

(c) Reflecting or exemplifying a particular period of the national, state or local history;

(d) Embodying the distinctive characteristics of a type, period or method of construction;

(e) The work of one or more master builders, designers, artists or architects whose talents influenced their historical period, or work that otherwise possesses high artistic value;

(f) Representing a significant and distinguishable entity whose components may lack individual distinction; or

(g) Yielding, or likely to yield, information important to national, state or local history or prehistory.

Point of Interest

Any real property or object:

(a) That is the site of a building, structure or object that no longer exists but was associated with historic events, important persons, or embodied a distinctive character of architectural style;

(b) That has historic significance, but was altered to the extent that the integrity of the original workmanship, materials or style is substantially compromised;

(c) That is the site of a historic event which has no distinguishable characteristics other than that a historic event occurred there and the historic significance is sufficient to justify the establishment of a historic landmark.

3.1.2 Thresholds for Significant Impacts

3.1.2.1 Historical Resources

The California Public Resources Code (PRC) establishes criteria for determining if an project will result in potentially significant, less than significant, or no impact on the environment (inclusive of historical resources). According to *CEQA Guidelines*, Section 15064.5, a project would have a significant impact on historical resources if it would result in a substantial adverse change in the significance of an historical resource.

Significant effects on historical resources are evaluated by determining the historic status of the resource, the basis for its importance, and then determining the potential for development to affect the characteristics that convey its historic significance. Section 15064.5(b)(1) of the *CEQA Guidelines* defines a significant effect as one that would materially impair the significance of an historical resource.

According to *CEQA Guidelines* Section 15064.5(b)(2), material impairment of a resource's historic significance could result if the project would do any of the following:

- Demolish or materially alter in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the CRHR

- Demolish or materially alter in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to local ordinance or resolution (PRC Section 5020.1(k)), or its identification in an historical resources survey meeting the requirements of PRC Section 5024.1(g) unless a preponderance of evidence establishes that the resource is not historically or culturally significant

- Demolish or materially alter in an adverse manner those physical characteristics of a resource that convey its historical significance and that justify its eligibility for its inclusion on the CRHR, as determined by the lead agency.

If it is determined that an project will result in an substantial adverse change in the significance of an historical resource, then mitigation measures to reduce the impacts to the resource must be implemented.

The CEQA lead agency is responsible for the identification of "potential feasible measures to mitigate significant adverse changes in the significance of an historical resource" and alternatives to demolition. Generally, a project that follows the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* or the *Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* (Weeks and Grimmer 1995), shall be considered as mitigated to a level of less than a significant impact on the historical resource.

3.2 Evaluation of Significance

4515 Copland Drive

Dating to ca. 1942, the residence at 4515 Copland Drive is a very simple example of mid twentieth century Ranch style residential design that displays few stylistic flourishes. The dwelling was reportedly moved to its present location when the 101 Ventura Freeway was constructed in the late 1950s. County Assessor's records indicate that the structure was remodeled in 1955, and this date may correspond with its relocation. There are no building permits available for the structure. Since its relocation, and possibly earlier, the structure is reported to have housed employees of the Broome Ranch. The house retains a high level of design integrity. Discernable alterations to the house are limited to routine maintenance and repair items, such as reroofing and plumbing fixture replacement.

The house at 4515 Copland Drive represents a common builder-designed interpretation of the Ranch style that employs standard construction materials and techniques. The Ranch style became very popular in Ventura and throughout southern California beginning in the late 1930s. This example possesses no characteristics of design that are considered unique or particular to the Ventura area or the Southern California region in general, or that could be considered of high artistic value. For these reasons, and because numerous comparable or superior local and regional examples of this residential style exist – including a group of six identical residences on Laguna Peak Access Road in Camarillo – the structure does not appear eligible for inclusion on the National or California Registers (Criterion A/1) on the basis of its architecture, nor does it meet the criteria for Ventura County or City of Ventura historic designation.

John S. Broome, who owned the property for nearly 55 years and whose employees occupied the dwelling for most of that time, was a major landholder and farmer in Ventura County since the 1940s. Through his farming and other business pursuits, along with his philanthropic activities, Broome made important contributions to the history of Ventura County. Although a significant personality within the community, his association with the subject property is minor. This residence and outbuilding represent an isolated outpost of Broome's farming and ranching activities and are among many tenant dwellings and outbuildings on Broome's extensive holdings. There are many ranch and residential buildings more closely associated with John S. Broome and more central to the daily functioning of his enterprises. Likewise, the 4515 Copland Drive property is not known to be the site of any important historical event, or to be associated with any broad pattern of historical events. For these reasons, the property is not considered eligible for National or California Register listing on the basis of significant historical associations (Criteria B and C/2 and 3). Likewise, it is not eligible for Ventura County Cultural Heritage Site designation or City of Ventura Landmark or Point of Interest designation. As discussed above, the County and City Landmark criteria closely correspond with CRHR eligibility criteria. Therefore, the property is not considered a historical resource under CEQA.

3.3 The Grove Project Impacts

3.3.1. Direct Impacts

Because it is not eligible for listing in the National Register of Historic Places, California Register of Historical Resources, or as a Ventura County Cultural Heritage Site, or City of

Ventura Landmark or Point of Interest, the residence and tractor shed at 4515 Copland Drive are not considered a historical resource under CEQA. Therefore, there will be no direct impacts to historical resources as a result of the project and no mitigation measures are required.

3.3.2. Indirect Impacts

Given that there are no identified historical resources in proximity to the Grove project site, there will be no indirect impacts to historical properties as a result of implementation of the project.

4.0 Conclusions and Recommendations

It is the conclusion of this historical resource evaluation that the 4515 Copland Drive property does not meet the eligibility criteria for national, state, county, or city historic designation. As such, the potential effects of the proposed residential development project on the buildings are considered *less than significant*. No additional documentation or treatment of historical resources is considered necessary at this time.

No archaeological materials were recorded during the course of a cursory walk-over of the property. However, review of historical maps indicated that there was once a dwelling located on the northwestern portion of the parcel. Based upon the background research, it is the conclusion of this investigation that the project has a potential to impact archaeological resources associated with this historic residence. The following recommendations address these potential impacts:

Recommendation 1

A qualified professional archaeologist should conduct a focused survey of The Grove project area before issuing grading permits. If historic or prehistoric archaeological resources or potential resources are identified by the survey, then a qualified professional archaeologist should evaluate the significance of the finds and recommend appropriate mitigation measures for significant resources. The City shall ensure that the project applicant implements these mitigation measures. Mitigation may include, but shall not be limited to, the avoidance of significant and potentially significant resources through alteration of the project design, archaeological monitoring of ground-disturbing activities, and/or subsurface testing and data recovery. Efforts that involve monitoring, testing, or excavation shall be conducted in consultation with the appropriate Native American representatives identified by the Native American Heritage Commission (NAHC).

Recommendation 2

The Grove project will entail adoption of a Specific Plan by the City of Ventura. State Senate Bill 18 (SB 18), specifically Government Code Section 65352.3, adopted in 2004, requires that:

> Prior to the adoption or any amendment of a city or county's general plan, proposed on or after March 1, 2005, the city or county shall conduct consultations with California Native American tribes that are on the contact list maintained by the Native American Heritage Commission for the purpose of preserving or mitigating impacts to places, features, and objects described in Sections 5097.9 and 5097.995 of the Public Resources Code that are located within the city or county's jurisdiction.

Under the provision of SB 18, adoption of a Specific Plan may be considered an amendment to the City's General Plan. Therefore, the City of Ventura should investigate initiation of consultation with the appropriate Native American group(s) prior to adoption of The Grove Specific Plan.

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Personal Communication

Esquivel, David	Resident, 4515 Copland Drive, Ventura.
Johnson, Charles	Librarian, Museum of Ventura County Research Library.
Moss, Kioren	Moss & Associates, Real Estate Appraisers & Advisors. Ventura.
Nichols, Gina	Archivist, U.S. Navy Seabee Museum, Naval Base Ventura County, Port Hueneme.

APPENDIX A

Record Search Results

Appendix 4.6 **1) Geotech Exhibit (Boring Key Map) prepared by Jensen Design dated January 17, 2011; 2) Geotechnical Investigation for the Grove Residential Project prepared by Geolabs-Westlake Village dated August 26, 2005**

GEOLABS-WESTLAKE VILLAGE
Foundation and Soils Engineering, Geology
31119 Via Colinas, Suite 502 • Westlake Village, CA 91362
Voice: (818) 889-2562 (805) 495-2197
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a dba of
R & R Services
Corporation

April 13, 2010
B.N. 9011.001.001

John Broome, Jr.
c/o Moss & Associates
3319 Telegraph Road, Suite 201
Ventura, California 93003-3319

Attention: Kioren Moss, MAI

SUBJECT: Proposal For Update to Geotechnical Investigation,
"The Grove" Residential Project,
25.6 Acres, Copland Drive,
City of Ventura, California

Reference: Geolabs-Westlake Village, August, 26, 2005; Geotechnical Investigation for the Grove Residential Project, 25.8 Acres at Telephone Road North of the 101 Freeway, City of Ventura, California

Ladies and Gentlemen:

Pursuant to your request, we have prepared this proposal for a supplemental update geotechnical report to compliment the referenced geotechnical investigation report our office prepared for the subject property in 2005.

Geotechnical reports are usually considered current for a period of one year. Since the writing of the referenced report, the 2001 California Building Code (CBC) has been replaced with the 2007 CBC. Also, methods of evaluating the potential liquefaction susceptibility of soils with fine-grains have evolved.

We propose to prepare a supplemental update report that will address geotechnical issues related to the changes in the building codes and recent methods of evaluating the liquefaction potential. Our tasks will involve performing a site visit to observe the current condition of the property, engineering analyses, and preparation of a supplemental update report.

We anticipate the work described herein will be approximately $1,000.00. We are prepared to complete our report within two days of being authorized to proceed. Return of an executed copy of the attached Agreement and Work Order may serve as our notice to proceed. We look forward to continuing our work with you on this project. Please do not hesitate to call if you have any questions.

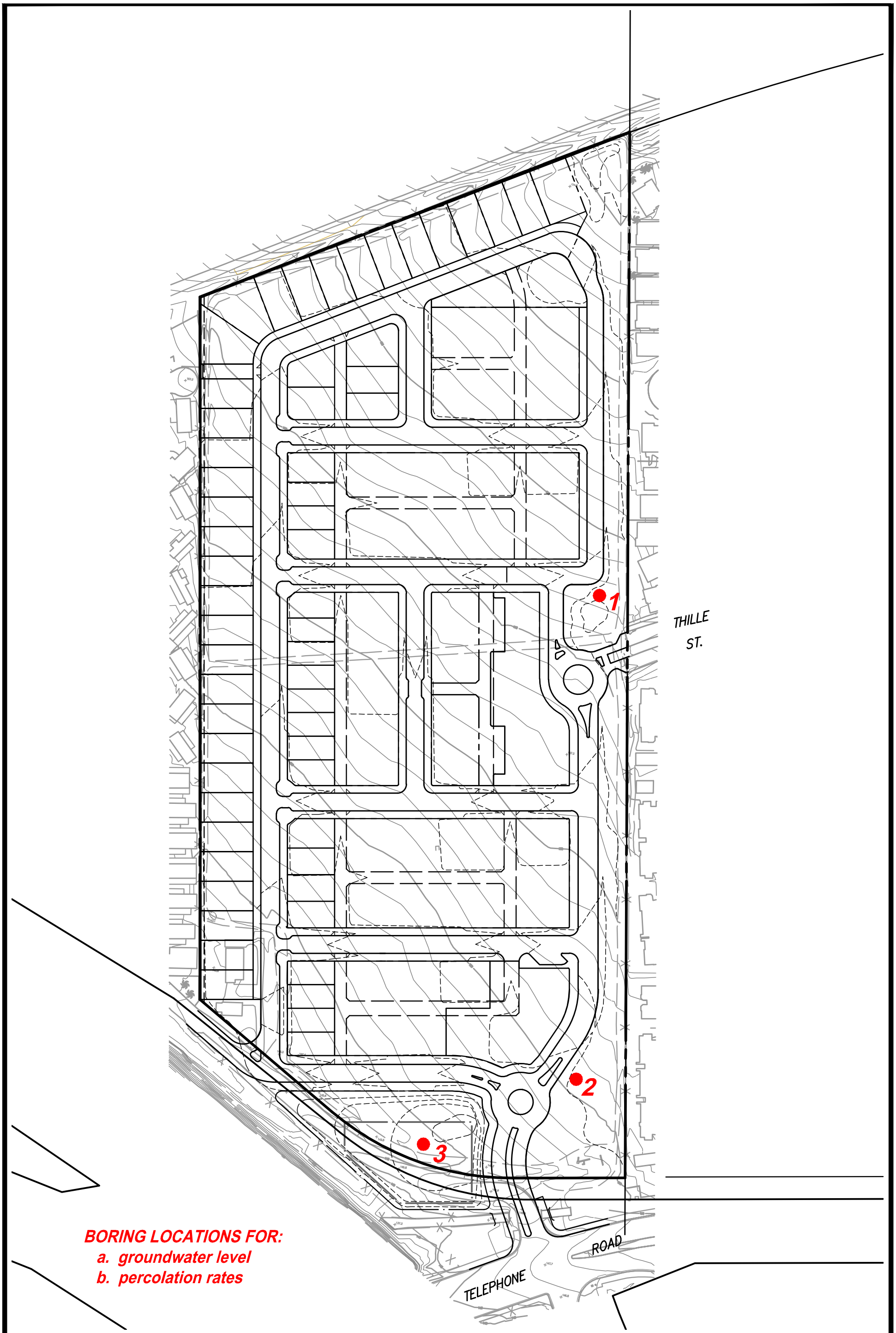
Respectfully Submitted;
GEOLABS-WESTLAKE VILLAGE

Lawrence Stark
G.E. 2772

Ronald Z. Shmerling
President

Enclosure: Agreement and Work Order

XC: (3) Addressee including 1 via fax



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THE GROVE

GEOTECH EXHIBIT

SHEET 1 OF 1

Jan 17, 2011

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GEOLABS-WESTLAKE VILLAGE
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a dba of
R & R Services
Corporation

August 26, 2005
W.O. 9011

John S. Broome
c/o Moss & Associates
3319 Telegraph Road, Suite 201
Ventura, California 93003-3319

Attention: Kioren Moss, MAI

SUBJECT: Geotechnical Investigation for the Grove Residential Project, 25.8 Acres at Telephone Road North of the 101 Freeway, City of Ventura, California

Gentlemen:

In accordance with your request, our firm has undertaken a study of the geotechnical conditions at the subject property. Our purpose was to evaluate the distribution and engineering characteristics of the earth material that occur at the site so that we might assess their impact upon the proposed development of the property.

The scope of work for this project included the following tasks: mapping of the site and its immediate vicinity, logging and sampling of six exploratory borings excavated with a truck-mounted hollow-stem auger, two Cone Penetration Tests (CPT), selected laboratory testing of the retrieved samples, soil engineering analysis of the assembled data, and preparation of this report.

The subject site and surrounding roadways is shown on the Site Vicinity and Alquist-Priolo Map, Plate 1.1. Field data and the approximate locations of borings are shown on the enclosed Plot Map, Plate 1.2. Descriptions of the materials encountered are provided on the enclosed logs (Plates B1 to B6 and CPT1 to CPT2). Pertinent laboratory test results are also provided herein.

SITE CONDITIONS

The site consists of approximately 25.8 acres and is currently being used for agricultural purposes. The subject site is relatively flat with a slope of approximately two percent towards the

southwest (see Plot Map, Plate 1.2). The range of elevation across the site is from a high of 177 feet above mean sea level (MSL), to a low of 142 feet. The property is bound by Copland Drive and Telephone Road to the South, by the 126 Freeway to the north, existing residential trailers on the west, and a block wall separating the site from an existing apartment complex to the east. A one-story residential home is located on the southwest corner of the site. A water-well/pump is located on the southeastern corner of the property with associated irrigation pipelines running along the eastern property line and three east-west trending pipelines extending through the subject property. The well has a state well number of 02N-22W07P-01. The well is in service, providing irrigation for the tomato plants field and produces in excess of 150 gallons per minute (gpm) from a screened interval of 460 to 580 ft.

PROPOSED DEVELOPMENT

It is our understanding the project consists of a residential development that will include 105 lots with single family one-story and two-story town home wood-framed structures. Interior streets and alleyways provide access to the residences.

At this time, it is anticipated that structures will be supported by conventional shallow foundations and concrete slabs-on-grades. For the purposes of this report, maximum anticipated loads are on the order of 4 kips per linear foot for walls and 20 kips for columns.

EARTH MATERIALS

The following earth materials were encountered during the course of our exploration. More detailed descriptions may be found in the accompanying boring and CPT logs (see Plates B1-B6 and CPT 1 –CPT2).

Agricultural Fill: The upper one to four feet of the property appear to have been disturbed by various agricultural activities. These materials consist of dark brown sandy CLAY, SILT, and Silty SAND

with variable rootlets and are typically moist and soft to medium stiff silts and clays and very loose to loose sands.

Alluvium: The subject property is underlain by several hundred feet of poorly consolidated, interlayered silt, clay, and minor sands. The upper 50 feet explored by our borings indicate that the fine-grained silts and clays are the predominant soil type. These materials are generally moist to wet and very soft to very stiff in consistency. Boring B1 in the northwest portion of the site indicated layers of loose to medium dense silty sand at depths of 8 to 12 feet, approximately 25 feet, and 39 to 43 feet. Other thin lenses of sand were noted in the soil profile.

GROUNDWATER

There is an existing 10 inch diameter ground water well on the site, which was drilled in July 2000 (Dave Paneros of the Ventura County Public Works Department and property owner Mr. Broome [personal communications]). In 2001 an 8 inch sleeve was placed inside the existing 10 inch casing. The well on site has a state well identification number of 02N-22W07P-01, has a total depth of 580 feet, has a wrapped steel screened interval from 460 to 580 feet in the confined, discontinuous Fox Canyon Aquifer (San Pedro Formation), and has a current pumping rate of 150 to 170 gallons per minute (gpm). The aquifer is capable of producing 300 to 500 gpm maximum yields, according to historical pump tests conducted on the aforementioned well. The depth to groundwater was measured at 141 feet following the installation of the 8 inch steel liner placed in 2001.

Groundwater was encountered in all six of the borings and ranged from 16.5 feet below the ground surface (ft-bgs) in B-2 to 4 ft-bgs in B-4 (see Plate 1.2). These groundwater measurements are attributed to perched groundwater conditions. The high historic water depth for the site is considered 10 feet; see Appendix A (CGS, 2005, Plate 1.2).

LABORATORY TESTING

Undisturbed and bulk samples of soil materials encountered at the site were collected during the course of our field work. Selected laboratory tests completed on the retrieved samples are described below:

Moisture-Density

The field moisture content and dry unit weight were determined for each undisturbed sample. Dry unit weight is expressed in pounds per cubic foot and the moisture content represents a percentage of the dry unit weight. These test data are presented in the attached boring logs B1 to B6.

Compaction and Expansion Tests

To determine the compaction characteristics of the onsite materials, compaction tests are performed in accordance with ASTM D 1557-00. The maximum dry density is reported in pounds per cubic foot and the optimum moisture content as a percentage of the maximum dry density. Expansion index tests were performed in accordance with the criteria in U.B.C. 18-2. The results of these tests are included in Table 1 shown below.

Laboratory Test Data - Table 1

Sample	Description		Maximum Dry Density PCF	Optimum Moisture Content %	Expansion Index
B1@5-10'	Silty SAND		123	11	24
Sample	Description	Gravel %	Sand %	Silt %	Clay %
B1@10'	Silty SAND	1	43	35	8
B1@15'	SILT	0	26	57	17
B1@25'	Silty SAND	1	39	34	6
B1@30'	SILT	0	12	58	30
B1@35'	SILT	0	39	51	10
B3@20'	SILT	0	14	46	30
B4@25'	CLAY	0	11	53	36
B4@40"	Sandy CLAY	0	15	54	31
B4@50'	CLAY	0	27	51	22

Shear Test

A shear test was performed in a Direct Shear Machine of the strain control type. The rate of deformation is approximately 0.01 inches per minute. Shearing occurred under a variety of confining loads in order to determine the Coulomb shear strength parameters. The tests were performed on undisturbed samples in an artificially saturated condition. The test results are presented graphically on Plate S-B1.5.

Consolidation Test

Settlement predictions of the soil's behavior under load are made on the basis of consolidation tests. A one inch high sample is loaded in a geometric progression and the resulting deformation is recorded at selected time intervals. Porous stones are placed in contact with the sample (top and bottom) to permit addition and release of pore fluid. The sample is inundated at a selected load during the progression. Results are plotted on the enclosed Consolidation-Pressure Curves (Plates C-B1.2.5 to C-B6.7.5). The majority of the Consolidation Test results indicate less than one percent hydroconsolidation, however the sample at 2.5 ft-bgs in boring B-1 indicates a hydroconsolidation of 4 percent with a normal applied load of 1 kips/ft^2.

Particle Size Analysis

The distribution of various particle sizes (relative to the Unified Soil Classification System [USCS]) or soil component in selected representative samples were determined using both mechanical sieves and hydrometer tests. The percentage and distribution of particles larger than a #200 sieve (0.075mm) are determined using mechanical processes. Particle distributions for fine-grained soils are determined using hydrometer methods. The particle distribution is presented as the relative percentages of gravel, sand, silt, and clay particles in each sample tested. The results are presented on the attached Particle Size Analysis Plates PS1 and in Table 1.

Sulfate

A representative soil sample of the near surface soils was analyzed for soluble sulfates. The soil concentration of water soluble sulfates was analyzed to be 317 parts per million (ppm). When soluble sulfate test results exceed a concentration of 1000 ppm (0.10 percent), the UBC designates specific requirements for concrete that is exposed to sulfate. These requirements are shown on the enclosed UBC Table 19-A-4.

TABLE 19-A-4 REQUIREMENTS FOR CONCRETE EXPOSED TO SULFATE-CONTAINING SOLUTIONS

SULFATE EXPOSURE	WATER-SOLUBLE SULFATE (SO_4) IN SOIL, PERCENTAGE BY WEIGHT	SULFATE (SO_4) IN WATER, ppm	CEMENT TYPE	Maximum Water-Cementitious Materials Ratio, by Weight, Normal-Weight Aggregate Concrete[1]	Minimum F'c Normal Weight and Lightweight Aggregate Concrete, psi[1] x 0.00689 for MPa
Negligible	0.00 - 0.10	0 - 150	--	--	--
Moderate[2]	0.10 - 0.20	150 - 1,500	II, IP(MS), IS(MS)	0.50	4,000
Severe	0.20 - 2.00	1,500 - 10,000	V	0.45	4,500
Very severe	Over 2.00	Over 10,000	V plus pozzolan[3]	0.45	4,500

1 A lower water-cementitious materials ratio or higher strength may be required for low permeability or for protection against corrosion of embedded items or freezing and thawing (Table 19-A-2).
2 Seawater
3 Pozzolan that has been determined by test or service record to improve sulfate resistance when used in concrete containing Type V cement.

In summary the near surface soil conditions were found to be moderately deleterious to concrete.

Soil Corrosiveness

A representative sample of the earth materials encountered at the site was tested for resistivity. The test method utilized is in conformity with the procedures outlined in California Test 532/643. Resistivity of soils is inversely proportional to corrosiveness. Thus, the analysis helps in determining whether the soils may have a deleterious affect on underground metallic structures. A generally accepted correlation between resistivity and soil corrosiveness toward metals is provided:

Resistivity (Ohm-Centimeter)	Corrosiveness
< 1,000	Severely Corrosive
1,000 - 2,000	Corrosive
2,000 - 10,000	Increasingly Moderate
> 10,000	Increasingly Mild

The results of this test are included in Appendix B. The near surface soils were measured as having an "as-received" resistivity of 110,000 ohm-cm, which is considered increasingly mild corrosive, and a saturated resistivity of 1,100 ohm-cm, which are corrosive soils.

FAULTING AND SEISMICITY

The subject site contains no known active or potentially active faults, nor is it within an Alquist-Priolo Regulatory Hazard Earthquake Fault Zone. Therefore, the potential for ground rupture is considered to be very low. However, the property is situated within the seismically active Southern California region and ground shaking is likely to occur due to earthquakes caused by movement along nearby faults.

One method of seismic design is to utilize the Static Force procedure (structures less than five stories) presented in the Uniform Building Code (UBC), which can be used to estimate base shear/on-site acceleration based upon site location, occupancy classifications, and the planned structural system. For the 1997 UBC this site in Zone 4, has a Seismic Zone Factor (Z) of 0.4 (Tbl 16-I), the Soil Profile Type is considered S_D (Tbl 16-J), the Seismic Source Type is considered B (Tbl 16-U), and the Near Source Factors are estimated as N_a of 1.2 and N_v of 1.5 (Tbl 16-S & 16-T). Analysis summary is attached in the Seismicity Analysis, Appendix A.

Another method of seismic design is to assess the potential on-site ground acceleration based upon a site's proximity to specific, known faults. This relies upon prediction of a maximum earthquake for each fault considered, relationships that characterize the diminution of ground response with distance from the causative event, and relationships that assess impact of site-characteristics upon ground response. Two commonly used methods of estimating possible on-site accelerations are the deterministic seismic hazard analysis (DSHA) method and the probabilistic seismic hazard analysis (PSHA) method. We provide the preliminary results of probabilistic studies

performed by the CGS (CGS, SHZR-052). The results of their analyses are discussed below. Excerpts from SHZR-052 are attached in the Seismicity Analysis, Appendix A.

Probabilistic Seismic Hazard Analyses

We have employed the "Simple Prescribed Parameter Value" Method (SPPV) for estimating the peak ground acceleration (PGA) for a 10 percent exceedance probability for an exposure period of 50 years (UBC Design-Basis Earthquake, 475 year return period). As discussed in CGS Seismic Hazard Evaluation Reports, the attenuation relationships of Boore et.al. (1997), Campbell (1997), Sadigh et.al. (1997), and Youngs et.al. (1997) were utilized to generate PGA maps. We have reproduced Figures from Seismic Hazard Evaluation Report 052 (for the Oxnard 7.5 Minute Quadrangle) in Appendix A to illustrate the project location with respect to SPPV PGA values for alluvium conditions. As seen, a peak ground acceleration of 0.64g is estimated for a UBC design-level event. A design earthquake magnitude of Mw=6.9 is the predominant earthquake, per Figure 3.4 of Seismic Hazard Zone Report 052. Figure 3.5 of SHZR 052 indicates the PGA magnitude-weighted to an Mw=7.5 earthquake is estimated as 0.50g (this is referred to as "liquefaction opportunity").

Seismic Discussion

The methodology in the Uniform Building Code intends to protect and preserve life and limb. It has, apparently, been successful in that regard. On that basis, we recommend minimum structural design be in compliance with the seismic design provisions of the UBC. Design per the UBC (and hence adoption of the philosophy that life and limb need be protected) is commensurate with the local building ordinance. Being that higher standards of design (i.e. that intend to minimize property damage in the case of a much less likely event) have not been adopted by the governing agency (which is responsible for setting such standards), use of a higher acceleration (than provided by the

UBC) is discretionary.

LIQUEFACTION AND RELATED HAZARDS

Liquefaction is a condition where the soil undergoes continued deformation at a constant low residual stress due to the build-up of high porewater pressures. The possibility of liquefaction occurring at a given site is dependent upon the occurrence of a significant earthquake in the vicinity; sufficient groundwater to cause high pore pressures; and on the grain size, relative density, and confining pressures of the soil at the site.

The subject site, like other sites in Southern California, is expected to be subjected to significant shaking from earthquakes. The northwest portion of the site is located within a Seismic Hazard Zone for liquefaction hazards (Seismic Hazard Zone Map of the Oxnard 7.5 Minute Quadrangle, Plate 1.3).

Blow counts from B1 were compared to CPT1 to assess the applicability of typical CPT-SPT correlations for use in liquefaction analyses. The data from CPT1 matches well with the findings from boring B1 (See Appendix C). Due to the superior stratigraphy obtained from CPT soundings, we have used the CPT soundings for analyses of liquefaction potential. The estimated historic high ground water depth of 10 feet or current groundwater level (whichever is higher) was utilized to evaluate the potential for liquefaction at the site. Based on our analyses, the northwest portion of the site has sand lenses and layers that have a potential to liquefy during a design-level earthquake. The balance of the site does not appear to have a significant potential for liquefaction. These findings appear to correlate with the zoning of the State Seismic Hazard Zone in the west portion of the property. The results of our analysis for liquefaction are presented in Appendix C.

Liquefaction-Induced Hazards

In the liquefied condition, soil may deform with little shear resistance. The amount of soil

deformation following liquefaction depends on the looseness of the material, the depth, thickness, and areal extent of the liquefied layers, the ground slope, and the distribution of loads applied by structures. When liquefaction is accompanied by ground displacement or ground failure, it can be destructive. Adverse effects of liquefaction can include ground oscillation, lateral spreads, flow failures, loss of bearing strength, settlement, and increased pressures on retaining walls. The following section provides a brief description of each of these effects.

Ground Oscillation

Ground oscillation can occur where the ground surface above liquefiable soils is too flat to allow lateral displacement. Liquefaction at depth may decouple overlying soil layers from the underlying soils, allowing the upper soil to oscillate back and forth and up and down and causing fissures to open and close. These oscillations may fracture rigid structures such as pavement and pipelines.

Lateral Spreads

Lateral spreads involve the lateral displacement of large surface blocks of soil due to liquefaction of subsurface soil layers. Lateral spreads generally develop on gentle slopes (most commonly less than 3 degrees) and move toward a free face such as a stream or river channel. Horizontal displacements can range up to several yards. The displaced ground can break up internally causing fissures, scarps, and grabens to form on the surface. Lateral spreads can disrupt foundations, pipelines, and other utilities.

Flow Failures

Flow failures are catastrophic lateral soil movements in which large masses of soil are displaced laterally dozens of yards or more, often at large velocities. Flows develop in loose saturated sands or silts on relatively steep slopes, usually greater than 3 degrees.

Loss of Bearing Strength

Liquefaction of near surface soils can cause these soils to lose strength and experience large deformations. Structures supported on these soils may literally settle and tip. Buried tanks and piles may be buoyed up through the liquefied soil.

Settlement

Settlements (relatively small compared to those that could occur from loss of bearing strength) can occur as pore-water pressures dissipate and consolidate subsequent to liquefaction. These settlements can be damaging, though they tend to be less so than the aforementioned effects from lateral spreading, flow failures, or bearing failures. Localized liquefaction-induced settlements can also be brought about by the eruption of sand boils.

Discussion of Liquefaction Hazard Assessment

Based upon our data, coarse-grained sedimentary soils and groundwater are present at the site within the upper fifty feet of the soil profile. Analyses of the subsurface data indicates the layers and lenses of the coarse grained soils have sufficiently low relative densities to be susceptible to liquefaction during an earthquake equivalent to, or larger than, the design level earthquake. These susceptible coarse-grained soils were noted in our soundings CPT1, but were basically absent from CPT4. The liquefiable layers in CPT 1appear to have significant thickness, extending from 10 to 13 feet, and 25 to 27 feet (see Appendix C).

To address the possible impacts of liquefaction, the practice of geotechnical engineering currently has available methods of approximating the potential liquefaction-induced settlement, lateral spreading, and the possibility of surface manifestations.

Liquefaction-Induced Settlement Potential

The potential for liquefaction-induced settlement has been evaluated using the procedures

proposed by Tokimatsu and Seed (1987). The site's soil profiles contain mostly silt, clay and minor sandy soils. The results of these analyses indicate potential seismic settlement during a design level earthquake may be on the order of 3 inches near our boring B1 and CPT1 and settlement on the order of ¼ inch near CPT4. This difference is due to the greater amount of sand in the area of the site near boring B1 and CPT1. The results are presented in Appendix C.

These calculations attempt to estimate total settlement. Differential settlement due to lateral heterogeneities in the soil profile would obviously be only a fraction of the total, and that would be buffered by the planned fills. The State Seismic Hazard Guidelines recommend the differential settlement be considered to be as much as 2/3 of the total settlement, with a common value of ½ (Martin & Lew, 1999). Considering the probability of a design level earthquake, it is our opinion that the potential for differential settlement resulting from seismically induced settlement to exceed estimations as a result of other phenomenon is small.

Surface Manifestations, Lateral Spread, Ground Oscillation

The liquefaction analyses indicate a potential for liquefaction in the upper 30 feet of the soil profile in the northwest area of the site. Therefore, we have further evaluated the potential impacts of liquefaction to determine the potential for ground surface disturbance from lateral spreading, ground oscillation, and other manifestations such and sand boils which could create local areas of bearing loss. Based on our analysis using empirical procedures proposed by Youd (2002), the northwest portion of the site has a potential for lateral spreading. At this time the analysis indicates a potential of 1.5 feet of lateral spreading for the sloping ground case (the applicable condition). This lateral spreading may allow for localized areas of bearing loss during a design-level event in areas of weakened soil such as areas where sand boils or fissures occur. At this time, the area considered susceptible is the area within the State designated Seismic Hazard Zone. The potential for these

effects can be significantly reduced if the loose sandy alluvium in the upper section of the soil profile (noted at depths of 10 to 13 feet in CPT1) could be replaced with compacted fill during grading or strengthened by alternative means.

HYDROCONSOLIDATION POTENTIAL

Hydroconsolidation is a condition where dry or moist soils undergo settlement upon being wetted. In many cases no additional surcharge load is necessary to trigger the hydroconsolidation. Typically, soils that are susceptible to hydroconsolidation include soils containing silt and clay particles, or soils cemented with such agents as iron oxide or calcium carbonate. The geologic environment for these soils is typically loose fills, altered wind-blown sands, or colluvium of a loose consistency.

The potential for hydroconsolidation has been evaluated based upon the results of consolidation tests performed on samples taken from the excavated borings. These samples were inundated at normal loads similar to their estimated existing overburden pressures. The amount of consolidation that occurs due to the inundation (without a change in the normal load) is assumed to reflect the potential for in-place hydroconsolidation if these materials were to become inundated.

The site is in an area mapped as young alluvium deposits. In most of the samples the consolidation is less than 1/2 percent when water is introduced to the sample. However, a 4 percent consolidation exists in boring B-1 at 2.5 feet. The samples tested have degrees of saturation of 69 % or greater below 5 ft in depth. Typically, materials with these levels of saturation are not considered to have a significant risk of hydroconsolidation. We propose to remove loose compressible near surface soils. The alluvial materials to remain after recommended soil removals during grading are considered to have a low potential for hydroconsolidation.

DISCUSSION AND RECOMMENDATIONS

The following discussion is based upon our understanding of the planned development and the site conditions depicted herein. Our office should be notified immediately should the planned development be altered and/or new information regarding the site conditions became known. Recommendations are provided for your consideration.

The northwest portion of the site is within a State designated Seismic Hazard Zone (Plate 1.3). This portion of the site has a potential to experience significant liquefaction-induced hazards such as lateral spreading and surface manifestations. We recommend that the near surface loose sandy soil (noted in CPT1 between depths of 10 and 13 feet) be removed and replaced with compacted fill. The habitable structures within this portion of the site should be designed for the potential effects of liquefaction (two inches of settlement, considering the aforementioned removals; three inches of settlement and lateral spreading if the deeper removals are not performed). The lateral extents of this area should be confirmed during the design phase for the "Remainder Parcel". Supplemental field work is recommended to further delineate the lateral extents of this liquefiable material.

Clearing and Grubbing

All brush and vegetation within grading areas should be cleared prior to grading. Vegetation should be stockpiled and not incorporated into engineered fill. No vegetation entrainment or blending should be performed.

Removals for Compressible Soils

The upper alluvial deposits underlying the subject property are generally compressible and subject to settlement should excessive loads (fill surcharge, heavy structures) be applied. According to plan review for the southern portion of Lot 38 (Phase 1), it is our understanding that future grades

will remain relatively similar to the present grades with cuts as great as 2 feet on the eastern side and fills as great as 5 feet on the southwestern corner. The future structures shall consist of lightly-loaded residential construction. The northern portion of Lot 38 (Phase 2) is not currently being considered in the plans. Considering the forgoing, the following recommendations apply.

Removals of compressible soils should be performed to provide a minimum of 4 feet of compacted fill beneath the bottom of footings or 7 ½ feet below existing grade, whichever is deeper. Removals should be extended laterally outside a structure's perimeter a horizontal distance equal to the thickness of the fill below the footing, but not less than 5 feet.

Grading - Engineered Fills

The following recommendations pertain to the placement of, and preparation for, engineered fills;

1. The on-site soils are suitable for use as structural fill. Any import materials that are to be used as structural fill should be approved by this office prior to placement.

2. Shrinkage refers to the lesser volume of fill resulting from a given volume of excavation. Overall shrinkage is anticipated to be between 15 % and 20 %.

3. Subsidence includes the general lowering of the ground due to in-place compaction by construction equipment. Subsidence is anticipated to range from 2.0 to 3.0 tenths of a foot.

4. All vegetation, trash debris or other deleterious material should be stripped from the area to be graded. Soils bearing sparse grasses may be thoroughly mixed with at least ten parts clean soil and incorporated into the engineered fill. Other materials should be wasted from the site.

5. Compressible soils that lie within the area to be filled should be removed to relatively incompressible material and replaced as properly compacted fill. Portions of the compressible materials that are sufficiently thin may be scarified, watered or air dried to approximately the

material's optimum moisture content, and compacted in-place. A combination of removal and recompaction in-place may be used, providing the recommended compaction is obtained throughout the recommended depth interval. Based upon the materials exposed in our exploratory excavations, we anticipate the removal to extend to an average depth of approximately 7 1/2 feet with removals as deep as 13 feet in the northwest portion of the "Remainder Parcel". Wet materials within areas of removals may require excavation with an excavator (as opposed to scrapers). Rock, geotextile, or special grading techniques may be necessary to stabilize removal bottoms to commence fill operations.

6. Exposed surfaces should be scarified, moistened or air dried as appropriate, and compacted to 90% of the material's maximum dry density prior to placement of fill.

7. We recommend a uniform blanket of compacted fill be created for support of structural footings. The fill cap should extend to at least four feet below the base of proposed footings and a horizontal distance beyond the foundation equal to the thickness of the fill below the foundation, or five feet beyond their perimeter, whichever is greater. Special consideration should be paid to locations where property lines or existing improvements (buildings, retaining walls, fences, power poles, etc.) interfere with the creation of the desired fill cap. Such conditions should be brought to the attention of this office so that the specific site conditions may be evaluated and recommendations provided. Depending upon the circumstances, special excavating techniques may be employed (i.e. slot cutting), alternative foundation designs may be used (i.e. grade beams supported by pad footings or piles), or the compaction standard may be increased. The preliminary plans indicate a property line wall will be constructed along a portion of the tract boundary. We recommend that fill to support these boundary walls be compacted to at least 95% relative compaction if off-site grading can not be performed.

8. Areas that are to be paved should be scarified to at least 12 inches below the existing or finished grade (whichever is deeper), brought to near the material's optimum moisture content, and compacted to at least 90% relative compaction.

9. Fill materials should be placed in thin lifts, watered to near the material's optimum moisture content, and compacted to at least 90% relative compaction prior to placing the next lift.

10. The 90% relative compaction standard applies to the face of fill slopes. This may be achieved by overfilling the constructed slope and trimming to a compacted finished surface, rolling the slope face with a sheepsfoot, or any method that achieves the desired product.

11. All grading should comply with the grading specifications and requirements of the local governing agency.

Dewatering

Dewatering may be required in areas where the groundwater levels are near the depths of the planned removals. The need for dewatering is likely to vary based on the time of year and time since rain or irrigation. We recommend that irrigation be discontinued as far ahead of the grading as possible. At this time our data suggests that if dewatering is necessary, a relatively shallow sump and pump system may suffice. The bottoms of removal excavations may be wet. Rock and/or geotextile may be needed to stabilize the bottom of removals to begin the fill process. Special grading techniques may be necessary to excavate and fill the removals.

FOUNDATION RECOMMENDATIONS

Habitable structures may be supported on either post-tensioned foundations or conventional shallow foundations. The following sections provide preliminary foundation recommendations for design use. These recommendations should be updated at the completion of rough grading to reflect the as-built condition at that time.

POST-TENSION FOUNDATIONS

Different methods are used to account for the potential effects of expansive soils and differential settlement. One method of mitigation, the California Slab Method (Spanability Method) utilizes deepened footings and pre-swelling of foundation soils. UBC Standard 18-III (1997), outlines another method, the Post-Tensioned Institute (PTI) Method, which relies upon increased stiffening of post-tension slabs to resist significant soil stresses due to variations caused by climatic conditions. The Spanability Method attempts to retard soil movement, while the PTI Method attempts to minimize slab deflection in the face of soil movement. Recommendations for both post-tension design methods are provided herein.

California Slab (Spanability) Method

This method reduces the potential for the soil to exert expansion-induced stresses by impeding the lateral migration of near-surface moisture. This method has proven successful. When utilizing deepened footings and pre-saturation techniques, the structural design need not employ the methodology from UBC Standard 18-III.

Geotechnical based input parameters for design of this foundation system are based, in part, upon the expansive properties of the soils near pad grade. Samples judged representative of these soils were determined to have an expansion index in the range of 21-50. "K" values, span criteria, recommended minimum perimeter footing embedment and pre-saturation guidelines that are commensurate with each range of soil expansiveness are provided in the accompanying table.

Expansion Index	Typical "K" Values	Span Criteria	Exterior Footing Depth	Pre-saturation Depth
0 - 20	900 - 200	4' - 6'	12"	12"
21 - 50	200 - 100	6' - 7'	15"	21"
51 - 90	100 - 40	7' – 9'	21"	27"

Post-Tensioning Institute Method

The potential for differential uplift in this method can be evaluated using the Uniform

Building Code (UBC) Section 1816, based on the design specifications of the Post-Tension Institute. The following table presents suggested minimum coefficients to be used.

Suggested Coefficients

Thornthwaite Moisture Index	-20 in/yr
Depth to Constant Soil Suction	5 feet
Constant Soil Suction	3.25 to 3.67 pf

Based on the above parameters, the following values were obtained from figures or tables in the UBC Section 1816. The values may not be appropriate to account for possible differential settlement of slabs due to other factors. If a stiffer slab is desired, higher values of Y_m and E_m can be considered.

Parameter	EI 0 to 50	EI 51 to 90	EI 91 to 130
E_m Center Moisture Variation Distance	5.5 feet	5.5 feet	5.5 feet
E_m Edge Moisture Variation Distance	2.5 feet	2.7 feet	2.7 feet
Y_m Center Lift	1.5 in.	2.5 in.	3.0 in.
Y_m Edge Lift	0.25 in.	0.5 in.	0.75 in.

These edge lift values are based on the effects of climatic variations only, as specified in the UBC. In an attempt to account for the potential effects of irrigation, we recommend that horizontal moisture barriers in the form of deepened perimeter beams be used to retard non-uniform surface moisture migration beneath the slab. The bottom of the deepened perimeter beams should be designed to resist tension, using cable or reinforcement per the Structural Engineer. Pre-swelling of the soils must also be used to minimize uplift after construction. For perimeter beam depths and pre-saturation criteria see the previous table in the California (Spanability) Method Section of this report.

The design criteria are considered minimums and may not be adequate to represent worst-case conditions such as adverse drainage and/or improper landscaping and maintenance. Additional protection may be provided by adjusting the edge lift parameters for a greater Thornthwaite Moisture Index value (to simulate irrigation or wetter conditions than the presumptive climatic conditions). This is discretionary. Additional parameters for this modification can be provided upon request.

General Post-Tension Discussion

The allowable bearing capacity may be taken as 1000 PSF at pad grade and 1500 PSF at twelve inches embedment and with a minimum width of twelve inches. This may be increased by one-third for short duration loading, such as by wind or seismic forces. Care should be exercised to see that all spoils from the slab subgrade are removed or property compacted.

Pre-saturation of the foundation soils should be initiated well before concrete is scheduled to be placed. Care should be taken to see that the water has properly penetrated the soil. Last minute flooding is not a good practice. Excess water remaining in the target pre-saturation zone at the time of concrete placement will penetrate further into the soil, possibly causing additional expansion and uplift of the curing concrete.

A minimum of two inches of sand should be placed beneath the slab. A vapor barrier (i.e., ten mil visqueen) should be installed where moisture penetration of the slab is undesirable.

Other aspects of the design, including but not limited to minimum reinforcement, footing embedment and the need for interior footings, are to be determined by the project structural Engineer. However, cold joints (in deepened footings and/or sunken rooms) should not be allowed.

Conventional Foundation Systems

Continuous or pad footings may be used to support the proposed structures. In order to achieve the capacities specified below, they should be founded a minimum of 12 inches into engineered fill, with the concrete placed against in-place, undisturbed material. Foundation design criteria are based, in part, upon the expansive properties of the materials anticipated to be present near the finished pad grade. Laboratory testing to verify the expansive properties of the near-pad-grade materials should be performed at the completion of rough grading. Preliminary findings indicate the soils are in the EI range of 21-50.

Pre-saturation guidelines are presented in the following table. Pre-saturation of the foundation soils should be initiated well before concrete is scheduled to be placed. Care should be

taken to see that the water has properly penetrated the soil. Last minute flooding is not a good practice. Excess water remaining in the target pre-saturation zone at the time of concrete placement will penetrate further into the soil, possibly causing additional expansion and uplift of the curing concrete.

Anticipated Expansion Index Range ..... 0 - 20
Pre-saturation ..... 12"

Footings[1]
- Allowable Bearing Capacity ..... 1500 PSF[2]
- Lateral Resistance ..... 300 PSF/Ft[2] [3]
- Maximum Lateral Resistance ..... 1500 PSF[2] [3]
- Coefficient of Friction 0.4
- Minimum Embedment Into Foundation Material ..... 12 inches
- Minimum Embedment Below Adjacent Grade ..... 12 inches[4]
- Minimum Reinforcement ..... 2 #4 bars, 1 near top, 1 near bottom

Slabs-On-Grade
- Bedding ..... 2" of clean sand[5]
- Thickness ..... Full 4"
- Minimum Reinforcement ..... #4@48" or #3@36" o.c.e.w.

Anticipated Expansion Index Range ..... 21 - 50
Pre-saturation ..... 21"

Footings[1]
- Allowable Bearing Capacity ..... 1500 PSF[2]
- Lateral Resistance ..... 300 PSF/Ft[2] [3]
- Maximum Lateral Resistance ..... 1500 PSF[2] [3]
- Coefficient of Friction 0.35
- Minimum Embedment Into Foundation Material ..... 12 inches
- Minimum Embedment Below Adjacent Grade ..... 15 inches[4]
- Minimum Reinforcement ..... 2 #4 bars, 1 near top, 1 near bottom

Slabs-On-Grade
- Bedding ..... 4" of clean sand[5]
- Thickness ..... Full 4"
- Minimum Reinforcement ..... #3 @18" o.c.e.w.

Anticipated Expansion Index Range ..... 51 - 90
Pre-saturation ..... 27"

Footings[1]
- Allowable Bearing Capacity ..... 1500 PSF[2]
- Lateral Resistance ..... 250 PSF/Ft[2] [3]
- Maximum Lateral Resistance ..... 1500 PSF[2] [3]
- Coefficient of Friction 0.3
- Minimum Embedment Into Foundation Material ..... 12 inches
- Minimum Embedment Below Adjacent Grade ..... 27 inches[4]
- Minimum Reinforcement ..... 2 #4 bars, 1 near top, 1 near bottom

Slabs-On-Grade
Bedding..... 4" of clean sand(5)
Thickness..... Nominal 4"
Minimum Reinforcement..... #4 @ 18" o.c.,e.w.

(1) Bearing portions of all footings should be at least five feet (measured horizontally) from the face of adjacent, descending slopes. All footings should bear at least three feet below an imaginary plane projected upward at 1.5:1 from the toe of locally over-steepened slopes. Pad footings should be at least 24 inches square.

(2) May be increased by 1/3 for short duration loading such as by wind or seismic forces.

(3) Decrease by 1/3 when combined with friction.

(4) Applies to exterior footings.

(5) Place vapor barrier (10 mil. visqueen) one inch below top of sand layer beneath all areas where moisture penetration of the slab is undesirable.

Settlement

Static settlement of foundations is anticipated to be minor, on the order of 2/3 inch for lightly loaded foundations. Differential loads between adjacent footings with similar loads are anticipated to be less than 1/4 inch in a horizontal distance of 30 feet.

Seismic shaking could cause liquefaction-induced settlement in the northwest area of the "Remainder Parcel". We recommend the habitable structures in this area be designed for at least 2 inches of total settlement from a design level earthquake, and a differential settlement of 1 inch across a horizontal distance of 30 feet. These values consider that the recommended earth removals are performed during rough grading.

The clayey alluvial soils to remain after grading may experience settlement if grades are raised significantly. In our opinion, if planned grades are raised more than 5 feet above the current grades, appreciable settlement may occur. This office should be notified if planned fills exceed five feet above the current grade. Additional analyses should be performed on a case-by-case basis.

RETAINING WALL RECOMMENDATIONS

Retaining walls may be included in the development plans. A Typical Retaining Wall Design is included as Plate RW. Foundation design criteria are provided in the preceding section. Lateral loading criteria for cantilevered wall designs are presented in the table below. Lateral loading

criteria for unyielding (basement, braced etc.) walls and walls constructed prior to placement of the fill that the wall is to support may be provided if such are to be utilized in the project.

Lateral Design(1)

Slope of Backfill	Equivalent Fluid Density (PCF)
Level	30
2:1	43

(1) Special design required for wall height in excess of fifteen feet.

All retaining walls should be provided with adequate backdrainage systems. Pipe backdrains or weep holes should be installed. Free draining material should be used about pipe drains or behind the weep holes. Weep holes should only be utilized where moisture in front of the wall can be tolerated.

Backfill for retaining walls should be properly compacted. An impervious cap should be provided at the top of the backfill to retard infiltration of water.

Additional surcharge, such as that due to proposed structures, traffic, or other loading, should be included in the wall design. Use of expansive soil as backfill for retaining walls will result in a surcharge to the wall, the magnitude of which is dependent upon the expansion index of the backfill. This may be avoided by using sand or gravel as backfill adjacent to the wall. Details regarding this type of construction may be provided upon request.

FACTORS OF SAFETY

The factor of safety for the allowable bearing pressure provided is greater than three. The allowable passive pressure provided is based upon a factor of safety of 1.5. The factor of safety for the sliding friction is one. The factor of safety for the active pressure is one.

With regard to retaining walls, the Uniform Building Code calls for a 1.5 factor of safety for both sliding and overturning. We defer to the Uniform Building Code and the project structural

engineer on this matter.

CORROSION POTENTIAL

Preliminary testing of samples obtained from our borings indicates the on-site soils have mild corrosion to corrosive potential for concrete and ferrous metals. Near the completion of grading additional testing should be performed to verify the corrosion potential of the soils.

PRELIMINARY PAVEMENT DESIGN

Preliminary pavement designs are provided for your consideration in the project development. Final pavement design will be determined at the conclusion of grading through R-Value testing of the subgrade soils and upon assigned Traffic Indices (assigned by others).

Preliminary Pavement Sections

Location	Asphalt Thickness	Base Thickness
Interior Streets (TI 4.5)	3.0"	6.5"
Interior Streets (TI 5.0)	3.0"	7.5"
Interior Streets (TI 6.0)	3.0"	11.0"

DRAINAGE

Positive drainage should be established to carry pad waters away from structures and foundations, and to prevent uncontrolled or sheet flow over manufactured slopes. We recommend as steep a gradient as possible be established around the residence, to the street or other non-erosive drainage devices. Fine-grade fills placed to create pad drainage should be compacted in order to retard infiltration of surface water.

Preserving proper surface drainage is also important. Planters, decorative walls, plants, trees or accumulations of organic matter should not be allowed to retard surface drainage. Planters adjacent to a structure should be constructed so that irrigation water will not saturate the soils underlying the footings and slabs. Area drains and roof gutters (if present) should be kept free of obstruction. Roof gutters (if present) and condensation lines from air conditioners should outlet to area

drains or paved areas directing the water to the street. Positive drainage along the backs of retaining walls should be maintained. Any other measures that will facilitate positive surface drainage should be employed.

UTILITY TRENCH BACKFILL

Backfill for utility trench excavations should be compacted to at least 90% relative compaction. Where installed in sloping areas, the backfill should be properly keyed and benched.

CONSTRUCTION MONITORING

Grading plans and foundation plans should be submitted to this office during the design process. Additional recommendations may be provided at that time, if such are considered warranted.

Placement of all fill and backfill should be monitored by representatives of this office. This includes our observation of prepared bottoms prior to filling. All excavated slopes, both temporary and permanent, should be observed by a representative of this office. Supplemental recommendations may prove warranted based upon the materials exposed in the actual excavations.

Foundation excavations should be observed by representatives of this office to see if the recommended penetration of proper supporting strata has been achieved. Such observations should be made prior to placing concrete, steel or forms. This office should be notified at least 24 hours prior to placing concrete.

CLOSURE

This geotechnical report has been prepared in accordance with generally accepted engineering practices at this time and location. No other warranties, either express or implied, are made as to the professional advice provided under the terms of our agreement and included in this report.

Thank you for this opportunity to be of service. Please do not hesitate to call if you have any questions regarding this report.

Respectfully submitted,
GEOLABS-WESTLAKE VILLAGE

Joseph Boldt
Staff Engineer

Ronald Z. Shimerling
C.E.G. 1047
R.C.E. 35444

Lawrence K. Stark
R.C.E 46240

Enclosures:

References	Plate R
Alquist Priolo and Site Vicinity Map	Plate 1.1
Plot Map	Plate 1.2
Seismic Hazard Zone Map	Plate 1.3
Boring Logs	Plates B1-B6
Cone Penetration Test Logs	Plates CPT1-CPT2
Laboratory Test Summary	Plate LS.1-LS.3
Shear Test Diagram	Plates S-B1.5
Consolidation Diagram	Plates C-B1.2.5 to C-B6.7.5
Particle Size Analyses	Plate PS1
Atterberg Limits	Plate AL
Seismic Analysis	Appendix A
Corrosivity Results	Appendix B
Seismic Settlement Analyses	Appendix C
Typical Details	Appendix D

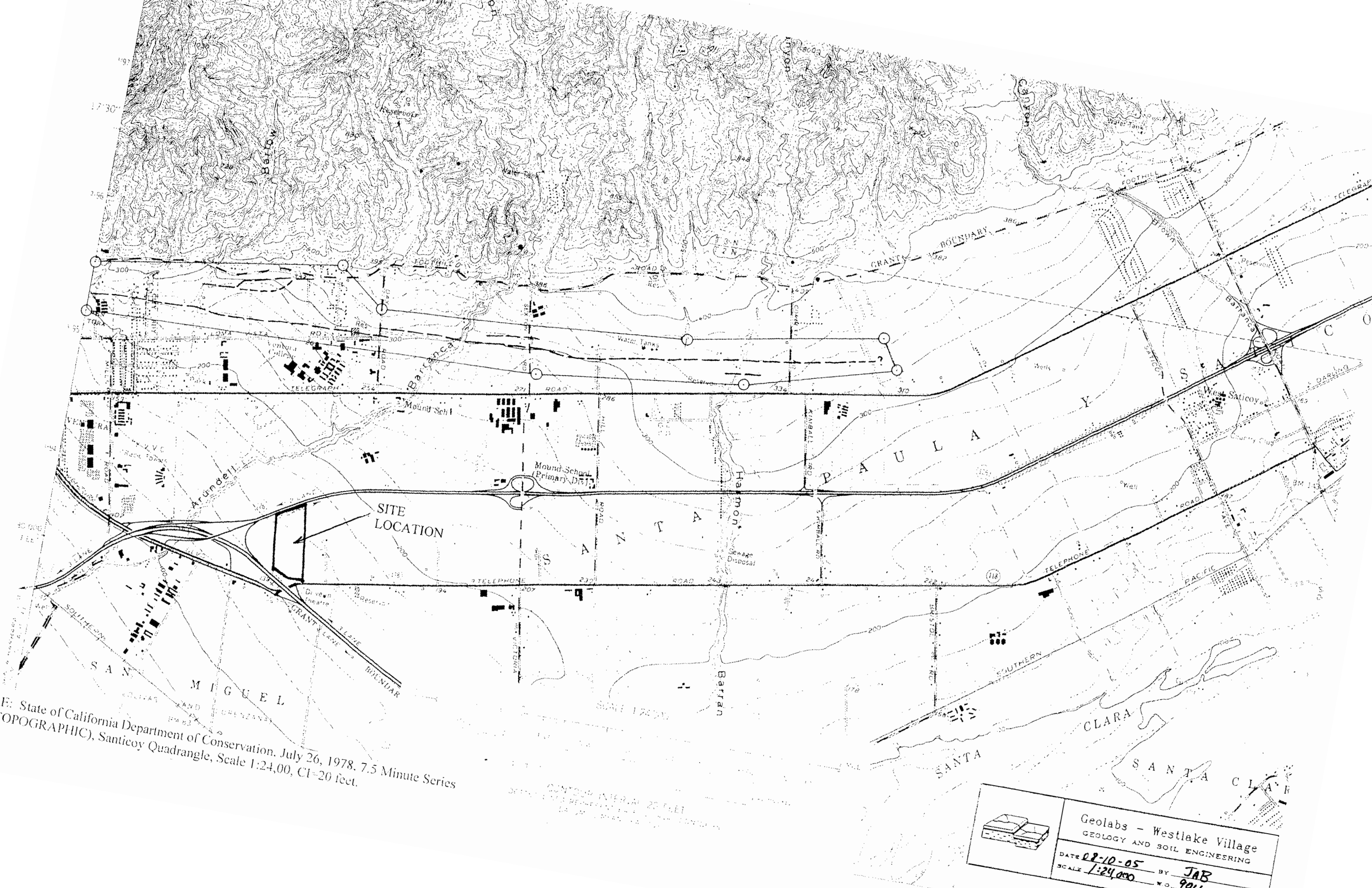
XC: (7) Addressee

REFERENCES

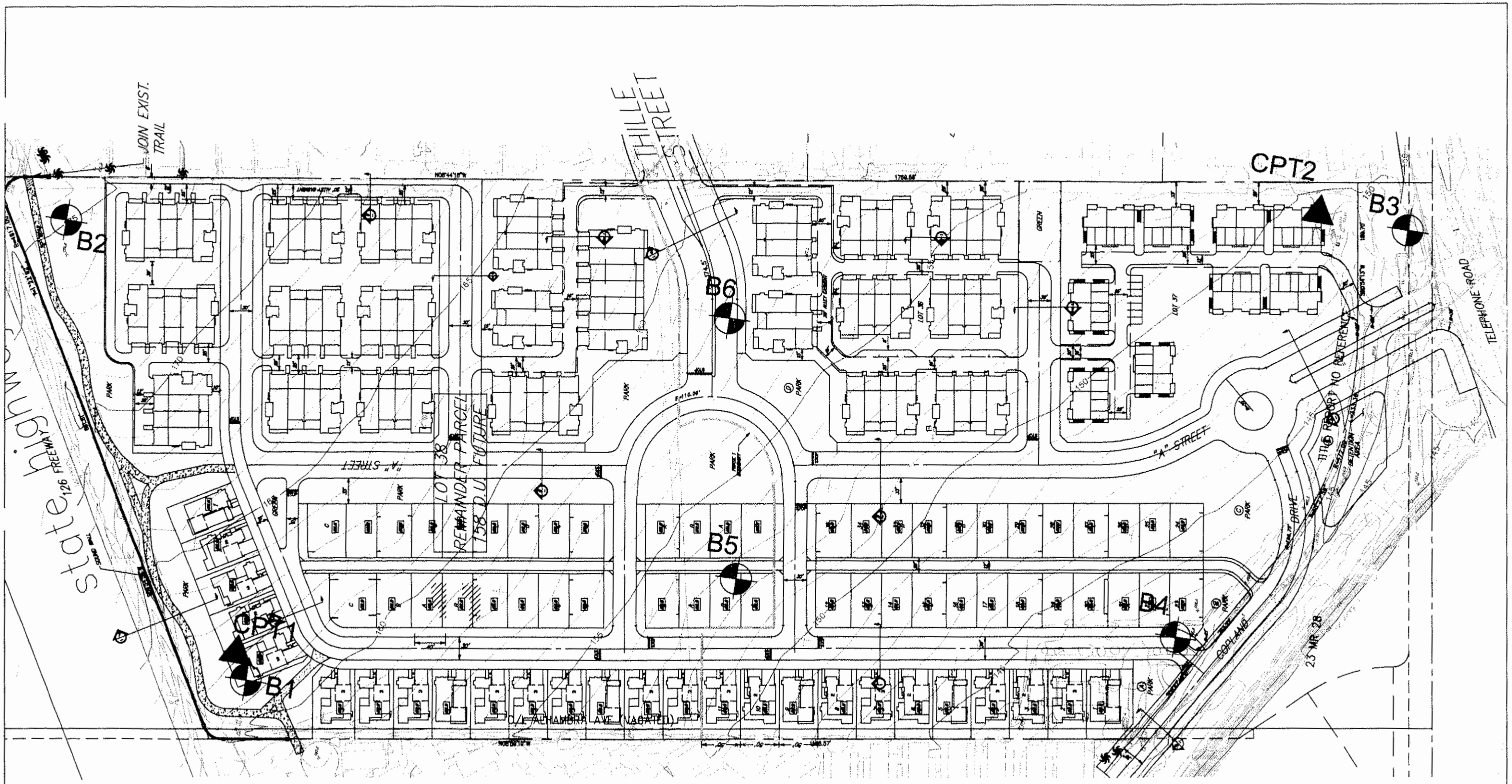
California Geological Survey, 2005; Seismic Hazard Evaluation for the Saticoy 7.5-Minute Quadrangle, Ventura County, California, Open-File Report 066.

..., 2005; Seismic Hazard Evaluation for the Oxnard 7.5-Minute Quadrangle, Ventura County, California, Open-File Report 052.

..., July 26, 1978; Fault-Rupture Hazards Zones in California, Alquist-Priolo Earthquake Fault Zoning Topographic Map, Saticoy Quadrangle, scale 1:24,000.



E: State of California Department of Conservation, July 26, 1978, 7.5 Minute Series
TOPOGRAPHIC), Santicoy Quadrangle, Scale 1:24,00, CI=20 feet.



Explanation

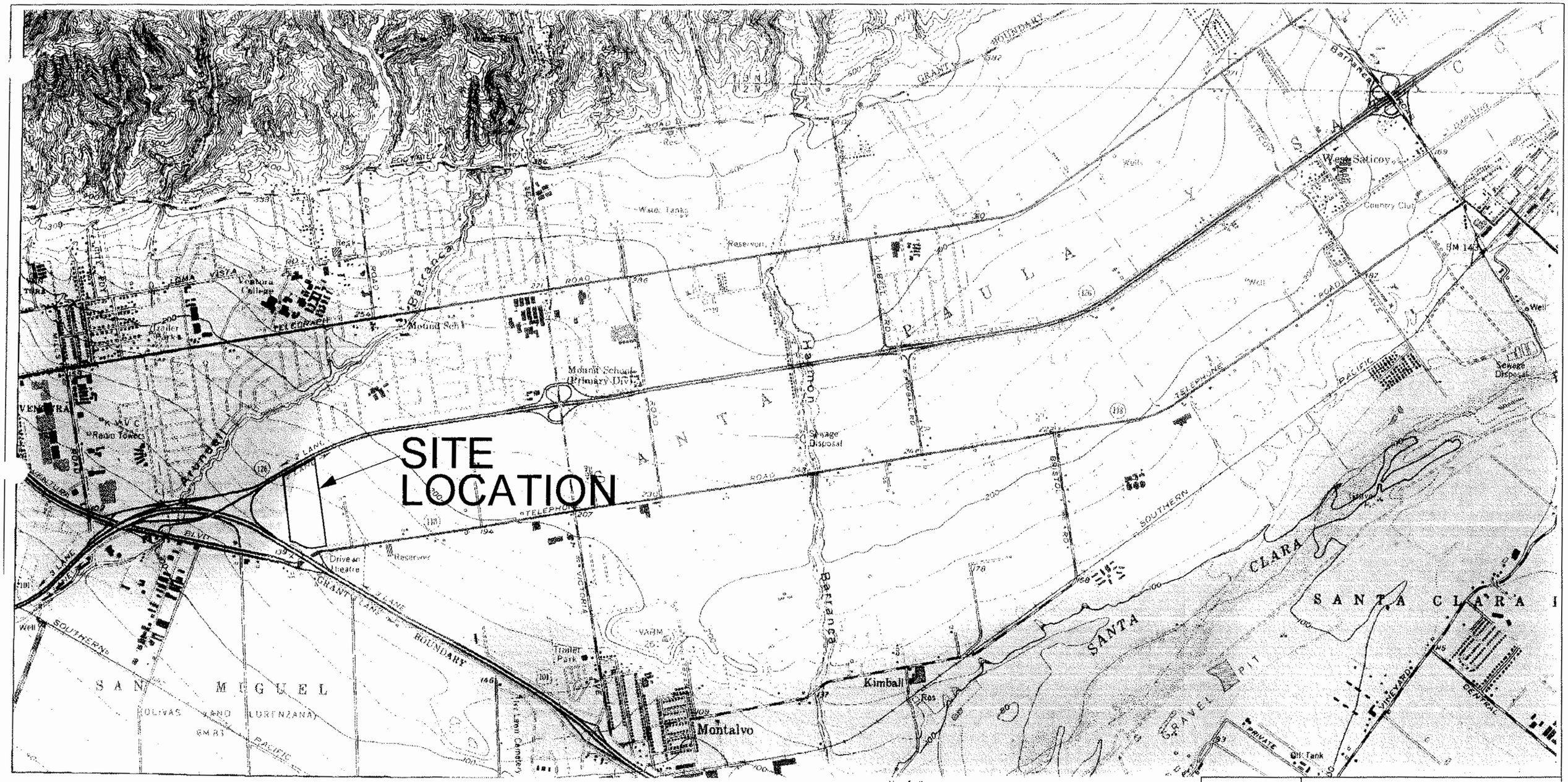
B6 Boring

CPT2 CPT

Geolabs – Westlake Village
GEOLOGY AND SOIL ENGINEERING

DATE 8/4/05 BY JB
SCALE NTS W.O. 9011

PLATE 1.2



RE: State of California Department of Conservation, February 14 2003,Seismic Hazard Zones,7.5 Minute Series (TOPOGRAPHIC), Saticoy Quadrangle, Scale 1:24000,CI=20 feet.

Liquefaction

Areas where historical occurrence of liquefaction, or local geological, geotechnical and ground-water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

Earthquake-Induced Landslides

Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

Geolabs – Westlake Village

GEOLOGY AND SOIL ENGINEERING

DATE 8/10/05 BY JB

SCALE 1"=2000' W.O. 9011

PLATE 1.3

CLIENT: Broome Property	PROJECT: The Groves, Ventura	W.O.: 9011
LOCATION: SW Corner	ELEVATION: 161'	DATE: 7/29/05
RIG TYPE: 8" HSA	HAMMER WEIGHTS: 140 lbs.	DROP: 30"

	N	U	B	M	DD	DESCRIPTION	ATTITUDES
0						(CL) Clay, with sparse medium to coarse sand, brown, moist.	
	1/2/3	C		14.0	94.2	(CL) Clay, greenish brown, moist, soft.	
5	2/3/4	C		21.4	98.1	(SM) Silty Sand, very fine grained, light brown, moist, very loose.	
						(CL) Clay, with fine to medium sands, dark brown, soft, moist.	
	1/3/3	C		17.5	99.5	(CL) Clay, same as above.	
10	2/3/3	C		18.2	110.0	(SM) Silty Sand, brown, wet, some 2" gravel, very fine grained sand, loose.	
15	0/2/3		S			(ML) Silt, brown, wet, soft.	
						(CL) Sandy Clay, dark brown, wet, very soft, very fine sands.	
20	1/2/4	C		25.5	101.0	(CL) Clay with fine sands, brown, wet, very soft.	
25	0/1/1		S			(SM) Silty Sand, fine grained with medium to coarse lenses, brown, wet, very loose.	
30	1/4/6	C		27.1	95.7	(ML) Silt, wet, medium stiff.	
35	1/1/5		S			(ML) Silt, wet, brown, soft.	
40	3/6/9	C		16.7	121.0	(SP) Sand, poorly graded, fine grained, brown, wet, with coarse grained lenses, loose.	
45							

ADDITIONAL COMMENTS:

SURFACE DATA

LOG OF BORING B1

CLIENT: Broome Property	PROJECT: The Groves, Ventura	W.O.: 9011
LOCATION: SW Corner	ELEVATION: 161'	DATE: 7/29/05
RIG TYPE: 8" HSA	HAMMER WEIGHTS: 140 lbs.	DROP: 30"

	N	U	B	M	DD	DESCRIPTION	ATTITUDES
40							
45	6/17/21	C		14.8	119.0	(ML/CL) Silty Clay, brown, wet, very stiff. @46.5' - Becomes (SW) Sand, well graded, fine to coarse grains, wet, brown, medium dense, sparse 1/4" gravel.	
50	4/5/10	C		28.7	94.7	(ML/CL) Silty Clay, brown, wet, stiff.	
55						Total Depth - 50' Groundwater at 13 ft-bgs	
60							
65							
70							
75							
80							
85							

ADDITIONAL COMMENTS:

SUBSURFACE DATA

LOG OF BORING B2

CLIENT: Broome Property	PROJECT: The Groves, Ventura	W.O.: 9011
LOCATION: NE Corner	ELEVATION: 175'	DATE: 7/29/05
RIG TYPE: 8" HSA	HAMMER WEIGHTS: 140 lbs.	DROP: 30"

	N	U	B	M	DD	DESCRIPTION	ATTITUDES
0						(ML) Silt with sparse 2" gravel, greenish brown, moist.	
	2/3/6	C		14.7	97.3	(ML) Same as above, medium stiff.	
5	3/3/6	C		15.7	96.9	(ML) Same as above. @6.5' - (CL) Clay, plastic, dark brown, moist, medium stiff.	
	3/4/7	C		20.2	98.4	(CL) Clay, same as above.	
10	2/3/4	C		24.1	96.4	(CL) Clay with silt, brown to dark brown, moist to wet, soft.	
15	1/1/2		S			(CL) Same as above.	
20	3/6/9	C		20.9	104.0	(CL) Same as above. (SP) Sand with clay, poorly graded, very fine grained, brown, wet, loose.	
25						Total Depth - 20' Groundwater at 16.5'	
30							
35							
40							
45							

ADDITIONAL COMMENTS:

SUBSURFACE DATA

LOG OF BORING B3

CLIENT: Broome Property	PROJECT: The Groves, Ventura	W.O.: 9011
LOCATION: SE Corner	ELEVATION: 149'	DATE: 7/29/05
RIG TYPE: 8" HSA	HAMMER WEIGHTS: 140 lbs.	DROP: 30"

	N	U	B	M	DD	DESCRIPTION	ATTITUDES
0						(0-0.5) Asphalt.	
						@0.5' - (CL) Sandy Clay, medium sands, dark brown, moist.	
						@2.5' - (CL) Same as above, medium stiff.	
	2/4/4	C		15.7	105.0	(SP) Sand, poorly graded, fine grained with sparse medium and coarse grains, loose.	
5	0/0/0	C		23.5	97.2	(CL) Clay, greenish brown, wet, very soft, becomes black to greenish brown at 7' with 1-2" gravel and sparse medium sands.	
	0/1/1	C		23.2	99.0	@7.5' - (CL) Same as above with sparse medium sands.	
10	1/1/2	C		15.5	106.0	(SP) Sand, fine grained, white to light brown, wet, very loose.	
						@11.5' - (SW) Sand with gravel at sample base, prevalent 1" gravel.	
15	4/5/7	C		24.4	95.3	(CL) Clay, wet, greenish brown, sparse medium sand, medium stiff.	
20	4/4/4		S			(ML) Silt, wet, brown, medium stiff.	
25						Total Depth - 20'	
						Groundwater at 6'	
30							
35							
40							
45							

ADDITIONAL COMMENTS:

.e: Boring in asphalt area covered by 2" compacted sand and gravel.

SUBSURFACE DATA

LOG OF BORING B4

CLIENT: Broome Property	PROJECT: The Groves, Ventura	W.O.: 9011
LOCATION: SW Corner	ELEVATION: 142'	DATE: 7/29/05
RIG TYPE: 8" HSA	HAMMER WEIGHTS: 140 lbs.	DROP: 30"

	N	U	B	M	DD	DESCRIPTION	ATTITUDES
0						(CL) Clay, greenish brown, moist, plastic.	
	2/3/2	C		27.2	98.0	(ML/CL) Clayey Silt, brown, moist to wet, soft.	
5	0/1/3	C		31.3	93.4	(CL/ML) Silty Clay, brown, wet, soft.	
	0/2/2	C		26.7	97.8	(CL/ML) Same as above.	
10	0/2/3	C		24.8	97..8	(CL/ML) Same as above.	
15	0/0/2		S			(CL) Clay, brown, wet, plastic, very soft.	
20	0/2/2	C		22.7	103.0	(CL) Clay with sparse medium sands, wet, brown, soft. @21.5' - (SP/SW) Sand lens, fine grains with sparse coarse grains.	
25	0/1/3		S			(CL) Same as above.	
30	3/5/4	C		30.4	93.5	(CH) Clay, brown, wet, highly plastic, medium stiff.	
35	2/2/2		S			(SC) Clayey Sand, very fine grained, wet, brown, very loose.	
40	3/6/6	C		35.1	89.8	(CL) Sandy Clay, very fine grained, wet, brown, soft.	
45							

ADDITIONAL COMMENTS:

SURFACE DATA

LOG OF BORING B4

CLIENT: Broome Property	PROJECT: The Groves, Ventura	W.O.: 9011
LOCATION: SW Corner	ELEVATION: 142'	DATE: 7/29/05
RIG TYPE: 8" HSA	HAMMER WEIGHTS: 140 lbs.	DROP: 30"

	N	U	B	M	DD	DESCRIPTION	ATTITUDES
40							
45	1/4/1		S			(SP) Sand, poorly graded, very fine to fine grained, some clay, brown, wet.	
50	2/5/9	C		28.5	94.5	(CL) Clay, wet, brown, stiff.	
55						Total Depth - 50' Groundwater at 3.9'	
60							
65							
70							
75							
80							
85							

ADDITIONAL COMMENTS:

J: Added water to hole at 30' and 40' for pressure head due to soil coming up into hole.

SUBSURFACE DATA

LOG OF BORING B5

CLIENT: Broome Property	PROJECT: The Groves, Ventura	W.O.: 9011
LOCATION: Center-W Side	ELEVATION: 153'	DATE: 7/29/05
RIG TYPE: 8" HSA	HAMMER WEIGHTS: 140 lbs.	DROP: 30"

	N	U	B	M	DD	DESCRIPTION	ATTITUDES
0						(CL/ML) Silty Clay, moist, brown.	
	1/1/3	C		22.0	100.0	(CL/ML) Silty Clay, moist to wet, greenish brown, soft to very soft, sparse coarse sand.	
5	0/0/0	C		28.7	92.7	(CL) Clay, highly plastic, dark brown, moist to wet, very soft.	
	0/2/4	C		28.0	89.5	(CL) Same as above.	
10	2/4/5	C		27.6	95.5	(CL) Same as above, medium stiff.	
15	1/2/3		S			(ML) Silt with clay, brown, wet, very soft.	
20	3/5/6	C		28.4	97.3	(ML/CL) Silty Clay, brown, wet, medium stiff.	
25						Total Depth - 20' Groundwater at 6.2'	
30							
35							
40							
45							

ADDITIONAL COMMENTS:

SUBSURFACE DATA

LOG OF BORING B6

CLIENT: Broome Property	PROJECT: The Groves, Ventura	W.O.: 9011
LOCATION: Center-E Side	ELEVATION: 158'	DATE: 8/1/05
RIG TYPE: 8" HSA	HAMMER WEIGHTS: 140 lbs.	DROP: 30"

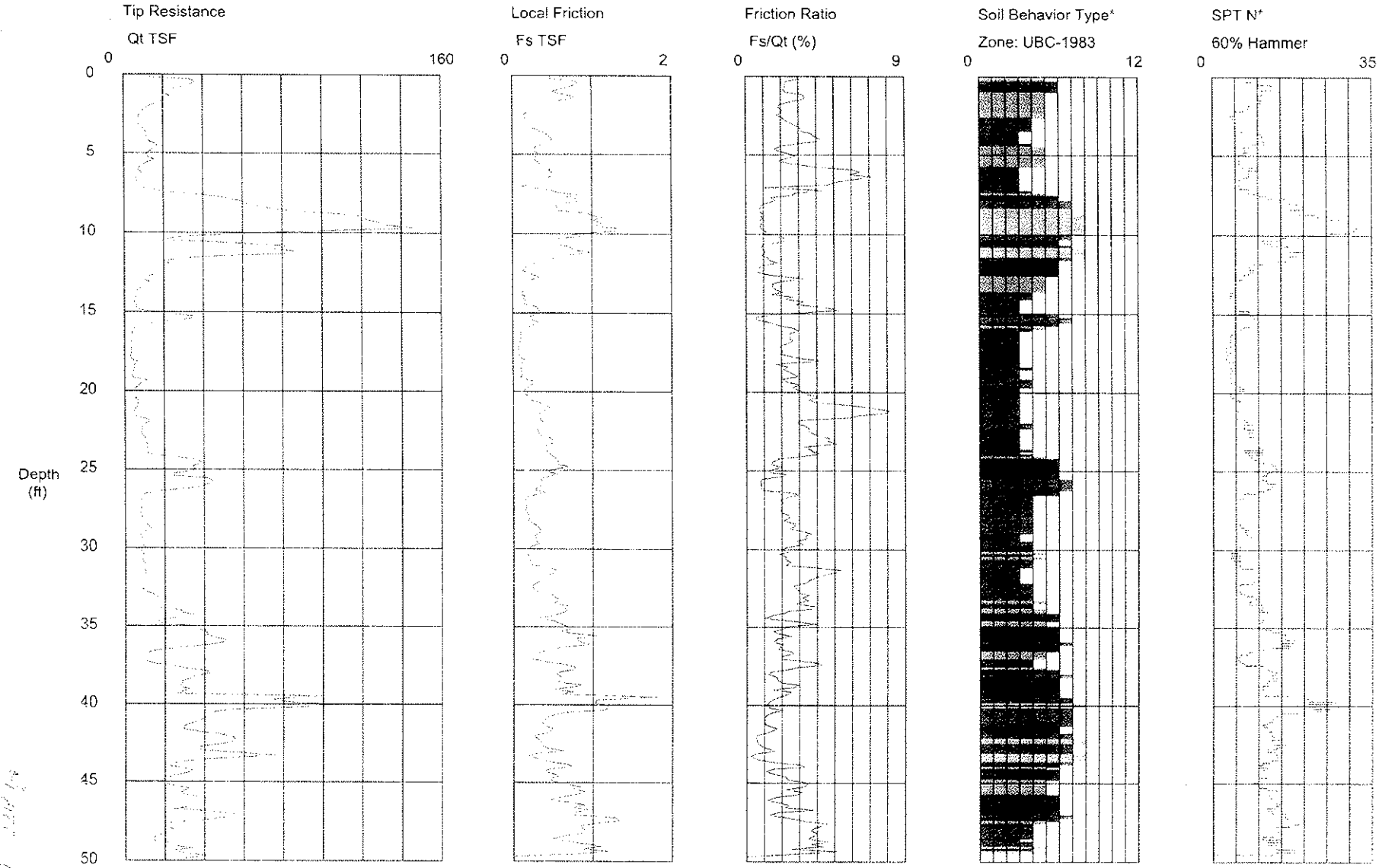
	N	U	B	M	DD	DESCRIPTION	ATTITUDES
0						(ML) Silt, brown, moist to wet, sparse coarse sand.	
	1/2/4	C		15.5	109.0	(SM) Silty Sand, wet, brown, very loose.	
5	0/0/1	C		29.2	83.9	(ML/CL) Silty Clay, wet, brown, very soft.	
	0/0/0	C		30.4	88.9	(CL) Clay, dark brown, sparse coarse grained, very soft.	
10	0/2/3	C		29.4	93.0	(CL/ML) Silty Clay, brown, wet, soft.	
15	3/5/5	C		25.5	98.3	(SP) Sand with clay, brown, wet, fine grained, sparse coarse grains, loose. @16' - (CL) Clay with silt, brown wet, medium stiff.	
20	1/2/3		S			(ML) Silt with clay, brown, wet, medium stiff.	
25	2/4/4	C		26.6	96.4	(ML) Same as above, with layer clay (CL) lenses.	
30						Total Depth - 25' Groundwater at 4.8'	
35							
40							
45							

ADDITIONAL COMMENTS:

Geolabs W stlake Village

Operator: BH
Sounding: CPT-01
Cone Used: DSG0786

CPT Date/Time: 7/25/2005 12:14:38 PM
Location: Broom Property
Job Number: 9011



Maximum Depth = 49.87 feet

Depth Increment = 0.164 feet

1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

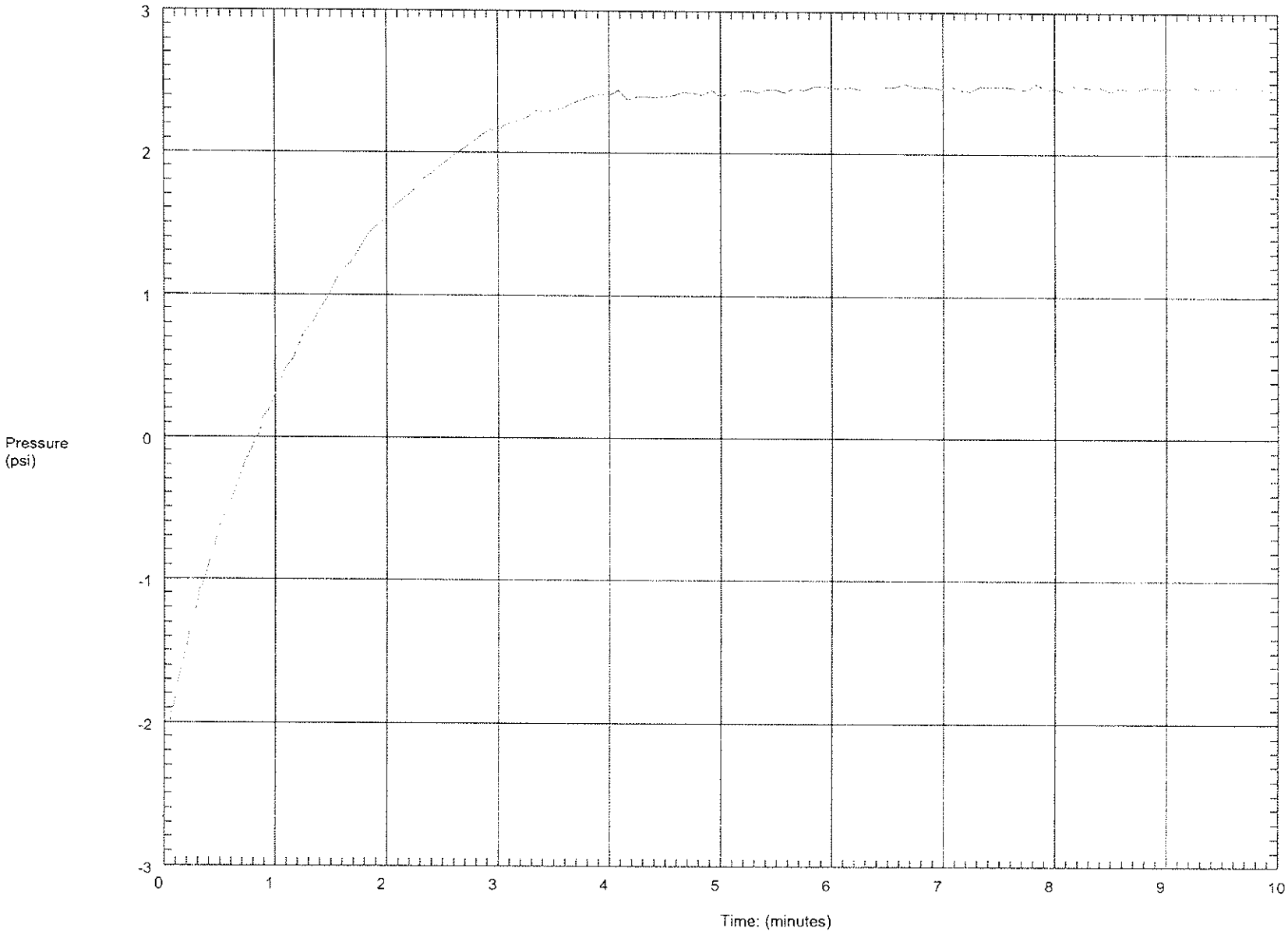
*Soil behavior type and SPT based on data from UBC-1983

Geolabs Westlake Village

Operator BH
Sounding: CPT-01
Cone Used: DSG0786

CPT Date/Time: 7/25/2005 12:14:38 PM
Location: Broom Property
Job Number: 9011

Selected Depth(s) (feet)
20.013

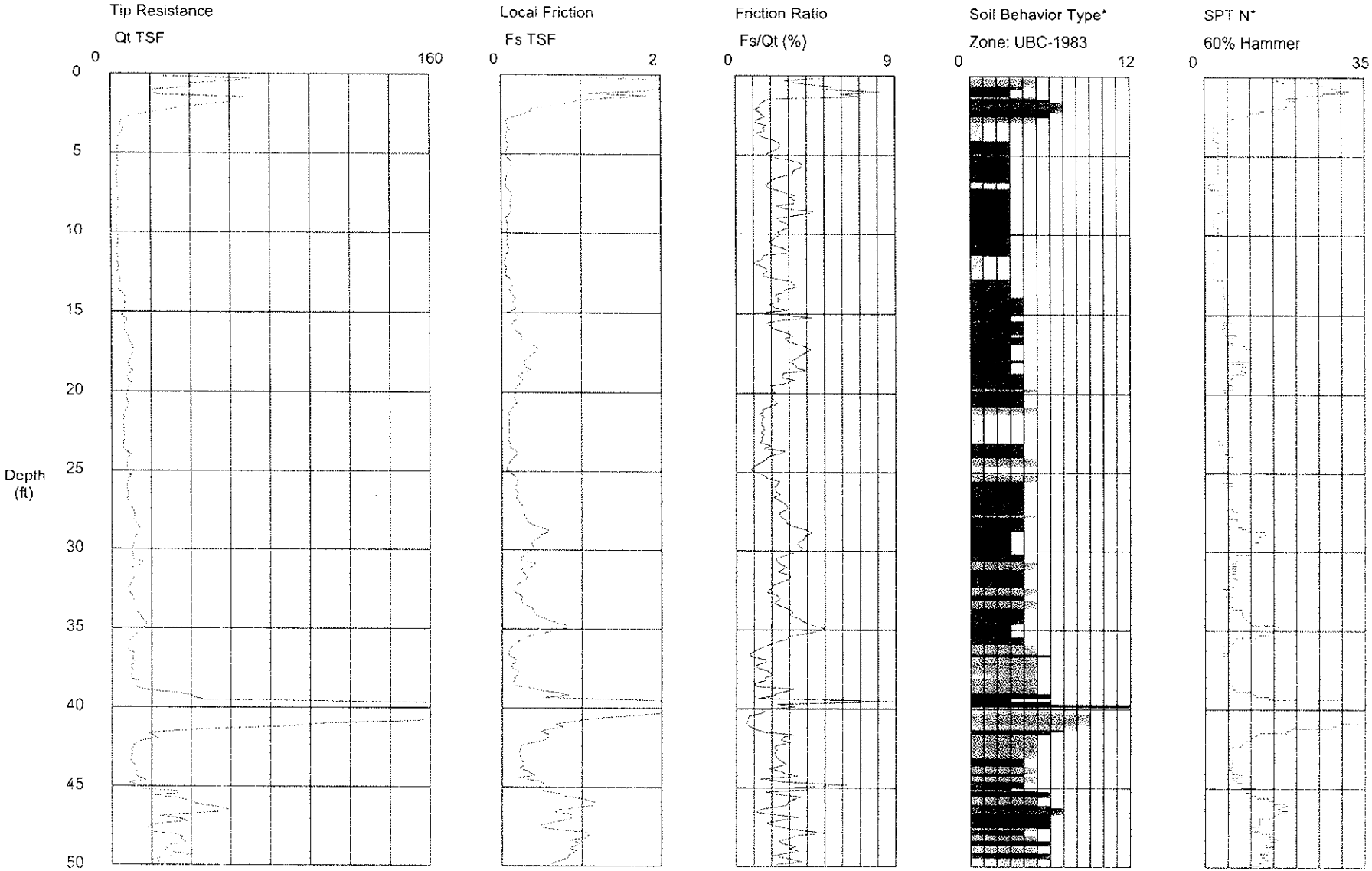


Maximum Pressure = 2.492 psi
Hydrostatic Pressure = 14.256 ft

Geolabs W tlake Village

Operator: BH
Sounding: CPT-02
Cone Used: DSG0786

CPT Date/Time: 7/25/2005 1:16:39 PM
Location: Broom Property
Job Number: 9011



Maximum Depth = 50.36 feet

Depth Increment = 0.164 feet

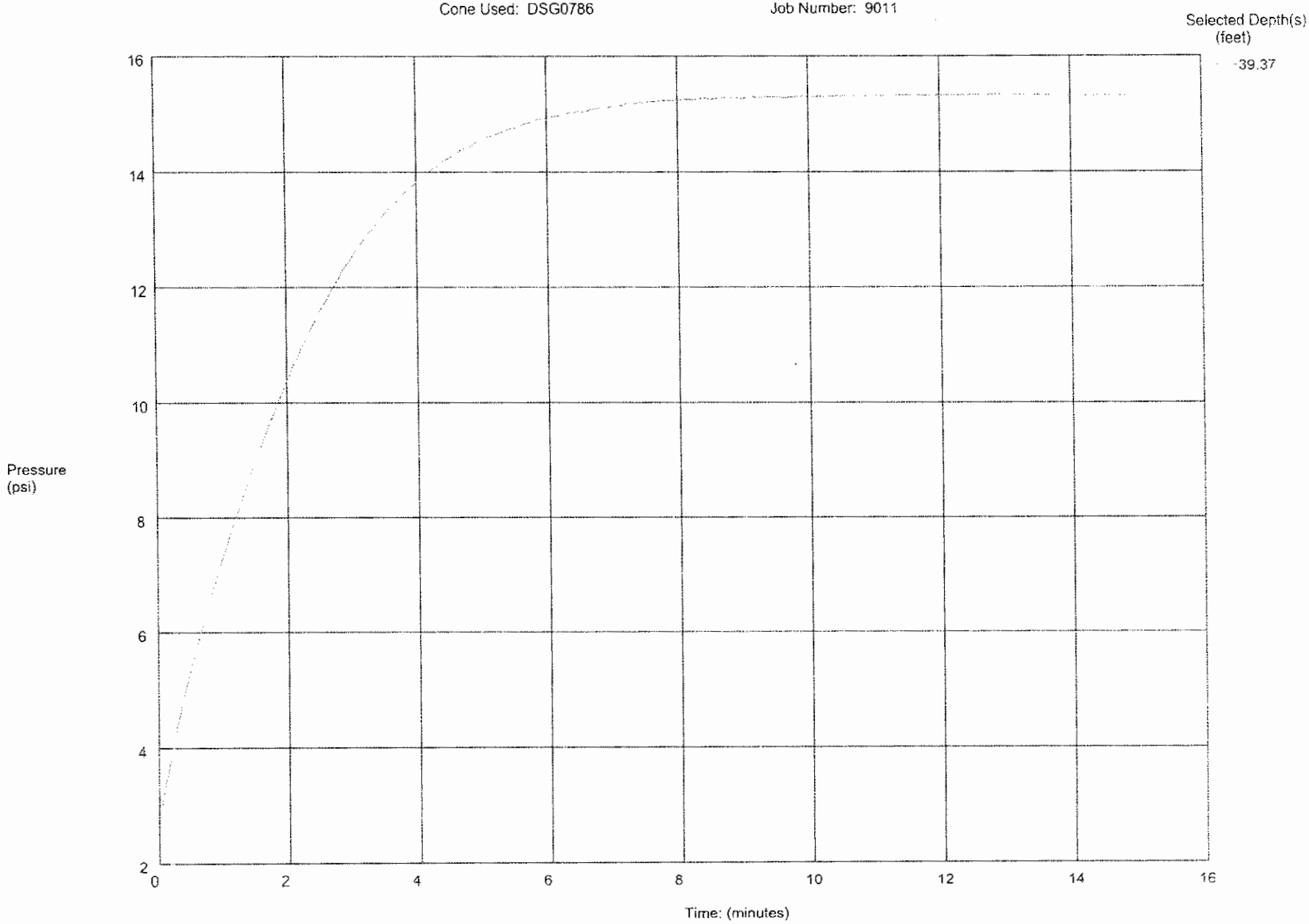
1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Geolabs Westlake Village

Operator BH
Sounding: CPT-02
Cone Used: DSG0786

CPT Date/Time: 7/25/2005 1:16:39 PM
Location: Broom Property
Job Number: 9011



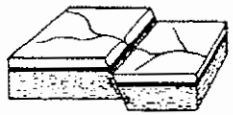
Maximum Pressure = 15.339 psi
Hydrostatic Pressure = 3.936 ft

Laboratory Test Summary

W.O. 9011

Depth	Geology	Sample Description	ST	w	DD	S	Max	Opt	EI	LL	PI	e	n	WD	SD	BD	Consol	Shear
Excavation: B1 (TD= 50 ft, GW @ 13 ft)																		
2.5	Alluvium	CLAY	(U)	14	94.2	48						0.78	0.44	107	139	76.2	C-B1.2.5	
5	Alluvium	silty fine SAND	(B)				123	11	24	28	13							S-B1.5
5	Alluvium	silty fine SAND	(U)	21.4	98.1	81						0.71	0.41	119	129	66.6	C-B1.5	
7.5	Alluvium	CLAY	(U)	17.5	99.5	69						0.68	0.41	117	134	71.4	C-B1.7.5	
10	Alluvium	silty SAND	(U)	18.2	110	94						0.52	0.34	130	133	70.5	C-B1.10	
20	Alluvium	fine sandy CLAY	(U)	25.5	101	100				26	6	0.65	0.39	127	125	62.3	C-B1.20	
30	Alluvium	silty CLAY	(U)	27.1	95.7	97						0.75	0.43	122	123	60.7		
40	Alluvium	fine SAND	(U)	16.7	121	100						0.39	0.28	141	135	72.4		
45	Alluvium	silty CLAY	(U)	14.8	119	98						0.41	0.29	137	138	75.1		
50	Alluvium	silty CLAY	(U)	28.7	94.7	100						0.77	0.44	122	122	59.3		
Excavation: B2 (TD= 20 ft, GW @ 16.5 ft)																		
2.5	Alluvium	SILT	(U)	14.7	97.3	55						0.72	0.42	112	138	75.2		
5	Alluvium	SILT	(U)	15.7	96.9	58						0.73	0.42	112	136	73.8	C-B2.5	
7.5	Alluvium	CLAY	(U)	20.2	98.4	77						0.70	0.41	118	130	68		
10	Alluvium	CLAY with SILT	(U)	24.1	96.4	88						0.73	0.42	120	126	63.7		
20	Alluvium	CLAY with SILT	(U)	20.9	104	93						0.60	0.38	126	130	67.2		
Excavation: B3 (TD= 20 ft, GW @ 6 ft)																		
2.5	Alluvium	sandy CLAY	(U)	15.7	105	72						0.58	0.37	122	136	73.8		
5	Alluvium	CLAY	(U)	23.5	97.2	87						0.72	0.42	120	127	64.3	C-B3.5	
7.5	Alluvium	CLAY	(U)	23.2	99	90						0.69	0.41	122	127	64.6	C-B3.7.5	
10	Alluvium	fine SAND	(U)	15.5	106	71						0.58	0.37	122	137	74.1		
15	Alluvium	CLAY	(U)	24.4	95.3	87				34	16	0.75	0.43	119	126	63.4	C-B3.15	

GEOLABS-WESTLAKE VILLAGE



Depth	Geology	Sample Description	ST	w	DD	S	Max Opt	EI	LL	PI	e	n	WD	SD	BD	Consol	Shear
Excavation: B4 (TD= 50 ft, GW @ 3.9 ft)																	
2.5	Alluvium	clayey SILT	(U)	27.2	98	100					0.71	0.41	125	123	60.6		
5	Alluvium	silty CLAY	(U)	31.1	93.4	100					0.79	0.44	122	120	57.2	C-B4.5	
7.5	Alluvium	silty CLAY	(U)	26.7	97.8	100					0.71	0.41	124	124	61.1		
10	Alluvium	silty CLAY	(U)	24.8	97.8	94					0.71	0.41	122	125	63	C-B4.10	
20	Alluvium	CLAY	(U)	22.7	103	98					0.62	0.38	127	128	65.2	C-B4.20	
25	Alluvium	SILT	(U)						40	23							
30	Alluvium	CLAY	(U)	30.4	93.5	100					0.79	0.44	122	120	57.8		
40	Alluvium	sandy CLAY	(U)	35.1	89.8	100			40	23	0.86	0.46	121	116	54		
50	Alluvium	CLAY	(U)	28.5	94.5	99			34	16	0.77	0.44	121	122	59.4		
Excavation: B5 (TD= 20 ft, GW @ 6.2 ft)																	
2.5	Alluvium	silty CLAY	(U)	22	100	88					0.67	0.40	122	128	65.9		
5	Alluvium	CLAY	(U)	28.7	92.7	96					0.80	0.44	119	122	59.3	C-B5.5	
7.5	Alluvium	CLAY	(U)	28	89.5	86					0.87	0.47	115	122	59.9	C-B5.7.5	
10	Alluvium	CLAY	(U)	27.6	95.5	98					0.75	0.43	122	123	60.3		
20	Alluvium	silty CLAY	(U)	28.4	97.3	100					0.72	0.42	125	122	59.5		
Excavation: B6 (TD= 25 ft, GW @ 4.8 ft)																	
2.5	Alluvium	silty SAND	(U)	15.5	109	77					0.54	0.35	126	137	74.1		
5	Alluvium	silty CLAY	(U)	29.2	83.9	79					0.99	0.5	108	121	58.8		
7.5	Alluvium	CLAY	(U)	30.4	88.9	92					0.89	0.47	116	120	57.8	C-B6.7.5	
10	Alluvium	silty CLAY	(U)	29.4	93	99					0.8	0.44	120	121	58.6		
15	Alluvium	SAND with CLAY	(U)	25.5	98.3	98					0.7	0.41	123	125	62.3		
25	Alluvium	SILT with CLAY	(U)	26.6	96.4	97					0.74	0.42	122	124	61.2		

GEOLABS-WESTLAKE VILLAGE

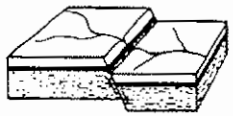


PLATE LS. 2

Depth	Geology	Sample Description	ST	w	DD	S	Max	Opt	EI	LL	PI	e	n	WD	SD	BD	Consol	Shear

LEGEND

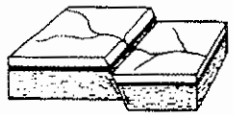
Depth = Sample Depth (ft)
ST = Sample Type*
w = Initial Moisture Content (%)
DD = Initial Dry Unit Weight (pcf)
Max = Maximum Dry Unit Weight (pcf)
Opt = Optimum Moisture Content (%)
EI = Expansion Index
S = Degree of Saturation (%)

LL = Liquid Limit
PI = Plasticity Index
e = Void Ratio
n = Porosity
WD = Initial Wet Unit Weight (pcf)
SD = Saturated Unit Weight (pcf)
BD = Bouyant (Submerged) Unit Weight (pcf) - Assuming water unit weight of 62.4 pcf

Consol = Consolidation Test Diagram (Plate No.)
Shear = Shear Test Diagram (Plate No.)

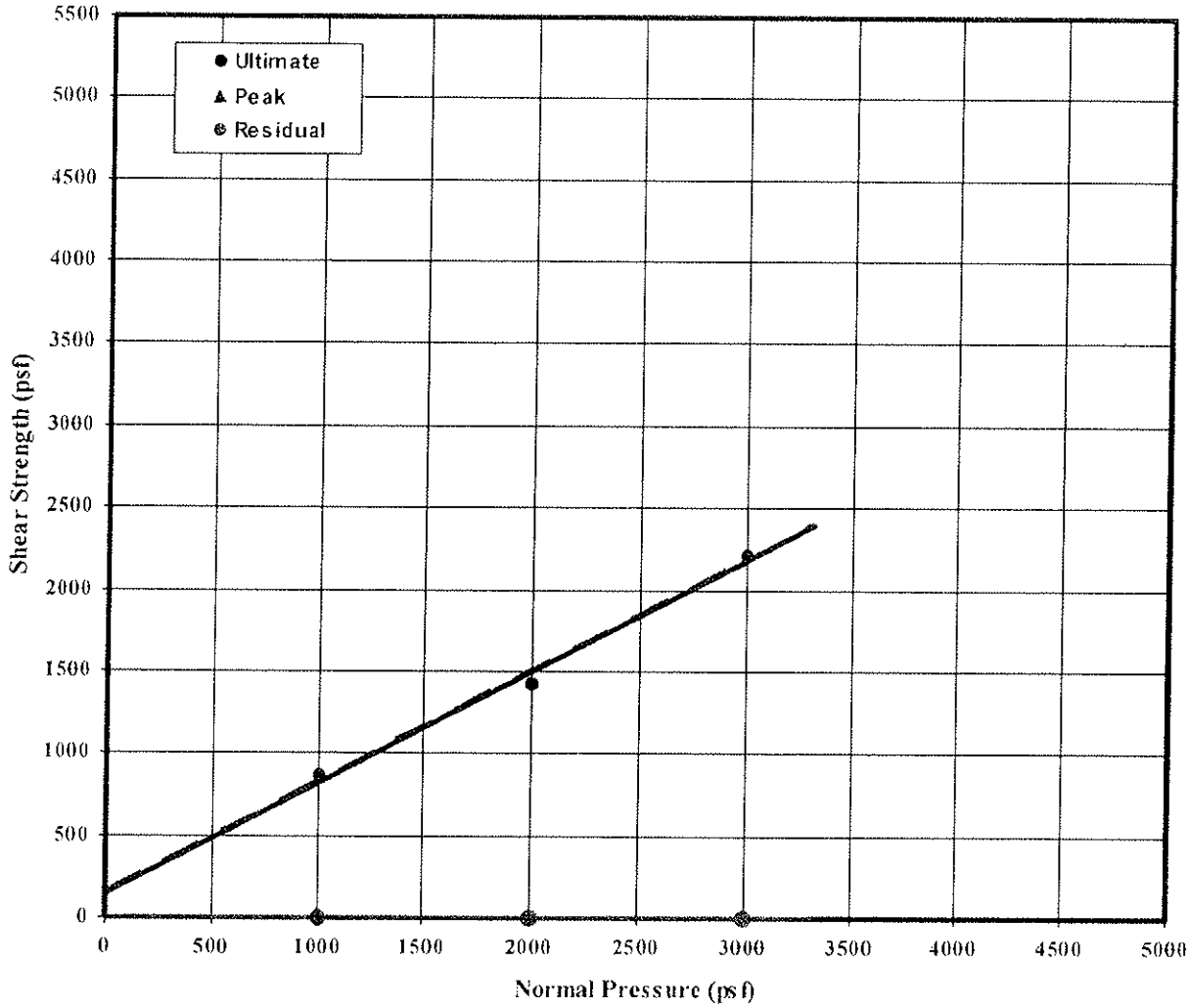
* Sample Types: (U) = relatively Undisturbed; (S) = SPT; (B) = Bulk

GEOLABS-WESTLAKE VILLAGE



SHEAR TEST RESULTS

Undisturbed Sample

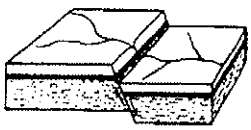


	Friction Angle	Cohesion
Ultimate Shear Strength:	34 deg	150 psf
Peak Shear Strength:	34 deg	150 psf
Residual Shear Strength:		

Displacement Rate: 0.01 in/min

Sample Location: B1
Sample Depth: 5 ft.
Geologic Unit: Alluvium
Material: silty find SAND

Dry Density:	0 pcf
Moisture:	19.2 %

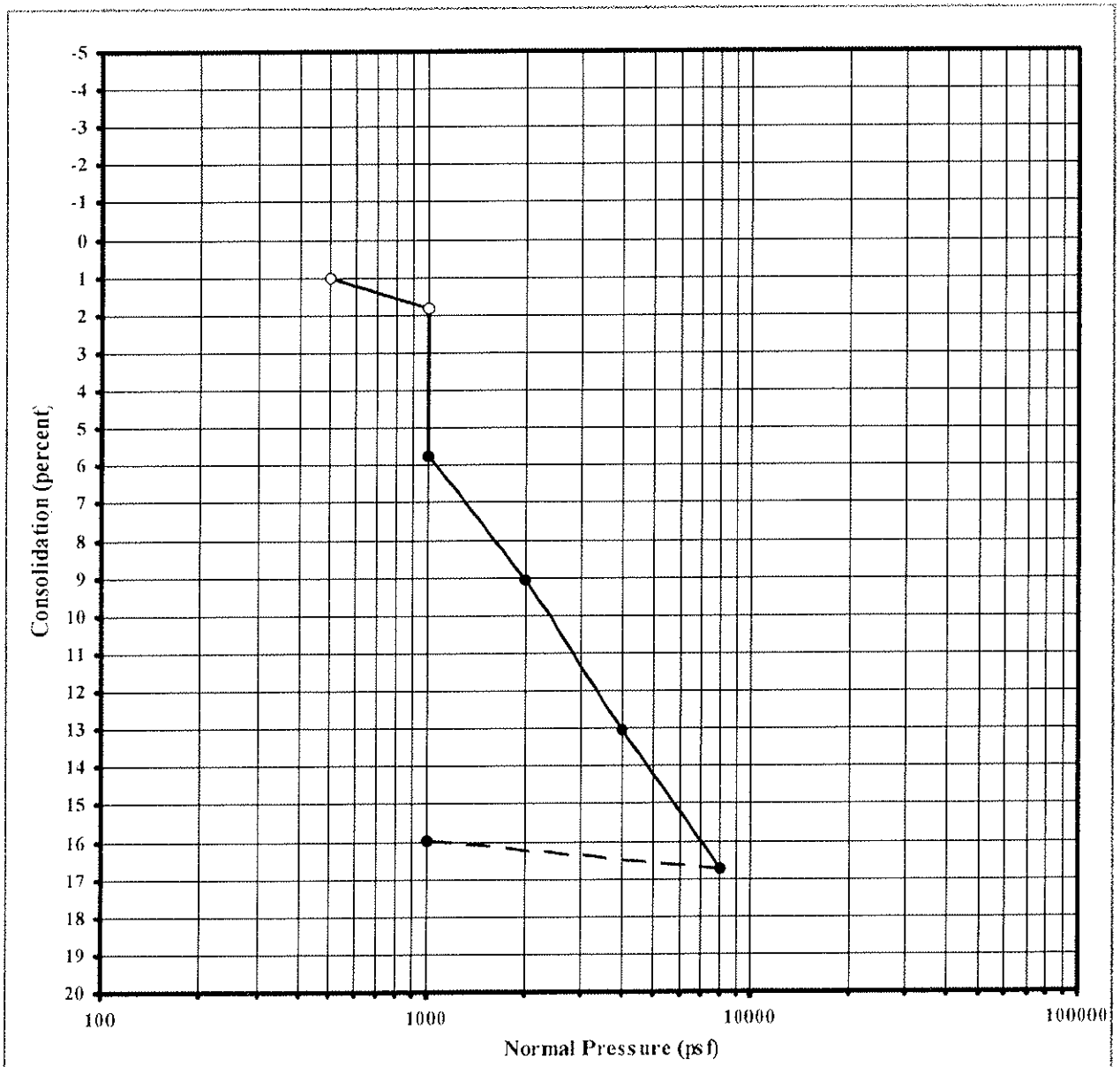


GEOLABS-WESTLAKE VILLAGE

PLATE S-B1.5

CONSOLIDATION RESULTS

Undisturbed Sample



Sample Inundated At Normal Pressure of 1000 psf

Sample Location: B1

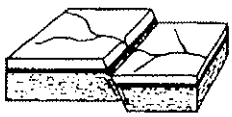
Sample Depth: 2.5 ft.

Initial Moisture: 14 %

Init. Dry Density: 94.2 pcf

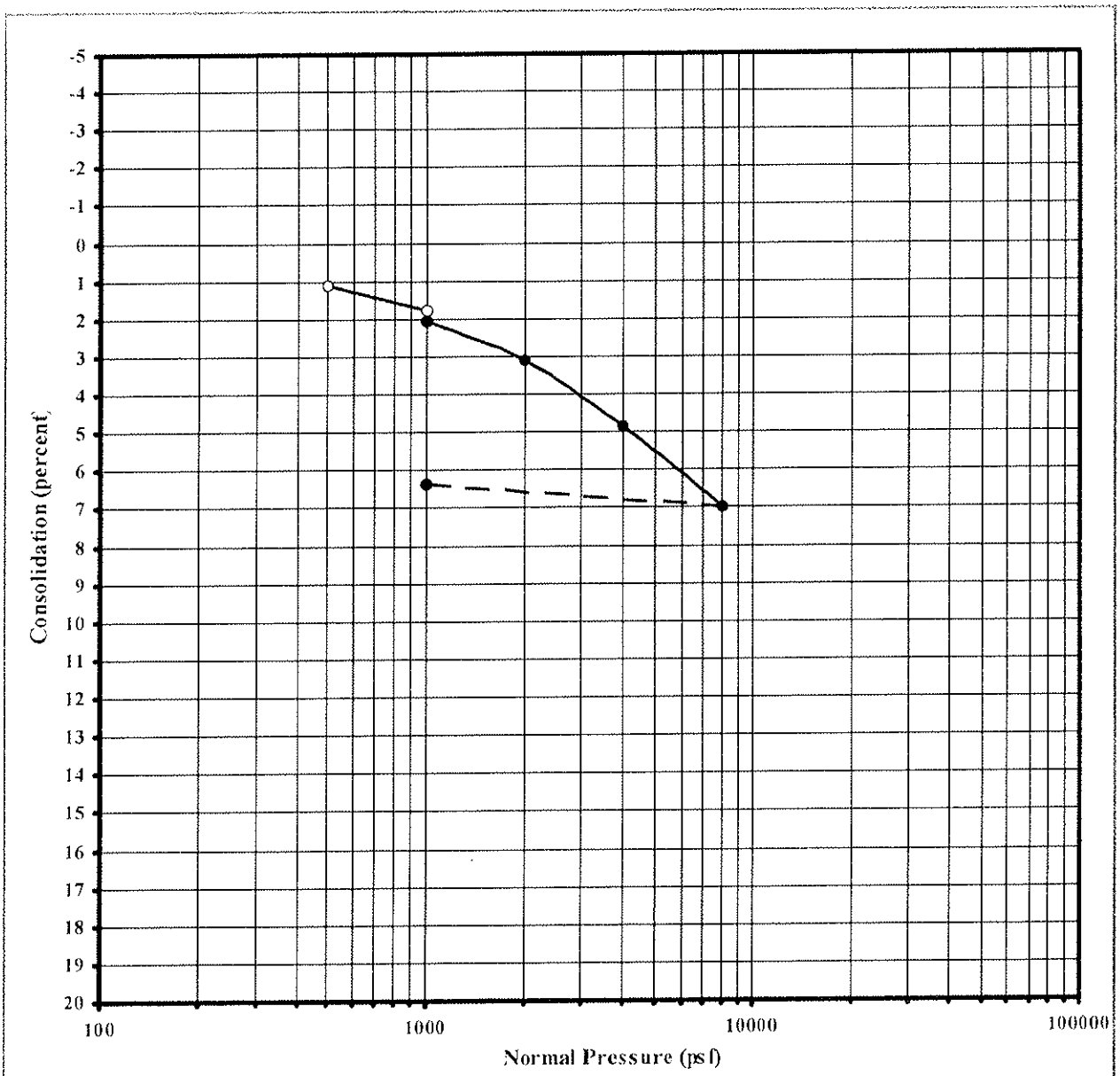
Geologic Unit: Alluvium

Material: CLAY



CONSOLIDATION RESULTS

Undisturbed Sample



Sample Inundated At Normal Pressure of 1000 psf

Sample Location: B1

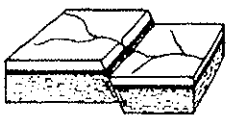
Sample Depth: 5 ft.

Initial Moisture: 21.4 %

Init. Dry Density: 98.1 pcf

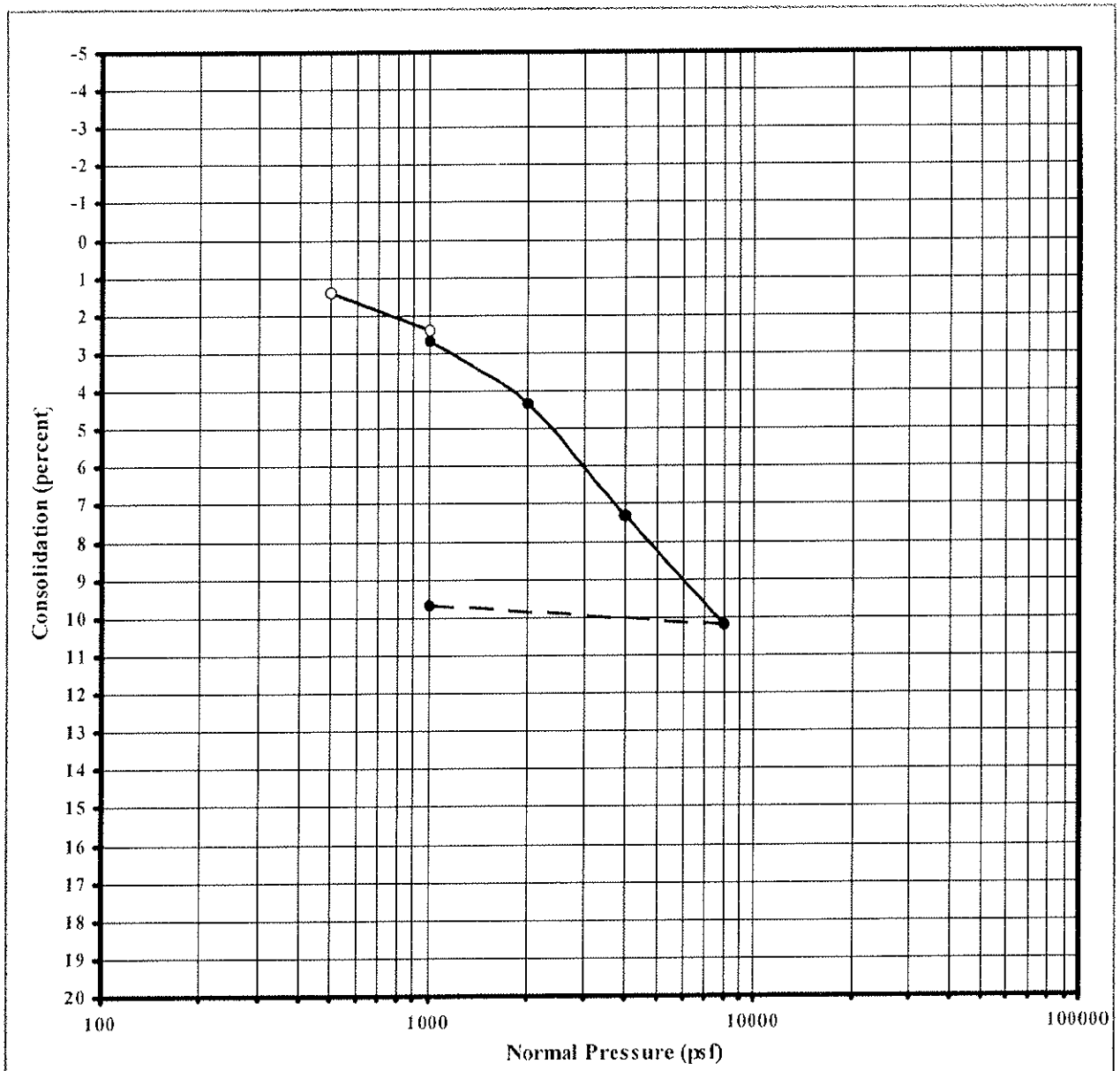
Geologic Unit: Alluvium

Material: silty fine SAND



CONSOLIDATION RESULTS

Undisturbed Sample



Sample Inundated At Normal Pressure of 1000 psf

Sample Location: B1

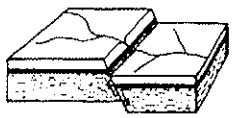
Sample Depth: 7.5 ft.

Initial Moisture: 17.5 %

Init. Dry Density: 99.5 pcf

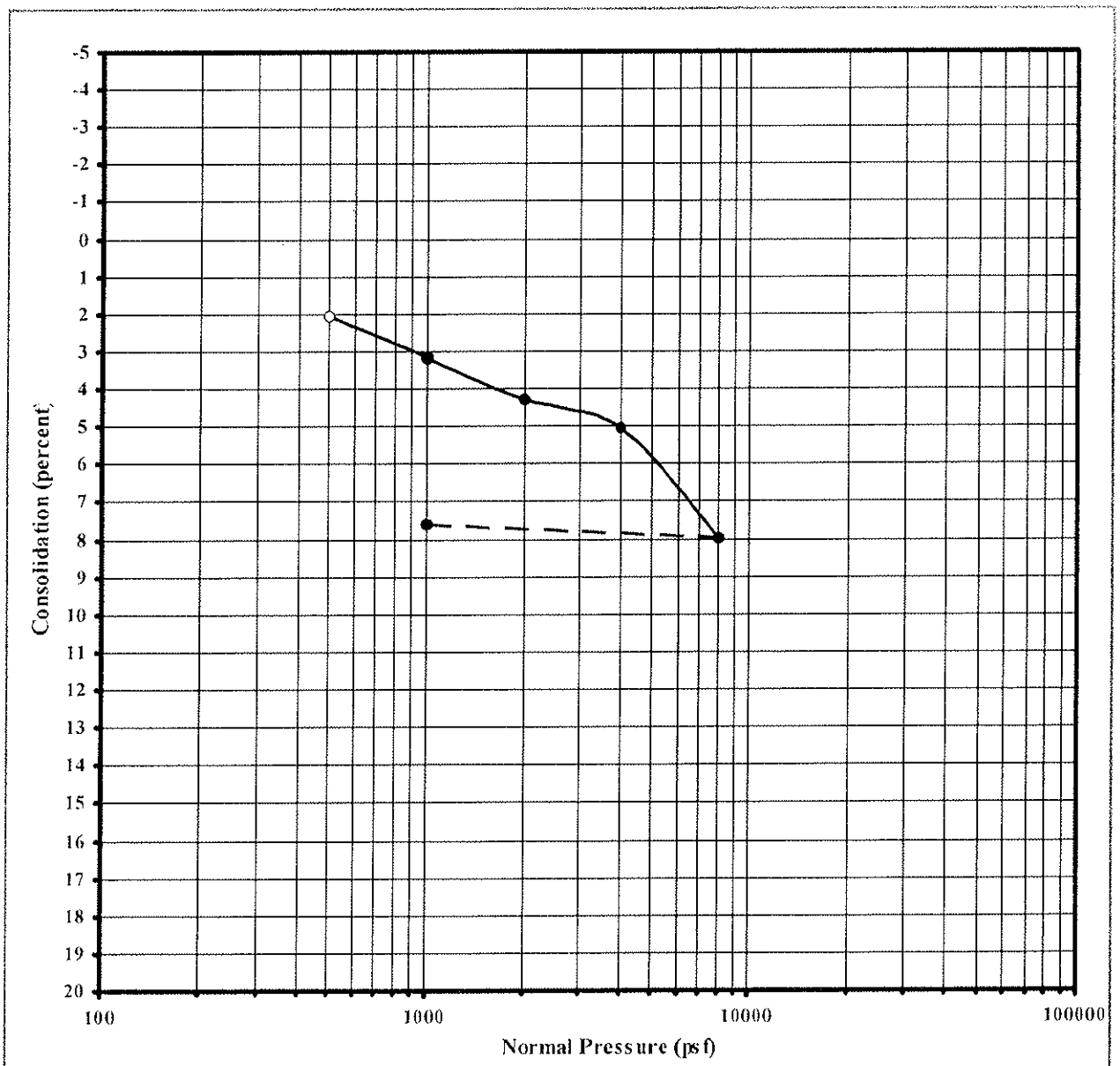
Geologic Unit: Alluvium

Material: CLAY



CONSOLIDATION RESULTS

Undisturbed Sample



Sample Inundated At Normal Pressure of 1000 psf

Sample Location: B1

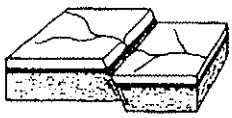
Sample Depth: 10 ft.

Initial Moisture: 18.2 %

Init. Dry Density: 110.2 pcf

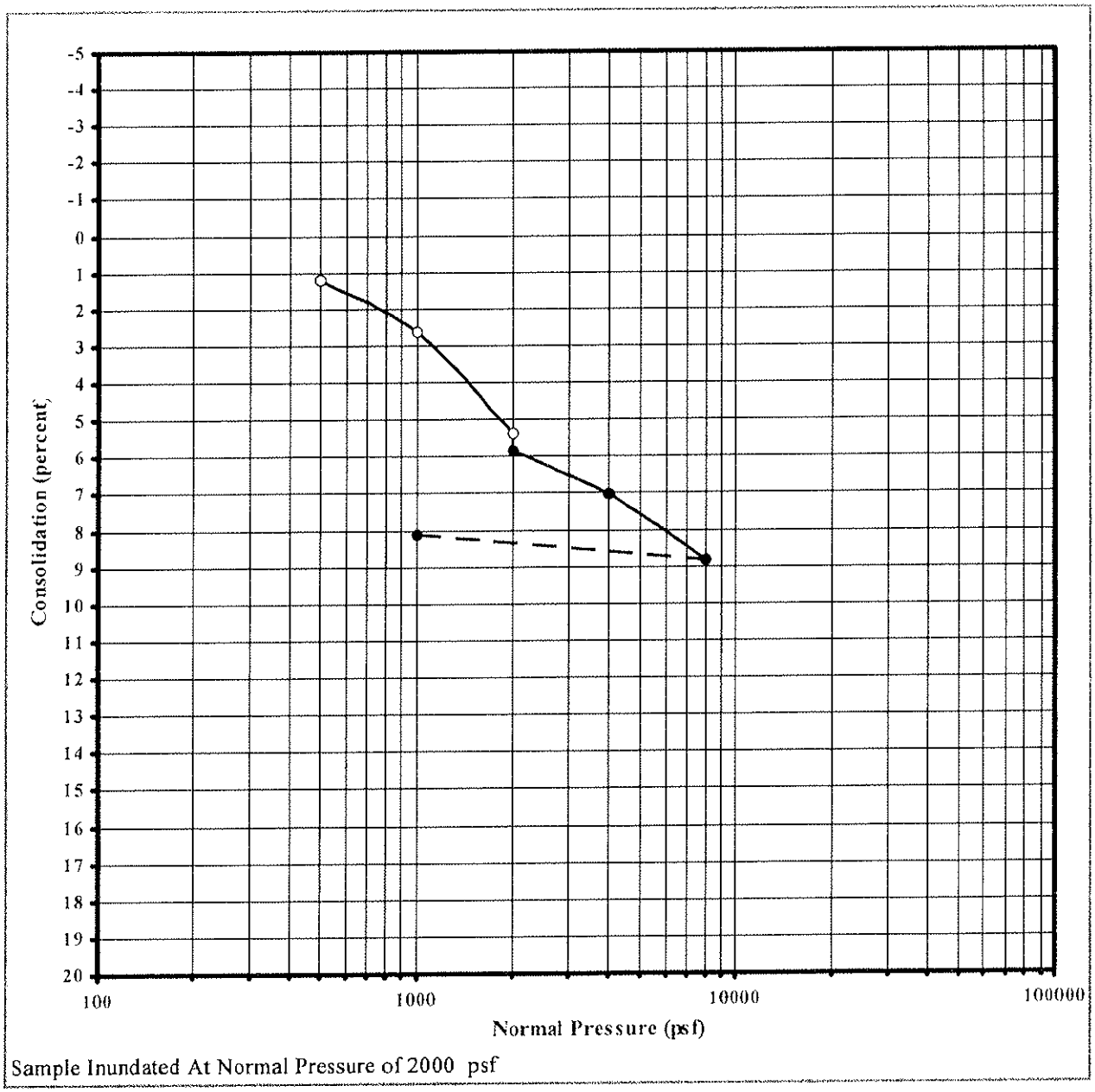
Geologic Unit: Alluvium

Material: silty SAND



CONSOLIDATION RESULTS

Undisturbed Sample



Sample Inundated At Normal Pressure of 2000 psf

Sample Location: B1

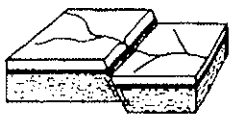
Sample Depth: 20 ft.

Initial Moisture: 25.5 %

Init. Dry Density: 101.2 pcf

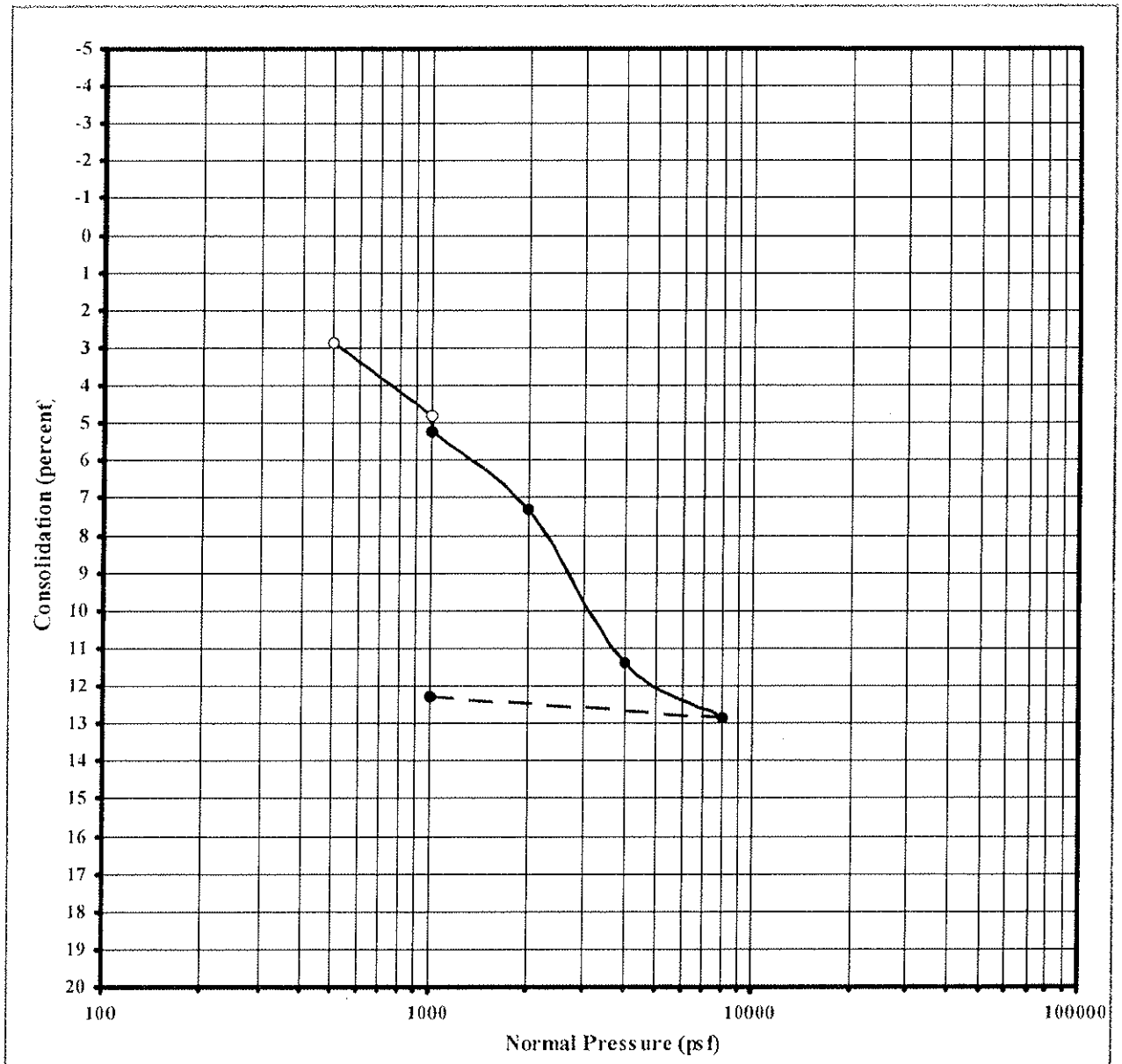
Geologic Unit: Alluvium

Material: fine sandy CLAY



CONSOLIDATION RESULTS

Undisturbed Sample



Sample Inundated At Normal Pressure of 1000 psf

Sample Location: B2

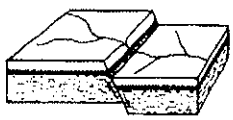
Sample Depth: 5 ft.

Initial Moisture: 15.7 %

Init. Dry Density: 96.9 pcf

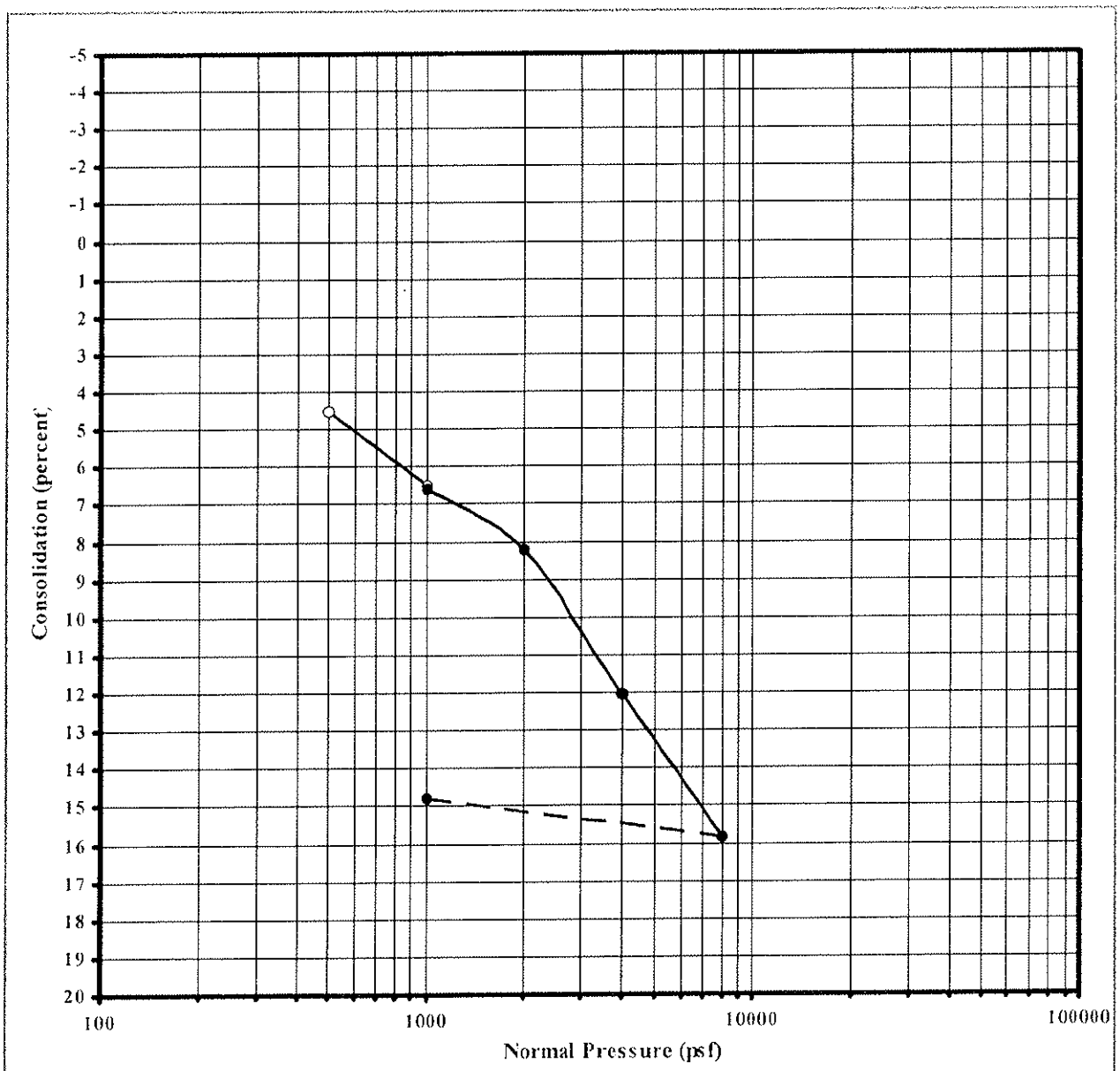
Geologic Unit: Alluvium

Material: SILT



CONSOLIDATION RESULTS

Undisturbed Sample



Sample Inundated At Normal Pressure of 1000 psf

Sample Location: B3

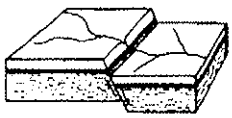
Sample Depth: 5 ft.

Initial Moisture: 23.5 %

Init. Dry Density: 97.2 pcf

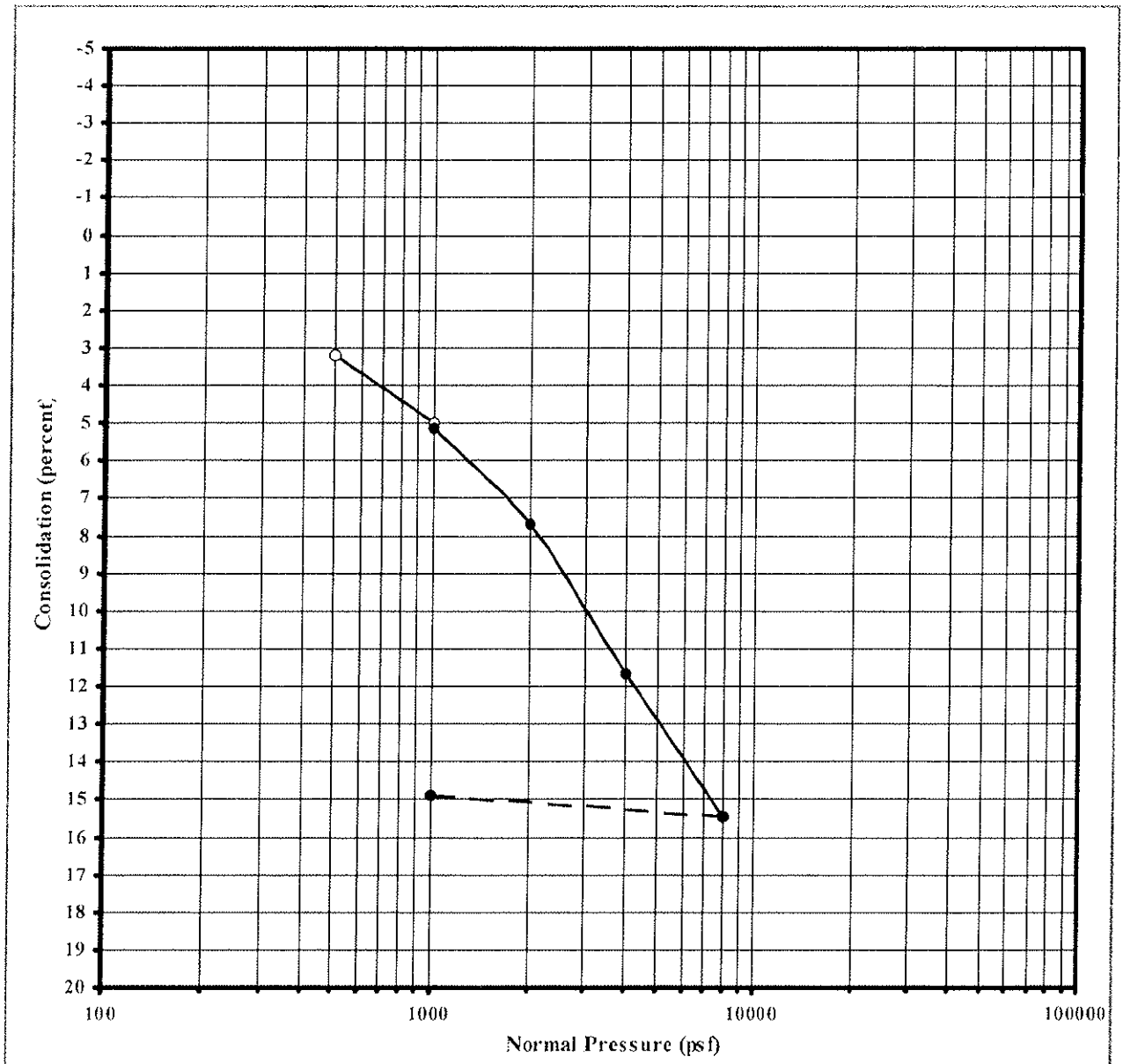
Geologic Unit: Alluvium

Material: CLAY



CONSOLIDATION RESULTS

Undisturbed Sample



Sample Inundated At Normal Pressure of 1000 psf

Sample Location: B3

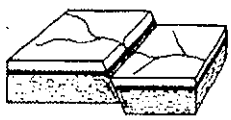
Sample Depth: 7.5 ft.

Initial Moisture: 23.2 %

Init. Dry Density: 99 pcf

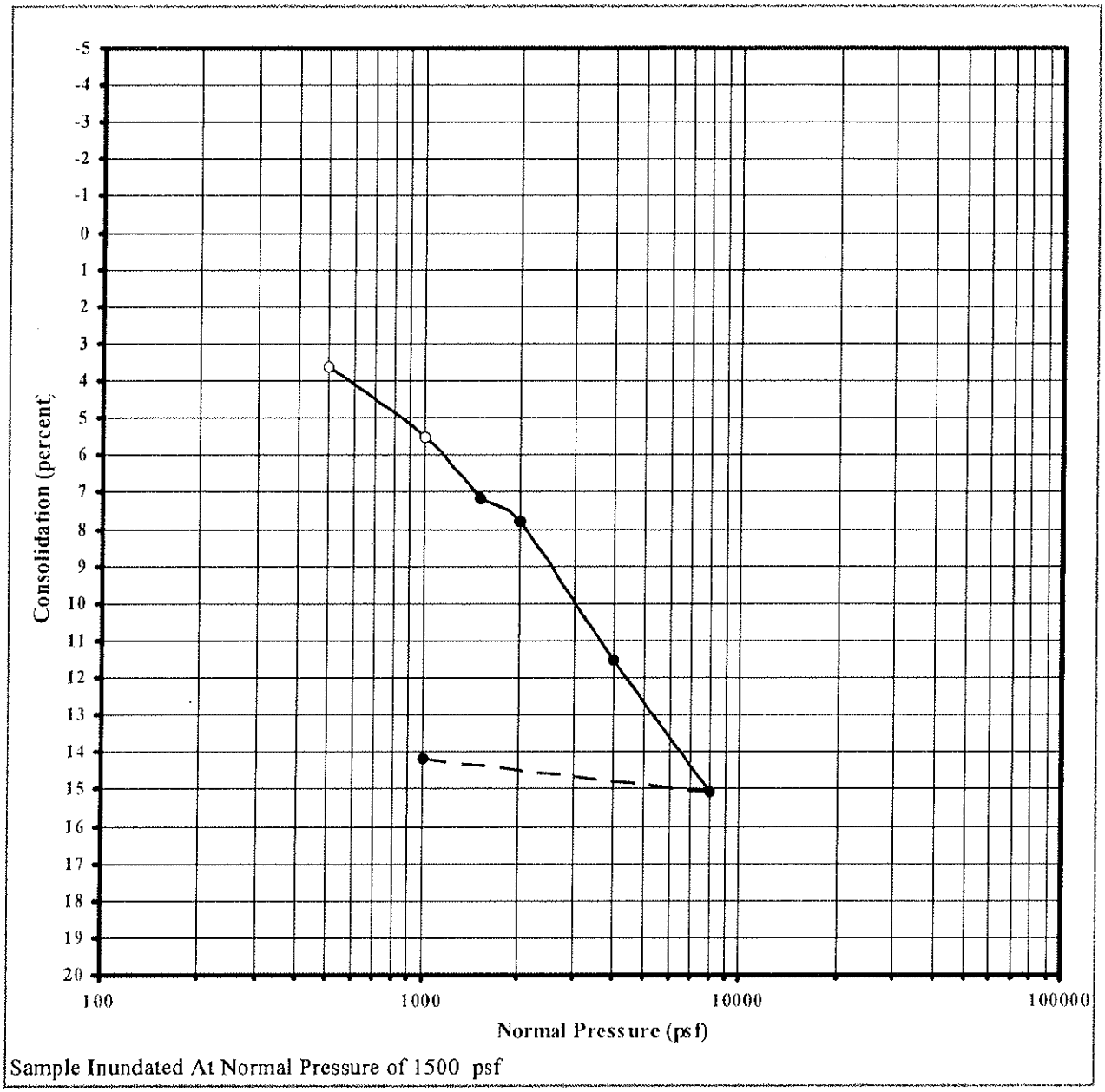
Geologic Unit: Alluvium

Material: CLAY



CONSOLIDATION RESULTS

Undisturbed Sample



Sample Inundated At Normal Pressure of 1500 psf

Sample Location: B3

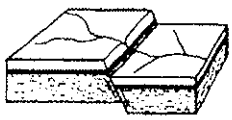
Sample Depth: 15 ft.

Initial Moisture: 24.4 %

Init. Dry Density: 95.3 pcf

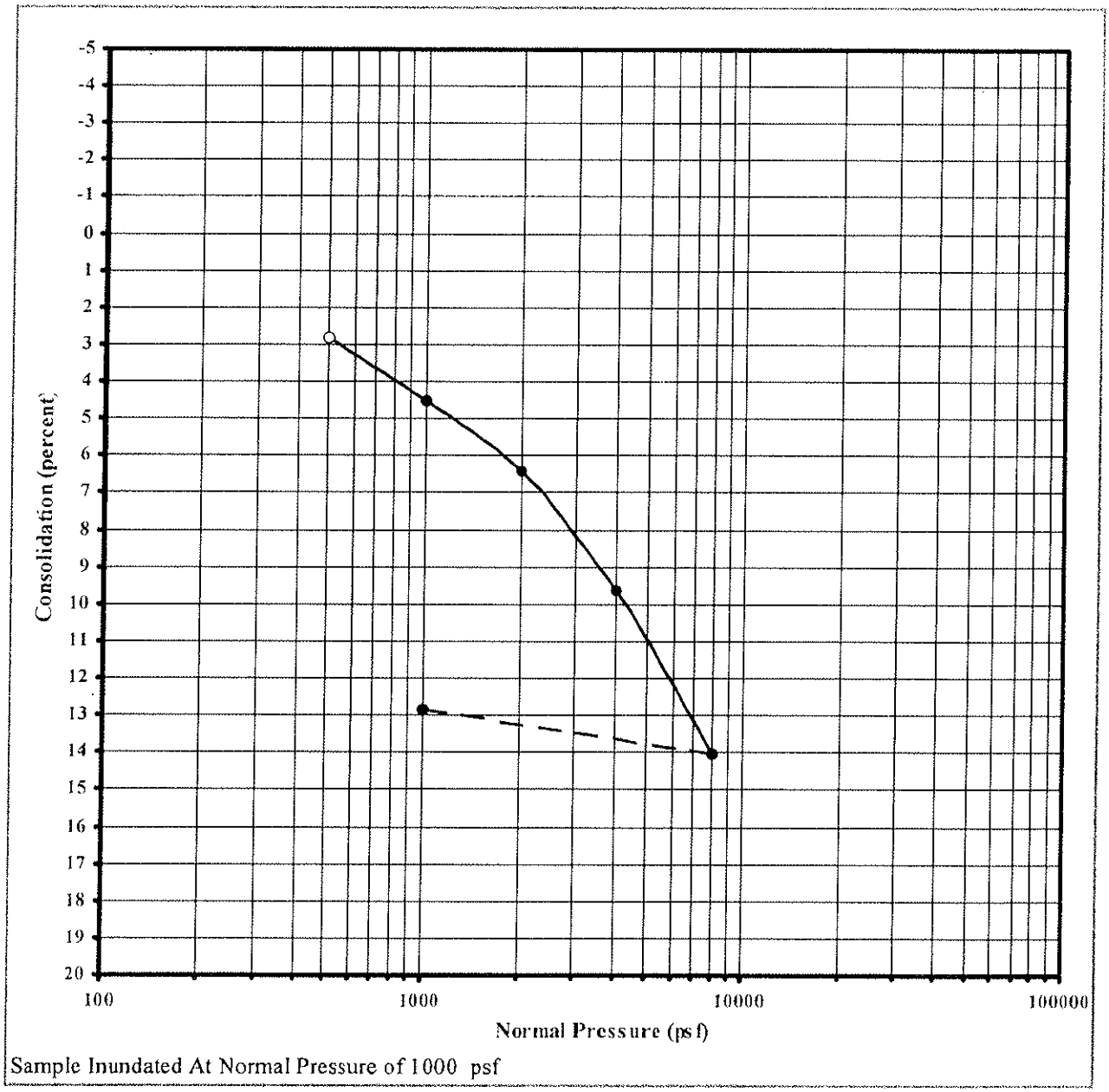
Geologic Unit: Alluvium

Material: CLAY



CONSOLIDATION RESULTS

Undisturbed Sample



Sample Inundated At Normal Pressure of 1000 psf

Sample Location: B4

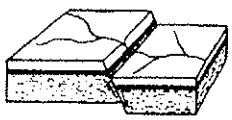
Sample Depth: 5 ft.

Initial Moisture: 31.1 %

Init. Dry Density: 93.4 pcf

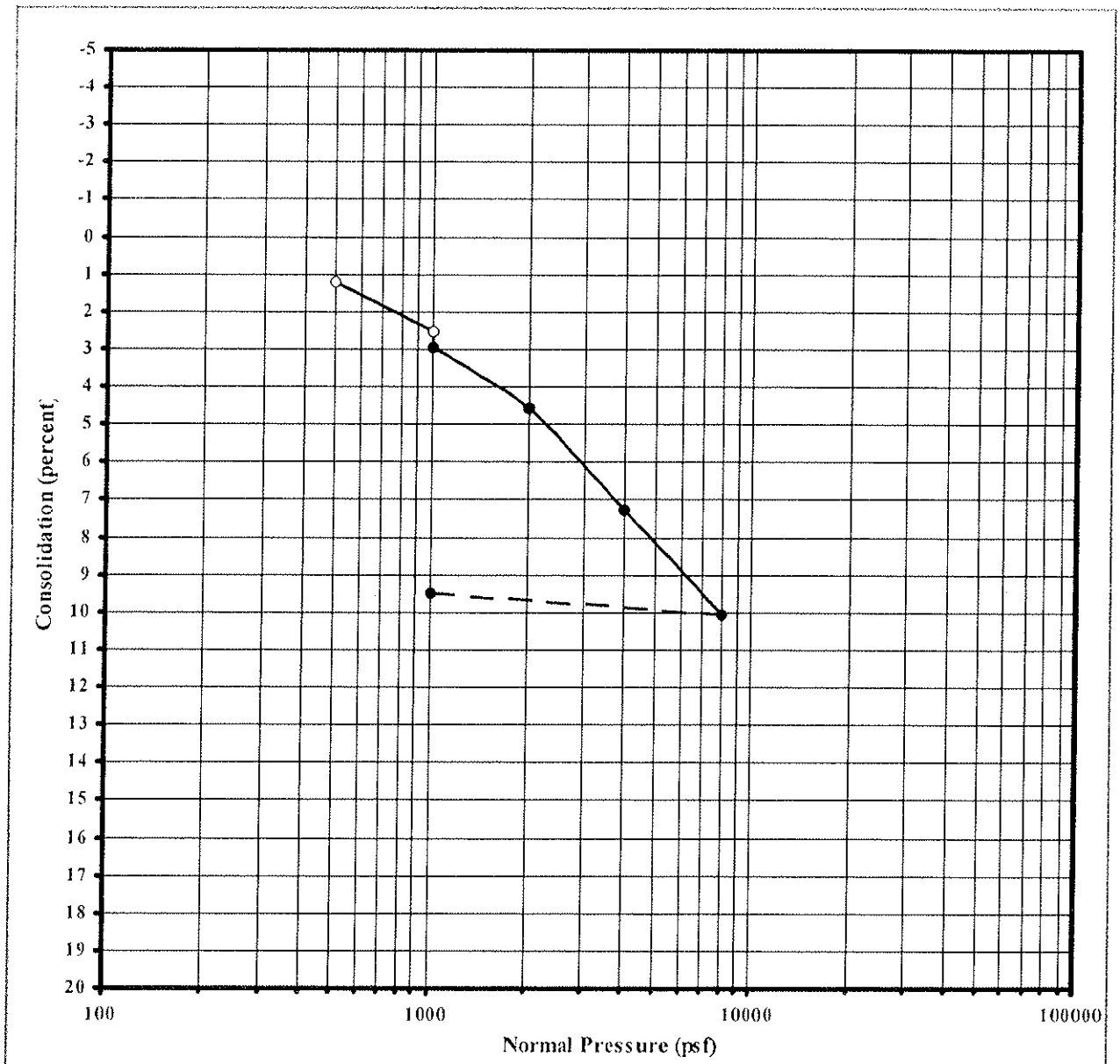
Geologic Unit: Alluvium

Material: silty CLAY



CONSOLIDATION RESULTS

Undisturbed Sample



Sample Inundated At Normal Pressure of 1000 psf

Sample Location: B4

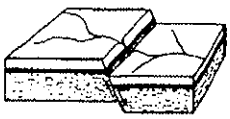
Sample Depth: 10 ft.

Initial Moisture: 24.8 %

Init. Dry Density: 97.8 pcf

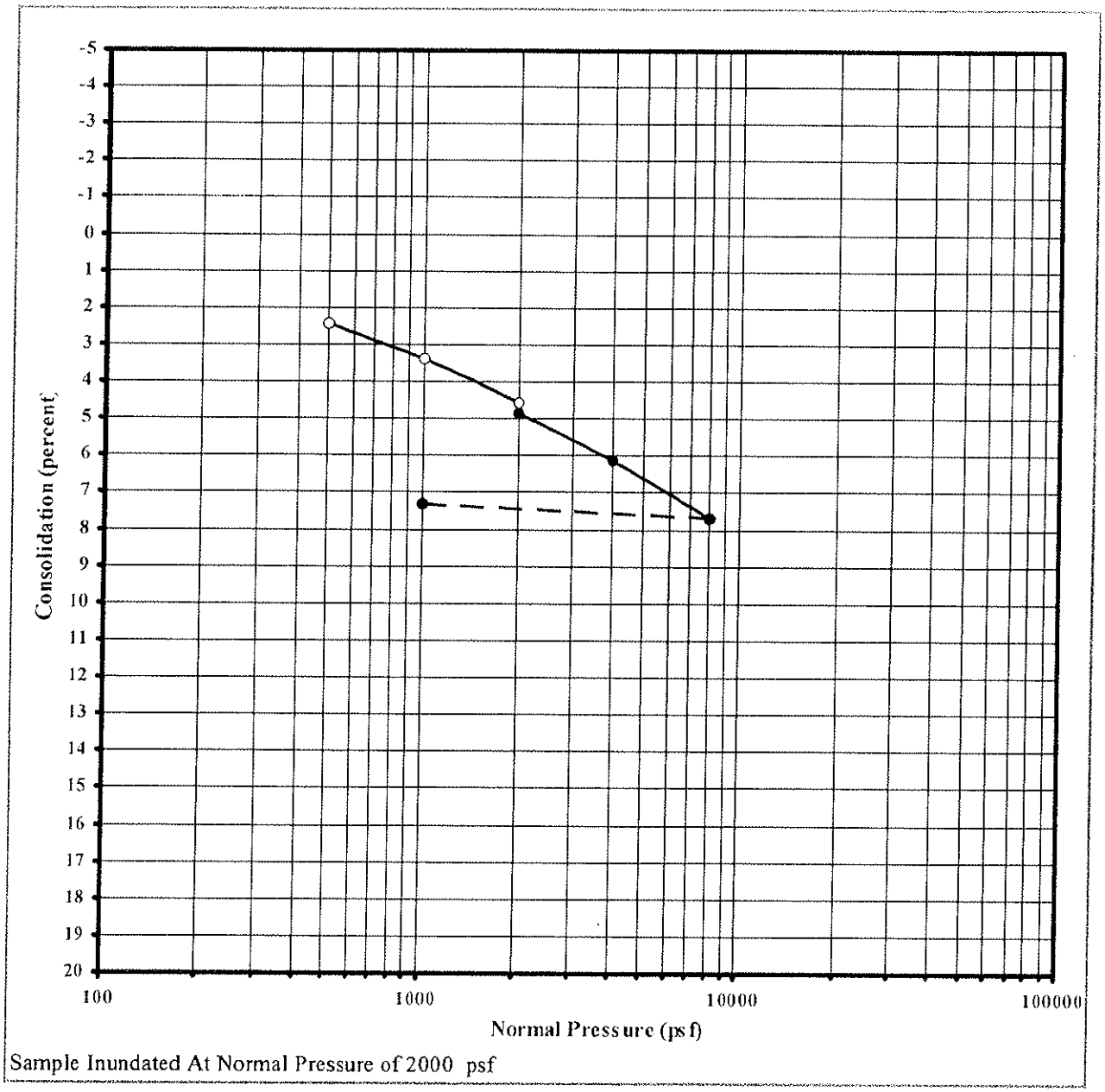
Geologic Unit: Alluvium

Material: silty CLAY



CONSOLIDATION RESULTS

Undisturbed Sample



Sample Inundated At Normal Pressure of 2000 psf

Sample Location: B4

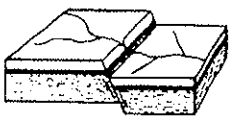
Sample Depth: 20 ft.

Initial Moisture: 22.7 %

Init. Dry Density: 103.3 pcf

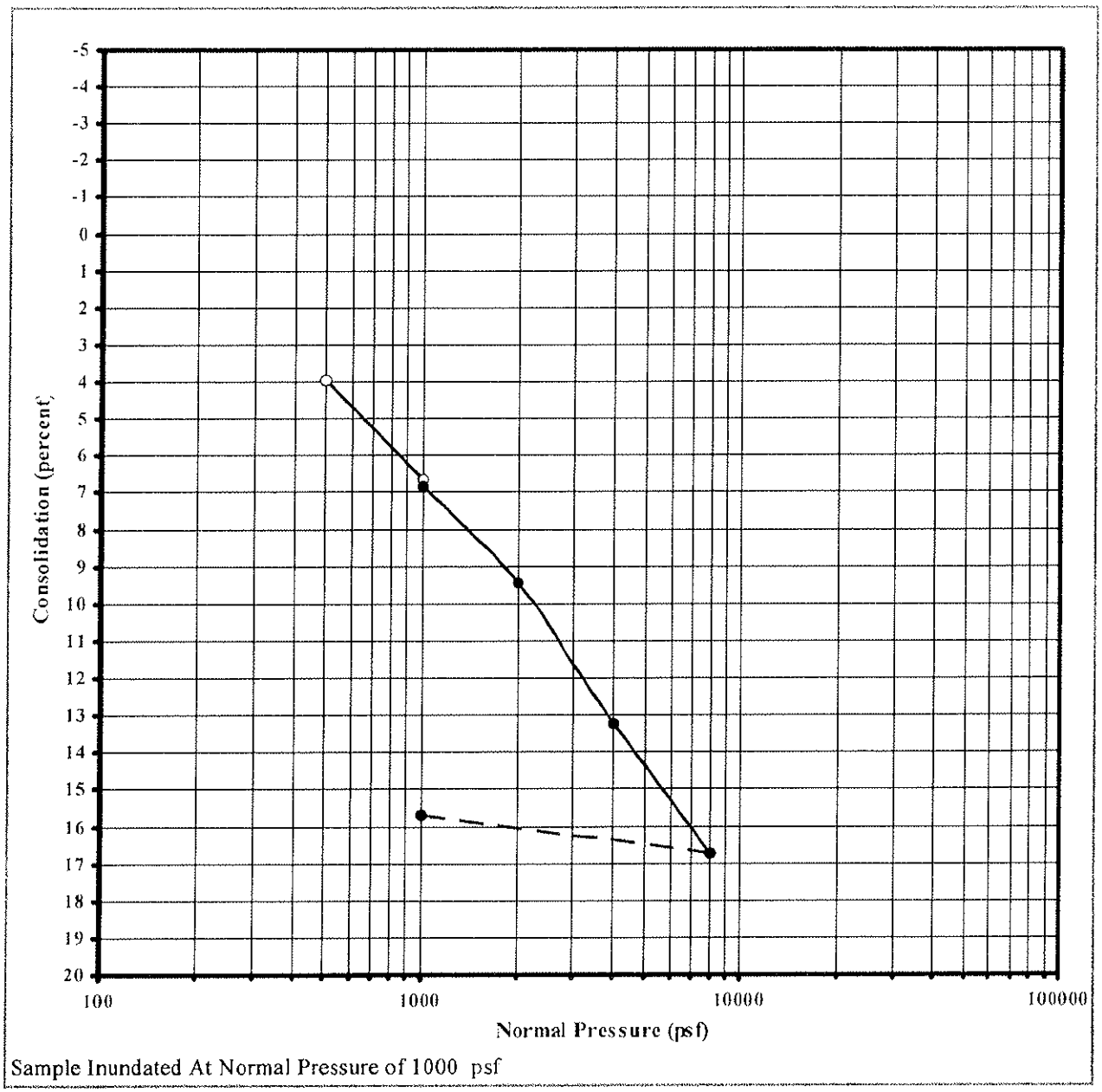
Geologic Unit: Alluvium

Material: CLAY



CONSOLIDATION RESULTS

Undisturbed Sample



Sample Inundated At Normal Pressure of 1000 psf

Sample Location: B5

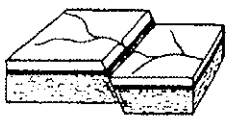
Sample Depth: 5 ft.

Initial Moisture: 28.7 %

Init. Dry Density: 92.7 pcf

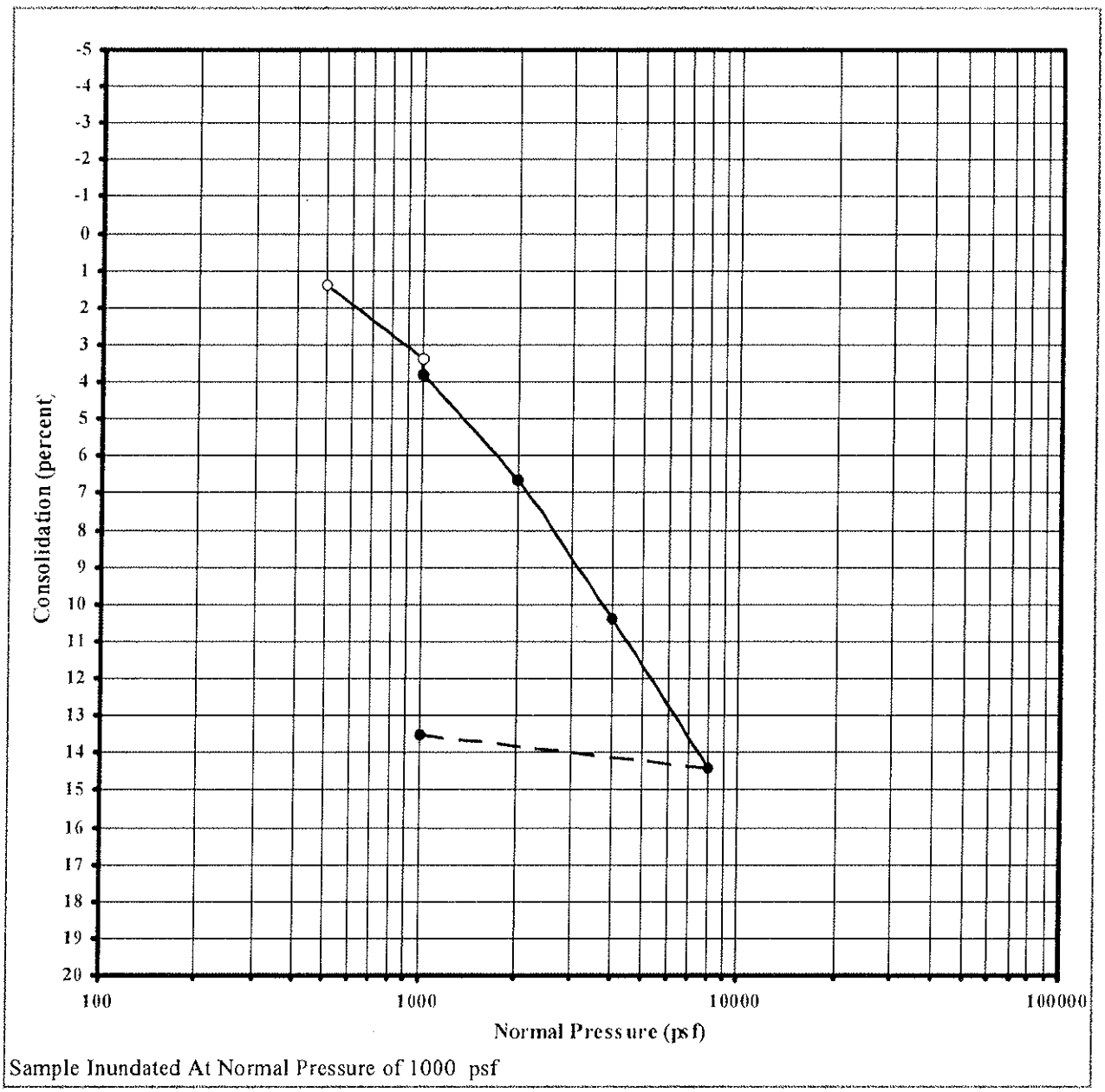
Geologic Unit: Alluvium

Material: CLAY



CONSOLIDATION RESULTS

Undisturbed Sample



Sample Inundated At Normal Pressure of 1000 psf

Sample Location: B5

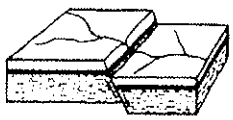
Sample Depth: 7.5 ft.

Initial Moisture: 28 %

Init. Dry Density: 89.5 pcf

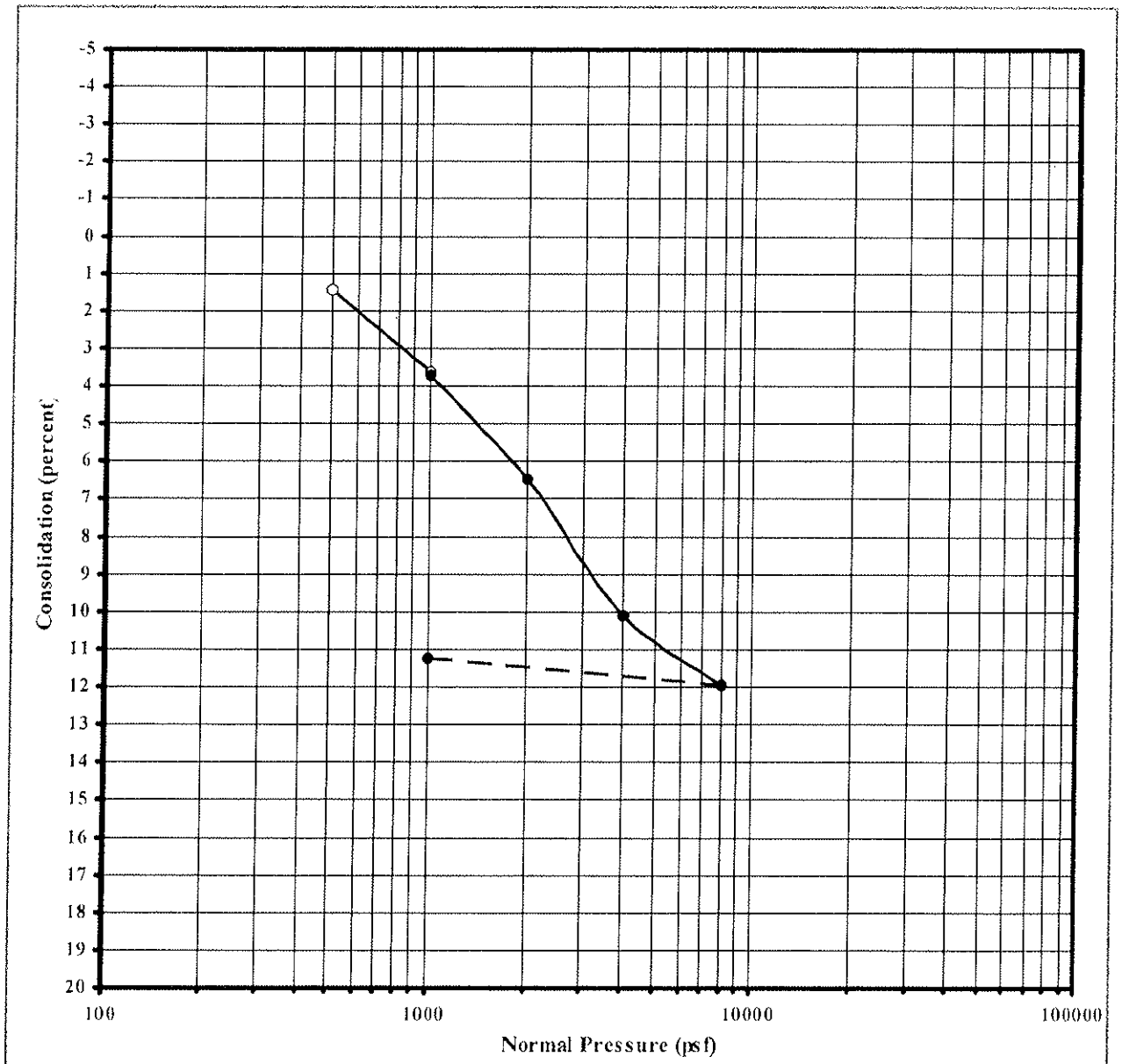
Geologic Unit: Alluvium

Material: CLAY



CONSOLIDATION RESULTS

Undisturbed Sample



Sample Inundated At Normal Pressure of 1000 psf

Sample Location: B6

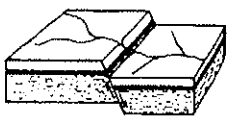
Sample Depth: 7.5 ft.

Initial Moisture: 30.4 %

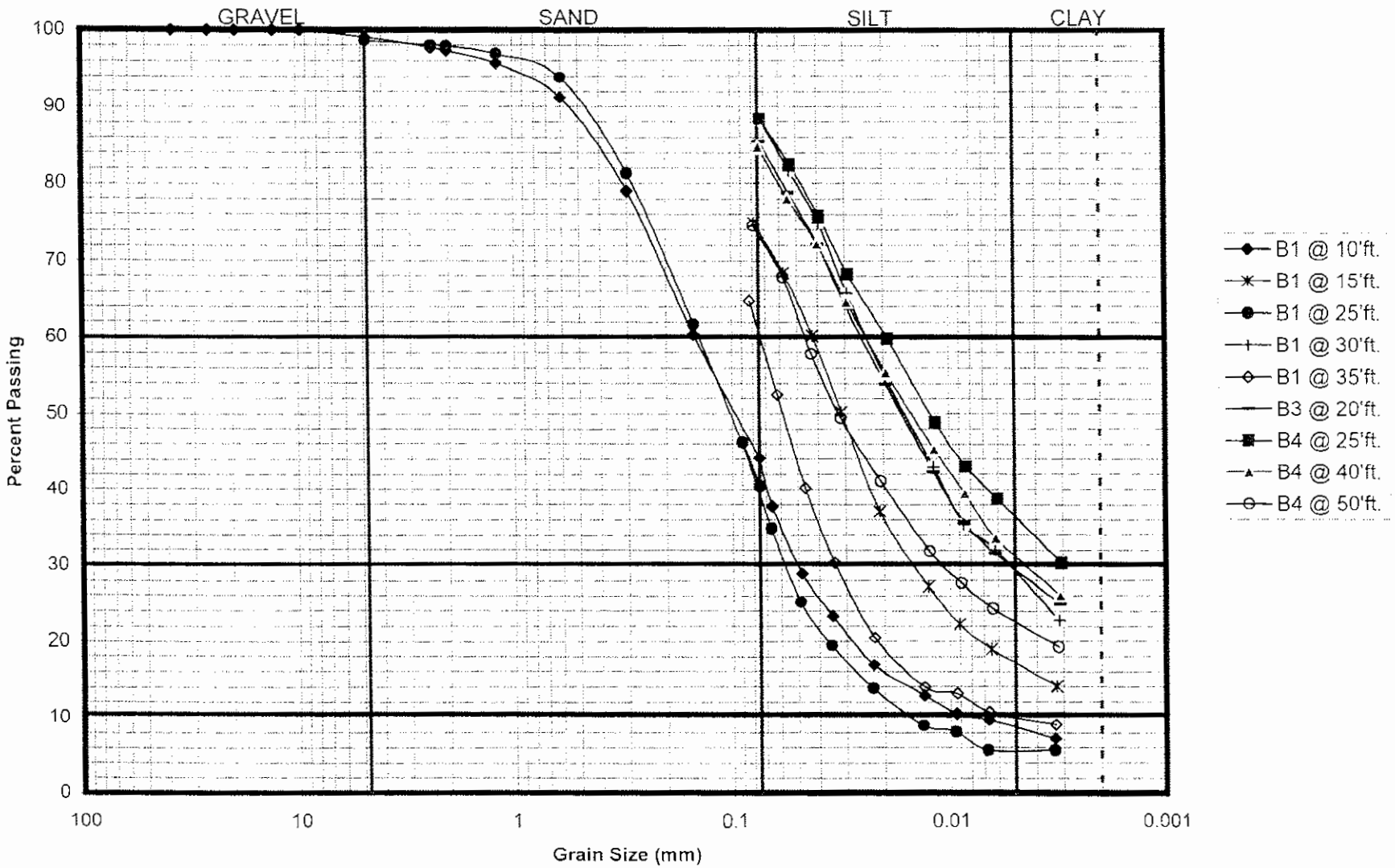
Init. Dry Density: 88.9 pcf

Geologic Unit: Alluvium

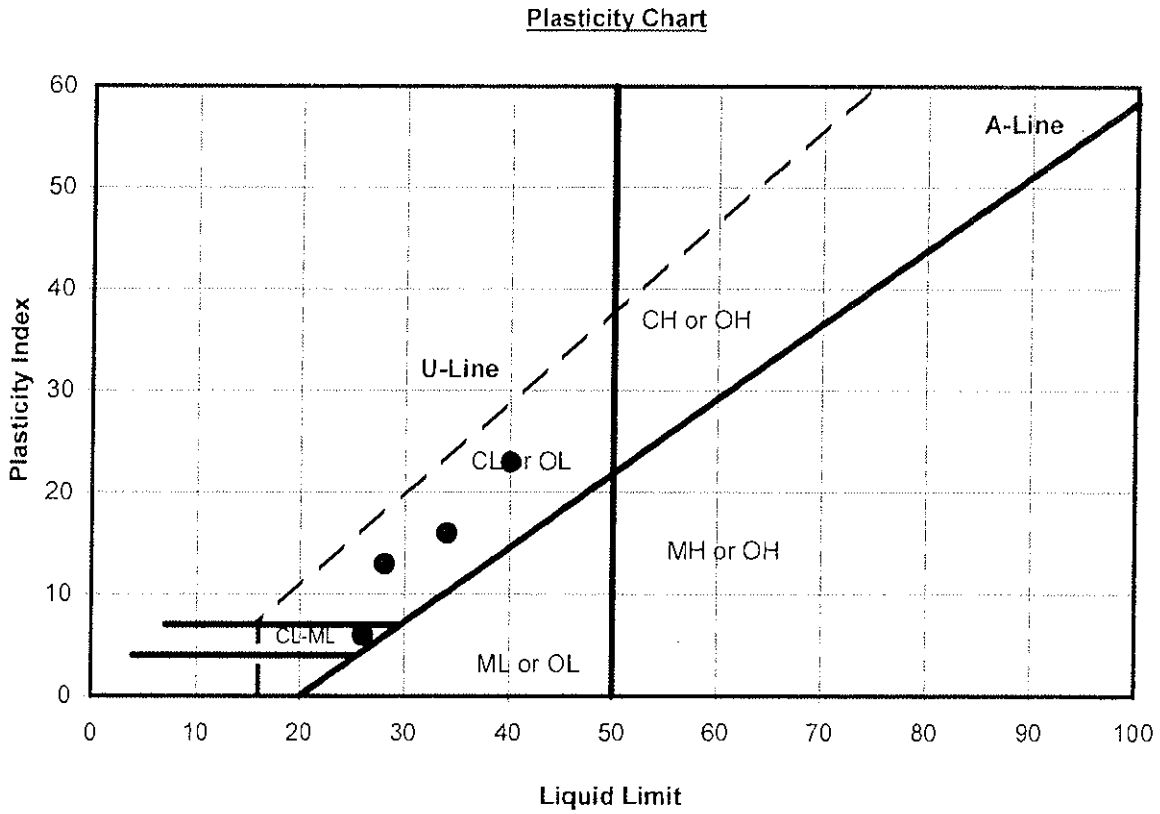
Material: CLAY



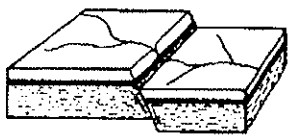
PARTICLE SIZE ANALYSIS



Atterberg Limits Test Results



Location	Depth (ft)	LL	PI	Classification
B1	5	28	13	CL
B1	20	26	6	CL
B3	15	34	16	CL
B4	25	40	23	CL
B4	40	40	23	CL
B4	50	34	16	CL



APPENDIX A

SEISMIC ANALYSIS

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**********************
*                    *
*   U B C S E I S    *
*                    *
*   Version  1.03    *
*                    *
**********************
```

COMPUTATION OF 1997
UNIFORM BUILDING CODE
SEISMIC DESIGN PARAMETERS

JOB NUMBER: 9011 DATE: 08-29-2005

JOB NAME: Broome Property

FAULT-DATA-FILE NAME: s:\engr\ubcsei s\CDMGUBCR.DAT

SITE COORDINATES:
SITE LATITUDE: 34.2652
SITE LONGITUDE: 119.2317

UBC SEISMIC ZONE: 0.4

UBC SOIL PROFILE TYPE: SD

NEAREST TYPE A FAULT:
NAME: SAN ANDREAS - 1857 Rupture
DISTANCE: 65.8 km

NEAREST TYPE B FAULT:
NAME: VENTURA - PITAS POINT
DISTANCE: 3.0 km

NEAREST TYPE C FAULT:
NAME:
DISTANCE: 99999.0 km

SELECTED UBC SEISMIC COEFFICIENTS:
Na: 1.2
Nv: 1.5
Ca: 0.53
Cv: 0.93
Ts: 0.708
To: 0.142

```
*****************************************************************
* CAUTION:  The digitized data points used to model faults are  *
*           limited in number and have been digitized from small-*
*           scale maps (e.g., 1:750,000 scale).  Consequently,   *
*           the estimated fault-site-distances may be in error by *
*           several kilometers.  Therefore, it is important that *
*           the distances be carefully checked for accuracy and  *
*           adjusted as needed, before they are used in design.  *
*****************************************************************
```

SUMMARY OF FAULT PARAMETERS

Page 1

ABBREVIATED FAULT NAME	APPROX. DISTANCE (km)	SOURCE TYPE (A,B,C)	MAX. MAG. (Mw)	SLIP RATE (mm/yr)	FAULT TYPE (SS,DS,BT)
VENTURA - PITAS POINT	3.0	B	6.8	1.00	DS
OAK RIDGE (Onshore)	3.1	B	6.9	4.00	DS
SIMI-SANTA ROSA	9.3	B	6.7	1.00	DS
RED MOUNTAIN	12.6	B	6.8	2.00	DS
M.RIDGE-ARROYO PARIDA-SANTA ANA	19.0	B	6.7	0.40	DS
ANACAPA-DUME	21.5	B	7.3	3.00	DS
SAN CAYETANO	22.3	B	6.8	6.00	DS
SANTA YNEZ (East)	27.2	B	7.0	2.00	SS
MALIBU COAST	34.7	B	6.7	0.30	DS
SANTA CRUZ ISLAND	40.2	B	6.8	1.00	DS
SANTA SUSANA	44.0	B	6.6	5.00	DS
SANTA YNEZ (West)	44.2	B	6.9	2.00	SS
HOLSER	46.3	B	6.5	0.40	DS
BIG PINE	46.6	B	6.7	0.80	SS
SANTA MONICA	56.9	B	6.6	1.00	DS
SAN GABRIEL	57.6	B	7.0	1.00	SS
PLEITO THRUST	64.7	B	6.8	2.00	DS
SAN ANDREAS - 1857 Rupture	65.8	A	7.8	34.00	SS
SANTA ROSA ISLAND	67.6	B	6.9	1.00	DS
GARLOCK (West)	69.1	A	7.1	6.00	SS
SIERRA MADRE (San Fernando)	69.3	B	6.7	2.00	DS
PALOS VERDES	70.2	B	7.1	3.00	SS
VERDUGO	74.5	B	6.7	0.50	DS
HOLLYWOOD	76.0	B	6.5	1.00	DS
NEWPORT-INGLEWOOD (L.A.Basin)	81.5	B	6.9	1.00	SS
SIERRA MADRE (Central)	86.0	B	7.0	3.00	DS
LOS ALAMOS-W. BASELINE	86.7	B	6.8	0.70	DS
WHITE WOLF	87.0	B	7.2	2.00	DS
RAYMOND	93.4	B	6.5	0.50	DS
LIONS HEAD	104.0	B	6.6	0.02	DS
CLAMSHELL-SAWPIT	107.6	B	6.5	0.50	DS
SAN LUIS RANGE (S. Margin)	113.0	B	7.0	0.20	DS
ELSINORE-WHITTIER	115.8	B	6.8	2.50	SS
SAN JUAN	118.8	B	7.0	1.00	SS
CASMALIA (Orcutt Frontal Fault)	121.5	B	6.5	0.25	DS
SAN JOSE	125.0	B	6.5	0.50	DS
CUCAMONGA	134.0	A	7.0	5.00	DS
CHINO-CENTRAL AVE. (Elsinore)	135.8	B	6.7	1.00	DS
NEWPORT-INGLEWOOD (Offshore)	142.4	B	6.9	1.50	SS
LOS OSOS	142.9	B	6.8	0.50	DS
HOSGRI	149.7	B	7.3	2.50	SS
ELSINORE-GLEN IVY	153.5	B	6.8	5.00	SS
SAN ANDREAS - Southern	156.8	A	7.4	24.00	SS
SAN JACINTO-SAN BERNARDINO	158.4	B	6.7	12.00	SS
GARLOCK (East)	158.8	A	7.3	7.00	SS
CLEGHORN	162.5	B	6.5	3.00	SS

SUMMARY OF FAULT PARAMETERS

ABBREVIATED FAULT NAME	APPROX. DISTANCE (km)	SOURCE TYPE (A,B,C)	MAX. MAG. (Mw)	SLIP RATE (mm/yr)	FAULT TYPE (SS,DS,BT)
CORONADO BANK	163.2	B	7.4	3.00	SS
RINCONADA	165.0	B	7.3	1.00	SS
LENWOOD-LOCKHART-OLD WOMAN SPRGS	171.8	B	7.3	0.60	SS
NORTH FRONTAL FAULT ZONE (West)	179.3	B	7.0	1.00	DS
HELENDALE - S. LOCKHARDT	181.0	B	7.1	0.60	SS
So. SIERRA NEVADA	182.3	B	7.1	0.10	DS
SAN JACINTO-SAN JACINTO VALLEY	185.4	B	6.9	12.00	SS
ELSINORE-TEMECULA	186.4	B	6.8	5.00	SS
GRAVEL HILLS - HARPER LAKE	197.1	B	6.9	0.60	SS
LITTLE LAKE	208.3	B	6.7	0.70	SS
ROSE CANYON	208.6	B	6.9	1.50	SS
BLACKWATER	212.8	B	6.9	0.60	SS
SAN JACINTO-ANZA	220.6	A	7.2	12.00	SS
NORTH FRONTAL FAULT ZONE (East)	222.7	B	6.7	0.50	DS
ELSINORE-JULIAN	226.6	A	7.1	5.00	SS
LANDERS	227.0	B	7.3	0.60	SS
CALICO - HIDALGO	227.3	B	7.1	0.60	SS
SAN ANDREAS (Creeping)	228.5	B	5.0	34.00	SS
PINTO MOUNTAIN	231.7	B	7.0	2.50	SS
JOHNSON VALLEY (Northern)	235.4	B	6.7	0.60	SS
TANK CANYON	236.5	B	6.5	1.00	DS
OWENS VALLEY	242.8	B	7.6	1.50	SS
EMERSON So. - COPPER MTN.	249.3	B	6.9	0.60	SS
PANAMINT VALLEY	255.0	B	7.2	2.50	SS
PISGAH-BULLION MTN.-MESQUITE LK	259.8	B	7.1	0.60	SS
BURNT MTN.	260.3	B	6.5	0.60	SS
EUREKA PEAK	261.3	B	6.5	0.60	SS
OWL LAKE	262.8	B	6.5	2.00	SS
SAN JACINTO-COYOTE CREEK	265.9	B	6.8	4.00	SS
INDEPENDENCE	269.8	B	6.9	0.20	DS
EARTHQUAKE VALLEY	271.7	B	6.5	2.00	SS
DEATH VALLEY (South)	295.8	B	6.9	4.00	SS
HUNTER MTN. - SALINE VALLEY	295.9	B	7.0	2.50	SS
DEATH VALLEY (Graben)	299.0	B	6.9	4.00	DS
ELSINORE-COYOTE MOUNTAIN	300.7	B	6.8	4.00	SS
SAN JACINTO - BORREGO	303.2	B	6.6	4.00	SS
BIRCH CREEK	312.5	B	6.5	0.70	DS
PALO COLORADO - SUR	313.5	B	7.0	3.00	SS
MONTEREY BAY - TULARCITOS	314.8	B	7.1	0.50	DS
ORTIGALITA	317.0	B	6.9	1.00	SS
CALAVERAS (So.of Calaveras Res)	317.6	B	6.2	15.00	SS
WHITE MOUNTAINS	324.1	B	7.1	1.00	SS
QUIEN SABE	331.8	B	6.5	1.00	SS
DEATH VALLEY (Northern)	333.3	A	7.2	5.00	SS
SUPERSTITION MTN. (San Jacinto)	335.4	B	6.6	5.00	SS
ROUND VALLEY (E. of S.N.Mtns.)	336.5	B	6.8	1.00	DS

SUMMARY OF FAULT PARAMETERS

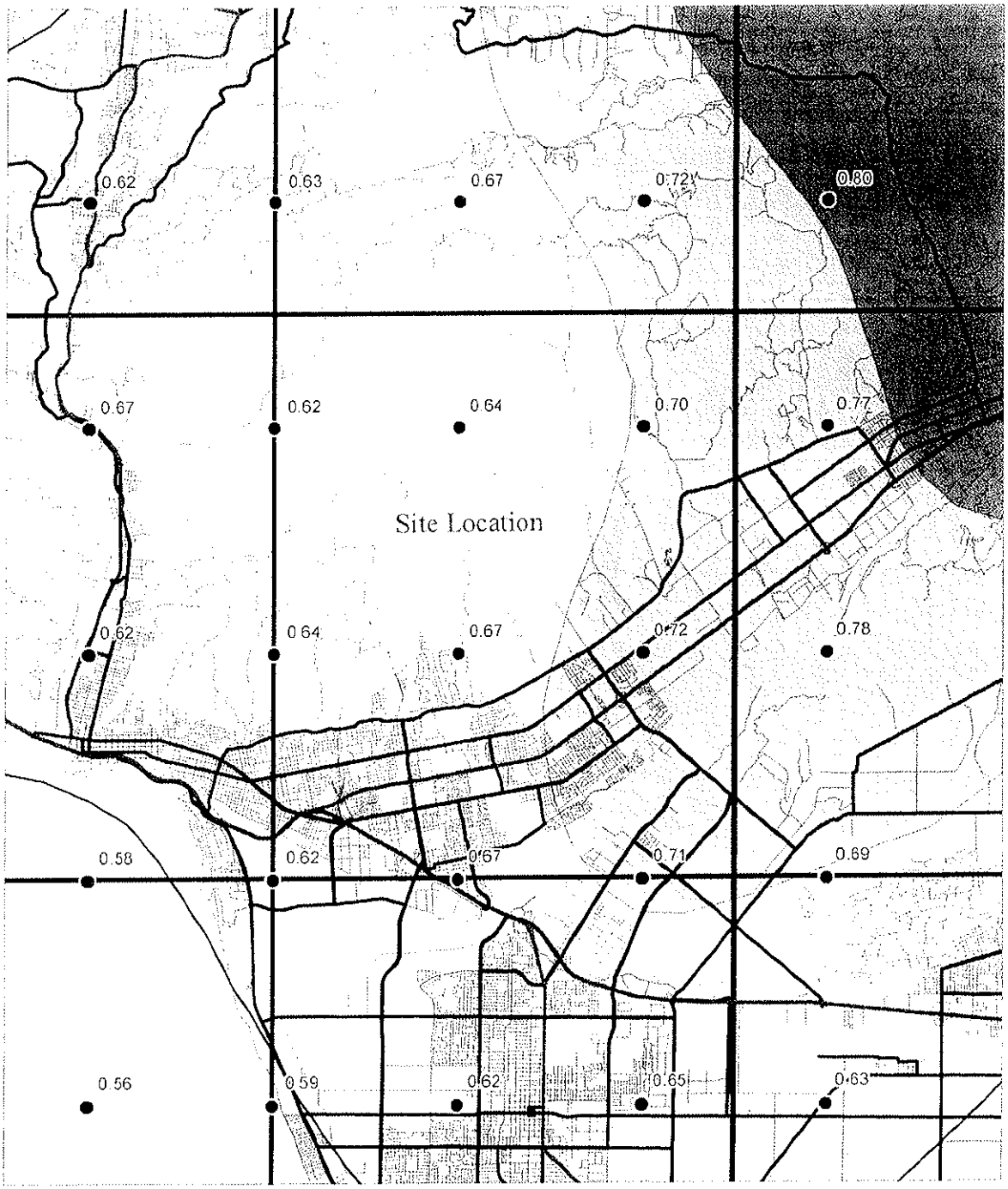
ABBREVIATED FAULT NAME	APPROX. DISTANCE (km)	SOURCE TYPE (A,B,C)	MAX. MAG. (Mw)	SLIP RATE (mm/yr)	FAULT TYPE (SS,DS,BT)
ELMORE RANCH	339.4	B	6.6	1.00	SS
BRAWLEY SEISMIC ZONE	339.6	B	6.5	25.00	SS
SUPERSTITION HILLS (San Jacinto)	341.5	B	6.6	4.00	SS
DEEP SPRINGS	346.9	B	6.6	0.80	DS
ZAYANTE-VERGELES	347.9	B	6.8	0.10	SS
FISH SLOUGH	351.4	B	6.6	0.20	DS
ELSINORE-LAGUNA SALADA	352.3	B	7.0	3.50	SS
SAN ANDREAS (1906)	353.0	A	7.9	24.00	SS
SARGENT	354.1	B	6.8	3.00	SS
HILTON CREEK	358.4	B	6.7	2.50	DS
DEATH VALLEY (N. of Cucamongo)	368.0	A	7.0	5.00	SS
IMPERIAL	368.5	A	7.0	20.00	SS
HARTLEY SPRINGS	375.8	B	6.6	0.50	DS
SAN GREGORIO	389.3	A	7.3	5.00	SS
MONTE VISTA - SHANNON	403.1	B	6.5	0.40	DS
HAYWARD (SE Extension)	405.2	B	6.5	3.00	SS
MONO LAKE	408.2	B	6.6	2.50	DS
GREENVILLE	408.4	B	6.9	2.00	SS
HAYWARD (Total Length)	425.5	A	7.1	9.00	SS
CALAVERAS (No.of Calaveras Res)	425.5	B	6.8	6.00	SS
ROBINSON CREEK	436.3	B	6.5	0.50	DS
ANTELOPE VALLEY	472.4	B	6.7	0.80	DS
CONCORD - GREEN VALLEY	475.2	B	6.9	6.00	SS
GENOA	492.4	B	6.9	1.00	DS
RODGERS CREEK	512.1	A	7.0	9.00	SS
WEST NAPA	514.4	B	6.5	1.00	SS
POINT REYES	526.2	B	6.6	0.30	DS
HUNTING CREEK - BERRYESSA	539.6	B	6.9	6.00	SS
MAACAMA (South)	575.3	B	6.9	9.00	SS
COLLAYOMI	593.6	B	6.5	0.60	SS
BARTLETT SPRINGS	599.9	A	7.1	6.00	SS
MAACAMA (Central)	616.2	A	7.1	9.00	SS
MAACAMA (North)	676.5	A	7.1	9.00	SS
ROUND VALLEY (N. S.F.Bay)	686.1	B	6.8	6.00	SS
BATTLE CREEK	728.1	B	6.5	0.50	DS
LAKE MOUNTAIN	743.8	B	6.7	6.00	SS
GARBERVILLE-BRICELAND	758.9	B	6.9	9.00	SS
MENDOCINO FAULT ZONE	812.3	A	7.4	35.00	DS
LITTLE SALMON (Onshore)	822.9	A	7.0	5.00	DS
CASCADIA SUBDUCTION ZONE	824.0	A	8.3	35.00	DS
MAD RIVER	828.0	B	7.1	0.70	DS
McKINLEYVILLE	838.0	B	7.0	0.60	DS
PICKLE HILL	839.5	B	6.9	0.60	DS
TRINIDAD	840.1	B	7.3	2.50	DS
TABLE BLUFF	842.7	B	7.0	0.50	DS
LITTLE SALMON (Offshore)	856.3	B	7.1	1.00	DS
BIG LAGOON - BALD MTN.FLT.ZONE	877.5	B	7.3	0.50	DS

SATICOY 7.5 MINUTE QUADRANGLE AND PORTIONS OF ADJACENT QUADRANGLES

10% EXCEEDANCE IN 50 YEARS PEAK GROUND ACCELERATION (g)

1998

ALLUVIUM CONDITIONS



Base map from GDT

Department of Conservation
California Geological Survey

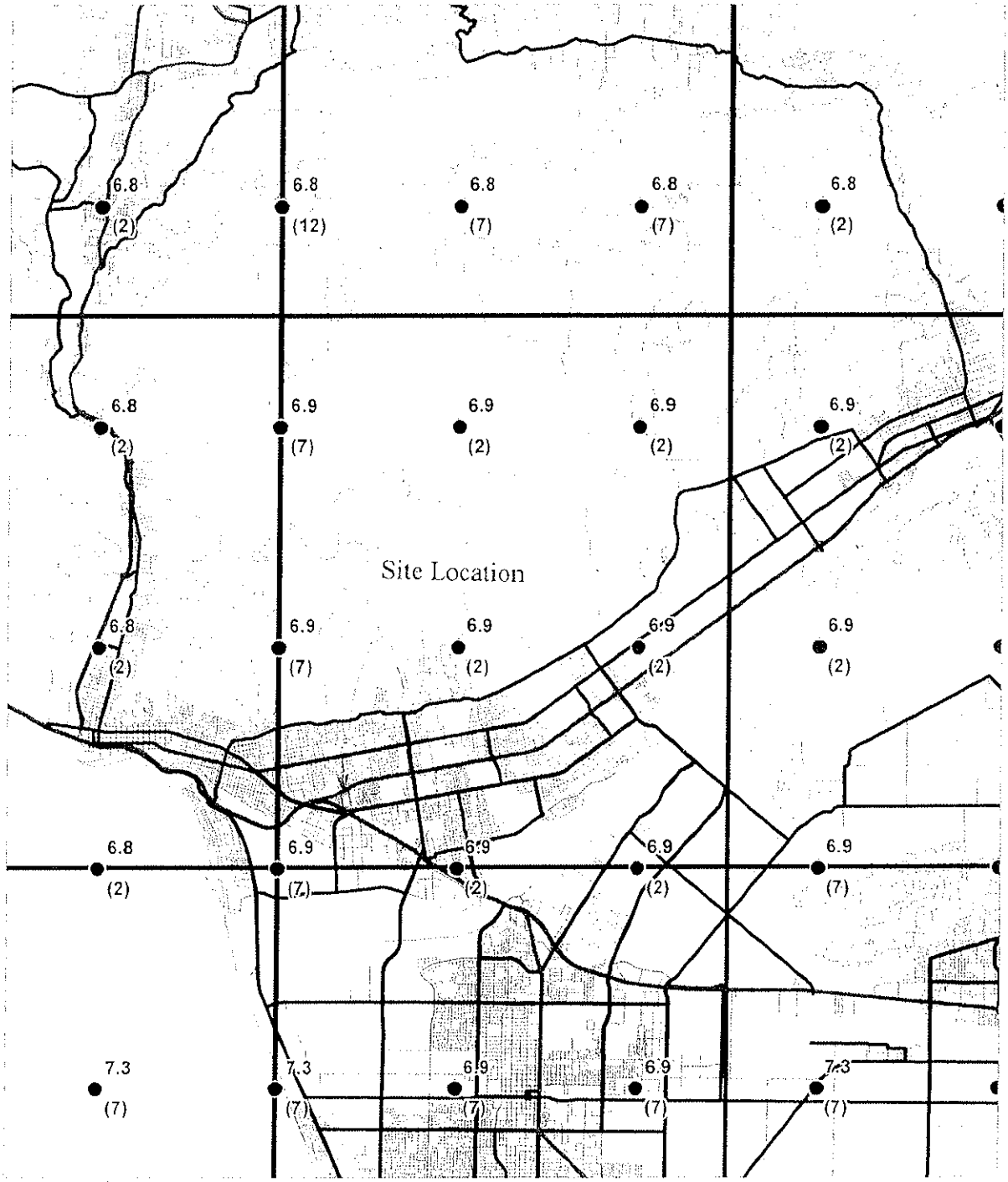
Figure 3.3

SATICOY 7.5 MINUTE QUADRANGLE AND PORTIONS OF
ADJACENT QUADRANGLES

10% EXCEEDANCE IN 50 YEARS PEAK GROUND ACCELERATION

1998

PREDOMINANT EARTHQUAKE
Magnitude (Mw)
(Distance (km))



Base map from GDT

0 1.5 3
Miles

Department of Conservation
California Geological Survey

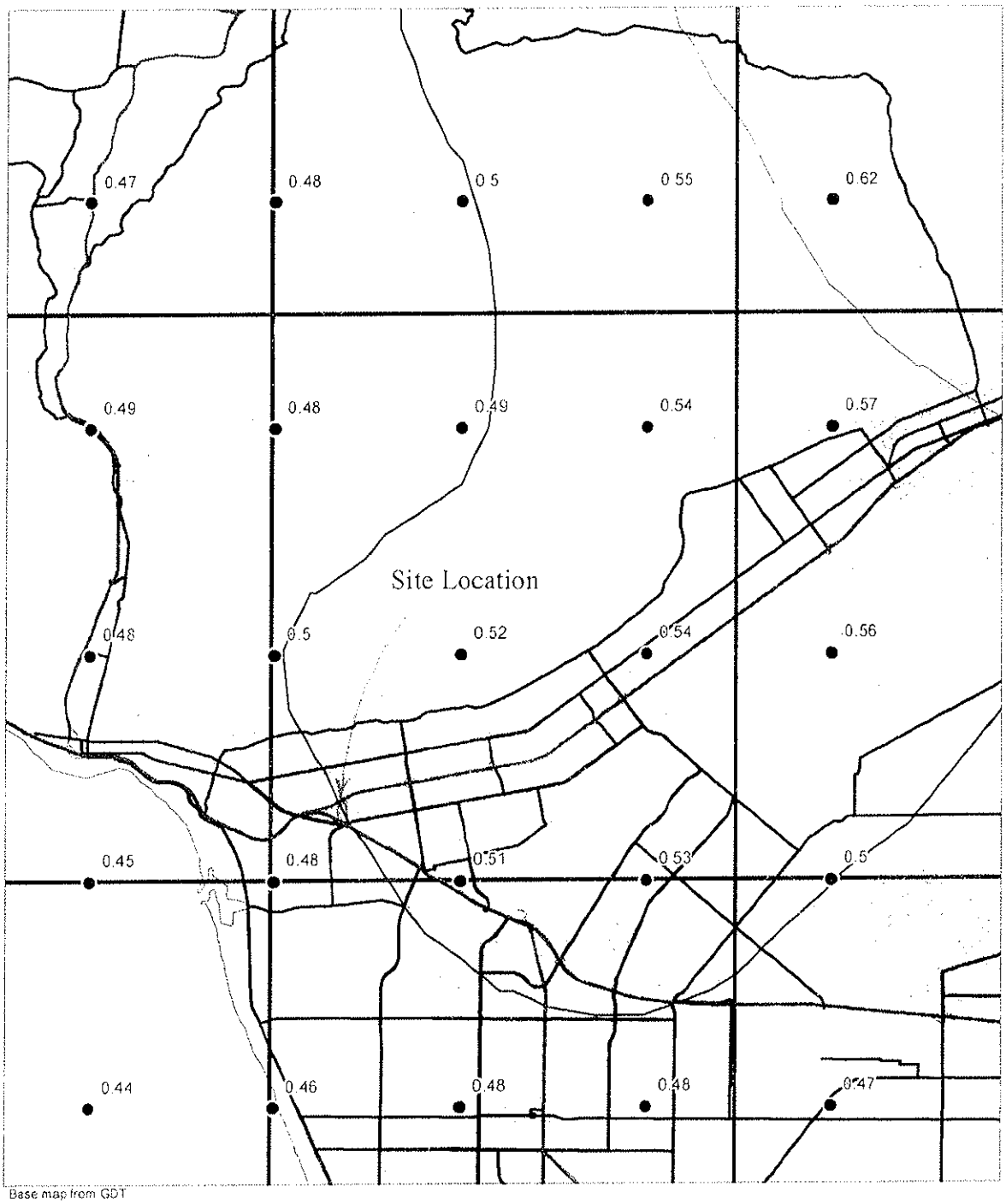
Figure 3.4

SATICOY 7.5 MINUTE QUADRANGLE AND PORTIONS OF ADJACENT QUADRANGLES

10% EXCEEDANCE IN 50 YEARS MAGNITUDE-WEIGHTED PSEUDO-PEAK ACCELERATION (g) FOR ALLUVIUM

1998

LIQUEFACTION OPPORTUNITY



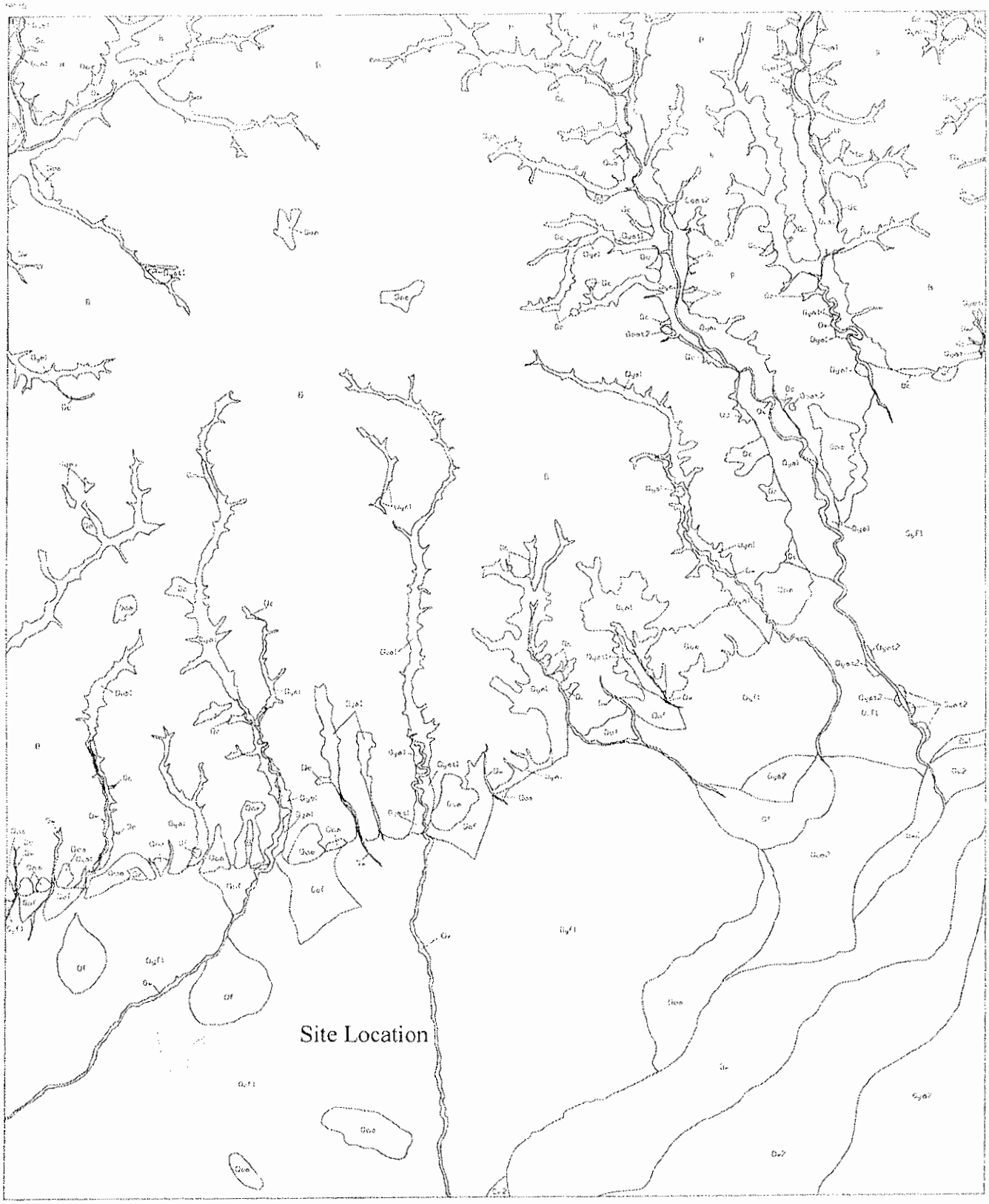
Base map from GDT

0 1.5 3
Miles

Department of Conservation
California Geological Survey

No Window

Figure 3.5

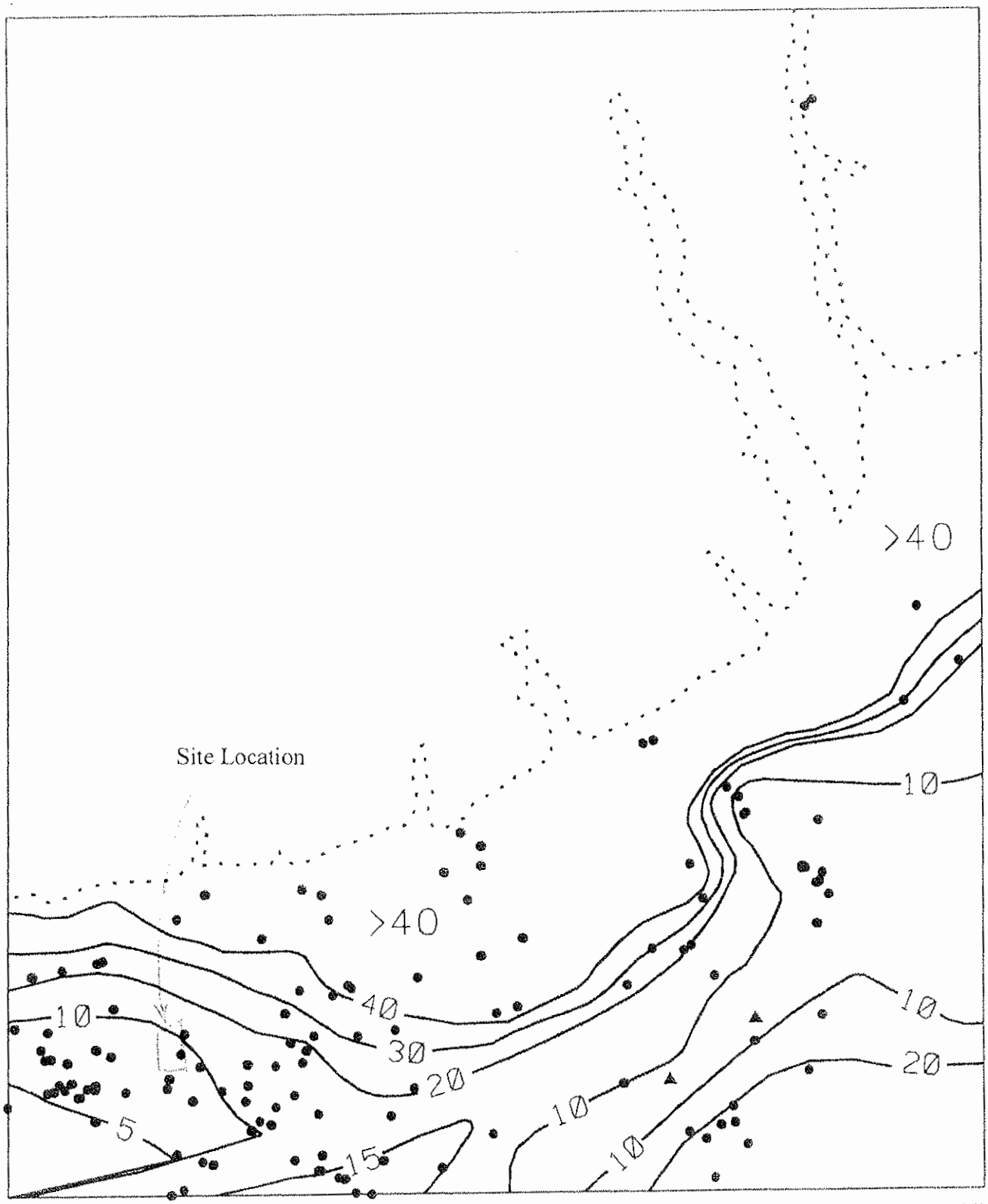


SATICOY QUADRANGLE

B = Pre-Quaternary bedrock

See "Bedrock and Surficial Geology" in Section 1 of report for descriptions of units

Plate 1.1 Quaternary Geologic Map of the Saticoy 7.5-Minute quadrangle (William Lettis & Associates, 2000).



SATICOY QUADRANGLE

Alluvium, Valley fill (Qvf)

Bore Hole Site

Approximate border of sand, silt, and clay deposits outlined in the Port Hueneme Formation (Yerkes, 1972)

20 Historically shallowest ground-water depths (feet)

>40 Historically shallowest ground-water depths greater than 40 feet

Plate 12. Historically shallowest ground-water depths and borehole locations in alluvium valley areas of the Saticoy 7.5-Minute Quadrangle

APPENDIX B

CORROSIVITY RESULTS

M.J. SCHIFF & ASSOCIATES, INC.
431 West Baseline Road
Claremont, CA 91711
TEL (909) 626-0967 / FAX (909) 626-3316
E-mail: mjsa@mjschiff.com http://www.mjschiff.com

TRANSMITTAL LETTER

DATE: August 25, 2005

ATTENTION: Mr. Joe Boldt
LARRY STARK

To: Geolabs Westlake Village
31119 Via Colinas #502
Westlake Village, CA 91362

SUBJECT: Laboratory Test Data
Broome Property
Your # 9011
MJS&A # 05-1171LAB

COMMENTS: Enclosed are the results for the subject project.

for James T. Keegan Laboratory Manager

M. J. Schiff & Associates, Inc.

Consulting Corrosion Engineers - Since 1959
431 W. Baseline Road
Claremont, CA 91711

Phone: (909) 626-0967 Fax: (909) 626-3316
E-mail lab@mjschiff.com
website: mjschiff.com

Table 1 - Laboratory Tests on Soil Samples

Geolabs Westlake Village
Broome Property
Your #9011, MJS&A #05-1171LAB
15-Aug-05

Sample ID			B1 5'-10'
Resistivity		**Units**	
as-received		ohm-cm	110,000
saturated		ohm-cm	1,100
pH			7.8
Electrical Conductivity		mS/cm	0.32
Chemical Analyses			
Cations			
calcium	Ca^{2+}	mg/kg	164
magnesium	Mg^{2+}	mg/kg	46
sodium	Na^{1+}	mg/kg	7
Anions			
carbonate	CO_3^{2-}	mg/kg	ND
bicarbonate	HCO_3^{1-}	mg/kg	323
chloride	Cl^{1-}	mg/kg	15
sulfate	SO_4^{2-}	mg/kg	317
Other Tests			
ammonium	NH_4^{1+}	mg/kg	na
nitrate	NO_3^{1-}	mg/kg	na
sulfide	S^{2-}	qual	na
Redox		mV	na

Electrical conductivity in millisiemens/cm and chemical analysis were made on a 1:5 soil-to-water extract.
mg/kg = milligrams per kilogram (parts per million) of dry soil.
Redox = oxidation-reduction potential in millivolts
ND = not detected
na = not analyzed

APPENDIX C

LIQUEFACTION AND SEISMIC SETTLMENT ANALYSIS

APPENDIX C
LIQUEFACTION AND SEISMIC SETTLEMENT ANALYSIS

This geotechnical investigation included analysis of the liquefaction potential and potential seismically induced settlement at the subject site. The liquefaction analysis addressed the alluvium below the shallow groundwater. The analysis of seismic settlement encompassed both saturated and unsaturated soils.

Field Investigation

These analyses used data retrieved from Standard Penetration Tests (SPT) in borings drilled using a hollow-stem auger and from the Cone Penetrometer Test (CPT) soundings. Samples were driven with a 140 lb. Automatic hammer lifted 30 inches. The estimated efficiency of the hammer is approximately 90 percent. Drilling rod was used to allow the hammer to remain above the auger. The boring diameter was approximately 6 inches (outer diameter). The samplers consisted of both a SPT split spoon sampler and a lined Modified California split spoon sampler (2.375 inch i.d.). The borings for this investigation used water and/or drilling mud to prohibit soil from sluicing up the auger.

The CPT rig used during the field investigation was a 23-ton truck-mounted rig provided by Holguin, Fahan & Associates, Inc. The cone tip has a cross-sectional area of 10 square centimeters. The CPT is capable of obtaining tip pressure and side friction data at 2 inch (0.05 meter) intervals.

Data Analyses

The data obtained from the CPT and SPT tests were processed using the procedures proposed from the 1996 NCEER (Youd, 1997) and 1998 NCEER/NSF Workshops (Youd, 2001), and the SCEC implementation document (Martin, 1999). The analyses were performed using procedures programmed in the computer using Microsoft Visual Basic in conjunction with a Microsoft Excel spreadsheet.

SPT Analysis

The data from the SPT tests were processed according to the procedures proposed by NCEER, 2001. The field blowcounts were corrected for overburden, hammer energy, rod length, percent fines, and sampler liner. Tests performed using the lined California sampler (with 3 inch outer diameter and 2.37 inch inner diameter) were converted to SPT blowcounts using the procedures proposed by Lowe and Zaccheo (Fang, 1991). The cyclic resistance of the soils is compared to the cyclic stress ratio. Ratios less than 1.3 are considered to have a potential for liquefaction. The following correlations were used in these analyses.

Cyclic Stress Ratio, CSR: $\mathrm{CSR} = 0.65(a_{max}/g)(\sigma_{vo}/\sigma'_{vo})r_d$

Stress Reduction Coeff, r_d: $r_d = 1.0 - 0.00765z$ for $z \le 9.15m$

$r_d = 1.174 - 0.0267z$ for $9.15m < z \le 23m$

Cyclic Resistance Ratio, $CRR_{7.5}$:

$$\mathrm{CRR}_{7.5} = \frac{1}{34-(N_1)_{60}} + \frac{(N_1)_{60}}{135} + \frac{50}{[10\times(N_1)_{60}+45]^2} - \frac{1}{200}$$

$$for: (N_1)_{60} < 30$$

Fines Content Correction: $(N_1)_{60cs} = \alpha + \beta(N_1)_{60}$

Where:

$\alpha = 0$ for $FC \leq 5\%$

$\alpha = e^{(1.76-(190/FC^2))}$ for $5\% < FC < 35\%$

$\alpha = 5.0$ for $FC \geq 35\%$

$\beta = 1.0$ for $FC \leq 5\%$

$\beta = [0.99 + (FC^{1.5}/1000)]$ for $5\% < FC < 35\%$

$\beta = 1.2$ for $FC \geq 35\%$

FC = Fines Content

Corrections to SPT N value: $(N_1)_{60} = N_{field} C_n C_e C_b C_r C_s$

Where: $C_n = 2.2/(1.2 + \sigma'_{vo}/P_a)$ for overburden normalization

Other Correction factors per Table 2 (Youd, 2001)

Liquefaction Safety Factor: $FS = (CRR_{7.5}/CSR)MSF$

Where: MSF is Magnitude Scaling Factor (Revised Idriss)

$MSF = 10^{2.24}/M_w^{2.56}$

CPT Analysis

The reduction of CPT data consisted of interpreting the soil behavior types encountered and assigning stratagraphic layers to the different soils. The depth ranges for the layers were assigned based upon material type differences such as grain size distribution and penetration resistance. Once soil layers were assigned to the sounding profile, thin sand layers were evaluated for the applicability of a correction for thin sand layers between soft clay layers. After applying a thin layer correction (if necessary), the profile data is normalized to approximately one atmosphere, evaluated, and material types and engineering characteristics are determined. The following correlations were used within these analyses.

Thin Layer Correction, K_H: $K_H = \frac{1}{4} \times [((\frac{H}{d_c})/17) - 1.77]^2 + 1.0$

Overburden Normalization: iterative procedure proposed by Robertson and Wride (1997).

$q_{c1N} = C_Q(q_c/P_a)$ where: $C_Q = (P_a/\sigma'_{vo})^n$ but not greater than 1.7

n varies from 0.5 to 1 by soil type.
this requires an iterative process

SPT Blowcounts: R.S. Olsen (1997) (see attached graph)

Soil Behavior Index, Ic:

$$I_c = [(3.47 - \log Q)^2 + (1.22 + \log F)^2]^n$$

Soil Type: Soil Behavior Chart, Robertson & Wride (1997)

Where: $Q = [(q_c - \sigma_{vo}) / P_a][(P_a / \sigma'_{vo})^n]$

And $F = [f_s / (q_c - \sigma_{vo})] \times 100\%$

Percent Fines: Robertson & Wride (1997)

Where: if $Ic < 2.6$ $FC(\%) = 0$

if $1.26 \le Ic \le 3.5$ $FC(\%) = 1.75 Ic^{3.25} - 3.7$

if $Ic > 3.5$ $FC(\%) = 100$

Grain characteristic corr. factor, K_c: $K_c = 1.0$ for $I_c \le 1.64$

$K_c = -0.403 I_c^4 + 5.581 I_c^3 - 21.63 I_c^2 + 33.75 I_c - 17.88$ for $I_c > 1.64$

Overburden corr. factor, K_σ: $K_\sigma = (\sigma_v')^{f-1}$ where: f ranges from 0.8 to 0.6 inversely to Dr

Equivalent Clean Sand Normalized Penetration Resistance:

$$(q_{c1N})_{cs} = K_c q_{c1N}$$

Cyclic Resistance Ratio, $CRR_{7.5}$:

$CRR_{7.5} = 0.833[(q_{c1N})_{cs} / 1000] + 0.05$ for $(q_{c1N})_{cs} < 50$

$CRR_{7.5} = 93[(q_{c1N})_{cs} / 1000]^3 + 0.08$ for $50 \le (q_{c1N})_{cs} < 160$

Cyclic Stress Ratio, CSR:

$$\mathrm{CSR} = 0.65(a_{max} / g)(\sigma_{vo} / \sigma'_{vo}) r_d$$

Magnitude Scaling Factor, MSF:

$MSF = 10^{2.24} / M_w^{2.56}$ Magnitude Scaling Factor (Revised Idriss)

Liquefaction Safety Factor: $FS = (CRR_{7.5} / CSR) MSF$

Relative Density	$D_r = -98 + 66\log_{10}\frac{q_c}{[\sigma'_{vo}]^{0.5}}$	Jamiolkowski et al (1985), Units of 10kPa
	$D_r = \frac{1}{2.41} * \ln[q_c/(157 * \sigma'^{0.55}_{vo})]$	Baldi et al (1986), Units of kPa
Undrained Shear Strength:	$S_u = \frac{q_c - \sigma_o}{N_K}$	Robertson & Campanella (1989), N_k=15
Effective Internal Friction:	$\phi' = \tan^{-1}[0.1 + 0.38\log\frac{q_c}{\sigma'_{vo}}]$	Roberston & Campanella (1983)
	$\phi' = 53.881 - 27.6034e^{(-0.0147N)}$	Peck et al., (1974) after Coyle (1985)
Overconsolidation Ratio:	programmed from chart	Schmertmann (1978)

The results of our analyses are presented on the attached graphs. Layers of materials in which the CSR exceeds the $CRR_{7.5}$ are considered liquefiable. The data from boring B1 and CPT sounding CPT1 were compared on a plot located at the end of the CPT1 output series. In our opinion the CPT data compares well with the SPT data.

Liquefaction Induced Settlement

The analyses of the potential liquefaction induced settlement are performed using the same electronic spreadsheet used to perform the liquefaction analyses. The spreadsheet is programmed to perform the analyses proposed by Tokimatsu and Seed (1987).

For the settlement analyses, the normalized, fines corrected SPT blowcounts are compared to digitized files of chart data (SPT blowcounts vs. Volumetric strain for clean sands) provided in Tokimatsu and Seed. The fines correction to the SPT blowcounts consider a liquefied soil. Therefore, this fines correction produces smaller corrected blowcounts than the corrected blowcounts used to estimate the potential for triggering of liquefaction. This fines correction is based on the recommended procedures for implementation of Publication 117 (Martin and Lew, 1999). The spreadsheet estimates the percent volumetric strain for each layer assuming the lateral strain is minor so the volumetric strain is equivalent to settlement. The estimated settlement for each soil layer and a summation of all the soil layers below the design groundwater level are then reported.

Seismic Settlement of Dry Sands

For coarse-grained materials above the design groundwater level the potential for settlement related to ground shaking is analyzed using the methods proposed by Tokimatsu and Seed (1987). Like in the liquefaction-induced-settlement analyses, the SPT blowcounts and/or CPT derived SPT blowcounts are corrected to an equivalent blowcount for clean sand. Clayey soils with 15 percent clay or more, and soils with an Ic of 2.6 or greater are discarded from the analyses. The following equations are used in the analysis to enter into charts provided with the methodology.

Effective Shear Strain: $$\gamma_{eff} = \frac{\tau_{av}}{G_{max} \times \frac{G_{eff}}{G_{max}}}$$

Average Cyclic Shear Stress: $\tau_{av} = 0.65 \bullet \frac{a_{max}}{g} \bullet \sigma_o \bullet r_d$

Shear Modulus at Low Strain:

$$G_{max} = 1000 \bullet (K_2)_{max} \bullet (\sigma'_m)^{1/2} \text{ in psf units}$$

$$(K_2)_{max} \cong 20(N_1)^{1/3} \qquad \text{(Ohta and Goto, 1976)}$$

Using the referenced methodology, the volumetric strain is estimated for each soil layer or layer portion above the design water level. This methodology is considered applicable to dry or moist sands (unsaturated). Again the lateral strains are considered insignificant so the volumetric strain is considered as settlement. The estimated settlement for each soil layer and a summation of all the soil layers above the groundwater level are then reported by incorporation into the attached settlement graphs.

Currently the practice of soils engineering lacks accurate means or knowledge to estimate the potential seismic settlement for fine-grained soils. The use of this methodology for soils with significant amounts of fine grain sizes is believed to be conservative. This methodology is used with the understanding of its limitations and for lack of better simplified means of estimating the potential for seismic settlement.

The estimate of potential differential settlement is typically taken to be half of the total seismic settlement (Martin and Lew, 1999).

Surface Manifestations

Consideration of the potential for surface manifestations used the procedure proposed by Ishihara, 1985. The potential is considered a function of the relative density (SPT blowcounts), depth and thickness of liquefiable material, and thickness of overlying non-liquefiable material. Surface manifestations are considered probable during a design level earthquake.

Liquefaction-Induced Lateral Spread

The potential for liquefaction-induced lateral spread was analyzed using the procedures proposed by Barlett and Youd (1995) as modified in 1999. The potential is considered a function of earthquake distance and magnitude, thickness and grain-size distribution in the liquefiable layers, and ground slope or nearness of an open face. It should be noted that this procedure was developed using a historical database of large displacement events. The database includes few points with movement magnitudes of small value, on the order that is of interest for engineering purposes. The procedure is also applicable only for earthquake sources greater than 10 kilometers from the subject site (though we have evaluated our data using smaller source distances). These two elements of the analyses are cause to suspect the output when faults are near source events and when the magnitude of movement is relatively small (a few meters). Therefore, for our purposes we have used this analyses as an indicator whether lateral-spread may be possible; however, the magnitudes of movement output from the analyses are considered suspect.

Considering the blow counts and estimated blow counts obtained during the investigation, lateral spreading during a design level earthquake is considered probable.

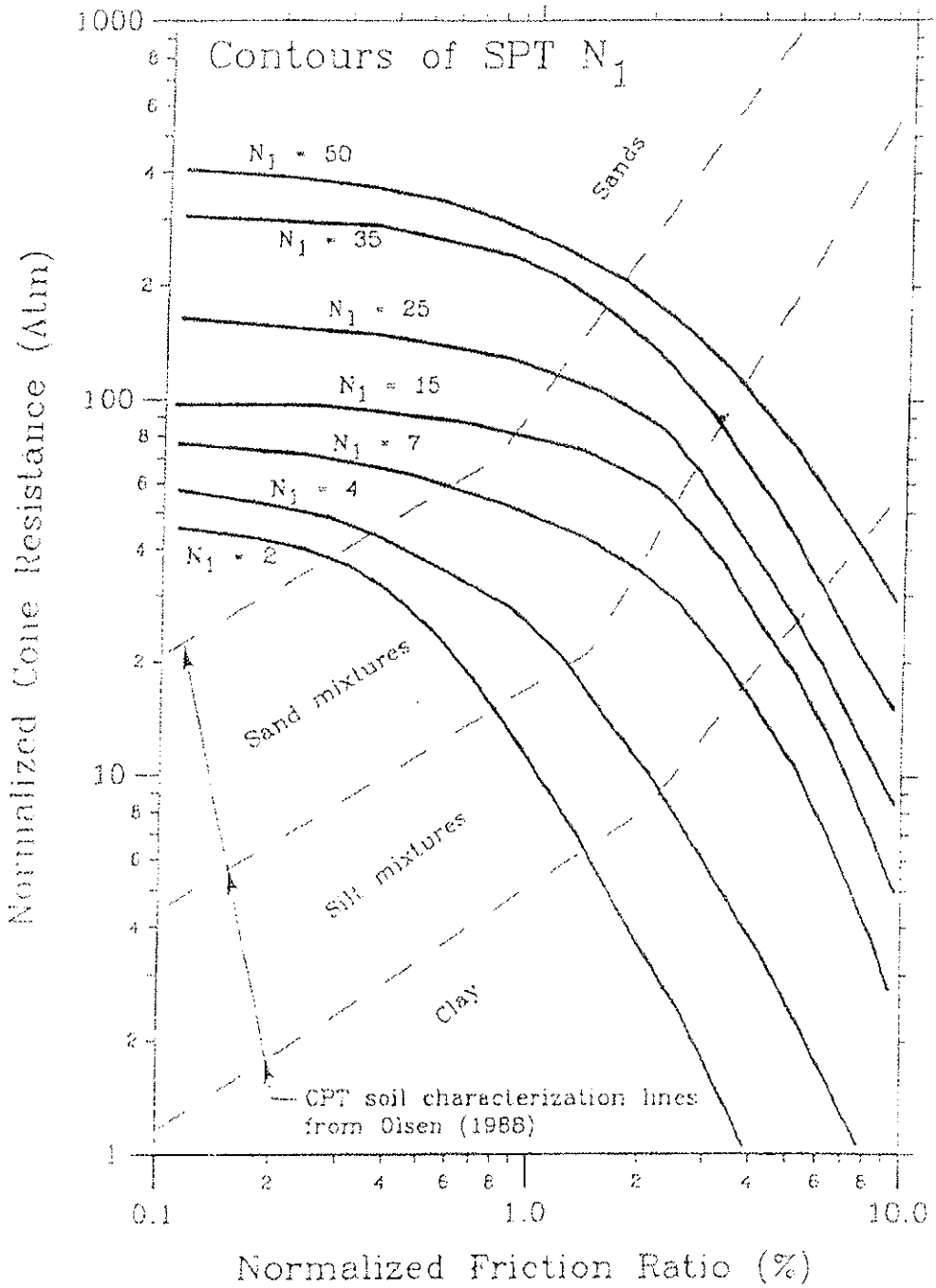


Figure 11 CPT estimation of SPT N_1 using both CPT measurements (Olsen 1994, 1988 1986, 1984).

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Summary of Analysis of CPT Data

CPT: CPT1 | W.O.: 8865
G.W. Depth: 14 ft | Elev.: 0
Design G.W. Depth: 10 ft | Ic 2.6
Removal: 0 ft

Fill Height: 0.0 ft 125 pcf
Max horizontal acc @ surface: 0.50 g
Design earthquake magnitude: 7.50

Layer	Layer Bott. (ft)	Layer Thick. (ft)	Avg. Tip Resist qc (tsf)	Avg. Side Fric. fs	Avg. Tip Resist qc1N (tsf)	Norm. Fric. Rt. (%)	Est. Wet Den (pcf)	Soil Behavior Type	O.B (tsf)	Eff. O.B. (tsf)	Norm. Exp n	Ic Range	Kc	Fines Content (%)	Phi (deg)	Dr (%)	Su (tsf)	SPT N1(60) (bpf)	SPT N1(60)cs (bpf)
1	0.98	0.66	30.3	0.68	49.3	2.2	120	Sand mixtures - silty sand to sandy silt	0.037	0.037	0.5	2.31 to 2.48	2.24	25.6	51	69.0	---	13.4	19.3
2	2.79	1.80	14.7	0.38	23.9	2.4	120	Silt mixtures - clayey silt to silty clay	0.113	0.113	0.5 to 0.7	2.52 to 2.85	3.83	39.0	---	---	1.0	8.3	14.9
3	3.28	0.49	7.5	0.21	12.5	2.9	120	Clays - silty clay to clay	0.182	0.182	0.7	2.9 to 2.93	5.85	52.9	---	---	0.5	6.1	11.1
4	3.44	0.16	10.5	0.33	17.0	3.2	120	Silt mixtures - clayey silt to silty clay	0.202	0.202	0.7	2.83	5.03	47.7	---	---	0.7	6.3	12.6
5	3.94	0.49	11.5	0.45	18.7	4.0	120	Clays - silty clay to clay	0.221	0.221	0.7	2.84 to 2.87	5.28	49.3	---	---	0.7	9.4	16.5
6	4.43	0.49	13.7	0.42	31.6	3.3	120	Silt mixtures - clayey silt to silty clay	0.251	0.251	0.5 to 1	2.55 to 2.75	3.58	37.2	---	---	0.9	15.8	23.9
7	4.59	0.16	28.8	0.28	27.4	1.7	120	Sand mixtures - silty sand to sandy silt	0.271	0.271	0.5	2.17	1.59	17.9	41	45.0	---	8.8	10.4
8	5.74	1.15	12.6	0.32	22.1	2.7	120	Silt mixtures - clayey silt to silty clay	0.310	0.310	0.5 to 1	2.56 to 2.77	3.92	39.6	---	---	0.8	7.5	14
9	5.89	1.15	7.3	0.44	16.5	6.3	120	Clays - silty clay to clay	0.379	0.379	1	2.9 to 3.06	6.68	58.1	---	---	0.5	24.6	34.5
10	7.05	0.16	6.2	0.07	13.7	1.2	120	Silt mixtures - clayey silt to silty clay	0.418	0.418	1	2.68	3.82	39.2	---	---	0.4	3.1	8.7
11	7.22	0.16	10.7	0.49	24.1	4.7	120	Clays - silty clay to clay	0.428	0.428	1	2.82	4.94	47.1	---	---	0.7	19.5	28.4
12	7.38	0.16	19.5	0.56	31.8	2.9	120	Silt mixtures - clayey silt to silty clay	0.438	0.436	0.7	2.59	3.27	34.9	---	---	1.3	10.8	17.9
13	7.87	0.49	43.8	0.61	63.2	2.0	120	Sand mixtures - silty sand to sandy silt	0.458	0.458	0.5	2.15 to 2.44	1.86	21.0	40	49.0	---	16.2	21.2
14	10.01	2.13	100.3	0.93	133.1	0.9	125	Sands - clean sand to silty sand	0.539	0.539	0.5	1.68 to 2.04	1.13	8.5	44	79.0	---	24.9	25.9
15	10.17	0.16	41.1	0.86	51.5	2.1	120	Sand mixtures - silty sand to sandy silt	0.611	0.611	0.5	2.34	2.09	24.1	38	41.0	---	13.2	16.9
16	10.60	0.33	23.0	0.51	28.8	2.2	120	Silt mixtures - clayey silt to silty clay	0.625	0.625	0.5	2.52 to 2.58	3.09	33.1	---	---	1.5	7.0	13.2
17	11.32	0.82	76.4	0.76	91.9	1.0	125	Sands - clean sand to silty sand	0.661	0.661	0.5	1.88 to 2.05	1.24	11.5	41	64.0	---	18.6	20.5
18	11.65	0.33	37.9	0.46	44.5	1.3	120	Sand mixtures - silty sand to sandy silt	0.696	0.696	0.5	2.18 to 2.36	1.89	21.6	37	33.0	---	8.2	12.7
19	11.81	0.16	20.4	0.38	23.7	1.9	120	Silt mixtures - clayey silt to silty clay	0.711	0.711	0.5	2.58	3.19	34.2	---	---	1.3	5.7	11.7
20	12.47	0.66	21.5	0.17	24.6	0.8	120	Sand mixtures - silty sand to sandy silt	0.736	0.736	0.5	2.31 to 2.47	2.21	25.3	33	10.0	---	3.6	8.3
21	12.63	0.16	16.0	0.29	20.0	1.9	120	Silt mixtures - clayey silt to silty clay	0.760	0.760	1	2.64	3.59	37.4	---	---	1.0	5.2	11.3
22	12.80	0.16	10.3	0.34	12.4	3.6	120	Clays - silty clay to clay	0.770	0.770	1	2.97	6.37	56.2	---	---	0.6	5.8	11.9
23	13.45	0.66	10.9	0.18	12.7	1.9	120	Silt mixtures - clayey silt to silty clay	0.795	0.795	1	2.69 to 2.88	4.62	46.1	---	---	0.7	4.0	9.9
24	14.93	1.48	6.7	0.20	6.9	3.5	120	Clays - silty clay to clay	0.859	0.850	1	2.95 to 3.35	8.96	71.2	---	---	0.4	4.4	10.3
25	15.58	0.66	44.0	0.27	30.1	1.0	125	Sand mixtures - silty sand to sandy silt	0.923	0.884	0.5	1.91 to 2.28	1.51	15.8	37	34.0	---	5.7	8.4
26	15.75	0.16	14.1	0.27	14.6	2.0	120	Silt mixtures - clayey silt to silty clay	0.948	0.896	1	2.77	4.50	44.0	---	---	0.9	4.6	10.5
27	17.88	2.13	4.1	0.10	3.3	3.3	120	Clays - silty clay to clay	1.017	0.929	1	3.15 to 3.63	13.02	92.0	---	---	0.2	3.0	8.7
28	18.04	0.16	3.8	0.17	2.6	6.2	115	Organic soils - peats	1.086	0.962	1	3.63	16.64	100.0	---	---	0.2	4.6	10.6
29	20.63	2.79	5.9	0.18	4.7	3.9	120	Clays - silty clay to clay	1.174	1.004	1	2.94 to 3.56	11.75	85.6	---	---	0.3	4.1	9.9
30	21.65	0.82	5.4	0.38	3.9	9.5	115	Organic soils - peats	1.281	1.055	1	3.53 to 3.76	16.51	100.0	---	---	0.3	12.0	19.4
31	24.11	2.46	10.6	0.40	8.4	4.4	120	Clays - silty clay to clay	1.379	1.102	1	2.98 to 3.28	6.70	70.1	---	---	0.6	5.6	11.7
32	24.28	0.16	27.9	0.53	25.6	2.0	120	Silt mixtures - clayey silt to silty clay	1.458	1.139	0.5	2.56	3.10	33.6	---	---	1.8	6.1	12.1
33	24.61	0.33	38.1	0.56	34.8	1.5	120	Sand mixtures - silty sand to sandy silt	1.472	1.146	0.5	2.37 to 2.41	2.26	25.9	34	23.0	---	6.5	11.7
34	24.77	0.16	34.8	0.71	31.7	2.1	120	Silt mixtures - clayey silt to silty clay	1.487	1.154	0.5	2.51	2.79	30.9	---	---	2.2	7.2	13.2
35	25.10	0.33	35.2	0.47	32.0	1.4	120	Sand mixtures - silty sand to sandy silt	1.502	1.161	0.5	2.38 to 2.4	2.28	26.1	34	20.0	---	5.9	11
36	25.43	0.33	24.3	0.52	19.5	2.3	120	Silt mixtures - clayey silt to silty clay	1.521	1.170	1	2.66 to 2.7	3.92	39.9	---	---	1.5	5.6	11.7
37	26.25	0.82	39.2	0.34	35.2	0.9	120	Sand mixtures - silty sand to sandy silt	1.556	1.187	0.5	2.19 to 2.4	1.84	21.1	34	23.0	---	5.2	9.4
38	33.79	7.55	10.6	0.31	6.7	3.5	120	Clays - silty clay to clay	1.807	1.307	1	2.92 to 3.38	9.17	72.4	---	---	0.6	4.5	10.3
39	34.12	0.33	28.6	0.65	18.7	2.5	120	Silt mixtures - clayey silt to silty clay	2.043	1.420	1	2.71 to 2.74	4.18	41.8	---	---	1.8	5.7	11.6
40	34.45	0.33	32.3	0.42	26.4	1.4	120	Sand mixtures - silty sand to sandy silt	2.063	1.430	0.5	2.45 to 2.46	2.55	28.7	32	11.0	---	5.3	10.5
41	34.78	0.33	17.0	0.55	10.4	3.8	120	Clays - silty clay to clay	2.083	1.439	1	2.93 to 3.15	7.28	61.5	---	---	1.0	5.5	11.0
42	35.10	0.33	32.7	0.72	21.1	2.4	120	Silt mixtures - clayey silt to silty clay	2.102	1.449	1	2.62 to 2.73	3.83	39.1	---	---	2.0	5.9	12.1
43	35.43	0.33	40.3	0.68	32.7	1.8	120	Sand mixtures - silty sand to sandy silt	2.122	1.458	0.5	2.44 to 2.45	2.50	28.3	33	20.0	---	6.6	12.2
44	35.60	0.16	41.6	1.06	26.9	2.7	120	Silt mixtures - clayey silt to silty clay	2.137	1.466	1	2.62	3.48	36.6	---	---	2.6	7.7	14.3
45	36.09	0.49	48.6	0.87	39.1	1.9	120	Sand mixtures - silty sand to sandy silt	2.156	1.475	0.5	2.33 to 2.44	2.31	26.4	34	28.0	---	8.5	13.6
46	36.42	0.33	29.4	0.55	18.3	2.0	120	Silt mixtures - clayey silt to silty clay	2.181	1.487	1	2.62 to 2.76	3.97	40.2	---	---	1.8	5.1	11.3
47	37.40	0.98	12.0	0.35	6.5	3.5	120	Clays - silty clay to clay	2.220	1.506	1	3.05 to 3.34	9.23	72.8	---	---	0.6	4.4	10.3
48	37.73	0.33	29.7	0.78	18.0	2.9	120	Silt mixtures - clayey silt to silty clay	2.260	1.524	1	2.71 to 2.84	4.63	44.8	---	---	1.8	6.0	12.2
49	38.06	0.33	42.6	0.57	33.7	1.4	120	Sand mixtures - silty sand to sandy silt	2.279	1.534	0.5	2.36 to 2.4	2.22	25.5	33	21.0	---	6.1	11.2
50	39.37	1.31	30.4	0.66	18.1	2.4	120	Silt mixtures - clayey silt to silty clay	2.329	1.557	1	2.6 to 2.83	4.24	42.0	---	---	1.9	5.5	11.5
51	39.86	0.49	85.9	1.30	66.8	1.5	120	Sand mixtures - silty sand to sandy silt	2.363	1.583	0.5	2.13 to 2.2	1.59	17.9	37	49.0	---	15.1	19.3
52	40.03	0.16	107.6	1.19	83.4	1.1	125	Sands - clean sand to silty sand	2.403	1.593	0.5	2.00	1.31	13.1	38	59.0	---	17.3	19.8
53	41.17	1.15	49.5	0.67	38.2	1.4	120	Sand mixtures - silty sand to sandy silt	2.442	1.612	0.5	2.15 to 2.41	2.11	24.1	35	25.0	---	7.5	12.4
54	41.67	0.49	30.5	0.45	17.1	1.6	120	Silt mixtures - clayey silt to silty clay	2.491	1.636	1	2.61 to 2.72	3.70	38.2	---	---	1.6	4.4	10.5
55	42.98	1.31	46.3	0.40	35.2	1.0	120	Sand mixtures - silty sand to sandy silt	2.546	1.662	0.5	2.09 to 2.49	1.91	21.4	35	22.0	---	5.2	9.3
56	43.31	0.33	67.1	0.25	50.6	0.4	125	Sands - clean sand to silty sand	2.565	1.685	0.5	1.82 to 2.07	1.26	11.8	35	38.0	---	5.2	6.9
57	43.47	0.16	51.4	0.32	38.7	0.7	120	Sand mixtures - silty sand to sandy silt	2.610	1.693	0.5	2.15	1.55	17.4	34	27.0	---	4.9	8.3
58	43.64	0.16	32.5	0.45	17.6	1.5	120	Silt mixtures - clayey silt to silty clay	2.620	1.698	1	2.63	3.51	35.8	---	---	2.0	4.3	10.2
59	43.96	0.33	23.0	0.72	11.9	3.5	120	Clays - silty clay to clay	2.635	1.705	1	2.95 to 3	6.47	56.8	---	---	1.4	5.6	11.7
60	44.13	0.16	30.7	0.47	16.4	1.7	120	Silt mixtures - clayey silt to silty clay	2.650	1.712	1	2.68	3.63	39.3	---	---	1.9	4.4	10.3
61	44.29	0.16	34.5	0.39	25.8	1.2	120	Sand mixtures - silty sand to sandy silt	2.660	1.717	0.5	2.44	2.47	28.0	31	10.0	---	4.8	10
62	44.62	0.33	28.6	0.53	15.1	2.1	120	Silt mixtures - clayey silt to silty clay	2.674	1.724	1	2.67 to 2.85	4.52	44.0	---	---	1.7	4.7	10.6
63	45.28	0.66	20.3	0.63	10.1	3.6	120	Clays - silty clay to clay	2.704	1.738	1	2.93 to 3.17	7.28	61.6	---	---	1.2	5.3	11.3
64	45.44	0.16	32.2	0.74	16.9	2.5	120	Silt mixtures - clayey silt to silty clay	2.728	1.750	1	2.77	4.51	44.1	---	---	2.0	5.4	11.5
65	45.77	0.33	28.8	0.87	14.8	3.3	120	Clays - silty clay to clay	2.743	1.757	1	2.86 to 2.88	5.54	51.0	---	---	1.7	6.0	12.2
66	45.93	0.16	35.8	0.59	18.8	1.6	120	Silt mixtures - clayey silt to silty clay	2.758	1.764	1	2.65	3.61	37.6	---	---	2.2	4.9	10.6
67	46.10	0.16	39.0	0.47	28.7	1.3	120	Sand mixtures - silty sand to sandy silt	2.768	1.769	0.5	2.42	2.38	27.0	31	14.0	---	5.3	10.5
68	46.59	0.49	36.7	0.80	15.1	2.4	120	Silt mixtures - clayey silt to silty clay	2.787	1.778	1	2.65 to 2.74	4.07	41.0	---	---	2.3	5.6	11.6
69	46.75	0.16	24.7	0.95	12.3	4.3	120	Clays - silty clay to clay	2.807	1.788	1	3.02	6.98	59.9	---	---	1.5	6.6	12.9
70	46.92	0.16	43.0	0.79	22.4	2.0	120	Silt mixtures - clayey silt to silty clay	2.817	1.793	1	2.60	3.34	35.5	---	---	2.7	5.6	11.7
71	47.08	0.16	55.5	0.73	40.5	1.4	120	Sand mixtures - silty sand to sandy silt	2.827	1.797	0.5	2.31	1.97	22.8	34	29.0	---	6.9	11.6
72	47.41	0.33	47.0	1.31	29.9	3.0	120	Silt mixtures - clayey silt to silty clay	2.842	1.804	0.5 to 1	2.48 to 2.78	3.67	37.6	---	---	2.9	10.1	16.7
73	49.05	1.64	20.9	0.85	9.8	4.7	120	Clays - silty clay to clay	2.901	1.833	1	3.01 to 3.33	8.30	67.8	---	---	1.2	6.5	12.8
74	49.21	0.16	34.5	0.88	17.0	2.8	120	Silt mixtures - clayey silt to silty clay	2.955	1.859	1	2.79	4.70	45.4	---	---	2.1	5.8	11.9
75	49.38	0.16	23.5	1.20	11.0	5.8	120	Clays - silty clay to clay	2.965	1.863	1	3.14	8.40	66.2	---	---	1.4	11.1	18.3

"Dry" Sand Seismic Settlement Using CPT Data

0.07

CPT:	CPT1	W.O.:	8865
G.W. Depth:	14 ft	Elev.:	0
Design G.W. Depth:	10 ft	Ic:	2.6
Removal:	0 ft		

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Fill Height:	0.0 ft	125 pcf
Max horizontal acc. @ surface:	0.50 g	
Design earthquake magnitude:	7.50	
Magnitude Scaling Factor:	1.00	

Layer	Layer Bott. (ft)	Layer Thick. (ft)	Avg. Tip Resist qc (tsf)	Avg. Side Fric. fs	Avg. Tip Resist qc1N (tsf)	Norm. Frc. Rt. (%)	Eff. O.B. (tsf)	Soil Behavior Type	Avg. rd	Kc	Kσ	Fines Content (%)	Avg. Dr (%)	Spt N160cs (bpf)	Cyclic Shear Stress τav (psf)	Gmax (ksf)	γeff / (Geff/Gmax)	γeff	Vol. Strain (%)	"Dry" Settle. (in)
1	0.98	0.66	30.3	0.68	49.3	2.2	0.037	Sand mixtures - silty sand to sandy silt (5)	1.00	2.24	1	25.6	89	19.3	24.00	3.10E+02	7.37E-05	1.35E-04	3.33E-02	3.07E-03
2	2.79	1.80	14.7	0.38	23.9	2.4	0.113	Silt mixtures - clayey silt to silty clay (4)	1.00	3.83	1	39.0	---	14.9	21.00	2.71E+02	2.82E-05	4.98E-05	1.39E-02	3.00E-03
6	4.43	0.49	13.7	0.42	31.6	3.3	0.251	Silt mixtures - clayey silt to silty clay (4)	0.99	3.58	1	37.2	---	23.9	56.00	3.71E+02	5.03E-05	9.63E-05	3.92E-02	2.31E-03
7	4.59	0.16	28.8	0.28	27.4	1.7	0.271	Sand mixtures - silty sand to sandy silt (5)	0.99	1.59	1	17.9	45	10.4	174.00	7.63E+02	2.29E-04	1.47E-03	6.93E-01	1.37E-02
8	5.74	1.15	12.6	0.32	22.1	2.7	0.310	Silt mixtures - clayey silt to silty clay (4)	0.99	3.92	1	39.8	---	14.0	55.00	3.37E+02	4.67E-05	9.02E-05	3.79E-02	5.22E-03
12	7.38	0.16	19.5	0.56	31.8	2.9	0.438	Silt mixtures - clayey silt to silty clay (4)	0.98	3.27	1	34.9	---	17.9	280.00	1.64E+03	1.71E-04	2.91E-04	7.13E-02	1.40E-03
13	7.87	0.49	43.8	0.81	63.2	2.0	0.458	Sand mixtures - silty sand to sandy silt (5)	0.98	1.86	1	21.0	49	21.2	293.00	1.26E+03	2.32E-04	8.32E-04	1.64E-01	9.69E-03
14	10.01	2.13	100.3	0.93	133.1	0.9	0.539	Sands - clean sand to silty sand (6)	0.98	1.13	1	8.5	79	25.9	344.00	1.42E+03	2.42E-04	8.62E-04	1.35E-01	3.47E-02

Liquefaction Analysis Using CPT Data

2.84

2.91

CPT: CPT1 W.O.: 8865

G.W. Depth: 14 ft Elev.: 0

Design G.W. Depth: 10 ft Ic: 2.6 C:\JOBS\9911_Broome_Ventura\7-25-05\CPD Folder\CPT-01.cpd

Removal: 0 ft.

Fill Height: 0.0 ft. 125 pcf

Max horizontal acc. @ surface: 0.50 g

Design earthquake magnitude: 7.50

Magnitude Scaling Factor: 1.00

Layer	Layer Bott. (ft)	Layer Thick. (ft)	Avg. Tip Resist qc (tsf)	Avg. Side Fric. fs	Avg. Tip Resist qc1N (tsf)	Norm. Frc. Rt. (%)	Eff. O.B. (tsf)	Soil Behavior Type	Avg. rd	Kc	Kσ	Avg. Fines Content (%)	Avg. Dr (%)	Avg. SPT N1(60)liq (bpf)	Min. CRR (M=7.5)	Avg. CSR	Min. Liq. FS	Avg. Strain (%)	Liq Settle. (in)
14	10.01	0.01	100.3	0.93	133.1	0.9	0.539	Sands - clean sand to silty sand (6)	0.98	1.13	1	8.5	79	333.6	0.22	0.319	0.68	1.5	0
15	10.17	0.16	41.1	0.86	51.5	2.1	0.611	Sand mixtures - silty sand to sandy silt (5)	0.98	2.09	1	24.1	41	15.3	0.20	0.320	0.61	1.9	0.04
16	10.50	0.33	23.3	0.51	28.8	2.2	0.625	Silt mixtures - clayey silt to silty clay (4)	0.98	3.05	1	33.1	---	9.8	0.14	0.323	0.42	2.6	0.1
17	11.32	0.82	76.4	0.76	91.9	1.0	0.661	Sands - clean sand to silty sand (6)	0.98	1.24	1	11.5	64	19.6	0.15	0.332	0.47	1.5	0.15
18	11.65	0.33	37.9	0.48	44.5	1.3	0.696	Sand mixtures - silty sand to sandy silt (5)	0.98	1.89	1	21.6	33	10.1	0.12	0.340	0.34	2.6	0.1
19	11.81	0.16	20.4	0.38	23.7	1.9	0.711	Silt mixtures - clayey silt to silty clay (4)	0.98	3.19	1	34.2	---	8.5	0.12	0.343	0.35	2.8	0.06
20	12.47	0.66	21.5	0.17	24.6	0.8	0.736	Sand mixtures - silty sand to sandy silt (5)	0.97	2.21	1	25.3	10	5.7	0.09	0.348	0.26	3.7	0.29
25	15.58	0.66	44.0	0.27	30.1	1.0	0.884	Sand mixtures - silty sand to sandy silt (5)	0.97	1.51	1	15.8	34	7.0	0.11	0.383	0.28	3.1	0.25
32	24.28	0.16	27.9	0.53	25.6	2.0	1.139	Silt mixtures - clayey silt to silty clay (4)	0.94	3.10	1	33.6	---	8.9	0.13	0.441	0.29	2.8	0.05
33	24.61	0.33	38.1	0.56	34.8	1.5	1.146	Sand mixtures - silty sand to sandy silt (5)	0.94	2.26	1	25.9	23	8.7	0.12	0.442	0.28	2.8	0.11
34	24.77	0.16	34.8	0.71	31.7	2.1	1.154	Silt mixtures - clayey silt to silty clay (4)	0.94	2.79	0.99	30.9	---	9.8	0.14	0.443	0.32	2.6	0.05
35	25.10	0.33	35.2	0.47	32.0	1.4	1.161	Sand mixtures - silty sand to sandy silt (5)	0.94	2.28	0.99	26.1	20	8.1	0.11	0.444	0.25	2.9	0.11
37	26.25	0.82	39.2	0.34	35.2	0.9	1.187	Sand mixtures - silty sand to sandy silt (5)	0.94	1.84	0.99	21.1	23	7.0	0.10	0.447	0.22	3.2	0.31
40	34.45	0.33	32.3	0.42	26.4	1.4	1.430	Sand mixtures - silty sand to sandy silt (5)	0.89	2.55	0.95	28.7	11	7.6	0.10	0.460	0.21	0.0	0
43	35.43	0.33	40.3	0.68	32.7	1.8	1.458	Sand mixtures - silty sand to sandy silt (5)	0.89	2.50	0.94	28.3	20	9.0	0.12	0.459	0.26	0.0	0
45	36.09	0.49	48.6	0.87	39.1	1.9	1.475	Sand mixtures - silty sand to sandy silt (5)	0.88	2.31	0.94	26.4	28	10.7	0.13	0.459	0.29	0.0	0
49	38.06	0.33	42.6	0.57	33.7	1.4	1.534	Sand mixtures - silty sand to sandy silt (5)	0.87	2.22	0.93	25.5	21	8.3	0.11	0.457	0.24	0.0	0
51	39.86	0.49	85.9	1.30	66.8	1.5	1.583	Sand mixtures - silty sand to sandy silt (5)	0.85	1.59	0.91	17.9	49	16.6	0.15	0.453	0.32	1.8	0.11
52	40.03	0.16	107.6	1.19	83.4	1.1	1.593	Sands - clean sand to silty sand (6)	0.85	1.31	0.9	13.1	59	18.4	0.18	0.453	0.40	1.7	0.03
53	41.17	1.15	49.5	0.67	38.2	1.4	1.612	Sand mixtures - silty sand to sandy silt (5)	0.84	2.11	0.91	24.1	25	9.5	0.09	0.451	0.21	2.7	0.37
55	42.98	1.31	46.3	0.40	35.2	1.0	1.662	Sand mixtures - silty sand to sandy silt (5)	0.83	1.91	0.92	21.4	22	7.0	0.09	0.446	0.20	3.2	0.5
56	43.31	0.33	67.1	0.25	50.6	0.4	1.686	Sands - clean sand to silty sand (6)	0.82	1.26	0.91	11.76	38	6.2	0.09	0.444	0.21	3.5	0.14
57	43.47	0.16	51.4	0.32	38.7	0.7	1.693	Sand mixtures - silty sand to sandy silt (5)	0.82	1.55	0.89	17.4	27	6.3	0.09	0.443	0.20	3.4	0.07
61	44.29	0.16	34.5	0.39	25.8	1.2	1.717	Sand mixtures - silty sand to sandy silt (5)	0.81	2.47	0.91	28.0	10	7.2	0.09	0.440	0.22	0.0	0
67	46.10	0.16	39.0	0.47	28.7	1.3	1.769	Sand mixtures - silty sand to sandy silt (5)	0.79	2.38	0.91	27.0	14	7.6	0.10	0.434	0.23	0.0	0
71	47.08	0.16	55.5	0.73	40.5	1.4	1.797	Sand mixtures - silty sand to sandy silt (5)	0.78	1.97	0.9	22.8	29	8.8	0.11	0.430	0.27	0.0	0
72	47.41	0.33	47.0	1.31	29.9	3.0	1.804	Silt mixtures - clayey silt to silty clay (4)	0.78	3.67	0.9	37.6	---	13.2	0.17	0.429	0.39	0.0	0

Evaluation of Soil Characteristics Using CPT Data

CPT: CPT1
G.W. Depth: 14 ft
Design G.W. Depth: 10 ft
Elev.: 0

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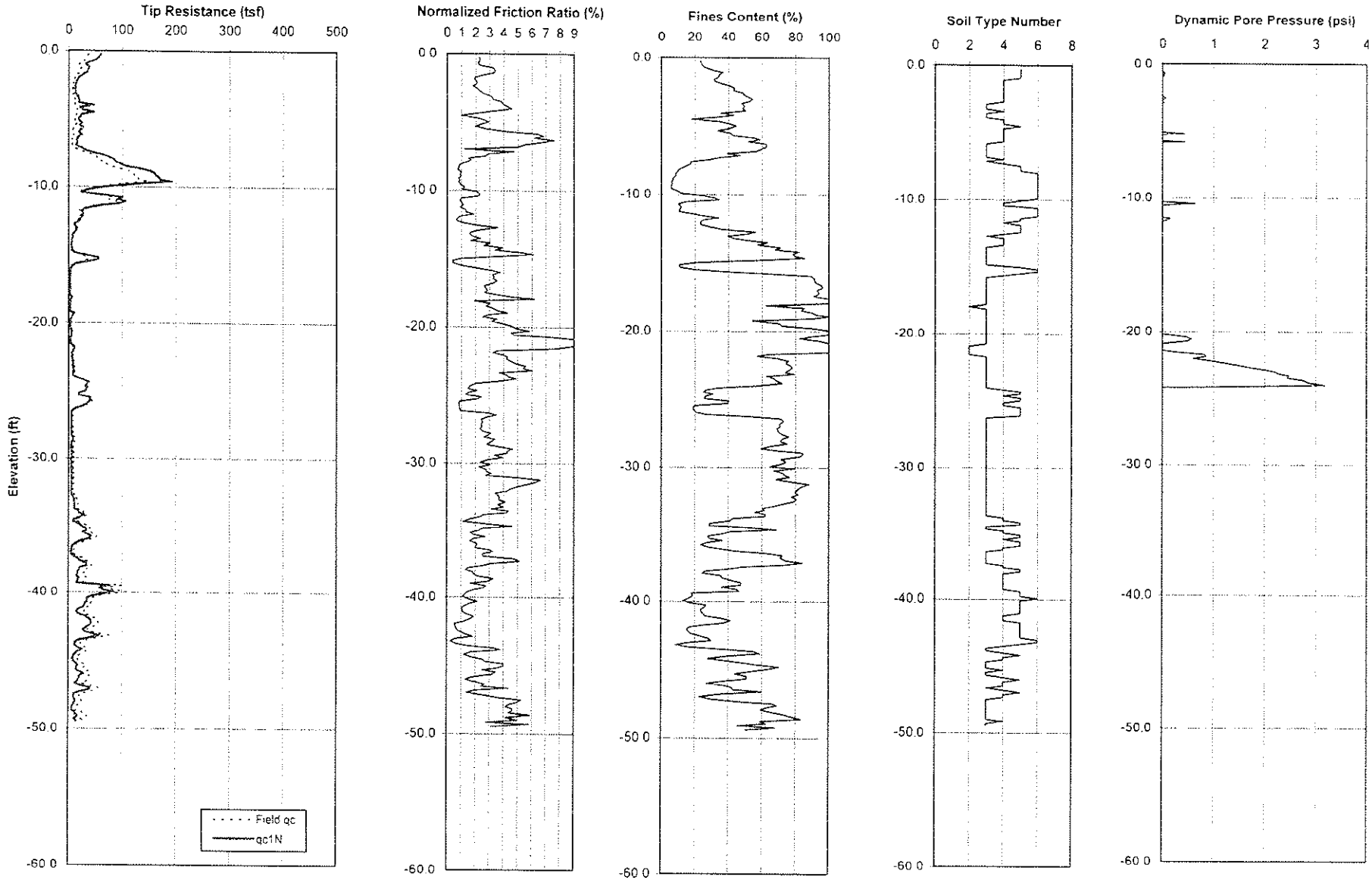

CPT-Based Soil Behavior Type

CPT: CPT1
G.W. Depth: 14 ft
Ic: 2.6

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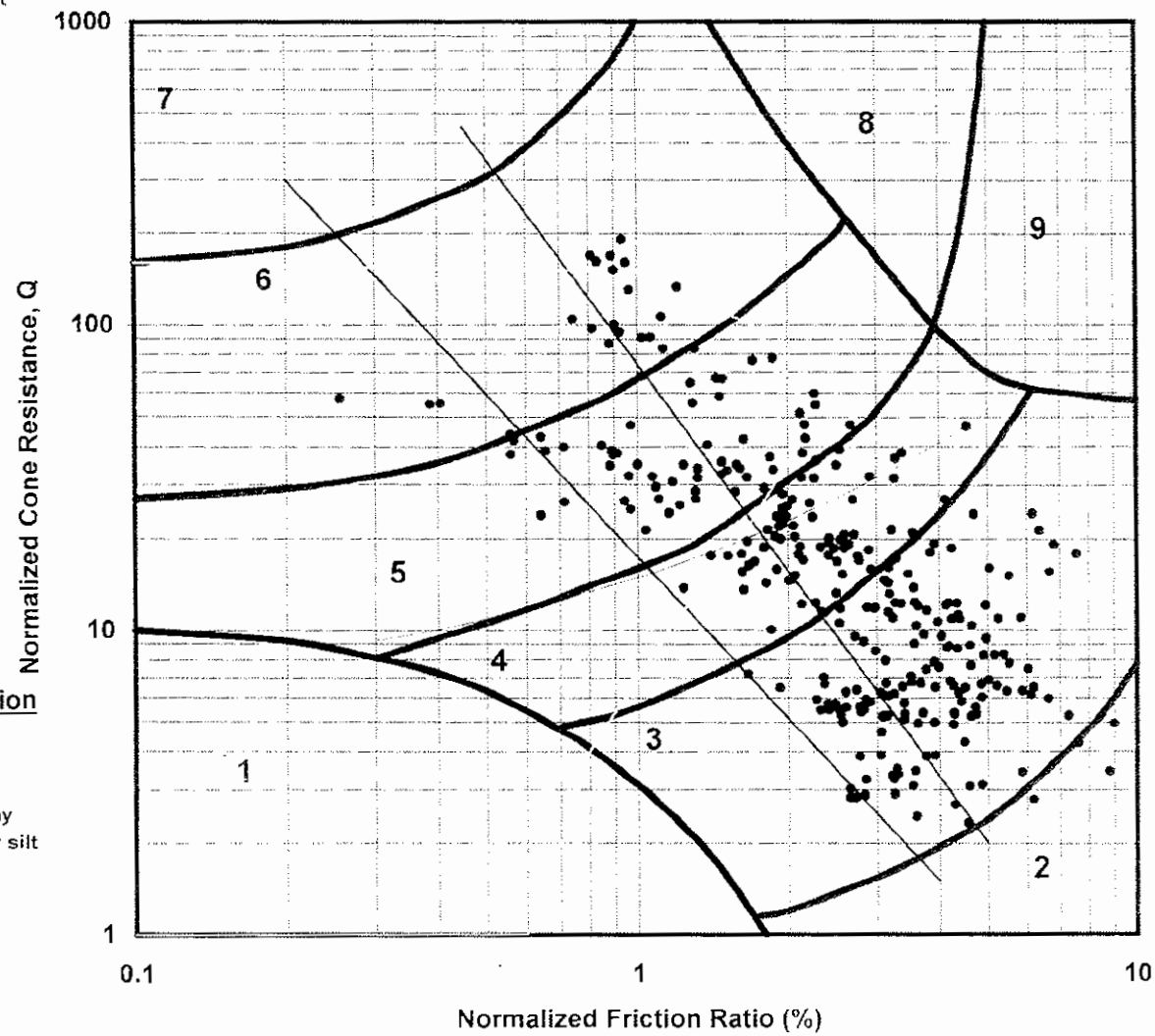
Soil Consistency Number

(Sand / Clay)
1 = very loose / very soft
2 = loose / soft
3 = medium dense / medium stiff
4 = dense / stiff
5 = very dense / very stiff
6 = --- / hard



Soil Behavior Type Classification

1. Sensitive Fine Grained
2. Organic soils - peats
3. Clays - silty clay to clay
4. Silt mixtures - clayey silt to silty clay
5. Sand mixtures - silty sand to sandy silt
6. Sands - clean sand to silty sand
7. Gravelly sand to dense sand
8. Very stiff sand to clayey sand*
9. Very stiff, fine grained*

*Heavily overconsolidated or cemented

Evaluation of Liquefa n Resistance of Soils
Using CPT Data

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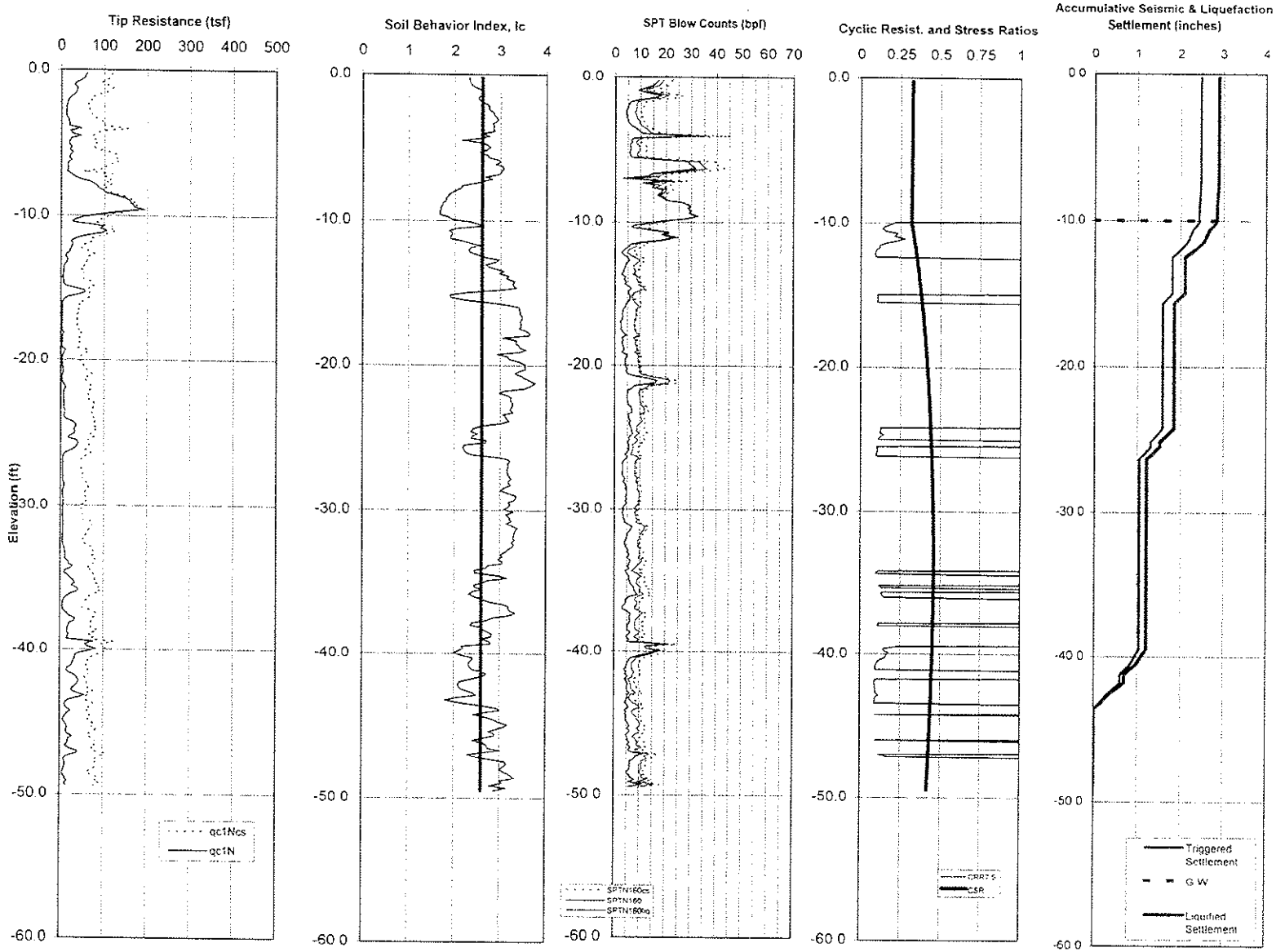
CPT: CPT1
G.W. Depth: 14 ft
Design G.W. Depth: 10 ft

Elev.: 0

Ic: 2.6 (Standard Value)

Fill Height: 0.0 ft 125 pcf
Max horizontal acc. @ surface: 0.50 g
Design earthquake magnitude: 7.5
Removal: 0 ft



GEOLABS-WESTLAKE VILLAGE

*Exclude Settlement from layers thinner than 6 inches

Soil Characteristics and Engineering Characteristics
Using CPT Data

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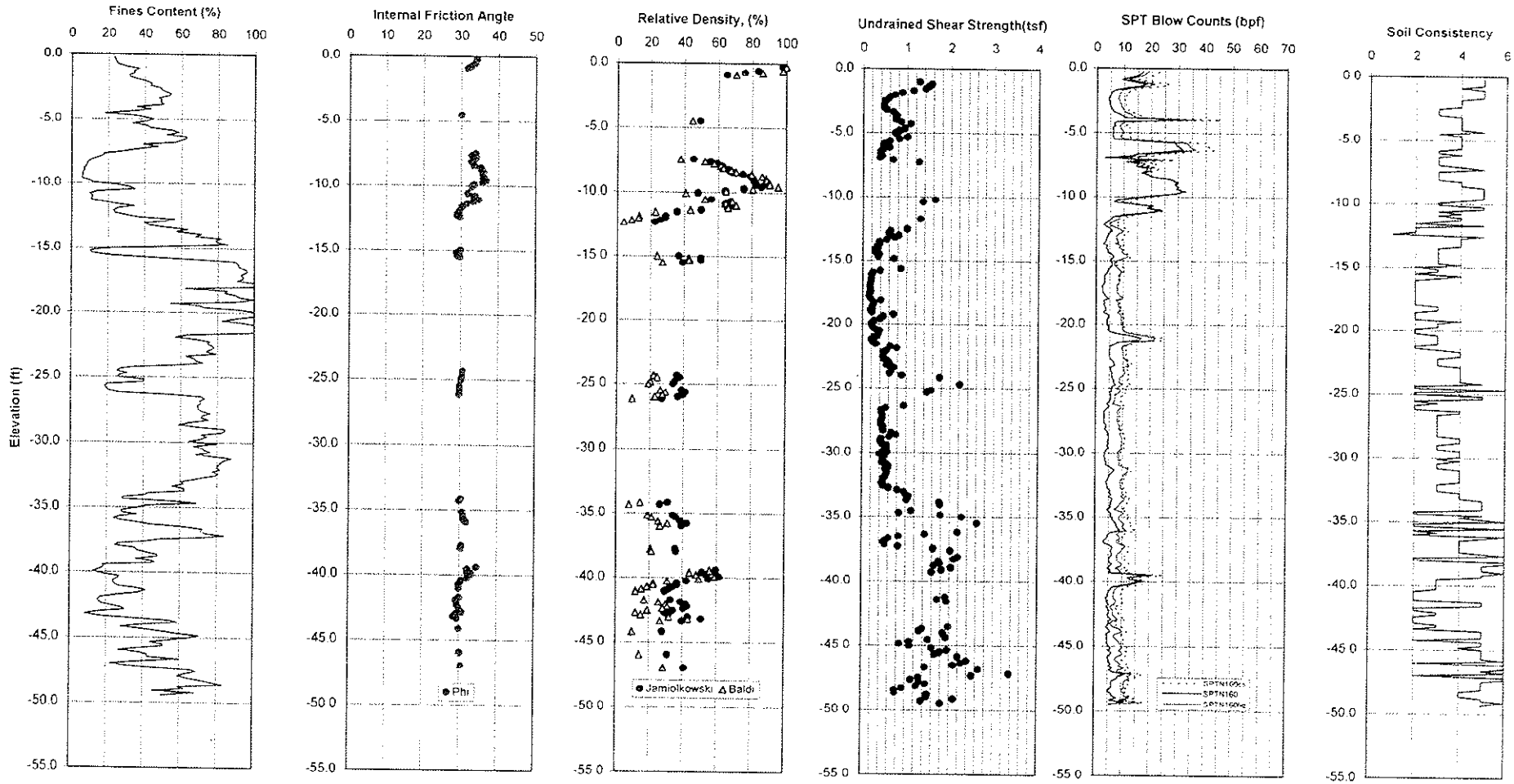
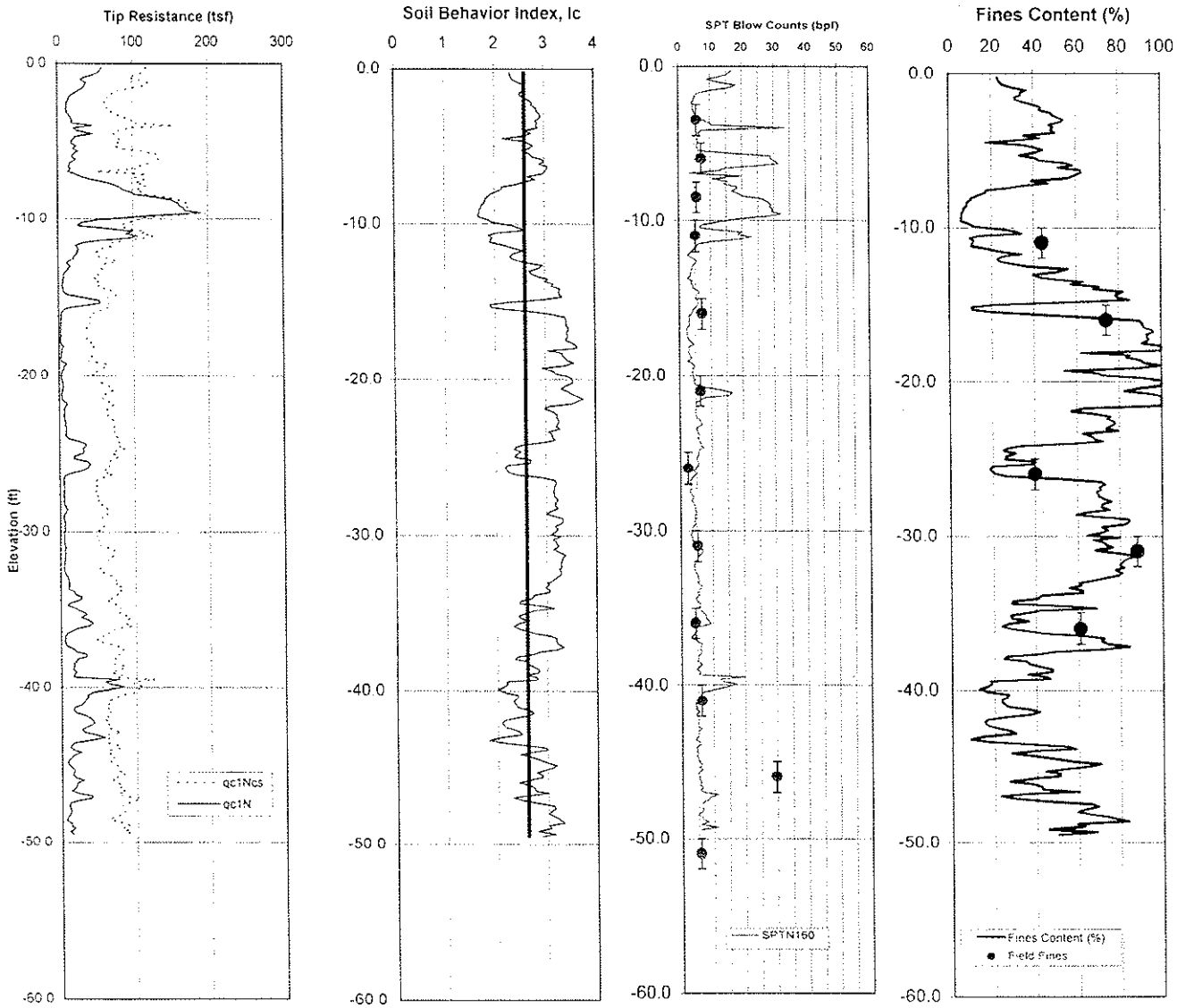
CPT: CPT1
G.W. Depth: 14 ft Elev.: 0
Design G.W. Depth: 10 ft.



Comparison of CPT Data and SPT Data

Boring:	B1	Elev.:	0	C:\JOBS\9011_Broome_Ventura\7-25-05\CPD Folder\CPT-01.cpd
CPT:	CPT1	Elev.:	0	
G.W. Depth:	14 ft			
Design G.W. Depth:	10 ft			



Summary of Analysis of CPT Data

CPT: CPT2 W.O.: 8865
G.W. Depth: 4 ft Elev.: 0
Design G.W. Depth: 4 ft Ic: 2.6 ...\08S\8011_Broome_Victoria\25 05\CPT\Folder\CPT 02.cpo
Removal: 0 ft

Fill Height: 0.0 ft 125 pcf
Max horizontal acc. @ surface: 0.50 g
Design earthquake magnitude: 7.50

Layer	Layer Bott. (ft)	Layer Thick. (ft)	Avg. Tip Resist qc (tsf)	Avg. Side Fric. fs	Avg. Tip Resist qc1N (tsf)	Norm. Frc. Rt. (%)	Est. Wet Den. (pcf)	Soil Behavior Type	O.B. (tsf)	Eff. O.B. (tsf)	Norm. Exp. n	Ic Range	Kc	Fines Content (%)	Phi (deg)	Dr (%)	Su (tsf)	SPT N1(60) (bpf)	SPT N1(60)cs (bpf)
1	0.49	0.16	58.2	2.14	94.8	3.7	120	Sand mixtures - silty sand to sandy silt	0.015	0.015	0.5	2.33	2.04	23.6	56	100.0	---	46.2	55.2
2	0.82	0.33	39.7	2.10	64.7	5.3	120	Silt mixtures - clayey silt to silty clay	0.039	0.039	0.5	2.53 to 2.56	3.07	33.3	---	---	2.6	48.8	62.5
3	1.31	0.49	22.1	1.57	35.9	7.1	120	Clays - silty clay to clay	0.064	0.064	0.7	2.77 to 2.87	4.98	47.3	---	---	1.5	44.1	58
4	1.64	0.33	64.0	1.15	104.3	1.8	120	Sand mixtures - silty sand to sandy silt	0.089	0.089	0.5	2.06 to 2.07	1.40	14.8	50	100.0	---	26.8	30.5
5	1.80	0.16	61.3	0.86	99.9	1.4	125	Sands - clean sand to silty sand	0.104	0.104	0.5	2.01	1.31	13.2	49	98.0	---	23.6	26.4
6	2.46	0.66	32.2	0.42	52.4	1.3	120	Sand mixtures - silty sand to sandy silt	0.128	0.128	0.5	2.09 to 2.39	1.78	20.1	45	64.0	---	10.2	14.3
7	2.95	0.49	8.3	0.12	13.6	1.4	120	Silt mixtures - clayey silt to silty clay	0.163	0.163	0.7	2.6 to 2.84	4.26	42.2	---	---	0.5	3.3	6.9
8	3.28	0.33	4.6	0.08	7.5	1.7	120	Clays - silty clay to clay	0.187	0.187	0.7	2.97 to 2.67	6.41	56.5	---	---	0.3	2.7	8.3
9	3.94	0.66	5.1	0.08	10.5	1.6	120	Silt mixtures - clayey silt to silty clay	0.217	0.217	0.7 to 1	2.72 to 2.92	5.14	48.3	---	---	0.3	3.1	8.7
10	4.43	0.49	3.0	0.07	11.4	2.6	120	Clays - silty clay to clay	0.251	0.246	1	2.91 to 2.93	5.87	53.1	---	---	0.2	4.7	10.6
11	5.09	0.66	3.3	0.07	11.4	2.2	120	Silt mixtures - clayey silt to silty clay	0.286	0.262	1	2.87 to 2.89	5.48	50.6	---	---	0.2	4.3	10.2
12	14.27	9.19	3.5	0.09	7.4	3.1	120	Clays - silty clay to clay	0.581	0.404	1	2.9 to 3.33	8.29	67.4	---	---	0.2	4.3	10.1
13	14.44	0.16	6.8	0.13	11.0	2.2	120	Silt mixtures - clayey silt to silty clay	0.862	0.539	1	2.89	5.58	51.3	---	---	0.4	4.2	10.1
14	14.76	0.33	6.7	0.17	10.6	3.0	120	Clays - silty clay to clay	0.876	0.546	1	2.92 to 3.03	6.45	56.7	---	---	0.4	4.9	10.8
15	14.93	0.16	6.5	0.07	10.1	1.3	120	Silt mixtures - clayey silt to silty clay	0.891	0.553	1	2.80	4.80	46.1	---	---	0.4	2.6	6.1
16	15.42	0.49	6.2	0.20	9.3	4.1	120	Clays - silty clay to clay	0.911	0.562	1	2.95 to 3.33	8.12	66.2	---	---	0.3	5.4	11.5
17	15.58	0.16	7.8	0.14	11.9	2.0	120	Silt mixtures - clayey silt to silty clay	0.931	0.572	1	2.84	5.09	48.1	---	---	0.5	4.2	10
18	19.36	3.77	8.7	0.28	12.1	3.7	120	Clays - silty clay to clay	1.049	0.628	1	2.86 to 3.1	6.57	57.4	---	---	0.5	6.1	12.4
19	19.52	0.16	10.1	0.20	13.1	2.2	120	Silt mixtures - clayey silt to silty clay	1.167	0.685	1	2.83	5.05	47.8	---	---	0.6	4.6	10.5
20	20.83	1.31	7.8	0.17	9.4	2.5	120	Clays - silty clay to clay	1.211	0.706	1	2.91 to 3.02	6.55	57.3	---	---	0.4	4.3	10.2
21	21.00	0.16	7.9	0.12	9.1	1.8	120	Silt mixtures - clayey silt to silty clay	1.255	0.728	1	2.91	5.82	52.8	---	---	0.4	3.3	9
22	24.44	3.44	6.4	0.11	6.5	2.2	120	Clays - silty clay to clay	1.364	0.780	1	2.94 to 3.27	7.78	64.5	---	---	0.3	3.1	8.7
23	24.93	0.49	7.3	0.07	7.0	1.2	120	Silt mixtures - clayey silt to silty clay	1.482	0.836	1	2.92 to 2.95	6.02	54.0	---	---	0.4	2.0	7.4
24	36.42	11.48	10.4	0.32	8.5	3.5	120	Clays - silty clay to clay	1.841	1.009	1	2.87 to 3.23	7.96	65.6	---	---	0.6	5.1	11.2
25	36.75	0.33	10.7	0.09	7.2	1.1	120	Silt mixtures - clayey silt to silty clay	2.195	1.179	1	2.85 to 2.94	5.69	51.9	---	---	0.6	2.0	7.4
26	37.07	0.33	10.0	0.17	6.6	2.2	120	Clays - silty clay to clay	2.215	1.188	1	3.05 to 3.11	7.72	64.3	---	---	0.5	3.2	8.9
27	37.24	0.16	10.9	0.13	7.3	1.5	120	Silt mixtures - clayey silt to silty clay	2.230	1.195	1	2.96	6.27	55.6	---	---	0.6	2.3	7.8
28	38.22	0.98	9.3	0.17	5.8	2.4	120	Clays - silty clay to clay	2.264	1.212	1	3.09 to 3.19	8.42	68.3	---	---	0.5	3.2	8.9
29	38.55	0.33	12.5	0.14	8.3	1.4	120	Silt mixtures - clayey silt to silty clay	2.304	1.231	1	2.86 to 2.91	5.58	51.2	---	---	0.7	2.3	7.8
30	38.88	0.33	14.6	0.45	9.9	3.8	120	Clays - silty clay to clay	2.323	1.240	1	2.95 to 3.18	7.60	63.4	---	---	0.8	5.3	11.4
31	39.21	0.33	35.8	0.78	29.2	2.4	120	Silt mixtures - clayey silt to silty clay	2.343	1.250	0.5 to 1	2.48 to 2.65	3.15	33.8	---	---	2.2	7.5	13.7
32	39.37	0.16	40.7	0.51	35.6	1.3	120	Sand mixtures - silty sand to sandy silt	2.358	1.257	0.5	2.34	2.09	24.1	34	24.0	--	6.2	11.1
33	39.53	0.16	47.1	5.40	35.5	12.1	120	Clays - silty clay to clay	2.368	1.261	1	3.00	6.72	58.3	---	---	3.0	50.0	65
34	39.70	0.16	288.8	6.73	251.1	2.3	125	Sands - clean sand to silty sand	2.378	1.266	0.5	1.92	1.21	10.6	45	100.0	---	50.0	52.4
35	39.86	0.16	285.0	9.30	247.3	3.3	125	Very stiff sand to clayey sand*	2.388	1.271	0.5	2.04	1.36	14.2	45	100.0	---	50.0	54.4
36	41.17	1.31	202.2	2.18	174.2	1.0	125	Sands - clean sand to silty sand	2.434	1.295	0.5	1.6 to 1.97	1.08	7.2	42	84.0	---	31.4	32
37	41.34	0.16	46.5	0.57	39.6	1.3	120	Sand mixtures - silty sand to sandy silt	2.480	1.317	0.5	2.30	1.95	22.5	35	28.0	---	6.7	11.3
38	41.50	0.16	29.2	0.47	20.2	1.8	120	Silt mixtures - clayey silt to silty clay	2.490	1.322	1	2.62	3.42	36.1	---	---	1.6	5.0	11
39	41.83	0.33	19.4	0.58	12.7	3.5	120	Clays - silty clay to clay	2.505	1.329	1	2.89 to 3	6.20	55.1	---	---	1.1	5.7	11.8
40	41.99	0.16	23.1	0.59	15.4	2.9	120	Silt mixtures - clayey silt to silty clay	2.519	1.336	1	2.83	5.07	47.9	---	---	1.4	5.6	11.7
41	44.62	2.62	11.3	0.28	6.3	3.3	120	Clays - silty clay to clay	2.603	1.377	1	2.98 to 3.34	9.13	72.2	---	--	0.6	4.2	16
42	44.78	0.16	8.2	0.53	3.9	9.6	115	Organic soils - peats	2.686	1.416	1	3.62	16.49	100.0	---	---	0.4	12.0	19.4
43	45.11	0.33	12.9	0.46	7.2	4.8	120	Clays - silty clay to clay	2.701	1.423	1	3.16 to 3.3	9.70	75.4	---	---	0.7	5.5	11.6
44	45.44	0.33	33.0	0.65	21.1	2.1	120	Silt mixtures - clayey silt to silty clay	2.721	1.433	1	2.62 to 2.67	3.61	37.5	---	---	2.0	5.6	11.7
45	45.60	0.16	21.4	0.60	13.0	4.3	120	Clays - silty clay to clay	2.735	1.440	1	3.00	6.71	58.3	---	---	1.2	6.7	13.1
46	46.10	0.49	37.7	1.12	24.1	3.2	120	Silt mixtures - clayey silt to silty clay	2.755	1.449	1	2.66 to 2.81	4.14	41.4	---	---	2.3	6.8	15.6
47	46.59	0.49	55.4	0.78	44.8	1.5	120	Sand mixtures - silty sand to sandy silt	2.785	1.464	0.5	2.23 to 2.39	1.93	22.1	35	33.0	---	8.5	13.2
48	46.75	0.16	38.2	0.86	24.0	2.4	120	Silt mixtures - clayey silt to silty clay	2.804	1.473	1	2.64	3.55	37.1	---	---	2.4	6.5	12.8
49	46.92	0.16	24.1	0.85	14.4	4.0	120	Clays - silty clay to clay	2.814	1.478	1	2.94	6.13	54.7	---	---	1.4	6.7	13.1
50	47.08	0.16	33.5	0.88	20.7	2.9	120	Silt mixtures - clayey silt to silty clay	2.824	1.482	1	2.73	4.21	42.0	---	---	2.0	6.5	12.8
51	47.24	0.16	38.0	0.65	30.5	1.9	120	Sand mixtures - silty sand to sandy silt	2.834	1.487	0.5	2.46	2.68	29.9	32	17.0	---	6.5	12.2
52	47.41	0.16	22.5	0.49	13.2	2.5	120	Silt mixtures - clayey silt to silty clay	2.844	1.492	1	2.85	5.25	49.1	---	---	1.3	4.9	10.6
53	48.06	0.66	22.4	0.85	12.9	4.4	120	Clays - silty clay to clay	2.868	1.504	1	2.83 to 3.12	6.97	59.7	---	---	1.3	8.2	14.8
54	48.56	0.49	35.7	0.97	21.6	2.9	120	Silt mixtures - clayey silt to silty clay	2.903	1.520	1	2.7 to 2.76	4.16	41.6	---	---	2.2	7.0	13.4
55	49.05	0.49	26.9	0.89	15.6	3.7	120	Clays - silty clay to clay	2.932	1.534	1	2.86 to 2.93	5.67	51.8	---	---	1.6	6.7	15
56	49.38	0.33	35.6	0.86	21.1	2.7	120	Silt mixtures - clayey silt to silty clay	2.957	1.546	1	2.61 to 2.8	4.10	41.0	---	---	2.2	6.3	12.0
57	49.70	0.33	22.9	0.77	12.8	4.0	120	Clays - silty clay to clay	2.977	1.556	1	2.89 to 3.08	6.64	57.7	---	---	1.3	6.2	12.5
58	49.87	0.16	26.7	0.62	15.2	2.6	120	Silt mixtures - clayey silt to silty clay	2.991	1.563	1	2.81	4.88	46.7	---	---	1.6	5.3	11.3

"Dry" Sand Seismic Settlement Using CPT Data

0.02

CPT: CPT2
G.W. Depth: 4 ft
Design G.W. Depth: 4 ft
Removal: 0 ft

W.O.: 8865
Elev.: 0
Ic: 2.6 C:\JOBS\9011_Broome_Ventura\7-25-05\CPD Folder\CPT-02.cpd

Fill Height: 0.0 ft 125 pcf
Max horizontal acc. @ surface: 0.50 g
Design earthquake magnitude: 7.50
Magnitude Scaling Factor: 1.00

Layer	Layer Bott. (ft)	Layer Thick. (ft)	Avg. Tip Resist qc (tsf)	Avg. Side Fric. fs	Avg. Tip Resist qc1N (tsf)	Norm. Frc. Rt. (%)	Eff. O.B. (tsf)	Soil Behavior Type	Avg. rd	Kc	Kσ	Fines Content (%)	Avg. Dr (%)	Spt N160cs (bpf)	Cyclic Shear Stress τav (psf)	Gmax (ksf)	γeff / (Geff/Gmax)	γeff	Vol. Strain (%)	"Dry" Settle. (in)
1	0.49	0.16	58.2	2.14	94.8	3.7	0.015	Sand mixtures - silty sand to sandy silt (5)	1.00	2.04	1	23.6	100	55.2	10.00	2.77E+02	3.46E-05	4.52E-05	2.76E-03	1.63E-04
2	0.82	0.33	39.7	2.10	64.7	5.3	0.039	Silt mixtures - clayey silt to silty clay (4)	1.00	3.07	1	33.3	---	62.5	26.00	7.42E+02	3.43E-05	4.49E-05	2.73E-03	1.08E-04
4	1.64	0.33	64.0	1.15	104.3	1.8	0.089	Sand mixtures - silty sand to sandy silt (5)	1.00	1.40	1	14.8	100	30.5	57.00	5.81E+02	9.89E-05	2.15E-04	2.52E-02	9.94E-04
5	1.80	0.16	61.3	0.86	99.9	1.4	0.104	Sands - clean sand to silty sand (6)	1.00	1.31	1	13.2	98	26.4	67.00	6.04E+02	1.11E-04	2.73E-04	3.96E-02	7.79E-04
6	2.46	0.66	32.2	0.42	52.4	1.3	0.128	Sand mixtures - silty sand to sandy silt (5)	1.00	1.78	1	20.1	64	14.4	83.00	5.60E+02	1.49E-04	6.42E-04	2.42E-01	1.90E-02

Liquefaction Analysis Using CPT Data

0 18

0 20

CPT: CPT2 W.O.: 8865

G.W. Depth: 4 ft. Elev.: 0

Design G.W. Depth: 4 ft Ic: 2.6 C:\JOBS\9011_Broome_Ventura\7-25-05\CPD Folder\CPT-02.cpd

Removal: 0 ft.

Fill Height: 0.0 ft. 125 pcf

Max horizontal acc. @ surface: 0.50 g

Design earthquake magnitude: 7.50

Magnitude Scaling Factor: 1.00

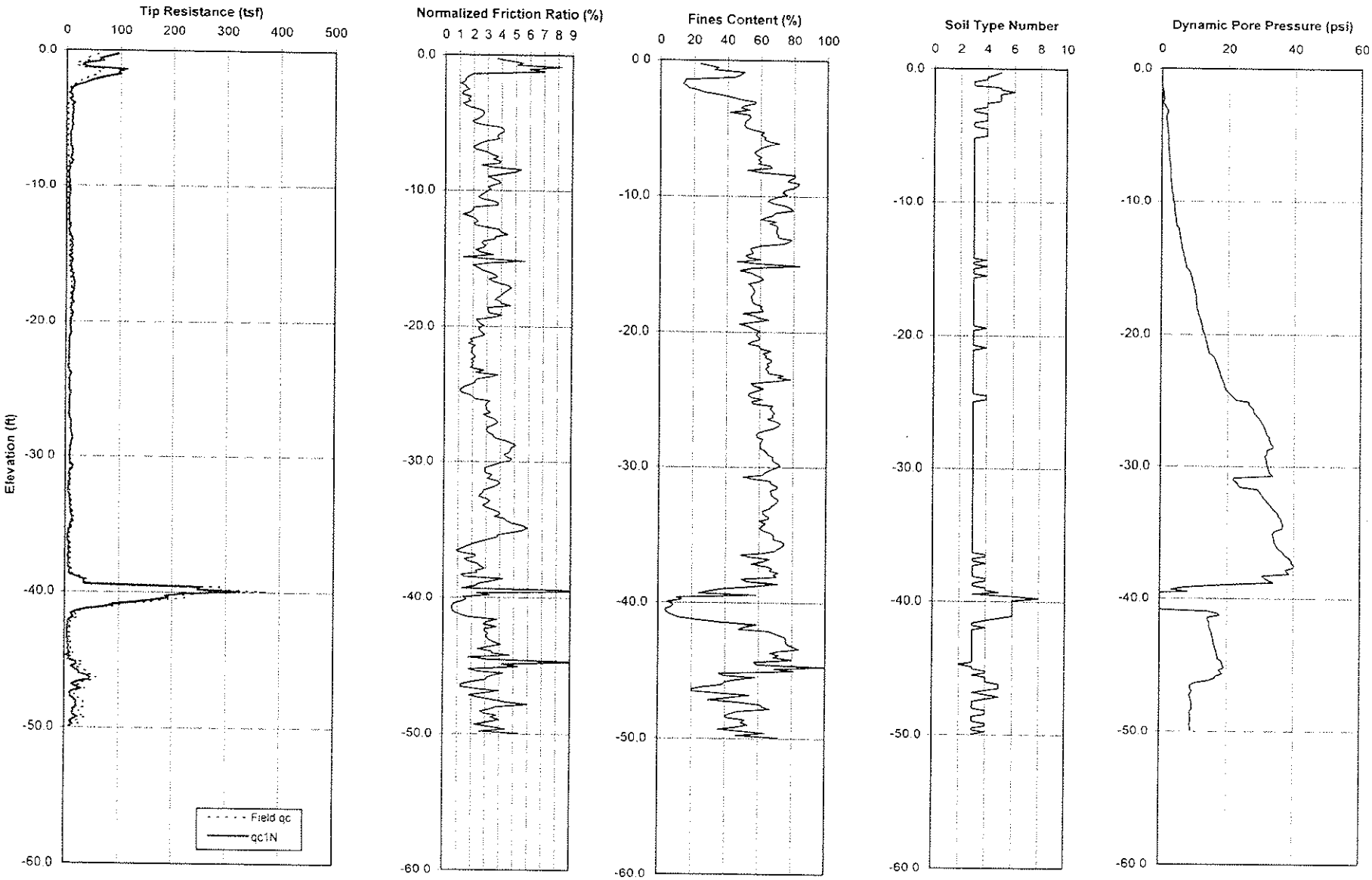
Layer	Layer Bott. (ft)	Layer Thick. (ft)	Avg. Tip Resist qc (tsf)	Avg. Side Fric. fs	Avg. Tip Resist qc1N (tsf)	Norm. Frc. Rt. (%)	Eff. O.B. (tsf)	Soil Behavior Type	Avg. rd	Kc	Kσ	Avg. Fines Content (%)	Avg. Dr (%)	Avg. SPT N1(60)liq (bpf)	Min. CRR (M=7.5)	Avg. CSR	Min. Liq. FS	Avg. Strain (%)	Liq Settle. (in)
31	39.21	0.33	35.8	0.78	29.2	2.4	1.250	Silt mixtures - clayey silt to silty clay (4)	0.86	3.15	0.96	33.8	---	10.4	0.15	0.523	0.29	0.0	0
32	39.37	0.16	40.7	0.51	35.6	1.3	1.257	Sand mixtures - silty sand to sandy silt (5)	0.86	2.09	0.96	24.1	24	8.2	0.11	0.522	0.22	0.0	0
34	39.70	0.16	288.8	6.73	251.1	2.3	1.266	Sands - clean sand to silty sand (6)	0.85	1.21	0.95	10.8	100	50.9	Infin	0.521	Infin	0.0	0
35	39.86	0.16	265.0	9.30	247.3	3.3	1.271	Very stiff sand to clayey sand* (8)	0.85	1.36	0.91	14.2	100	51.2	Infin	0.520	Infin	0.0	0
36	41.17	1.31	202.2	2.18	174.2	1.0	1.295	Sands - clean sand to silty sand (6)	0.85	1.08	0.91	7.2	84	32.0	0.15	0.517	0.29	0.8	0.12
37	41.34	0.16	46.5	0.57	39.6	1.3	1.317	Sand mixtures - silty sand to sandy silt (5)	0.84	1.95	0.92	22.5	28	8.6	0.11	0.513	0.22	2.8	0.06
47	46.59	0.49	55.4	0.78	44.8	1.5	1.464	Sand mixtures - silty sand to sandy silt (5)	0.79	1.93	0.92	22.1	33	10.3	0.12	0.488	0.24	0.0	0
51	47.24	0.16	38.0	0.65	30.5	1.9	1.487	Sand mixtures - silty sand to sandy silt (5)	0.78	2.68	0.92	29.9	17	9.0	0.12	0.484	0.25	0.0	0

Evaluation of Soil Characteristics Using CPT Data

CPT: CPT2
G.W. Depth: 4 ft
Design G.W. Depth: 4 ft

Elev.: 0

C:\JOBS\9011_Broome_Ventura\7-25-05\CPD Folder\CPT-02.cpd



CPT-Based Soil Behavior Type

CPT: CPT2
G.W. Depth: 4 ft
Ic: 2.6

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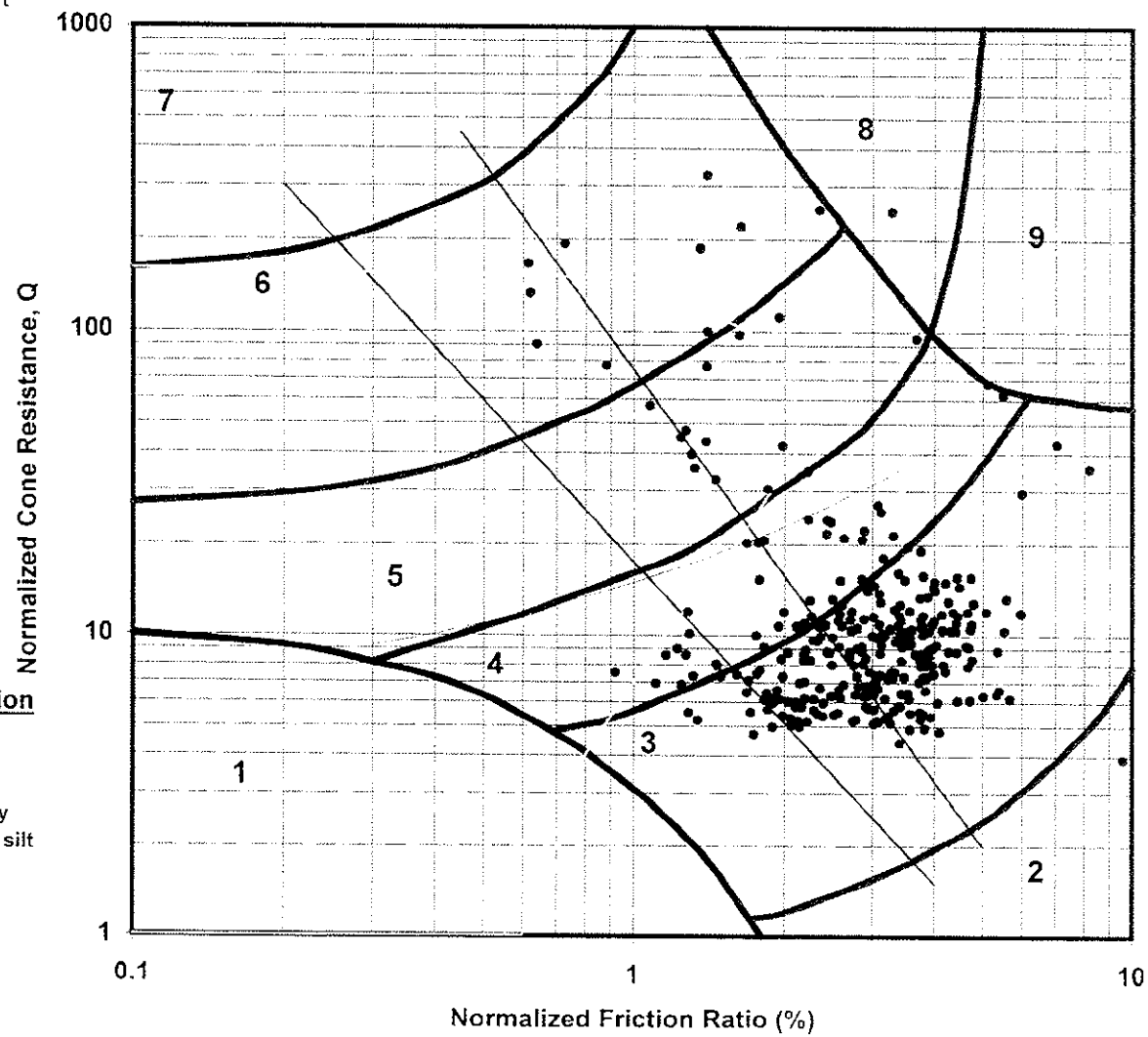


Soil Consistency Number

(Sand / Clay)
1 = very loose / very soft
2 = loose / soft
3 = medium dense / medium stiff
4 = dense / stiff
5 = very dense / very stiff
6 = --- / hard

Soil Behavior Type Classification

1. Sensitive Fine Grained
2. Organic soils - peats
3. Clays - silty clay to clay
4. Silt mixtures - clayey silt to silty clay
5. Sand mixtures - silty sand to sandy silt
6. Sands - clean sand to silty sand
7. Gravelly sand to dense sand
8. Very stiff sand to clayey sand*
9. Very stiff, fine grained*

*Heavily overconsolidated or cemented

Evaluation of Liquefac n Resistance of Soils
Using CPT Data

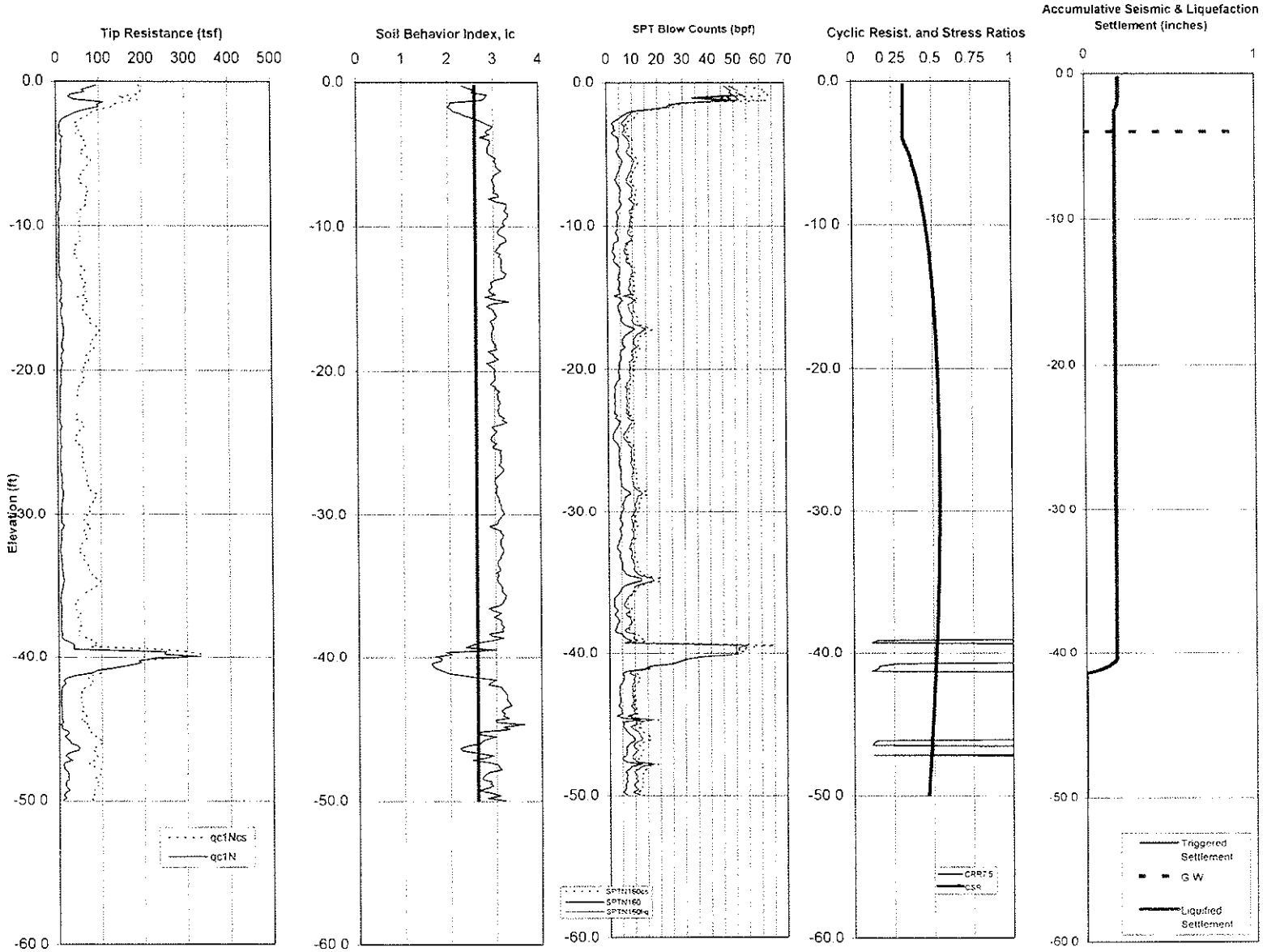
C:\JOBS\9011_Broome_Ventura\7-25-05\CPD Folder\CPT-02.cpd

CPT: CPT2
G.W. Depth: 4 ft.
Design G.W. Depth: 4 ft.

Elev.: 0

Ic: 2.6 (Standard Value)

Fill Height: 0.0 ft 125 pcf
Max horizontal acc. @ surface: 0.50 g
Design earthquake magnitude: 7.5
Removal: 0 ft

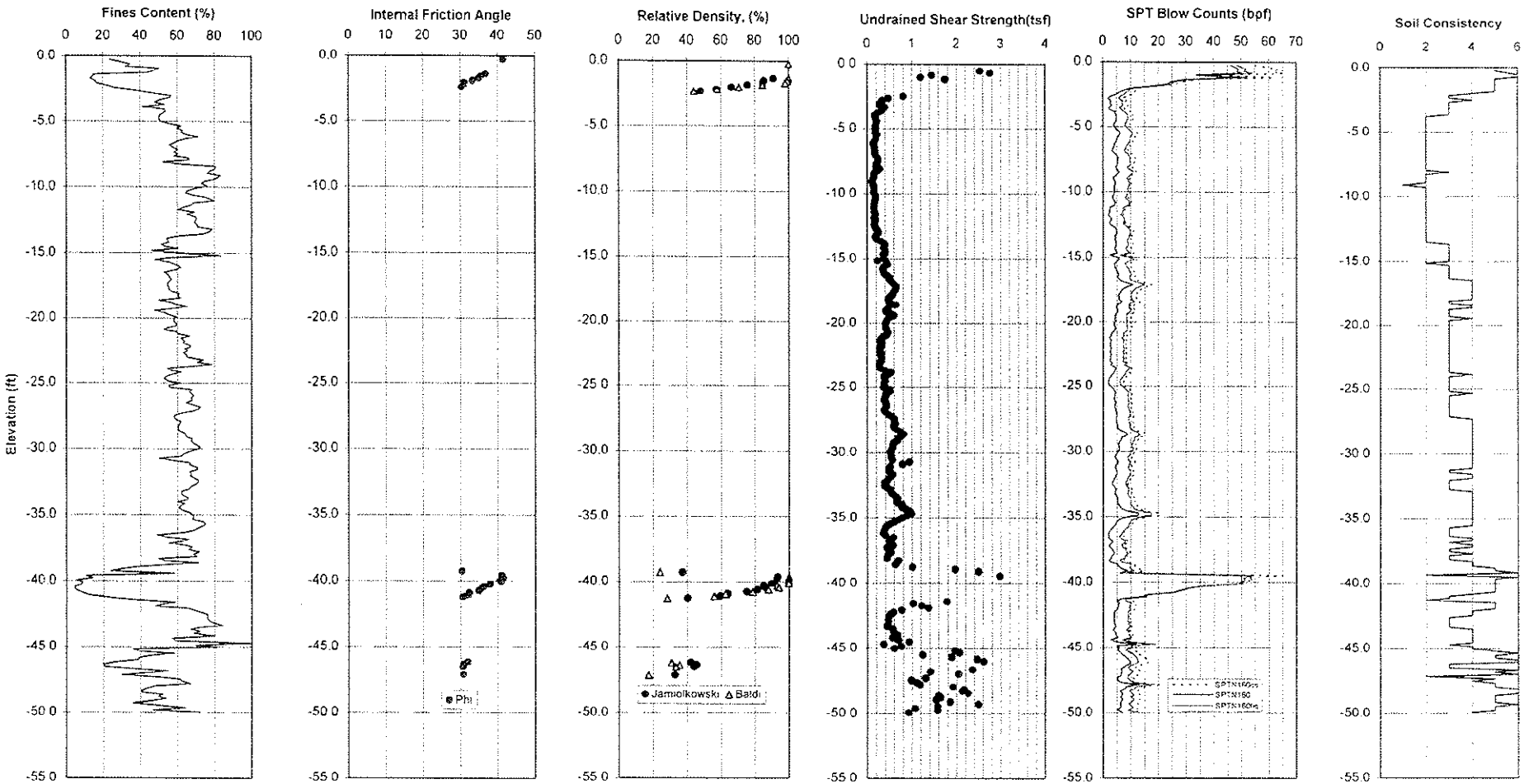


*Exclude Settlement from layers thinner than 6 inches

Soil Characteristics and Engineering Characteristics
Using CPT Data

C:\JOBS\9011_Broome_Ventura\7-25-05\CPD Folder\CPT-02.cpd

CPT: CPT2
G.W. Depth: 4 ft. Elev.: 0
Design G.W. Depth: 4 ft.



Empirical Prediction of Liquefaction-Induced Lateral Spread

References:

Bartlett, S.F., and Youd, T.L. (1995), "Empirical Prediction of Liquefaction-Induced Lateral Spread." J. Geotech. Engrg., ASCE, 121(4), 316-329.

Youd, T.L., Hanson, C.M., and Bartlett, S.F. (1999), "Revised MLR Equations for Predicting Lateral Spread Displacement (Draft).

Youd, T.L., Hanson, C.M., and Bartlett, S.F. (2002), "Revised MLR Equations for Prediction of Lateral Spread Displacement." J. Geotech. Engrg., ASCE, 128(12), 1007-1017.

INPUT: **CPT 1**

earthquake Magnitude,	$M := 6.9$	6< M <8
horizontal distance to nearest seismic energy source or to nearest fault rupture (km),	$R := 3$	R>0.5km
free face ratio (100xH/L),	$W := \frac{12}{300} \cdot 100 \quad W = 4$	1<W%<20
gradient of surface topo or ground slope (%),	$S := \frac{2.0}{100 \cdot \%} \quad S = 2$	$0.1 < S(\%) < 6$

For 1<Zt (m)<10 (upper 30 ft)

thickness of saturated layers with N160 ≤15 (m),	$T_{15} := 1.3 \quad 4.27\ ft = 1.301\ m$	$1 < T15(m) < 15$
average fines content in T15 (%),	$F_{15} := 23.86$	
average D50 in T15 (mm),	$D50_{15} := 0.064$	

$Ro := 10^{(0.89 \cdot M - 5.64)} \qquad Ra := Ro + R$

Free-face component (Revision from 2002):

$$\log D_{Hff} := -16.713 + 1.532 \cdot M - 1.406 \cdot \log(Ra) - 0.012 \cdot R + 0.592 \cdot \log(W) + 0.540 \cdot \log(T_{15}) \ldots + 3.413 \cdot \log(100 - F_{15}) - 0.795 \cdot \log(D50_{15}) + 0.1$$

$D_{Hff} := 10^{(\log D_{Hff})} \qquad D_{Hff} = 1.5$ meters $\qquad D_{Hff} \cdot m = 4.907 \cdot ft \qquad D_{Hff} \cdot m = 4.9 \cdot ft$

Ground Slope Component (Revision from 2002):

$$\log D_{Hff} := -16.213 + 1.532 \cdot M - 1.406 \cdot \log(Ra) - 0.012 \cdot R + 0.338 \cdot \log(S) + 0.540 \cdot \log(T_{15}) \ldots + 3.413 \cdot \log(100 - F_{15}) - 0.795 \cdot \log(D50_{15}) + 0.1$$

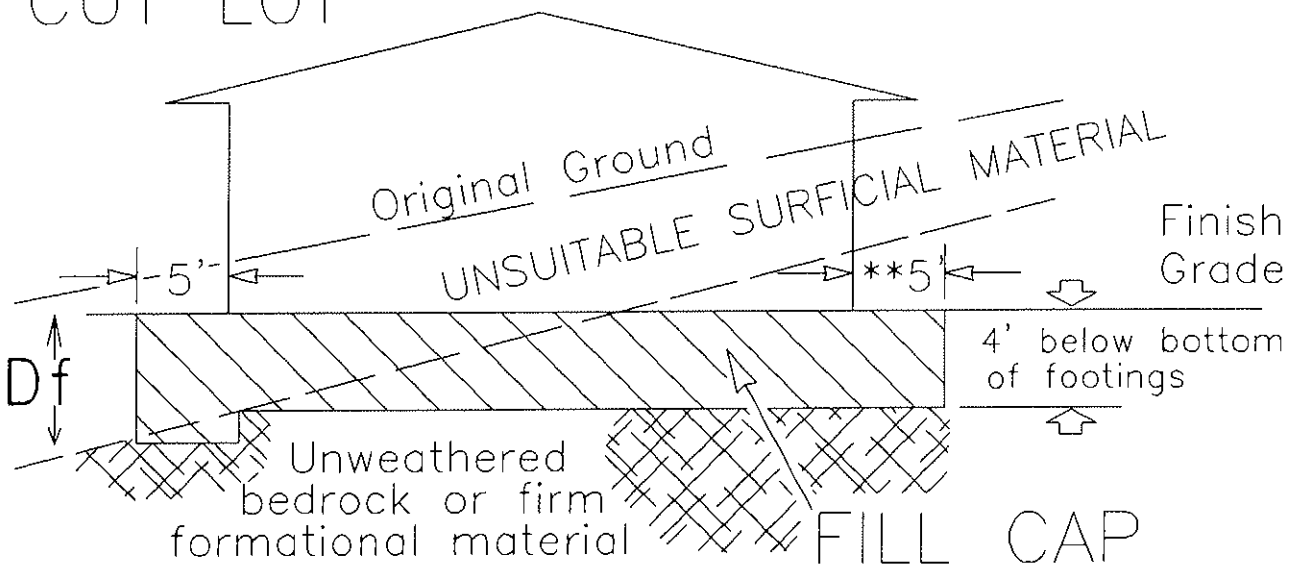
$D_{Hff} := 10^{(\log D_{Hff})} \qquad D_{Hff} = 0.46$ meters $\qquad D_{Hff} \cdot m = 18.2 \cdot in \qquad D_{Hff} \cdot m = 1.5 \cdot ft$

APPENDIX D

TYPICAL DETAILS

FILL CAP DETAIL

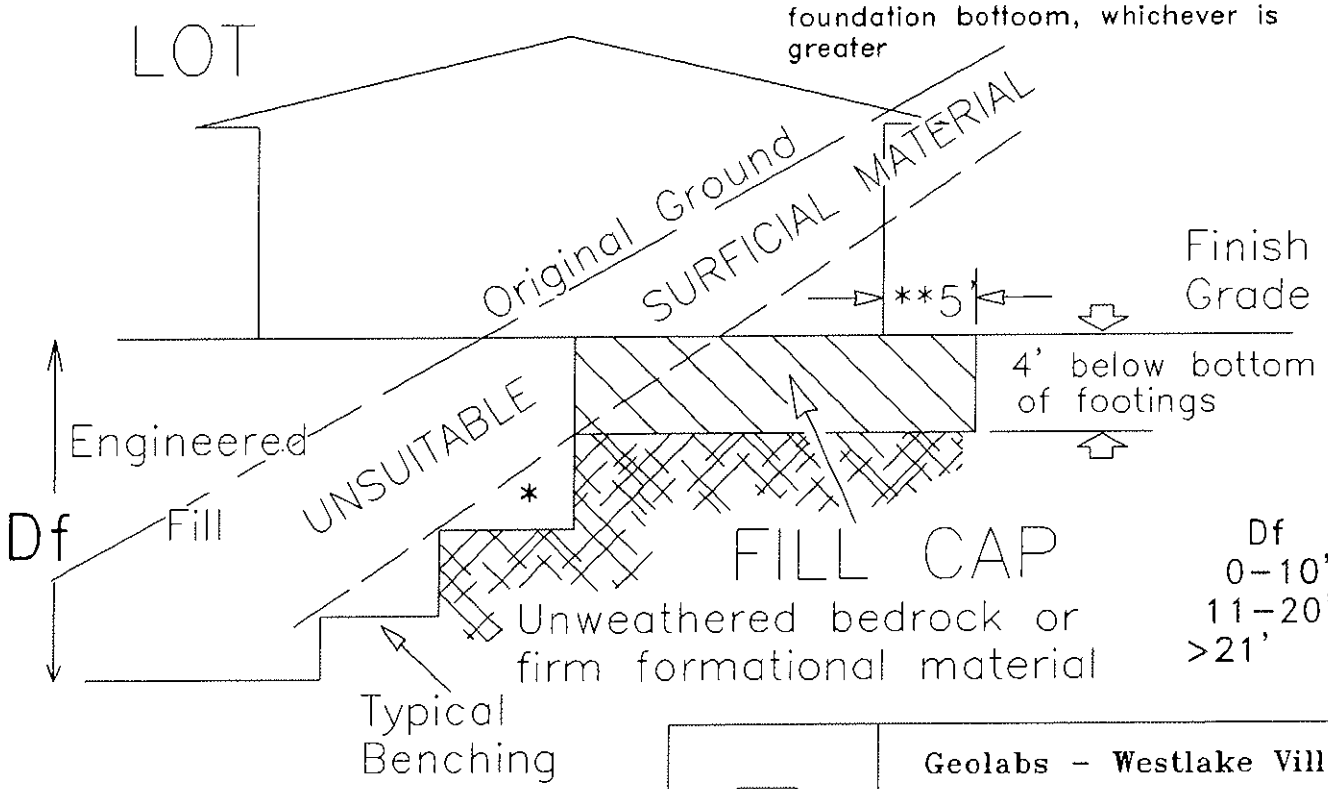
CUT LOT



Unsuitable surficial material anticipated to range from 7.5 to 13 feet.

** 5' min or thickness of fill below foundation bottoom, whichever is greater

TRANSITION LOT



Df	Dc
0–10'	5'
11–20'	7'
>21'	10'

* For backslopes steeper than 3:1 the uppermost bench is to be 15' wide.

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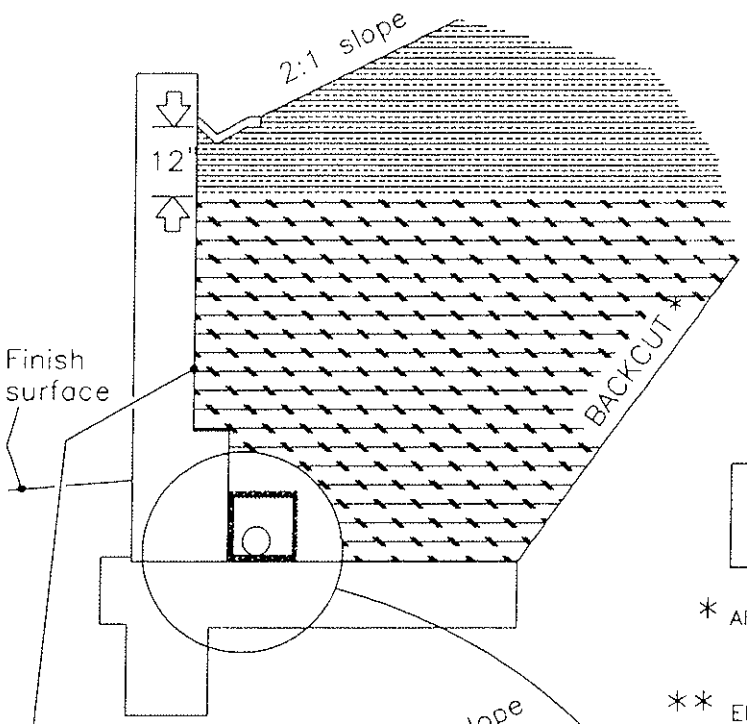
GEOLOGY AND SOIL ENGINEERING

DATE _____ BY _____
SCALE n.a. W.O. _____

TRANSLOT

PLATE GS

TYPICAL RETAINING WALL



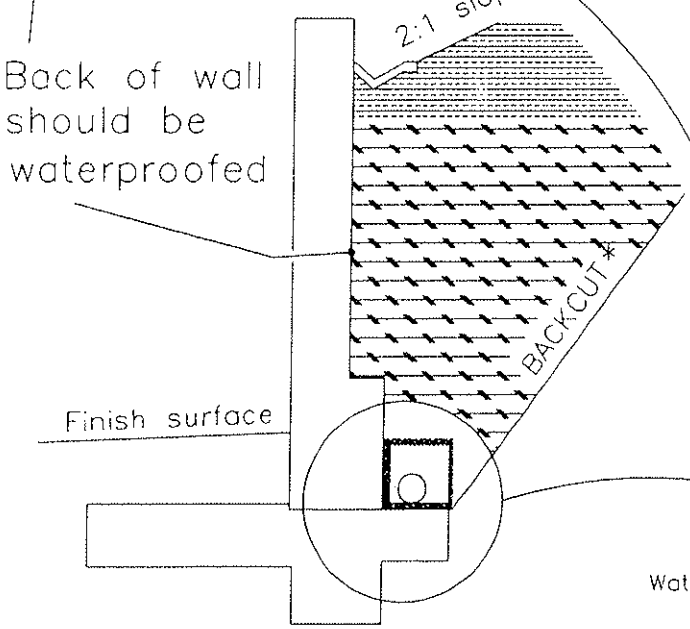
Relatively impermeable backfill soil

Rock or non-expansive soil backfill (EI <20 or SE>20).**
If rock is used, Filter Cloth is required to separate rock from relatively impermeable soil and backfill. Non-expansive backfill should be placed to the backcut or three feet, whichever is less.
NOTE: All backfill should be compacted to a minimum of 90% relative density.

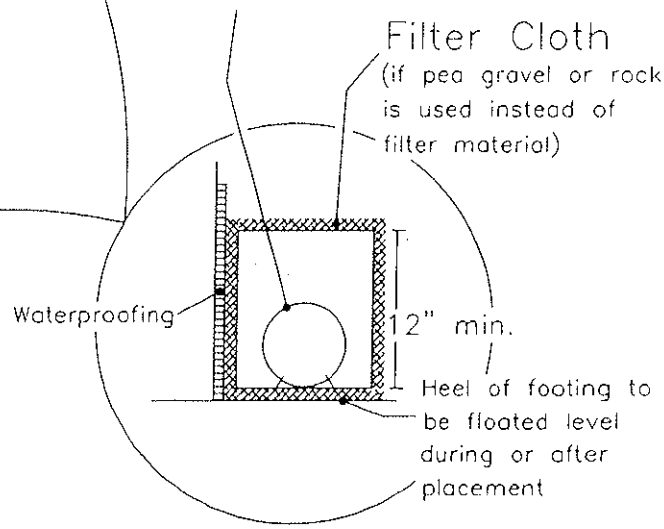
FILTER MATERIAL (see gradation), PEA GRAVEL, OR ROCK – Geotextile should be used to separate Pea Gravel or Rock from backcut and backfill.

* All backcuts shall be in accordance with OSHA standards, unless site-specific backcut and/or backfill recommendations are made by this office.

** EI 21–30 may be used if placed at 2% over optimum



3" (min.) to 4" (max.) perforated pipe (SDR 35 or equivalent) laid level on footing with holes set facing downward. Pipe should outlet to a non-erodable structure or device.



FILTER MATERIAL GRADATION

Sieve Size	% Passing
1'	100
3/4'	90-100
3/8'	40-100
#4	24-50
#8	15-35
#30	5-15
#50	0-7
#200	0-2

Geolabs – Westlake Village
GEOLOGY AND SOIL ENGINEERING

DATE _____ BY _____
SCALE _____ W.O. _____

Retwall1A

PLATE RW

Appendix 4.7 Greenhouse Gas Emissions Technical Report prepared by Pomeroy Environmental Services dated January 2016

Greenhouse Gas Emissions Technical Report
The Grove Specific Plan Project
San Buenaventura, California

Prepared by:

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Santa Clarita, California 91381
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www.pomeroyes.com

January 2016

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Appendix A: Construction & Operational Greenhouse Gas Data

INTRODUCTION

This report provides a discussion of global climate change, existing regulations pertaining to global climate change, an inventory of the approximate greenhouse gas (GHG) emissions that would result from the Project, and an analysis of the significance of the impact of these GHGs.

PROJECT OVERVIEW

Project Location

The City of San Buenaventura is located in Ventura County, California. The Grove Specific Plan area is located in the western portion of the City, specifically at the western terminus of Thille Street, north of Copland Drive. The project site is bounded on the north by Highway 126 (SR-126), on the east by the Thille Community neighborhood, on the south by Telephone Road and Copland Drive, and on the west by the La Posada mobile home park, and farther to the west by the 101/SR 126 highway interchange (see Figure 1, Aerial Photograph of the Project Site). The plan area is approximately 26.51 acres in area and is currently within unincorporated area, but is within the City of Ventura's Sphere of Influence and is designated on the General Plan Map as Medium Density Residential; 9-20 du/acre. The site is currently used for seasonal floral agricultural production.

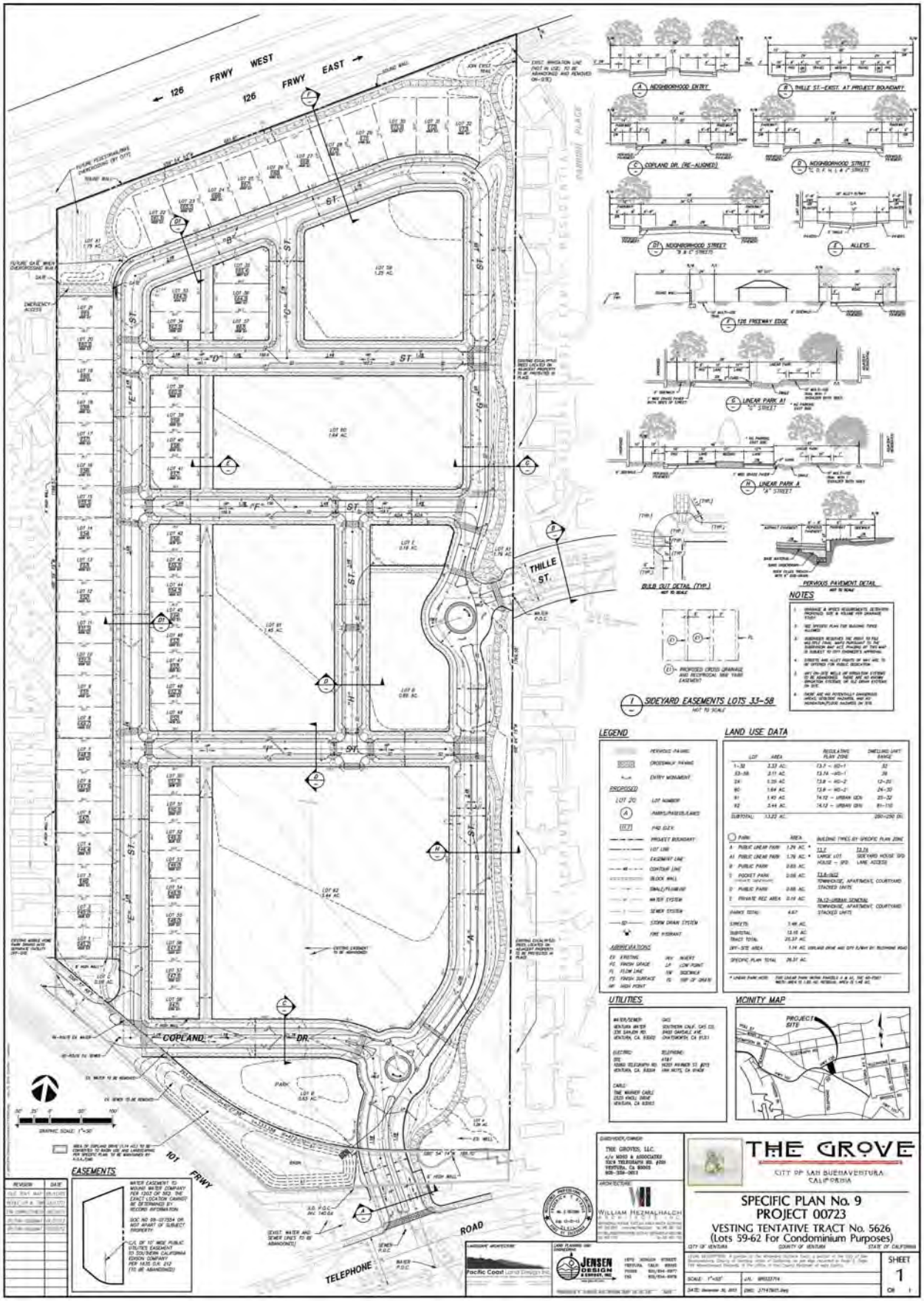
Project Characteristics

The proposed Project consists of a Specific Plan and a Vesting Tentative Tract Map that would enable the future development of a residential neighborhood ranging between 200 and 250 dwellings on approximately 26.51 acres (a density of 9.43 per units per acre). The Tentative Map (see Figure 2, Vesting Tentative Tract Map) would create individual lots for 32 front-loaded single-family residences, 26 alley-loaded single-family residences, and 4 larger lots that could accommodate up to 192 units in a combination of alley-loaded single family homes, townhouses, and courtyard or stacked multi-family housing.

Source: Figure 1.1 (page 3), The Grove Specific Plan No. 9; January 2015.

POMEROY ENVIRONMENTAL SERVICES

Figure 1
Aerial Photograph of the Project Site



Source: Figure 3.2, The Grove Specific Plan No. 9; January 2015.

POMEROY ENVIRONMENTAL SERVICES

Figure 2
Vesting Tentative Tract Map

ENVIRONMENTAL SETTING

General Terms and Scientific Literature

Earth's natural warming process is known as the "greenhouse effect." This greenhouse effect compares the Earth and the atmosphere surrounding it to a greenhouse with glass panes. The glass allows solar radiation (sunlight) into Earth's atmosphere, but prevents radiative heat from escaping, thus warming Earth's atmosphere. GHGs keep the average surface temperature of the Earth to approximately 60 degrees Fahrenheit. However, excessive concentrations of GHGs in the atmosphere can result in increased global mean temperatures, with associated adverse climatic and ecological consequences.

Scientists studying the particularly rapid rise in global temperatures have determined that human activity has resulted in increased emissions of GHGs, primarily from the burning of fossil fuels (during motorized transport, electricity generation, consumption of natural gas, industrial activity, manufacturing, etc.), deforestation, agricultural activity, and the decomposition of solid waste.

Scientists refer to the global warming context of the past century as the "enhanced greenhouse effect" to distinguish it from the natural greenhouse effect.[1] While the increase in temperature is known as "global warming," the resulting change in weather patterns is known as "global climate change." Global climate change is evidenced in changes to wind patterns, storms, precipitation, and air temperature.

GHG Components

GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride.[2] A general description of each GHG discussed in this report is provided in Table 1, Description of Identified Greenhouse Gases. CO_2 is the most abundant GHG. Other GHGs are less abundant, but have higher global warming potential (GWP) than CO_2. Thus, emissions of other GHGs are frequently expressed in the equivalent mass of CO_2, denoted as CO_2e. Forest fires, decomposition, industrial processes, landfills, and consumption of fossil fuels for power generation, transportation, heating, and cooking are the primary sources of GHG emissions.

[1] *Climate Change 101: Understanding and Responding to Global Climate Change, published by the Pew Center on Global Climate Change and the Pew Center on the States.*

[2] *As defined by California Assembly Bill (AB) 32 and Senate Bill (SB) 104.*

Table 1
Description of Identified Greenhouse Gases

Greenhouse Gas	General Description
CO_2	CO_2 is an odorless, colorless GHG, which has both natural and man made sources. Natural sources include the following: decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing; man made sources of CO_2 are burning coal, oil, natural gas, and wood.
CH_4	CH_4 is a flammable gas and is the main component of natural gas. When one molecule of CH_4 is burned in the presence of oxygen, one molecule of CO_2 and two molecules of water are released. There are no ill health effects from CH_4. A natural source of CH_4 is the anaerobic decay of organic matter. Geological deposits, known as natural gas fields, also contain CH_4, which is extracted for fuel. Other sources are from landfills, fermentation of manure, and cattle.
N_2O	N_2O is a colorless GHG. High concentrations can cause dizziness, euphoria, and sometimes slight hallucinations. N_2O is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is used in rocket engines, race cars, and as an aerosol spray propellant.
HFCs	HFCs are synthetic man-made chemicals that are used as a substitute for chlorofluorocarbons (CFCs) for automobile air conditioners and refrigerants. CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the Earth's surface). CFCs were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. Because they destroy stratospheric ozone, the production of CFCs was stopped as required by the Montreal Protocol in 1987.
PFCs	PFCs have stable molecular structures and do not break down though the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above the Earth's surface are able to destroy the compounds. PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane and hexafluoroethane. The two main sources of PFCs are primary aluminum production and semiconductor manufacture.
SF_6	SF_6 is an inorganic, odorless, colorless, non-toxic, and nonflammable gas. SF_6 is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.
Source: Association of Environment Professionals, Alternative Approaches to Analyze Greenhouse Gas Emissions and Global Climate Change in CEQA Documents, Final, June 29, 2007.	

Global Warming Potential

Global Warming Potential (GWP) is one type of simplified index based upon radiative properties that is used to estimate the potential future impacts of emissions of different gases upon the climate system in a relative sense. GWP is based on a number of factors, including the radiative efficiency (heat-absorbing

ability) of each gas relative to that of CO_2, as well as the decay rate of each gas (the amount removed from the atmosphere over a given number of years) relative to that of CO_2. A summary of the atmospheric lifetime and GWP of selected gases is presented at Table 2, Atmospheric Lifetimes and Global Warming Potentials.

Table 2
Atmospheric Lifetimes and Global Warming Potentials

Pollutant	Lifetime (Years)	Global Warming Potential (20-Year)	Global Warming Potential (100-Year)
Carbon Dioxide	100	1	1
Nitrous Oxide	121	264	265
Nitrogen Triflouride	500	12,800	16,100
Sulfur Hexaflouride	3,200	17,500	23,500
Perflourocarbons	3,000-50,000	5,000-8,000	7,000-11,000
Black Carbon	days to weeks	270-6,200	100-1,700
Methane	12	84	28
Hydroflourocarbons	Uncertain	100-11,000	100-12,000
Source: CARB, First Update to the Climate Change Scoping Plan, May 2014.			

Projected Impacts of Global Warming in California

The primary effect of rising global concentrations of atmospheric GHG levels is a rise in the average global temperature of approximately 0.2 degrees Celsius per decade, determined from meteorological measurements worldwide between 1990 and 2005. Climate change modeling using 2000 emission rates shows that further warming is likely to occur given the expected rise in global atmospheric GHG concentrations from innumerable sources of GHG emissions worldwide, which would induce further changes in the global climate system during the current century.[3] Adverse impacts from global climate change worldwide and in California include:

- Declining sea ice and mountain snow peak levels, thereby increasing sea levels and sea surface evaporation rates with a corresponding increase in atmospheric water vapor due to the atmosphere's ability to hold more water vapor at higher temperatures;[4]
- Rising average global sea levels primarily due to thermal expansion and the melting of glaciers, ice caps, and the Greenland and Antarctic ice sheets;[5]
- Changing weather patterns, including changes to precipitation, ocean salinity, and wind patterns, and more energetic aspects of extreme weather including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones;[6]

[3] *USEPA, Draft Endangerment Finding, 74 Federal Regulations 18886, 18904, April 24, 2009.*
[4] *Ibid.*
[5] *IPCC, Climate Change, 2007.*

- Declining Sierra Mountains snowpack levels, which account for approximately half of the surface water storage in California, by 70 percent to as much as 90 percent over the next 100 years;[7]
- Increasing the number of days conducive to ozone formation (e.g., clear days with intense sun light) by 25 to 85 percent (depending on the future temperature scenario) in high O_3 areas located in the Southern California area and the San Joaquin Valley by the end of the 21st Century;[8] and
- Increasing the potential for erosion of California's coastlines and seawater intrusion into the Sacramento Delta and associated levee systems due to the rise in sea level.[9]

Existing Statewide Greenhouse Gas Emissions

California is the fifteenth largest emitter of GHG on the planet, representing about two percent of the worldwide emissions.[10] Table 3 shows the California GHG emissions inventory for years 2003 to 2013. Statewide GHG emissions slightly decreased in 2009 due to a noticeable drop in on-road transportation, electricity generation, and industrial emissions. In 2012 and 2013, total GHG and per capita emissions increased, albeit only by a single percentage point. This increase was driven primarily by strong economic growth in the state, the unexpected closure of the San Onofre Nuclear Generating Station, and drought conditions that limited in-state hydropower.

Table 3
California Greenhouse Gas Emissions Inventory

Scoping Plan Category	CO2e Emissions (Million Metric Tons)										
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Transportation	184	187	189	189	189	178	171	170	168	167	169
Electric Power	113	115	108	105	114	120	101	90	88	95	91
Commercial and Residential	42	43	41	42	42	42	43	44	44	42	44
Industrial	93	94	92	90	87	88	85	89	88	89	93
Recycling and Waste	8	8	8	8	8	8	8	8	8	8	9
Agriculture	37	36	37	38	37	38	36	36	36	38	36
High Global Warming Potential	9	10	10	11	12	13	14	16	17	18	19
Emissions Total	**486**	**493**	**485**	**483**	**489**	**487**	**458**	**453**	**449**	**457**	**459**

Source: CARB, California Greenhouse Gas Inventory 2003-2013, April 24, 2015; http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_2000-13_20150831.pdf, accessed January 2016. 2013 data is most recent year available.

6 *IPCC, Climate Change, 2007.*
7 *Cal/EPA, Climate Action Team, Climate Action Team Report to Governor Schwarzenegger and the Legislature, 2006.*
8 *Ibid.*
9 *Ibid.*
10 *CARB, Climate Change Scoping Plan, December 2008.*

REGULATORY FRAMEWORK

Federal

With regard to GHG emissions and global climate change, in 2002, President George W. Bush set a national policy goal of reducing the GHG emission intensity (tons of GHG emissions per million dollars of gross domestic product) of the nation's economy by 18 percent by 2012. No binding reductions were associated with the goal. The United States instead opted for a voluntary and incentive-based approach toward GHG emissions reductions, identified as the Climate Change Technology Program (CCTP). CCTP is a multi-agency research and development coordination effort, led by the Secretaries of Energy and Commerce.

The U.S. Supreme Court ruled in Massachusetts v. Environmental Protection Agency, 127 S. Ct. 1438 (2007), that CO_2 and other GHGs are pollutants under the federal Clean Air Act (CAA), which the United States Environmental Protection Agency (USEPA) must regulate if it determines they pose an endangerment to public health or welfare. On December 7, 2009, USEPA Administrator made two distinct findings: (1) the current and projected concentrations of the six key GHGs in the atmosphere (i.e., CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) threatens the public health and welfare of current and future generations; and (2) the combined emissions of these GHGs from motor vehicle engines contribute to GHG pollution which threatens public health and welfare.

USEPA subsequently published its endangerment finding for GHGs in the Federal Register. The USEPA Administrator determined that six GHGs, taken in combination, endanger both the public health and welfare of current and future generations. Although the endangerment finding discusses the effects of six GHGs, it acknowledges that transportation sources only emit four of the key GHGs: CO_2, CH_4, N_2O, and HFCs. Further, the USEPA Administrator found that the combined emissions of these GHGs from new motor vehicles contribute to air pollution that endangers the public health and welfare under the CAA, Section 202(a).

USEPA requires large emitters of GHG to collect and report data. Fossil fuel and industrial GHG suppliers, motor vehicle and engine manufacturers, and facilities that emit 25,000 metric tons or more of CO_2 equivalent per year to report GHG emissions annually data to USEPA. The Rule is referred to as 40 Code of Federal Regulations (CFR) Part 98-Greenhouse Gas Reporting Program.

Energy Independence and Security Act (EISA)

In response to the Massachusetts v. Environmental Protection Agency ruling, the Bush Administration issued an executive order on May 14, 2007, directing USEPA, the United States Departments of Transportation, and the United States Departments of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. On December 19,

2007, the EISA was signed into law, which requires an increased corporate average fuel economy (CAFE) standard of 35 miles per gallon (mpg) for the combined fleet of cars and light trucks by model year 2020.

EISA requires establishment of interim standards (from 2011 to 2020) that will be the maximum feasible average fuel economy for each fleet. On October 10, 2008, the National Highway Traffic Safety Administration (NHTSA) released a final environmental impact statement analyzing interim standards for model years 2011 to 2015 passenger cars and light trucks. NHTSA issued a final rule for model year 2011 on March 23, 2009. In addition to setting increased CAFE standards for motor vehicles, the EISA included other provisions: (1) renewable fuel standard (RFS) (Section 202); (2) appliance and lighting efficiency standards (Sections 301–325); and (3) building energy efficiency (Sections 411-441). Additional provisions addressed energy savings in government and public institutions, promoting research for alternative energy, additional research in carbon capture, international energy programs, and the creation of green jobs. On May 19, 2009, President Obama announced a national policy for fuel efficiency and emissions standards in the United States auto industry. The federal standards apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles built in model years 2012 through 2016.

In addition, on September 15, 2009, President Obama proposed new fuel efficiency standards for cars and trucks that required fuel economy to increase by five percent annually. In 2016, new cars and trucks will have to achieve an average rating of 35.5 mpg, four years sooner than the law now requires. Alternatively, manufacturers could meet this requirement if their vehicles, on average, emit no more than 250 grams of CO_2 per mile.

Stationary Source Regulations

Under the CAA, once a pollutant is regulated under any part of the Act, (as was the case with GHG emissions after the motor vehicle regulations were finalized in April 2010) major new sources or modifications are subject to the Prevention of Significant Deterioration (PSD) program and to Title V operating permits. In the PSD program, major new or modified stationary sources (such as power plants and manufacturing facilities) are required to implement best available control technologies for pollution abatement.

The Tailoring Rule

On May 13, 2010, USEPA issued the final version of a new rule for GHG emissions, referred to as the Tailoring Rule. The rule states that new or modified sources that already are subject to New Source Review requirements for other pollutants will be required to also meet these requirements for GHGs if they increase emissions by more than 75,000 tons of CO_2e annually. Then on July 1, 2011, the requirements will apply to new sources that emit at least 100,000 tons of CO_2e annually and to major modifications of existing sources emitting 75,000 tons of CO_2e annually, even if they do not meet the

threshold new source review requirements for other pollutants. In July 2012, the requirements will begin applying Title V operating permit requirements to existing sources not currently covered by Title V if they emit 100,000 tons of CO_2e annually. In regulating these GHG emissions, USEPA has developed guidelines for states to use in determining what would satisfy requirements as "best available control technology" as part of new source review of major modifications or new sources.

GHG and Fuel Efficiency Standards for Passenger Cars and Light-Duty Trucks

In April 2010, USEPA and NHTSA finalized GHG standards for new (model year 2012 through 2016) passenger cars, light-duty trucks, and medium-duty passenger vehicles. Under these standards, CO_2 emission limits would decrease from 295 grams per mile (g/mi) in 2012 to 250 g/mi in 2016 for a combined fleet of cars and light trucks. If all of the necessary emission reductions were made from fuel economy improvements, then the standards would correspond to a combined fuel economy of 30.1 miles per gallon (mpg) in 2012 and 35.5 mpg in 2016. The agencies issued a joint Final Rule for a coordinated National Program for model years 2017 to 202 5 light-duty vehicles on August 28, 2012, that would correspond to a combined fuel economy of 36.6 mpg in 2017 and 54.5 mpg in 2025.

GHG and Fuel Efficiency Standards for Medium-and Heavy-Duty Engines and Vehicles

In October 2010, the USEPA and NHTSA announced a program to reduce GHG emissions and to improve fuel efficiency for medium-and heavy-duty vehicles (model years 2014 through 2018). These standards were signed into law on August 9, 2011. The two agencies' complementary standards form a new Heavy-Duty National Program that has the potential to reduce GHG emissions by 270 million metric tons and to reduce oil consumption by 530 million barrels over the life of the affected vehicles.

Additional Stationary Source Rules. As a consequence of the decision in Massachusetts v. Environmental Protection Agency, USEPA entered into a December 2010 judicial settlement ending a long-running lawsuit seeking the inclusion of GHGs under the New Source Performance Standards (NSPS) provisions of the CAA. USEPA committed to promulgating NSPS for GHGs for power plants and refineries. NSPS are technology-based standards for both new and existing sources which apply to specific categories of stationary sources.

State

Executive Order (E.O.) S-3-05

On June 1, 2005, E.O. S-3-05 set the following GHG emission reduction targets: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels. The E.O. establishes State GHG emission targets of 1990 levels by 2020 (the same as Assembly Bill 32) and 80 percent below 1990 levels by 2050. It calls for the Secretary of California Environmental Protection Agency (Cal/EPA) to be responsible for coordination of

State agencies and progress reporting. A recent CEC Report concludes, however, that the primary strategies to achieve this target should be major "decarbonization" of electricity supplies and fuels, and major improvements in energy efficiency.

In response to the E.O., the Secretary of the Cal/EPA created the Climate Action Team (CAT). California's CAT originated as a coordinating council organized by the Secretary for Environmental Protection. It included the Secretaries of the Natural Resources Agency, the Department of Food and Agriculture, and the Chairs of the Air Resources Board, Energy Commission, and Public Utilities Commission. The original council was an informal collaboration between the agencies to develop potential mechanisms for reductions in GHG emissions in the State. The council was given formal recognition in E.O. S-3-05 and became the CAT.

The original mandate for the CAT was to develop proposed measures to meet the emission reduction targets set forth in the executive order. The CAT has since expanded and currently has members from 18 State agencies and departments. The CAT also has ten working groups, which coordinate policies among their members. The working groups and their major areas of focus are as follows:

- Agriculture: Focusing on opportunities for agriculture to reduce GHG emissions through efficiency improvements and alternative energy projects, while adapting agricultural systems to climate change
- Biodiversity: Designing policies to protect species and natural habitats from the effects of climate change
- Energy: Reducing GHG emissions through extensive energy efficiency policies and renewable energy generation
- Forestry: Coupling GHG mitigation efforts with climate change adaptation related to forest preservation and resilience, waste to energy programs and forest offset protocols
- Land Use and Infrastructure: Linking land use and infrastructure planning to efforts to reduce GHG from vehicles and adaptation to changing climatic conditions
- Oceans and Coastal: Evaluating the effects sea level rise and changes in coastal storm patterns on human and natural systems in California
- Public Health: Evaluating the effects of GHG mitigation policies on public health and adapting public health systems to cope with changing climatic conditions
- Research: Coordinating research concerning impacts of and responses to climate change in California
- State Government: Evaluating and implementing strategies to reduce GHG emissions resulting from State government operations
- Water: Reducing GHG impacts associated with the State's water systems and exploring strategies to protect water distribution and flood protection infrastructure

Assembly Bill 32 (AB 32)

In September 2006, the California Global Warming Solutions Act of 2006, also known as AB 32, was signed into law. AB 32 focuses on reducing GHG emissions in California and requires the California Air Resources Board (CARB) to adopt rules and regulations that would achieve GHG emissions equivalent to Statewide levels in 1990 by 2020. The CARB initially determined that the total Statewide aggregated GHG 1990 emissions level and 2020 emissions limit was 427 million metric tons of CO_2e. The 2020 target reduction was estimated to be 174 million metric tons of CO_2e.

To achieve the goal, AB 32 mandates that CARB establish a quantified emissions cap, institute a schedule to meet the cap, implement regulations to reduce Statewide GHG emissions from stationary sources, and develop tracking, reporting, and enforcement mechanisms to ensure that reductions are achieved. Because the intent of AB 32 is to limit 2020 emissions to the equivalent of 1990, it is expected that the regulations would affect many existing sources of GHG emissions and not just new general development projects. Senate Bill 1368, a companion bill to AB 32, requires the California Public Utilities Commission and the CEC to establish GHG emission performance standards for the generation of electricity. These standards will also apply to power that is generated outside of California and imported into the State.

AB 32 charges CARB with the responsibility to monitor and regulate sources of GHG emissions in order to reduce those emissions. On June 1, 2007, CARB adopted three discrete early action measures to reduce GHG emissions. These measures involved complying with a low carbon fuel standard, reducing refrigerant loss from motor vehicle air conditioning maintenance, and increasing methane capture from landfills.[11] On October 25, 2007, CARB tripled the set of previously approved early action measures. The approved measures include improving truck efficiency (i.e., reducing aerodynamic drag), electrifying port equipment, reducing PFCs emissions from the semiconductor industry, reducing propellants in consumer products, promoting proper tire inflation in vehicles, and reducing SF_6 emissions from the non-electricity sector.

The CARB AB 32 Scoping Plan (Scoping Plan) contains the main strategies to achieve the 2020 emissions cap. The Scoping Plan was developed by CARB with input from the CAT and proposes a comprehensive set of actions designed to reduce overall carbon emissions in California, improve the environment, reduce oil dependency, diversify energy sources, and enhance public health while creating new jobs and improving the State economy. The GHG reduction strategies contained in the Scoping Plan include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system. Key approaches for reducing GHG emissions to 1990 levels by 2020 include the following:

[11] *CARB, Proposed Early Action Measures to Mitigate Climate Change in California, April 20, 2007.*

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a Statewide renewable electricity standard of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related GHG emissions for regions throughout the State, and pursuing policies and incentives to achieve those targets; and
- Adopting and implementing measures to reduce transportation sector emissions.

CARB has adopted the First Update to the Climate Change Scoping Plan.[12] This update identifies the next steps for California's leadership on climate change. The first update to the initial AB 32 Scoping Plan describes progress made to meet the near-term objectives of AB 32 and defines California's climate change priorities and activities for the next several years. It also frames activities and issues facing the State as it develops an integrated framework for achieving both air quality and climate goals in California beyond 2020. Specifically, the update covers a range of topics, including the following:

- An update of the latest scientific findings related to climate change and its impacts, including short-lived climate pollutants.
- A review of progress-to-date, including an update of Scoping Plan measures and other State, federal, and local efforts to reduce GHG emissions in California.
- Potential technologically feasible and cost-effective actions to further reduce GHG emissions by 2020.
- Recommendations for establishing a mid-term emissions limit that aligns with the State's long-term goal of an emissions limit 80 percent below 1990 levels by 2050.
- Sector-specific discussions covering issues, technologies, needs, and ongoing State activities to significantly reduce emissions throughout California's economy through 2050.

In December 2007, CARB approved a total statewide GHG 1990 emissions level and 2020 emissions limit of 427 million metric tons of CO_2e. As part of the update, CARB revised the 2020 Statewide limit to 431 million metric tons of CO_2e, an approximately 1 percent increase from the original estimate. The 2020 business-as-usual (BAU) forecast in the update is 509 million metric tons of CO_2e. The State would need to reduce those emissions by 15.3 percent to meet the 431 million metric tons of CO_2e 2020 limit.

SB 97 & CEQA Guidelines

In August 2007, the Legislature adopted Senate Bill 97 (SB 97), requiring the Office of Planning and Research (OPR) to prepare and transmit new CEQA guidelines for the mitigation of GHG emissions or the effects of GHG emissions to the California Natural Resources Agency by July 1, 2009. Following receipt of

[12] *CARB, First Update to the Climate Change Scoping Plan: Building on the Framework, May 2014.*

these guidelines, the Resources Agency was required to certify and adopt the guidelines prepared by OPR by January 1, 2010.

OPR submitted its proposed guidelines to the Secretary for Natural Resources on April 13, 2009. The Natural Resources Agency then undertook the formal rulemaking process to certify and adopt the amendments as part of the State regulations implementing CEQA. The CEQA Guidelines amendments were adopted on December 30, 2009 and became effective on March 18, 2010.

The CEQA Guideline amendments do not specify a threshold of significance for GHG emissions, nor do they prescribe assessment methodologies or specific mitigation measures. Instead, the amendments encourage lead agencies to consider many factors in performing a CEQA analysis, but rely on the lead agencies in making their own significance threshold determinations based upon substantial evidence. The CEQA Guidelines amendments also encourage public agencies to make use of programmatic mitigation plans and programs from which to tier when they perform individual project analyses.

Senate Bill (SB) 375

California's Sustainable Communities and Climate Protection Act, also referred to as Senate Bill 375 (SB 375) became effective January 1, 2009. The goal of SB 375 is to help achieve AB 32's GHG emissions reduction goals by aligning the planning processes for regional transportation, housing, and land use. SB 375 requires CARB to develop regional reduction targets for GHGs, and prompts the creation of regional plans to reduce emissions from vehicle use throughout the state. California's 18 Metropolitan Planning Organizations (MPOs) have been tasked with creating "Sustainable Community Strategies" (SCS) in an effort to reduce the region's vehicle miles traveled (VMT) in order to help meet AB 32 targets through integrated transportation, land use, housing and environmental planning. Pursuant to SB 375, CARB set per-capita GHG emissions reduction targets from passenger vehicles for each of the State's 18 MPOs. For the SCAG region, the targets are set at eight percent below 2005 per capita emissions levels by 2020 and 13 percent below 2005 per capita emissions levels by 2035.

Senate Bill (SB) 743

SB 743, adopted September 27, 2013, encourages land use and transportation planning decisions and investments that reduce vehicle miles traveled that contribute to GHG emissions, as required by AB 32. Key provisions of SB 743 include reforming aesthetics and parking CEQA analysis for urban infill projects and eliminating the measurement of auto delay, including level of service (LOS), as a metric that can be used for measuring traffic impacts in transit priority areas. SB 743 requires the State Office of Planning and Research (OPR) to develop revisions to the CEQA Guidelines establishing criteria for determining the significance of transportation impacts of projects within transit priority areas that promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses. It also allows OPR to develop alternative metrics outside of transit priority areas.

California's Energy Efficiency Standards for Residential and Nonresidential Buildings

Located in Title 24, Part 6 of the CCR and commonly referred to as "Title 24," these energy efficiency standards were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The goal of Title 24 energy standards is the reduction of energy use. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods.[13] On May 31, 2012, the California Energy Commission (CEC) adopted the 2013 Building and Energy Efficiency Standards. Buildings that are constructed in accordance with the 2013 Building and Energy Efficiency Standards are 25 percent (residential) to 30 percent (nonresidential) more energy efficient than the 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in home and businesses.

California Green Building Code

The California Green Building Code, referred to as CALGreen, is the first Statewide green building code. It was developed to provide a consistent, approach for green building within California. CALGreen lays out minimum requirements for newly constructed buildings in California, which will reduce greenhouse gas emissions through improved efficiency and process improvements. It requires builders to install plumbing that cuts indoor water use by as much as 20 percent, to divert 50 percent of construction waste from landfills to recycling, and to use low-pollutant paints, carpets, and floors.

Regional

Southern California Association of Governments (SCAG) 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)

While Southern California is a leader in reducing emissions, and ambient levels of air pollutants are improving, the SCAG region continues to have the worst air quality in the nation. SCAG completed the RTP/SCS, which includes a strong commitment to reduce emissions from transportation sources to comply with SB 375. Goals and policies included in the RTP/SCS to reduce air pollution consist of adding density in proximity to transit stations, mixed-use development and encouraging active transportation (i.e., non-motorized transportation such as bicycling). SCAG promotes the following policies and actions related to active transportation to help the region confront congestion and mobility issues and consequently improve air quality:

- Implement Transportation Demand Management (TDM) strategies including integrating bicycling through folding bikes on buses programs, triple racks on buses, and dedicated racks on light and heavy rail vehicles;

[13] *CEC, California's Energy Efficiency Standards for Residential and Nonresidential Buildings, Title 24, Part 6, of the California Code of Regulations.*

- Encourage and support local jurisdictions to develop "Active Transportation Plans" for their jurisdiction if they do not already have one;
- Expand Compass Blueprint program to support member cities in the development of bicycle plans;
- Expand the Toolbox Tuesday's program to encourage local jurisdictions to direct enforcement agencies to focus on bicycling and walking safety to reduce multimodal conflicts;
- Support local advocacy groups and bicycle-related businesses to provide bicycle-safety curricula to the general public;
- Encourage children, including those with disabilities, to walk and bicycle to school;
- Encourage local jurisdictions to adopt and implement the proposed SCAG Regional Bikeway Network; and
- Support local jurisdictions to connect all of the cities within the SCAG region via bicycle facilities.

Ventura County Air Pollution Control District (VCAPCD)

The VCAPCD has long participated in the CEQA process by providing project applicants, environmental consultants, and lead agencies with air quality information and analyses needed for environmental documents required by CEQA. The District also reviews and comments on environmental documents sent to it for that purpose.

At its September 13, 2011 meeting, the Ventura County Air Pollution Control Board requested that District staff report back on possible GHG significance thresholds for evaluating GHG impacts of land use projects in Ventura County under CEQA. The District staff responded with a report titled *Greenhouse Gas Thresholds of Significance Options for Land Use Development Projects (November 8, 2011)*. The report presents a number of options for setting GHG significance thresholds. Since 2008, the CARB and several larger local air districts (South Coast, Bay Area, and San Joaquin) have undertaken efforts to identify and adopt suitable GHG significance thresholds for land use development projects in their respective jurisdictions. Several other California air districts, including VCAPCD, are still looking into this complex matter as part of their CEQA implementing procedures (CEQA Guidelines § 15022) or thresholds of significance development (CEQA Guidelines § 15064.7). Such thresholds, however, would only be advisory and not regulatory directives. That is because, although California air districts have a vital role in the CEQA review process, and have authority to regulate emissions from indirect or areawide sources (Health & Safety Code § 40716(a)), they do not have authority over land use projects (Health & Safety Code § 40716(b)), and have not adopted control measures, rules, or regulations governing GHG emissions from land use projects. While no conclusive threshold of significance has been adopted, the District staff concludes the report stating the District will continue to evaluate and develop suitable interim GHG threshold options for Ventura County with preference for GHG threshold consistency with the South Coast AQMD and the SCAG region.

Local

City of Ventura

The City of Ventura's General Plan, adopted in 2005, provides goals, policies, and actions developed to guide future development in the City through the 2025 planning horizon, with an emphasis on a more intense "Infill First" strategy designed to preserve open space and prevent unsustainable growth. The General Plan establishes the following goals relevant to GHGs:

- Our Sustainable Infrastructure – Our goal is to safeguard public health, well-being, and prosperity by providing and maintaining facilities that enable the community to live in balance with natural systems.
    - Policy 5A: Follow an approach that contributes to resource conservation.
        - Action 5.1: Require low flow fixtures, leak repair, and drought tolerant landscaping (native species if possible), plus emerging water conservation techniques, such as reclamation, as they become available.
        - Action 5.5: Provide incentives for new residences and businesses to incorporate recycling and waste diversion practices, pursuant to guidelines provided by the Environmental Services Office.

ENVIRONMENTAL IMPACTS

Methodology

The California Climate Action Registry (CCAR) General Reporting Protocol recommends the separation of GHG emissions into three categories that reflect different aspects of ownership or control over emissions. They include the following:

- Scope 1: Direct, on-site combustion of fossil fuels (e.g., natural gas, propane, gasoline, and diesel).
- Scope 2: Indirect, off-site emissions associated with purchased electricity or purchased steam.
- Scope 3: Indirect emissions associated with other emissions sources, such as third-party vehicles and embodied energy.[14]

CARB believes that consideration of so-called indirect emissions provides a more complete picture of the GHG footprint of a facility. Annually reported indirect energy usage aids the conservation awareness of

[14] *Embodied energy is a scientific term that refers to the quantity of energy required to manufacture and supply to the point of use a product, material, or service.*

a facility and provides information to CARB to be considered for future strategies.[15] CARB has proposed requiring the calculation of direct and indirect GHG emissions as part of the AB 32 reporting requirements. Additionally, the OPR has noted that lead agencies "should make a good-faith effort, based on available information, to calculate, model, or estimate…GHG emissions from a project, including the emissions associated with vehicular traffic, energy consumption, water usage and construction activities."[16] Therefore, direct and indirect emissions have been calculated for the Project from these sources.

Construction-Related Emissions

Construction GHG emissions were calculated using the California Emissions Estimator Model (CalEEMod 2013.2.2). For a complete discussion of the construction methodology, please refer to the Air Quality Technical Report prepared for the Project. The mobile source emission methodology for on-road construction emissions, associated with worker commute and delivery of materials, uses a vehicle miles traveled rate calculated by CalEEMod in order to generate values for annual emissions. Emission factors are derived from the EMFAC model using light duty automobile factors for worker commute and heavy duty truck factors for deliveries.

The Association of Environmental Professionals (AEP) has recommended that total construction emissions be amortized and added to operational emissions (AEP 2010). Accordingly, the construction-related GHG emissions have been amortized over a 30-year operational period to be consistent with this guidance.

The most common GHGs emitted in association with the construction of land use developments include CO_2, CH_4 and N_2O. CalEEMod provides these GHGs and translates them into a common currency of carbon dioxide equivalent (CO_2e). In order to obtain the CO_2e, an individual GHG is multiplied by its global warming potential. The GWP designates on a pound for pound basis the potency of the GHG compared to CO_2.

Operational Emissions

Operational GHG emissions were calculated using CalEEMod 2013.2.2. Operational GHG sources include motor vehicles, electricity, natural gas, water usage/wastewater generation, landscaping/maintenance equipment, and solid waste generation and disposal.

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15 *CARB, Initial Statement of Reasons for Rulemaking, Proposed Regulation for Mandatory Reporting of Greenhouse Gas Emissions Pursuant to the California Global Warming Solutions Act of 2006 (AB 32), Planning and Technical Support Division Emission Inventory Branch, October 19, 2007.*

16 *State of California Office of Planning and Research (OPR), Technical Advisory, CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review, June 19, 2008.*

Motor vehicle emission calculations associated with operation of the Project use a projection of annual VMT, which is derived from the trips provided in the Project traffic study and the default trip characteristics in CalEEMod. These values account for the daily and seasonal variations in trip frequency and length associated with travel to and from the Project Site and other activities that require a commute.

GHGs are emitted as a result of activities in buildings for which electricity and natural gas are used as energy sources. Combustion of any type of fuel emits criteria pollutants and GHGs directly into the atmosphere; when this occurs in a building this is a direct emission source associated with that building and CalEEMod calculates all of these pollutants. GHGs are also emitted during the generation of electricity from fossil fuels. When electricity is used, the electricity generation typically takes place offsite at a power plant; electricity use generally causes emissions in an indirect manner and therefore GHG emissions have been calculated from electricity generation.

The amount of water used and wastewater generated by a project has indirect GHG emissions associated with it. These emissions are a result of the energy used to supply, distribute, and treat the water and wastewater. It will often be the case that the water treatment and wastewater treatment occur outside of the project area. In this case, it is still important to quantify the energy and associated GHG emissions attributable to the water use. In addition to the indirect GHG emissions associated with energy use, wastewater treatment can directly emit both methane and nitrous oxide. Thus, GHG emissions have been calculated from water used and wastewater generated by the Project.

Municipal solid waste (MSW) is the amount of material that is disposed of by land filling, recycling, or composting. CalEEMod calculates the indirect GHG emissions associated with waste that is disposed of at a landfill. The program uses annual waste disposal rates from the California Department of Resources Recycling and Recovery (CalRecyle) data for individual land uses. If waste disposal information was not available, waste generation data was used. CalEEMod uses the overall California Waste Stream composition to generate the necessary types of different waste disposed into landfills. CalEEMod quantifies the GHG emissions associated with the decomposition of the waste, which generates methane based on the total amount of degradable organic carbon. CalEEMod also quantifies the CO_2 emissions associated with the combustion of methane, if applicable. Default landfill gas concentrations were used as reported in Section 2.4 of AP-42.[17] The IPCC has a similar method to calculate GHG emissions from MSW in its 2006 Guidelines for National Greenhouse Gas Inventories.

Planting trees will sequester CO_2 and is considered to result in a one-time carbon-stock change. Trees sequester CO_2 while they are actively growing. The amount of CO_2 sequestered depends on the type of tree. CalEEMod uses default annual CO_2 accumulation per tree for specific broad species classes.

[17] *See AP-42, Fifth Edition, Compilation of Air Pollutant Emission Factors, prepared by the Office of Air Quality Planning and Standards, U.S. EPA, January 1995.*

Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, roto-tillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers, as well as air compressors, generators, and pumps. The emissions associated from landscape equipment use was processed using OFFROAD 2007 and CARB's Technical Memo: *Change in Population and Activity Factors for Lawn and Garden Equipment* (6/13/2003).

Thresholds of Significance

Appendix G of the State CEQA Guidelines

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would have a significant impact if it would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment;
- Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

A project's GHG emissions typically are very small in comparison to state or global GHG emissions. In isolation, a Project may have no significant direct impact on climate change. However, the increased accumulation of GHGs from more than one project and many sources in the atmosphere may result in global climate change, which can cause the adverse environmental effects previously discussed. Accordingly, the threshold of significance for GHG emissions determines whether a project's contribution to global climate change is "cumulatively considerable." Many air quality agencies concur that GHG and climate change should be evaluated as a potentially significant cumulative impact, rather than a project-specific and direct impact.

VCAPCD Draft Thresholds

As stated previously, the VCAPCD staff prepared a report titled *Greenhouse Gas Thresholds of Significance Options for Land Use Development Projects (November 8, 2011)*. The report presents a number of options for setting GHG significance thresholds. Since 2008, the CARB and several larger local air districts (South Coast, Bay Area, and San Joaquin) have undertaken efforts to identify and adopt suitable GHG significance thresholds for land use development projects in their respective jurisdictions. Several other California air districts, including VCAPCD, are still looking into this complex matter as part of their CEQA implementing procedures (CEQA Guidelines § 15022) or thresholds of significance development (CEQA Guidelines § 15064.7). Such thresholds, however, would only be advisory and not regulatory directives. That is because, although California air districts have a vital role in the CEQA review process, and have authority to regulate emissions from indirect or areawide sources (Health & Safety Code § 40716(a)), they do not have authority over land use projects (Health & Safety Code §

40716(b)), and have not adopted control measures, rules, or regulations governing GHG emissions from land use projects.

Given that Ventura County is adjacent to the South Coast AQMD jurisdiction and is a part of the SCAG region, District staff believes it makes sense to set local GHG emission thresholds of significance for land use development projects at levels consistent with those set by the South Coast AQMD. While no conclusive threshold of significance has been adopted, the District staff will continue to evaluate and develop suitable interim GHG threshold options for Ventura County with preference for GHG threshold consistency with the South Coast AQMD and the SCAG region.

Based on VCAPCD staff recommendation summarized above, this analysis will rely in part on the draft thresholds of the SCAQMD. The SCAQMD released draft guidance regarding interim CEQA GHG significance thresholds in 2008. In December 2008, the SCAQMD adopted an interim 10,000 metric tons CO_2e ($MTCO_2e$) per year screening level threshold for stationary source/industrial projects for which the SCAQMD is the lead agency. The SCAQMD continues to consider adoption of significance thresholds for non-industrial development projects. The most recent proposal issued in September 2010 uses the following tiered approach to evaluate potential GHG impacts from various uses:

Tier 1: Determine if CEQA categorical exemptions are applicable. If not, move to Tier 2.

Tier 2: Consider whether or not the proposed project is consistent with a locally adopted GHG reduction plan (i.e., a Climate Action Plan) that has gone through public hearings and CEQA review, that has an approved inventory, includes monitoring, etc. If not, move to Tier 3.

Tier 3: Consider whether the project generates GHG emissions in excess of screening thresholds for individual land uses. The 10,000 $MTCO_2e$/year threshold for industrial uses would be recommended for use by all lead agencies. Under option 1, separate screening thresholds are proposed for residential projects (3,500 $MTCO_2e$/year), commercial projects (1,400 $MTCO_2e$/year), and mixed-use projects (3,000 $MTCO_2e$/year). Under option 2 a single numerical screening threshold of 3,000 $MTCO_2e$/year would be used for all non-industrial projects. If the project generates emissions in excess of the applicable screening threshold, move to Tier 4.

Tier 4: Consider whether the project generates GHG emissions in excess of applicable performance standards for the project service population (population plus employment). The efficiency targets were established based on the goal of AB 32 to reduce statewide GHG emissions to 1990 levels by 2020. The 2020 efficiency targets are 4.8 $MTCO_2e$ per service population for project level analyses and 6.6 $MTCO_2e$ per service population for plan level analyses. If the project generates emissions in excess of the applicable efficiency targets, move to Tier 5.

Tier 5: Consider the implementation of CEQA mitigation (including the purchase of GHG offsets) to reduce the project efficiency target to Tier 4 levels.

The thresholds identified above are not adopted by the SCAQMD or VCAPCD, nor distributed for widespread public review and comment, and the working group tasked with developing the thresholds has not met since September 2010. The future schedule and likelihood of threshold adoption is uncertain. However, for the purpose of evaluating the GHG impacts associated with the Project, this analysis utilizes a dual threshold approach. With respect to the Project's generation of GHG emissions, the proposed 3,500 $MTCO_2e$ per year Tier 3 threshold for residential projects will be utilized to illustrate the scope of the Project's increase in GHG emissions. Tier 3 requires that a project's incremental increase in GHG emissions would be below or mitigated to less than the significance screening level. Proposed projects that do not exceed the thresholds would not be considered to have a cumulatively considerable increase in GHG emissions. This draft threshold has been used for other projects in the South Coast Air Basin, Ventura County, and the City of Ventura.

In addition, and separate from the quantified draft screening threshold, a project's impact with respect to the generation of GHG emissions would be considered less than significant if it can demonstrate it would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Project Impacts

Construction GHG Emissions

This analysis assumes construction would be undertaken with the following primary construction phases: (1) Demolition/Site Clearing, (2) Grading, and (3) Structural Building, Finishing and Paving. Each primary construction phase has been further detailed below. This analysis assumes construction would begin in 2017 and residential uses could be occupied by 2018.

Demolition/Site Clearing

The Project would require the demolition of the existing house and barn (approximately 50 cubic yards or 24 tons of demolition debris), the removal of trees, fences, and other existing debris. This analysis estimates demolition and site clearing would occur for approximately one week and a maximum total of 16 truck trips would be required. This analysis assumes the daily on-site demolition activities would require the following equipment (or generally equivalent mix): three excavators, two rubber tired dozers, and one concrete/industrial saw.

Grading and Site Preparation

After the completion of demolition/site clearing, grading and site preparation activities would occur for approximately 6 months and would involve the cut and fill of land to ensure the proper base and slope for the entire site, including building pads and foundations. At this time, no soil import or export activities are anticipated. This analysis assumes daily grading activities would require the following equipment (or generally equivalent mix): two excavators, one grader, one rubber tired dozer, two scrapers, and two tractors/loaders/backhoes.

Structural Building, Finishing and Paving

As discussed previously, the proposed Project consists of a Specific Plan and a Vesting Tentative Tract Map that would enable the future development of a residential neighborhood ranging between 200 and 250 dwellings on approximately 26.51 acres (a density of 9.43 per units per acre). For purposes of this analysis, it is estimated that building construction would occur in two phases. The first buildout phase would include the construction of up to 150 residential units over approximately 9 months with occupied units in 2018. At the completion of the first buildout phase, the second buildout phase would include the construction of up to 100 residential units over approximately 9 months with occupied units in 2019. Thus, this analysis assumes 250 residential units would be built out over an approximate 18-month building construction period. While the buildout phases may take longer in reality, this analysis represents the fastest buildout potential resulting in a conservative worst-case impact scenario. Upon completion of the building shells, finishing (coatings) and paving of parking areas and streets would follow. This analysis assumes that the maximum daily construction building activities would require the following equipment for each phase (or generally equivalent mix): one crane, three forklifts, one generator set, three tractors/loaders/backhoes, one welder, one air compressor, two pavers, two pieces of paving equipment, and two rollers.

Emissions of GHGs were calculated using CalEEMod for each phase and each year of construction of the Project and the results of this analysis are presented in Table 4, Project Construction-Related Greenhouse Gas Emissions. As shown in Table 4, the greatest annual increase in GHG emissions from the Project's construction activities would be 766.29 CO_2e MTY in 2017. The total amount of construction-related GHG emissions is estimated to be approximately 1,465.71 CO_2e MTY, or approximately 48.86 CO_2e MTY amortized over a 30-year period.

Table 4
Project Construction-Related Greenhouse Gas Emissions

Year	CO_2e Emissions (Metric Tons per Year)
Phase 1 – Year 2017	766.29
Phase 1 – Year 2018	370.31
Phase 1 Total	*1,136.60*
Phase 2 – Year 2018	95.04
Phase 2 – Year 2019	234.07
Phase 2 Total	*329.11*
Total Project (Phase 1 & 2 Combined)	**1,465.71**
CalEEMod data provided in Appendix A to this report.	

Operational GHG Emissions

As discussed previously, the proposed Project consists of a Specific Plan and a Vesting Tentative Tract Map that would enable the future development of a residential neighborhood ranging between 200 and 250 dwellings on approximately 26.51 acres (a density of 9.43 per units per acre). For purposes of this analysis, it is estimated that buildout and operations would occur in two phases. The first buildout phase would include the construction of up to 150 residential units with occupied units in 2018. At the completion of the first buildout phase, the second buildout phase would include the construction of up to 100 residential units with occupied units in 2019. Thus, this analysis assumes 250 residential units would be operational (58 single-family detached units and 192 condominiums). While the buildout phases may take longer in reality, this analysis represents the fastest buildout potential resulting in a conservative worst-case impact scenario.

The GHG emissions resulting from operation of the Project, which involves the usage of on-road mobile vehicles, electricity, natural gas, water, landscape equipment, and generation of solid waste and wastewater have been calculated with CalEEMod. These results are presented in Table 5, Project Operational Greenhouse Gas Emissions. As shown in Table 5, the increase in GHG emissions generated by the Project would be approximately 2,512.98 $MTCO_2e$ (metric tons of CO_2e) per year, which would be under the 3,500 $MTCO_2e$ per year Tier 3 threshold for residential projects.

Table 5
Project Operational Greenhouse Gas Emissions

Emissions Source	Estimated Project Generated CO_2e Emissions (Metric Tons per Year)		
	Project Phase 1	Project Phase 2	Total Project (Phase 1 & 2 Combined)
Area	1.86	1.24	3.10
Energy	325.69	216.69	542.38
Mobile (Motor Vehicles)	1,070.31	693.03	1,763.34
Solid Waste Generation	39.62	26.25	65.87
Water Consumption	53.66	35.77	89.43
Construction Emissions[a]	37.89	10.97	48.86
Total	**1,529.03**	**983.95**	**2,512.98**

[a] The total construction GHG emissions were amortized over 30 years and added to the operation of the Project. CalEEMod data provided in Appendix A to this report.

In addition, and separate from the quantitative analysis above, there is substantial evidence to support that the Project is qualitatively consistent with statewide goals and policies in place for the reduction of greenhouse gas emissions, including SB 375, AB 32 and the corresponding Scoping Plan. Consistent with the spirit and intent of state and local plans, policies, and regulations adopted for the purpose of reducing the emissions of greenhouse gases, the Grove Specific Plan has identified several project objectives and design features that would serve to reduce GHG emissions, including but not limited to the following:

- Land Use Transportation: The Grove Specific Plan property is a true infill site, surrounded on all sides by medium to high density residential development and existing urban transportation corridors. The site's location adjacent to Telephone Road offers direct access to Gold Coast Transit Route 6B, a major cross-town route. The site also offers access to the Telephone Road and Thille Street Class II bike lanes, as well as access to the bicycle and pedestrian trail that extends eastward of the site to Victoria Avenue and the Government Center between the Thille neighborhood and Highway 126. A paseo/park linkage would be provided from this trail through the project site down to Telephone Road. These features are consistent with the 2005 Ventura General Plan policies that encourage infill development, reducing dependency on the automobile, and reducing vehicle miles traveled (VMT) and associated GHG emissions. These features would also be consistent with SB 375, which establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions. Through the SB 375 process, regions will work to integrate development patterns and the transportation network in a way that achieves the reduction of GHG emissions while meeting housing needs and other regional planning objectives. SB 375 reflects the importance of achieving significant

additional reductions of greenhouse gas emissions from changed land use patterns and improved transportation to help achieve the goals of AB 32. Specifically, SB 375 requires CARB to develop regional reduction targets for GHGs, and prompts the creation of regional plans to reduce emissions from vehicle use throughout the State. California's 18 MPOs have been tasked with creating Sustainable Community Strategies (SCS) in an effort to reduce the region's VMT in order to help meet AB 32 targets through integrated transportation, land use, housing and environmental planning. Thus, the Project's infill location and access to transit, bicycle lanes and pedestrian trails would be consistent with local and statewide goals and policies aimed at reducing the generation of GHGs through integrated transportation, land use, housing and environmental planning.

- Low-Flow Water Fixtures: The Project will include low-flow and/or high efficiency water fixtures such as low-flow toilets, urinals, showerheads, faucets, and high-efficiency clothes-washers and dishwashers;
- Vegetation & Landscape Irrigation Systems: The Project will include drought-tolerant landscaping and will implement efficient landscape irrigation techniques to reduce water use and its associated GHG emissions;
- Energy Reduction: The Project will reduce energy demand through the following building design techniques:
    - Use overhangs, shutters, louvers and shade trees to minimize solar heat gain. Design buildings to allow for the passage of cooling breezes;
    - Reduce the amount of conditioned space by using covered outdoor circulation, porches, and balconies;
    - Use tight, well-insulated wall systems and high-performance glazing;
    - Design buildings to accommodate renewable energy sources as they become cost effective, including solar, wind, and biomass.
    - Include energy efficient appliances and high-efficiency lighting.
    - The Project will be built to meet and exceed the State's 2013 Green Building Standards (CALGreen Code);
- Alternative Fuel Vehicles: The Project's residential uses will be designed to accommodate the charging of electric vehicles, supporting and promoting the use of electric vehicles.

Based on the information provided above, the Project would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases and these impacts would be less than significant.

CUMULATIVE IMPACTS

Although the Project is expected to emit GHGs, the emission of GHGs by a single project into the atmosphere is not itself necessarily an adverse environmental effect. As stated in recent CEQA case

law,[18] the global scope of climate change and the fact that carbon dioxide and other greenhouse gases, once released into the atmosphere, are not contained in the local area of their emission means that the impacts to be evaluated are also global rather than local. For many air pollutants, the significance of their environmental impact may depend greatly on where they are emitted; for greenhouse gases, it does not. For individual projects, like the proposed residential development, which are designed to accommodate long-term growth in California's population and economic activity, a certain amount of greenhouse gas emissions is as inevitable as population growth. However, meeting our statewide GHG reduction goals does not preclude all new development. Rather, the Scoping Plan - the state's roadmap for meeting A.B. 32's target - assumes continued growth and depends on increased efficiency and conservation in land use and transportation from all Californians. To the extent a project incorporates efficiency and conservation measures sufficient to contribute its portion of the overall greenhouse gas reductions necessary, one can reasonably argue that the project's impact is not cumulatively considerable, because it is helping to solve the cumulative problem of greenhouse gas emissions as envisioned by California law.[19]

As discussed above, the Project's total construction and operational GHG emissions would not exceed the 3,500 $MTCO_2e$ per year Tier 3 threshold for residential projects. In addition, and also detailed previously, the Project's objectives and design features would be consistent with local and State-wide goals and policies aimed at reducing the generation of GHGs, including CARB's AB 32 Scoping Plan. Furthermore, and also discussed previously, the Project's infill location and access to transit, bicycle lanes and pedestrian trails would be consistent with local and statewide goals and policies (i.e., RTP/SCS and SB 375) aimed at reducing the generation of GHGs through integrated transportation, land use, housing and environmental planning.

Therefore, based on the discussion above, the Project's generation of GHG emissions would not be considered cumulatively considerable because of the scope of the emissions (i.e., the Project would not exceed the 3,500 $MTCO_2e$ per year Tier 3 threshold for residential projects) and because the Project would not conflict with an applicable plan, policy or regulation for the purposes of reducing the emissions of greenhouse gasses. Therefore, the Project's cumulative impact would be less than significant.

MITIGATION MEASURES

Regulatory Compliance Measure

1. The Project shall be built to meet the State's 2013 Green Building Standards (CALGreen Code).

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[18] *Supreme Court of California, Center for Biological Diversity et al. v. California Department of Fish and Wildlife (2015), S217763, 11-13.*

[19] *Addressing the Significance of Greenhouse Gas Emissions, supra, 4 Golden Gate U. Envtl. L.J. at p. 210.*

LEVEL OF SIGNIFICANCE AFTER MITIGATION

The Project would be consistent with local and statewide goals and policies aimed at reducing the generation of GHGs, including SB 375, AB 32, and the corresponding Scoping Plan. Therefore, the Project's generation of GHG emissions would not make a cumulatively considerable contribution to GHG emissions and climate change, and impacts would be less than significant.

Appendix A

Construction & Operational Greenhouse Gas Data

The Grove - Phase 1

Ventura County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	35.00	Dwelling Unit	15.00	63,000.00	107
Condo/Townhouse	115.00	Dwelling Unit	12.00	115,000.00	352

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Site is approximately 27 acres.

Construction Phase - see report for construction phases discussion.

Grading - site is approximately 27 acres

Demolition -

Trips and VMT - approximately 16 haul trucks during demolition.

Vehicle Trips - trip rates per project traffic study.

Construction Off-road Equipment Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	35.00	89.00
tblConstructionPhase	NumDays	440.00	198.00
tblConstructionPhase	NumDays	30.00	6.00
tblConstructionPhase	NumDays	45.00	130.00
tblConstructionPhase	NumDays	35.00	23.00
tblConstructionPhase	PhaseEndDate	2/5/2019	10/3/2018
tblConstructionPhase	PhaseEndDate	12/29/2017	12/31/2017
tblConstructionPhase	PhaseEndDate	11/5/2018	10/3/2018
tblConstructionPhase	PhaseStartDate	10/4/2018	6/1/2018
tblConstructionPhase	PhaseStartDate	7/1/2017	7/2/2017
tblConstructionPhase	PhaseStartDate	10/4/2018	9/3/2018
tblGrading	AcresOfGrading	325.00	27.00
tblLandUse	LotAcreage	11.36	15.00
tblLandUse	LotAcreage	7.19	12.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	HaulingTripNumber	2.00	32.00
tblVehicleTrips	ST_TR	7.16	5.86
tblVehicleTrips	ST_TR	10.08	9.57
tblVehicleTrips	SU_TR	6.07	5.86
tblVehicleTrips	SU_TR	8.77	9.57
tblVehicleTrips	WD_TR	6.59	5.86

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					
2017	0.4131	4.6611	3.1986	4.2700e-003	0.4171	0.2221	0.6393	0.2197	0.2044	0.4241	0.0000	393.5098	393.5098	0.1175	0.0000	395.9781
2018	1.2434	2.7548	2.5191	4.3700e-003	0.0943	0.1681	0.2624	0.0253	0.1582	0.1834	0.0000	368.8605	368.8605	0.0692	0.0000	370.3132
Total	**1.6565**	**7.4159**	**5.7177**	**8.6400e-003**	**0.5114**	**0.3902**	**0.9017**	**0.2450**	**0.3626**	**0.6075**	**0.0000**	**762.3703**	**762.3703**	**0.1867**	**0.0000**	**766.2913**

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					
2017	0.4131	4.6611	3.1986	4.2700e-003	0.1938	0.2221	0.4160	0.1005	0.2044	0.3049	0.0000	393.5093	393.5093	0.1175	0.0000	395.9777
2018	1.2434	2.7548	2.5191	4.3700e-003	0.0943	0.1681	0.2624	0.0253	0.1582	0.1834	0.0000	368.8602	368.8602	0.0692	0.0000	370.3129
Total	**1.6565**	**7.4159**	**5.7177**	**8.6400e-003**	**0.2881**	**0.3902**	**0.6784**	**0.1257**	**0.3626**	**0.4883**	**0.0000**	**762.3695**	**762.3695**	**0.1867**	**0.0000**	**766.2906**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**43.66**	**0.00**	**24.77**	**48.67**	**0.00**	**19.62**	**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	0.8203	0.0130	1.1216	6.0000e-005		6.1200e-003	6.1200e-003		6.1200e-003	6.1200e-003	0.0000	1.8193	1.8193	1.8000e-003	0.0000	1.8572
Energy	0.0153	0.1304	0.0555	8.3000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	364.3923	364.3923	0.0127	4.8000e-003	366.1465
Mobile	0.5461	1.3996	5.6031	0.0144	1.0511	0.0172	1.0683	0.2806	0.0159	0.2965	0.0000	1,069.4490	1,069.4490	0.0410	0.0000	1,070.3091
Waste						0.0000	0.0000		0.0000	0.0000	19.6434	0.0000	19.6434	1.1609	0.0000	44.0222
Water						0.0000	0.0000		0.0000	0.0000	3.1006	56.0051	59.1056	0.3210	8.0500e-003	68.3434
Total	**1.3816**	**1.5431**	**6.7803**	**0.0152**	**1.0511**	**0.0339**	**1.0850**	**0.2806**	**0.0325**	**0.3132**	**22.7440**	**1,491.6657**	**1,514.4097**	**1.5374**	**0.0129**	**1,550.6784**

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	0.8203	0.0130	1.1216	6.0000e-005		6.1200e-003	6.1200e-003		6.1200e-003	6.1200e-003	0.0000	1.8193	1.8193	1.8000e-003	0.0000	1.8572
Energy	0.0122	0.1041	0.0443	6.6000e-004		8.4200e-003	8.4200e-003		8.4200e-003	8.4200e-003	0.0000	324.1571	324.1571	0.0117	4.1500e-003	325.6876
Mobile	0.5461	1.3996	5.6031	0.0144	1.0511	0.0172	1.0683	0.2806	0.0159	0.2965	0.0000	1,069.4490	1,069.4490	0.0410	0.0000	1,070.3091
Waste						0.0000	0.0000		0.0000	0.0000	17.6791	0.0000	17.6791	1.0448	0.0000	39.6200
Water						0.0000	0.0000		0.0000	0.0000	2.4804	43.7929	46.2733	0.2568	6.4300e-003	53.6596
Total	**1.3786**	**1.5167**	**6.7691**	**0.0151**	**1.0511**	**0.0318**	**1.0829**	**0.2806**	**0.0304**	**0.3110**	**20.1595**	**1,439.2183**	**1,459.3779**	**1.3560**	**0.0106**	**1,491.1334**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.22**	**1.71**	**0.17**	**1.12**	**0.00**	**6.29**	**0.20**	**0.00**	**6.55**	**0.68**	**11.36**	**3.52**	**3.63**	**11.80**	**17.67**	**3.84**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/23/2017	6/30/2017	5	6	
2	Grading	Grading	7/2/2017	12/31/2017	5	130	
3	Building Construction	Building Construction	1/1/2018	10/3/2018	5	198	
4	Architectural Coating	Architectural Coating	6/1/2018	10/3/2018	5	89	
5	Paving	Paving	9/3/2018	10/3/2018	5	23	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 27

Acres of Paving: 0

Residential Indoor: 360,450; Residential Outdoor: 120,150; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	3	8.00	162	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	32.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	95.00	16.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	19.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.6000e-004	0.0000	2.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0121	0.1281	0.1017	1.2000e-004		6.3800e-003	6.3800e-003		5.9400e-003	5.9400e-003	0.0000	10.9855	10.9855	3.0100e-003	0.0000	11.0488
Total	**0.0121**	**0.1281**	**0.1017**	**1.2000e-004**	**2.6000e-004**	**6.3800e-003**	**6.6400e-003**	**4.0000e-005**	**5.9400e-003**	**5.9800e-003**	**0.0000**	**10.9855**	**10.9855**	**3.0100e-003**	**0.0000**	**11.0488**

3.2 Demolition - 2017

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	2.5000e-004	4.3900e-003	3.4000e-003	1.0000e-005	2.7000e-004	6.0000e-005	3.3000e-004	7.0000e-005	6.0000e-005	1.3000e-004	0.0000	1.0370	1.0370	1.0000e-005	0.0000	1.0371
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-004	1.7000e-004	1.7100e-003	0.0000	3.6000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3080	0.3080	2.0000e-005	0.0000	0.3084
Total	**3.9000e-004**	**4.5600e-003**	**5.1100e-003**	**1.0000e-005**	**6.3000e-004**	**6.0000e-005**	**7.0000e-004**	**1.7000e-004**	**6.0000e-005**	**2.3000e-004**	**0.0000**	**1.3450**	**1.3450**	**3.0000e-005**	**0.0000**	**1.3454**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.2000e-004	0.0000	1.2000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0121	0.1281	0.1017	1.2000e-004		6.3800e-003	6.3800e-003		5.9400e-003	5.9400e-003	0.0000	10.9855	10.9855	3.0100e-003	0.0000	11.0487
Total	**0.0121**	**0.1281**	**0.1017**	**1.2000e-004**	**1.2000e-004**	**6.3800e-003**	**6.5000e-003**	**2.0000e-005**	**5.9400e-003**	**5.9600e-003**	**0.0000**	**10.9855**	**10.9855**	**3.0100e-003**	**0.0000**	**11.0487**

3.2 Demolition - 2017

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	2.5000e-004	4.3900e-003	3.4000e-003	1.0000e-005	2.7000e-004	6.0000e-005	3.3000e-004	7.0000e-005	6.0000e-005	1.3000e-004	0.0000	1.0370	1.0370	1.0000e-005	0.0000	1.0371
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-004	1.7000e-004	1.7100e-003	0.0000	3.6000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3080	0.3080	2.0000e-005	0.0000	0.3084
Total	**3.9000e-004**	**4.5600e-003**	**5.1100e-003**	**1.0000e-005**	**6.3000e-004**	**6.0000e-005**	**7.0000e-004**	**1.7000e-004**	**6.0000e-005**	**2.3000e-004**	**0.0000**	**1.3450**	**1.3450**	**3.0000e-005**	**0.0000**	**1.3454**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.4058	0.0000	0.4058	0.2167	0.0000	0.2167	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3964	4.5235	3.0423	4.0100e-003		0.2156	0.2156		0.1984	0.1984	0.0000	372.2805	372.2805	0.1141	0.0000	374.6759
Total	**0.3964**	**4.5235**	**3.0423**	**4.0100e-003**	**0.4058**	**0.2156**	**0.6214**	**0.2167**	**0.1984**	**0.4151**	**0.0000**	**372.2805**	**372.2805**	**0.1141**	**0.0000**	**374.6759**

3.3 Grading - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1300e-003	4.9600e-003	0.0495	1.2000e-004	0.0105	8.0000e-005	0.0106	2.7800e-003	7.0000e-005	2.8600e-003	0.0000	8.8989	8.8989	4.4000e-004	0.0000	8.9081
Total	**4.1300e-003**	**4.9600e-003**	**0.0495**	**1.2000e-004**	**0.0105**	**8.0000e-005**	**0.0106**	**2.7800e-003**	**7.0000e-005**	**2.8600e-003**	**0.0000**	**8.8989**	**8.8989**	**4.4000e-004**	**0.0000**	**8.9081**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1826	0.0000	0.1826	0.0975	0.0000	0.0975	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3964	4.5235	3.0423	4.0100e-003		0.2156	0.2156		0.1984	0.1984	0.0000	372.2800	372.2800	0.1141	0.0000	374.6754
Total	**0.3964**	**4.5235**	**3.0423**	**4.0100e-003**	**0.1826**	**0.2156**	**0.3982**	**0.0975**	**0.1984**	**0.2959**	**0.0000**	**372.2800**	**372.2800**	**0.1141**	**0.0000**	**374.6754**

3.3 Grading - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1300e-003	4.9600e-003	0.0495	1.2000e-004	0.0105	8.0000e-005	0.0106	2.7800e-003	7.0000e-005	2.8600e-003	0.0000	8.8989	8.8989	4.4000e-004	0.0000	8.9081
Total	**4.1300e-003**	**4.9600e-003**	**0.0495**	**1.2000e-004**	**0.0105**	**8.0000e-005**	**0.0106**	**2.7800e-003**	**7.0000e-005**	**2.8600e-003**	**0.0000**	**8.8989**	**8.8989**	**4.4000e-004**	**0.0000**	**8.9081**

3.4 Building Construction - 2018

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	0.2642	2.3028	1.7357	2.6500e-003		0.1479	0.1479		0.1391	0.1391	0.0000	234.4020	234.4020	0.0574	0.0000	235.6066
Total	**0.2642**	**2.3028**	**1.7357**	**2.6500e-003**		**0.1479**	**0.1479**		**0.1391**	**0.1391**	**0.0000**	**234.4020**	**234.4020**	**0.0574**	**0.0000**	**235.6066**

3.4 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0123	0.1293	0.1750	3.5000e-004	0.0103	2.0400e-003	0.0123	2.9200e-003	1.8700e-003	4.8000e-003	0.0000	30.9978	30.9978	2.0000e-004	0.0000	31.0020
Worker	0.0272	0.0325	0.3241	8.8000e-004	0.0758	5.6000e-004	0.0764	0.0201	5.2000e-004	0.0207	0.0000	61.9673	61.9673	2.9300e-003	0.0000	62.0288
Total	**0.0395**	**0.1619**	**0.4991**	**1.2300e-003**	**0.0861**	**2.6000e-003**	**0.0887**	**0.0231**	**2.3900e-003**	**0.0255**	**0.0000**	**92.9651**	**92.9651**	**3.1300e-003**	**0.0000**	**93.0308**

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	0.2642	2.3028	1.7357	2.6500e-003		0.1479	0.1479		0.1391	0.1391	0.0000	234.4017	234.4017	0.0574	0.0000	235.6063
Total	**0.2642**	**2.3028**	**1.7357**	**2.6500e-003**		**0.1479**	**0.1479**		**0.1391**	**0.1391**	**0.0000**	**234.4017**	**234.4017**	**0.0574**	**0.0000**	**235.6063**

3.4 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0123	0.1293	0.1750	3.5000e-004	0.0103	2.0400e-003	0.0123	2.9200e-003	1.8700e-003	4.8000e-003	0.0000	30.9978	30.9978	2.0000e-004	0.0000	31.0020
Worker	0.0272	0.0325	0.3241	8.8000e-004	0.0758	5.6000e-004	0.0764	0.0201	5.2000e-004	0.0207	0.0000	61.9673	61.9673	2.9300e-003	0.0000	62.0288
Total	**0.0395**	**0.1619**	**0.4991**	**1.2300e-003**	**0.0861**	**2.6000e-003**	**0.0887**	**0.0231**	**2.3900e-003**	**0.0255**	**0.0000**	**92.9651**	**92.9651**	**3.1300e-003**	**0.0000**	**93.0308**

3.5 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.9050					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.0893	0.0825	1.3000e-004		6.7000e-003	6.7000e-003		6.7000e-003	6.7000e-003	0.0000	11.3620	11.3620	1.0800e-003	0.0000	11.3847
Total	**0.9182**	**0.0893**	**0.0825**	**1.3000e-004**		**6.7000e-003**	**6.7000e-003**		**6.7000e-003**	**6.7000e-003**	**0.0000**	**11.3620**	**11.3620**	**1.0800e-003**	**0.0000**	**11.3847**

3.5 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4500e-003	2.9300e-003	0.0291	8.0000e-005	6.8200e-003	5.0000e-005	6.8700e-003	1.8100e-003	5.0000e-005	1.8600e-003	0.0000	5.5708	5.5708	2.6000e-004	0.0000	5.5763
Total	**2.4500e-003**	**2.9300e-003**	**0.0291**	**8.0000e-005**	**6.8200e-003**	**5.0000e-005**	**6.8700e-003**	**1.8100e-003**	**5.0000e-005**	**1.8600e-003**	**0.0000**	**5.5708**	**5.5708**	**2.6000e-004**	**0.0000**	**5.5763**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.9050					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.0893	0.0825	1.3000e-004		6.7000e-003	6.7000e-003		6.7000e-003	6.7000e-003	0.0000	11.3620	11.3620	1.0800e-003	0.0000	11.3847
Total	**0.9182**	**0.0893**	**0.0825**	**1.3000e-004**		**6.7000e-003**	**6.7000e-003**		**6.7000e-003**	**6.7000e-003**	**0.0000**	**11.3620**	**11.3620**	**1.0800e-003**	**0.0000**	**11.3847**

3.5 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4500e-003	2.9300e-003	0.0291	8.0000e-005	6.8200e-003	5.0000e-005	6.8700e-003	1.8100e-003	5.0000e-005	1.8600e-003	0.0000	5.5708	5.5708	2.6000e-004	0.0000	5.5763
Total	**2.4500e-003**	**2.9300e-003**	**0.0291**	**8.0000e-005**	**6.8200e-003**	**5.0000e-005**	**6.8700e-003**	**1.8100e-003**	**5.0000e-005**	**1.8600e-003**	**0.0000**	**5.5708**	**5.5708**	**2.6000e-004**	**0.0000**	**5.5763**

3.6 Paving - 2018

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	0.0185	0.1974	0.1667	2.6000e-004		0.0108	0.0108		9.9300e-003	9.9300e-003	0.0000	23.4241	23.4241	7.2900e-003	0.0000	23.5772
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0185**	**0.1974**	**0.1667**	**2.6000e-004**		**0.0108**	**0.0108**		**9.9300e-003**	**9.9300e-003**	**0.0000**	**23.4241**	**23.4241**	**7.2900e-003**	**0.0000**	**23.5772**

3.6 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-004	6.0000e-004	5.9400e-003	2.0000e-005	1.3900e-003	1.0000e-005	1.4000e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.1366	1.1366	5.0000e-005	0.0000	1.1377
Total	**5.0000e-004**	**6.0000e-004**	**5.9400e-003**	**2.0000e-005**	**1.3900e-003**	**1.0000e-005**	**1.4000e-003**	**3.7000e-004**	**1.0000e-005**	**3.8000e-004**	**0.0000**	**1.1366**	**1.1366**	**5.0000e-005**	**0.0000**	**1.1377**

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	0.0185	0.1974	0.1667	2.6000e-004		0.0108	0.0108		9.9300e-003	9.9300e-003	0.0000	23.4240	23.4240	7.2900e-003	0.0000	23.5772
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0185**	**0.1974**	**0.1667**	**2.6000e-004**		**0.0108**	**0.0108**		**9.9300e-003**	**9.9300e-003**	**0.0000**	**23.4240**	**23.4240**	**7.2900e-003**	**0.0000**	**23.5772**

3.6 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-004	6.0000e-004	5.9400e-003	2.0000e-005	1.3900e-003	1.0000e-005	1.4000e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.1366	1.1366	5.0000e-005	0.0000	1.1377
Total	**5.0000e-004**	**6.0000e-004**	**5.9400e-003**	**2.0000e-005**	**1.3900e-003**	**1.0000e-005**	**1.4000e-003**	**3.7000e-004**	**1.0000e-005**	**3.8000e-004**	**0.0000**	**1.1366**	**1.1366**	**5.0000e-005**	**0.0000**	**1.1377**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.5461	1.3996	5.6031	0.0144	1.0511	0.0172	1.0683	0.2806	0.0159	0.2965	0.0000	1,069.4490	1,069.4490	0.0410	0.0000	1,070.3091
Unmitigated	0.5461	1.3996	5.6031	0.0144	1.0511	0.0172	1.0683	0.2806	0.0159	0.2965	0.0000	1,069.4490	1,069.4490	0.0410	0.0000	1,070.3091

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	673.90	673.90	673.90	1,862,035	1,862,035
Single Family Housing	334.95	334.95	334.95	925,491	925,491
Total	1,008.85	1,008.85	1,008.85	2,787,526	2,787,526

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	7.30	7.50	32.90	18.00	49.10	86	11	3
Single Family Housing	10.80	7.30	7.50	32.90	18.00	49.10	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.475011	0.063009	0.180574	0.158011	0.069740	0.010288	0.013503	0.017378	0.000770	0.000675	0.005608	0.000318	0.005113

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	203.6152	203.6152	9.3600e-003	1.9400e-003	204.4120
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	213.3291	213.3291	9.8100e-003	2.0300e-003	214.1640
NaturalGas Mitigated	0.0122	0.1041	0.0443	6.6000e-004		8.4200e-003	8.4200e-003		8.4200e-003	8.4200e-003	0.0000	120.5419	120.5419	2.3100e-003	2.2100e-003	121.2755
NaturalGas Unmitigated	0.0153	0.1304	0.0555	8.3000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	151.0632	151.0632	2.9000e-003	2.7700e-003	151.9825

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	1.81989e+006	9.8100e-003	0.0839	0.0357	5.4000e-004		6.7800e-003	6.7800e-003		6.7800e-003	6.7800e-003	0.0000	97.1165	97.1165	1.8600e-003	1.7800e-003	97.7075
Single Family Housing	1.01092e+006	5.4500e-003	0.0466	0.0198	3.0000e-004		3.7700e-003	3.7700e-003		3.7700e-003	3.7700e-003	0.0000	53.9467	53.9467	1.0300e-003	9.9000e-004	54.2750
Total		**0.0153**	**0.1304**	**0.0555**	**8.4000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**151.0632**	**151.0632**	**2.8900e-003**	**2.7700e-003**	**151.9825**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	1.44976e+006	7.8200e-003	0.0668	0.0284	4.3000e-004		5.4000e-003	5.4000e-003		5.4000e-003	5.4000e-003	0.0000	77.3648	77.3648	1.4800e-003	1.4200e-003	77.8357
Single Family Housing	809108	4.3600e-003	0.0373	0.0159	2.4000e-004		3.0100e-003	3.0100e-003		3.0100e-003	3.0100e-003	0.0000	43.1771	43.1771	8.3000e-004	7.9000e-004	43.4399
Total		**0.0122**	**0.1041**	**0.0443**	**6.7000e-004**		**8.4100e-003**	**8.4100e-003**		**8.4100e-003**	**8.4100e-003**	**0.0000**	**120.5419**	**120.5419**	**2.3100e-003**	**2.2100e-003**	**121.2755**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	497332	142.3201	6.5400e-003	1.3500e-003	142.8771
Single Family Housing	248138	71.0090	3.2600e-003	6.8000e-004	71.2869
Total		**213.3291**	**9.8000e-003**	**2.0300e-003**	**214.1640**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	474921	135.9066	6.2500e-003	1.2900e-003	136.4385
Single Family Housing	236605	67.7086	3.1100e-003	6.4000e-004	67.9735
Total		**203.6152**	**9.3600e-003**	**1.9300e-003**	**204.4120**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.8203	0.0130	1.1216	6.0000e-005		6.1200e-003	6.1200e-003		6.1200e-003	6.1200e-003	0.0000	1.8193	1.8193	1.8000e-003	0.0000	1.8572
Unmitigated	0.8203	0.0130	1.1216	6.0000e-005		6.1200e-003	6.1200e-003		6.1200e-003	6.1200e-003	0.0000	1.8193	1.8193	1.8000e-003	0.0000	1.8572

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	0.0905					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6952					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0346	0.0130	1.1216	6.0000e-005		6.1200e-003	6.1200e-003		6.1200e-003	6.1200e-003	0.0000	1.8193	1.8193	1.8000e-003	0.0000	1.8572
Total	**0.8203**	**0.0130**	**1.1216**	**6.0000e-005**		**6.1200e-003**	**6.1200e-003**		**6.1200e-003**	**6.1200e-003**	**0.0000**	**1.8193**	**1.8193**	**1.8000e-003**	**0.0000**	**1.8572**

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	0.0905					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6952					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0346	0.0130	1.1216	6.0000e-005		6.1200e-003	6.1200e-003		6.1200e-003	6.1200e-003	0.0000	1.8193	1.8193	1.8000e-003	0.0000	1.8572
Total	**0.8203**	**0.0130**	**1.1216**	**6.0000e-005**		**6.1200e-003**	**6.1200e-003**		**6.1200e-003**	**6.1200e-003**	**0.0000**	**1.8193**	**1.8193**	**1.8000e-003**	**0.0000**	**1.8572**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	46.2733	0.2568	6.4300e-003	53.6596
Unmitigated	59.1056	0.3210	8.0500e-003	68.3434

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	7.49271 / 4.72367	45.3143	0.2461	6.1700e-003	52.3966
Single Family Housing	2.28039 / 1.43764	13.7913	0.0749	1.8800e-003	15.9468
Total		**59.1056**	**0.3210**	**8.0500e-003**	**68.3434**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	5.99417 / 3.77893	35.4762	0.1969	4.9300e-003	41.1390
Single Family Housing	1.82431 / 1.15011	10.7971	0.0599	1.5000e-003	12.5206
Total		**46.2733**	**0.2568**	**6.4300e-003**	**53.6596**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	17.6791	1.0448	0.0000	39.6200
Unmitigated	19.6434	1.1609	0.0000	44.0222

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	52.9	10.7382	0.6346	0.0000	24.0651
Single Family Housing	43.87	8.9052	0.5263	0.0000	19.9572
Total		**19.6434**	**1.1609**	**0.0000**	**44.0222**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	47.61	9.6644	0.5712	0.0000	21.6585
Single Family Housing	39.483	8.0147	0.4737	0.0000	17.9614
Total		**17.6791**	**1.0448**	**0.0000**	**39.6200**

9.0 Operational Offroad

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

10.0 Vegetation

The Grove - Phase 2

Ventura County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	23.00	Dwelling Unit	7.47	41,400.00	70
Condo/Townhouse	77.00	Dwelling Unit	4.81	77,000.00	236

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - see report for construction phase discussion.

Vehicle Trips - trip rates per project traffic study.

Construction Off-road Equipment Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	66.00
tblConstructionPhase	NumDays	300.00	198.00
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	PhaseEndDate	10/8/2019	7/8/2019
tblConstructionPhase	PhaseEndDate	8/6/2019	7/8/2019
tblConstructionPhase	PhaseStartDate	7/9/2019	4/8/2019
tblConstructionPhase	PhaseStartDate	7/9/2019	6/8/2019
tblProjectCharacteristics	OperationalYear	2014	2019
tblVehicleTrips	ST_TR	7.16	5.86
tblVehicleTrips	ST_TR	10.08	9.57
tblVehicleTrips	SU_TR	6.07	5.86
tblVehicleTrips	SU_TR	8.77	9.57
tblVehicleTrips	WD_TR	6.59	5.86

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					
2018	0.0926	0.7680	0.6600	1.1100e-003	0.0185	0.0476	0.0661	4.9600e-003	0.0448	0.0497	0.0000	94.6462	94.6462	0.0189	0.0000	95.0435
2019	0.8030	1.7035	1.6017	2.7700e-003	0.0444	0.1007	0.1451	0.0119	0.0947	0.1066	0.0000	233.0789	233.0789	0.0474	0.0000	234.0733
Total	**0.8956**	**2.4715**	**2.2618**	**3.8800e-003**	**0.0629**	**0.1483**	**0.2112**	**0.0168**	**0.1395**	**0.1563**	**0.0000**	**327.7251**	**327.7251**	**0.0663**	**0.0000**	**329.1168**

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					
2018	0.0926	0.7680	0.6600	1.1100e-003	0.0185	0.0476	0.0661	4.9600e-003	0.0448	0.0497	0.0000	94.6461	94.6461	0.0189	0.0000	95.0435
2019	0.8030	1.7035	1.6017	2.7700e-003	0.0444	0.1007	0.1451	0.0119	0.0947	0.1066	0.0000	233.0787	233.0787	0.0474	0.0000	234.0731
Total	**0.8956**	**2.4715**	**2.2618**	**3.8800e-003**	**0.0629**	**0.1483**	**0.2112**	**0.0168**	**0.1395**	**0.1563**	**0.0000**	**327.7247**	**327.7247**	**0.0663**	**0.0000**	**329.1165**

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

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	0.5455	8.6400e-003	0.7462	4.0000e-005		4.0900e-003	4.0900e-003		4.0900e-003	4.0900e-003	0.0000	1.2129	1.2129	1.1900e-003	0.0000	1.2379
Energy	0.0102	0.0868	0.0369	5.5000e-004		7.0100e-003	7.0100e-003		7.0100e-003	7.0100e-003	0.0000	242.4321	242.4321	8.4500e-003	3.1900e-003	243.5992
Mobile	0.3421	0.8647	3.4757	9.5800e-003	0.6995	0.0112	0.7106	0.1867	0.0103	0.1970	0.0000	692.4932	692.4932	0.0257	0.0000	693.0329
Waste						0.0000	0.0000		0.0000	0.0000	13.0158	0.0000	13.0158	0.7692	0.0000	29.1692
Water						0.0000	0.0000		0.0000	0.0000	2.0670	37.3367	39.4037	0.2140	5.3700e-003	45.5623
Total	**0.8977**	**0.9601**	**4.2589**	**0.0102**	**0.6995**	**0.0223**	**0.7217**	**0.1867**	**0.0214**	**0.2081**	**15.0828**	**973.4749**	**988.5577**	**1.0186**	**8.5600e-003**	**1,012.6014**

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	0.5455	8.6400e-003	0.7462	4.0000e-005		4.0900e-003	4.0900e-003		4.0900e-003	4.0900e-003	0.0000	1.2129	1.2129	1.1900e-003	0.0000	1.2379
Energy	8.1000e-003	0.0692	0.0295	4.4000e-004		5.6000e-003	5.6000e-003		5.6000e-003	5.6000e-003	0.0000	215.6669	215.6669	7.7600e-003	2.7600e-003	216.6850
Mobile	0.3421	0.8647	3.4757	9.5800e-003	0.6995	0.0112	0.7106	0.1867	0.0103	0.1970	0.0000	692.4932	692.4932	0.0257	0.0000	693.0329
Waste						0.0000	0.0000		0.0000	0.0000	11.7142	0.0000	11.7142	0.6923	0.0000	26.2523
Water						0.0000	0.0000		0.0000	0.0000	1.6536	29.1953	30.8489	0.1712	4.2900e-003	35.7731
Total	**0.8956**	**0.9426**	**4.2514**	**0.0101**	**0.6995**	**0.0209**	**0.7203**	**0.1867**	**0.0200**	**0.2067**	**13.3678**	**938.5682**	**951.9360**	**0.8981**	**7.0500e-003**	**972.9812**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.23**	**1.83**	**0.18**	**1.08**	**0.00**	**6.33**	**0.20**	**0.00**	**6.59**	**0.68**	**11.37**	**3.59**	**3.70**	**11.82**	**17.64**	**3.91**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	10/4/2018	7/8/2019	5	198	
2	Architectural Coating	Architectural Coating	4/8/2019	7/8/2019	5	66	
3	Paving	Paving	6/8/2019	7/8/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 239,760; Residential Outdoor: 79,920; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	64.00	11.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Building Construction - 2018

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	0.0841	0.7327	0.5523	8.4000e-004		0.0471	0.0471		0.0443	0.0443	0.0000	74.5825	74.5825	0.0183	0.0000	74.9657
Total	**0.0841**	**0.7327**	**0.5523**	**8.4000e-004**		**0.0471**	**0.0471**		**0.0443**	**0.0443**	**0.0000**	**74.5825**	**74.5825**	**0.0183**	**0.0000**	**74.9657**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.6900e-003	0.0283	0.0383	8.0000e-005	2.2400e-003	4.5000e-004	2.6900e-003	6.4000e-004	4.1000e-004	1.0500e-003	0.0000	6.7808	6.7808	4.0000e-005	0.0000	6.7817
Worker	5.8400e-003	6.9700e-003	0.0695	1.9000e-004	0.0163	1.2000e-004	0.0164	4.3200e-003	1.1000e-004	4.4300e-003	0.0000	13.2829	13.2829	6.3000e-004	0.0000	13.2961
Total	**8.5300e-003**	**0.0353**	**0.1078**	**2.7000e-004**	**0.0185**	**5.7000e-004**	**0.0191**	**4.9600e-003**	**5.2000e-004**	**5.4800e-003**	**0.0000**	**20.0637**	**20.0637**	**6.7000e-004**	**0.0000**	**20.0778**

3.2 Building Construction - 2018

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	0.0841	0.7327	0.5523	8.4000e-004		0.0471	0.0471		0.0443	0.0443	0.0000	74.5824	74.5824	0.0183	0.0000	74.9657
Total	**0.0841**	**0.7327**	**0.5523**	**8.4000e-004**		**0.0471**	**0.0471**		**0.0443**	**0.0443**	**0.0000**	**74.5824**	**74.5824**	**0.0183**	**0.0000**	**74.9657**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.6900e-003	0.0283	0.0383	8.0000e-005	2.2400e-003	4.5000e-004	2.6900e-003	6.4000e-004	4.1000e-004	1.0500e-003	0.0000	6.7808	6.7808	4.0000e-005	0.0000	6.7817
Worker	5.8400e-003	6.9700e-003	0.0695	1.9000e-004	0.0163	1.2000e-004	0.0164	4.3200e-003	1.1000e-004	4.4300e-003	0.0000	13.2829	13.2829	6.3000e-004	0.0000	13.2961
Total	**8.5300e-003**	**0.0353**	**0.1078**	**2.7000e-004**	**0.0185**	**5.7000e-004**	**0.0191**	**4.9600e-003**	**5.2000e-004**	**5.4800e-003**	**0.0000**	**20.0637**	**20.0637**	**6.7000e-004**	**0.0000**	**20.0778**

3.2 Building Construction - 2019

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	0.1587	1.4151	1.1556	1.8100e-003		0.0867	0.0867		0.0816	0.0816	0.0000	158.0329	158.0329	0.0385	0.0000	158.8403
Total	**0.1587**	**1.4151**	**1.1556**	**1.8100e-003**		**0.0867**	**0.0867**		**0.0816**	**0.0816**	**0.0000**	**158.0329**	**158.0329**	**0.0385**	**0.0000**	**158.8403**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.3600e-003	0.0554	0.0788	1.7000e-004	4.8100e-003	8.9000e-004	5.7000e-003	1.3700e-003	8.2000e-004	2.1900e-003	0.0000	14.3114	14.3114	9.0000e-005	0.0000	14.3133
Worker	0.0116	0.0137	0.1371	4.1000e-004	0.0348	2.6000e-004	0.0351	9.2500e-003	2.4000e-004	9.4900e-003	0.0000	27.5299	27.5299	1.2700e-003	0.0000	27.5565
Total	**0.0170**	**0.0691**	**0.2159**	**5.8000e-004**	**0.0396**	**1.1500e-003**	**0.0408**	**0.0106**	**1.0600e-003**	**0.0117**	**0.0000**	**41.8413**	**41.8413**	**1.3600e-003**	**0.0000**	**41.8699**

3.2 Building Construction - 2019

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	0.1587	1.4151	1.1556	1.8100e-003		0.0867	0.0867		0.0816	0.0816	0.0000	158.0327	158.0327	0.0385	0.0000	158.8401
Total	**0.1587**	**1.4151**	**1.1556**	**1.8100e-003**		**0.0867**	**0.0867**		**0.0816**	**0.0816**	**0.0000**	**158.0327**	**158.0327**	**0.0385**	**0.0000**	**158.8401**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.3600e-003	0.0554	0.0788	1.7000e-004	4.8100e-003	8.9000e-004	5.7000e-003	1.3700e-003	8.2000e-004	2.1900e-003	0.0000	14.3114	14.3114	9.0000e-005	0.0000	14.3133
Worker	0.0116	0.0137	0.1371	4.1000e-004	0.0348	2.6000e-004	0.0351	9.2500e-003	2.4000e-004	9.4900e-003	0.0000	27.5299	27.5299	1.2700e-003	0.0000	27.5565
Total	**0.0170**	**0.0691**	**0.2159**	**5.8000e-004**	**0.0396**	**1.1500e-003**	**0.0408**	**0.0106**	**1.0600e-003**	**0.0117**	**0.0000**	**41.8413**	**41.8413**	**1.3600e-003**	**0.0000**	**41.8699**

3.3 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.6020					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.7900e-003	0.0606	0.0608	1.0000e-004		4.2500e-003	4.2500e-003		4.2500e-003	4.2500e-003	0.0000	8.4257	8.4257	7.1000e-004	0.0000	8.4407
Total	**0.6107**	**0.0606**	**0.0608**	**1.0000e-004**		**4.2500e-003**	**4.2500e-003**		**4.2500e-003**	**4.2500e-003**	**0.0000**	**8.4257**	**8.4257**	**7.1000e-004**	**0.0000**	**8.4407**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1500e-003	1.3600e-003	0.0136	4.0000e-005	3.4600e-003	3.0000e-005	3.4800e-003	9.2000e-004	2.0000e-005	9.4000e-004	0.0000	2.7339	2.7339	1.3000e-004	0.0000	2.7365
Total	**1.1500e-003**	**1.3600e-003**	**0.0136**	**4.0000e-005**	**3.4600e-003**	**3.0000e-005**	**3.4800e-003**	**9.2000e-004**	**2.0000e-005**	**9.4000e-004**	**0.0000**	**2.7339**	**2.7339**	**1.3000e-004**	**0.0000**	**2.7365**

3.3 Architectural Coating - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.6020					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.7900e-003	0.0606	0.0608	1.0000e-004		4.2500e-003	4.2500e-003		4.2500e-003	4.2500e-003	0.0000	8.4257	8.4257	7.1000e-004	0.0000	8.4407
Total	**0.6107**	**0.0606**	**0.0608**	**1.0000e-004**		**4.2500e-003**	**4.2500e-003**		**4.2500e-003**	**4.2500e-003**	**0.0000**	**8.4257**	**8.4257**	**7.1000e-004**	**0.0000**	**8.4407**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1500e-003	1.3600e-003	0.0136	4.0000e-005	3.4600e-003	3.0000e-005	3.4800e-003	9.2000e-004	2.0000e-005	9.4000e-004	0.0000	2.7339	2.7339	1.3000e-004	0.0000	2.7365
Total	**1.1500e-003**	**1.3600e-003**	**0.0136**	**4.0000e-005**	**3.4600e-003**	**3.0000e-005**	**3.4800e-003**	**9.2000e-004**	**2.0000e-005**	**9.4000e-004**	**0.0000**	**2.7339**	**2.7339**	**1.3000e-004**	**0.0000**	**2.7365**

3.4 Paving - 2019

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	0.0150	0.1568	0.1508	2.3000e-004		8.5000e-003	8.5000e-003		7.8200e-003	7.8200e-003	0.0000	21.0414	21.0414	6.6600e-003	0.0000	21.1812
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0150**	**0.1568**	**0.1508**	**2.3000e-004**		**8.5000e-003**	**8.5000e-003**		**7.8200e-003**	**7.8200e-003**	**0.0000**	**21.0414**	**21.0414**	**6.6600e-003**	**0.0000**	**21.1812**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2000e-004	5.0000e-004	5.0000e-003	1.0000e-005	1.2700e-003	1.0000e-005	1.2800e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	1.0037	1.0037	5.0000e-005	0.0000	1.0047
Total	**4.2000e-004**	**5.0000e-004**	**5.0000e-003**	**1.0000e-005**	**1.2700e-003**	**1.0000e-005**	**1.2800e-003**	**3.4000e-004**	**1.0000e-005**	**3.5000e-004**	**0.0000**	**1.0037**	**1.0037**	**5.0000e-005**	**0.0000**	**1.0047**

3.4 Paving - 2019

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	0.0150	0.1568	0.1508	2.3000e-004		8.5000e-003	8.5000e-003		7.8200e-003	7.8200e-003	0.0000	21.0414	21.0414	6.6600e-003	0.0000	21.1812
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0150**	**0.1568**	**0.1508**	**2.3000e-004**		**8.5000e-003**	**8.5000e-003**		**7.8200e-003**	**7.8200e-003**	**0.0000**	**21.0414**	**21.0414**	**6.6600e-003**	**0.0000**	**21.1812**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2000e-004	5.0000e-004	5.0000e-003	1.0000e-005	1.2700e-003	1.0000e-005	1.2800e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	1.0037	1.0037	5.0000e-005	0.0000	1.0047
Total	**4.2000e-004**	**5.0000e-004**	**5.0000e-003**	**1.0000e-005**	**1.2700e-003**	**1.0000e-005**	**1.2800e-003**	**3.4000e-004**	**1.0000e-005**	**3.5000e-004**	**0.0000**	**1.0037**	**1.0037**	**5.0000e-005**	**0.0000**	**1.0047**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3421	0.8647	3.4757	9.5800e-003	0.6995	0.0112	0.7106	0.1867	0.0103	0.1970	0.0000	692.4932	692.4932	0.0257	0.0000	693.0329
Unmitigated	0.3421	0.8647	3.4757	9.5800e-003	0.6995	0.0112	0.7106	0.1867	0.0103	0.1970	0.0000	692.4932	692.4932	0.0257	0.0000	693.0329

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	451.22	451.22	451.22	1,246,754	1,246,754
Single Family Housing	220.11	220.11	220.11	608,180	608,180
Total	671.33	671.33	671.33	1,854,934	1,854,934

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	7.30	7.50	32.90	18.00	49.10	86	11	3
Single Family Housing	10.80	7.30	7.50	32.90	18.00	49.10	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.475160	0.062821	0.180756	0.157858	0.069481	0.010201	0.013548	0.017639	0.000764	0.000681	0.005618	0.000317	0.005153

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	135.4925	135.4925	6.2300e-003	1.2900e-003	136.0228
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	141.9556	141.9556	6.5300e-003	1.3500e-003	142.5112
NaturalGas Mitigated	8.1000e-003	0.0692	0.0295	4.4000e-004		5.6000e-003	5.6000e-003		5.6000e-003	5.6000e-003	0.0000	80.1743	80.1743	1.5400e-003	1.4700e-003	80.6622
NaturalGas Unmitigated	0.0102	0.0868	0.0369	5.5000e-004		7.0100e-003	7.0100e-003		7.0100e-003	7.0100e-003	0.0000	100.4765	100.4765	1.9300e-003	1.8400e-003	101.0880

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	1.21854e+006	6.5700e-003	0.0562	0.0239	3.6000e-004		4.5400e-003	4.5400e-003		4.5400e-003	4.5400e-003	0.0000	65.0258	65.0258	1.2500e-003	1.1900e-003	65.4216
Single Family Housing	664321	3.5800e-003	0.0306	0.0130	2.0000e-004		2.4700e-003	2.4700e-003		2.4700e-003	2.4700e-003	0.0000	35.4507	35.4507	6.8000e-004	6.5000e-004	35.6664
Total		**0.0102**	**0.0868**	**0.0369**	**5.6000e-004**		**7.0100e-003**	**7.0100e-003**		**7.0100e-003**	**7.0100e-003**	**0.0000**	**100.4765**	**100.4765**	**1.9300e-003**	**1.8400e-003**	**101.0880**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	531700	2.8700e-003	0.0245	0.0104	1.6000e-004		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	28.3735	28.3735	5.4000e-004	5.2000e-004	28.5462
Condo/Townhouse	970710	5.2300e-003	0.0447	0.0190	2.9000e-004		3.6200e-003	3.6200e-003		3.6200e-003	3.6200e-003	0.0000	51.8008	51.8008	9.9000e-004	9.5000e-004	52.1161
Total		**8.1000e-003**	**0.0692**	**0.0295**	**4.5000e-004**		**5.6000e-003**	**5.6000e-003**		**5.6000e-003**	**5.6000e-003**	**0.0000**	**80.1743**	**80.1743**	**1.5300e-003**	**1.4700e-003**	**80.6622**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	332997	95.2926	4.3800e-003	9.1000e-004	95.6655
Single Family Housing	163062	46.6631	2.1400e-003	4.4000e-004	46.8457
Total		**141.9556**	**6.5200e-003**	**1.3500e-003**	**142.5112**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	317990	90.9984	4.1800e-003	8.7000e-004	91.3545
Single Family Housing	155483	44.4942	2.0500e-003	4.2000e-004	44.6683
Total		**135.4926**	**6.2300e-003**	**1.2900e-003**	**136.0228**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.5455	8.6400e-003	0.7462	4.0000e-005		4.0900e-003	4.0900e-003		4.0900e-003	4.0900e-003	0.0000	1.2129	1.2129	1.1900e-003	0.0000	1.2379
Unmitigated	0.5455	8.6400e-003	0.7462	4.0000e-005		4.0900e-003	4.0900e-003		4.0900e-003	4.0900e-003	0.0000	1.2129	1.2129	1.1900e-003	0.0000	1.2379

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	0.0602					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4624					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0228	8.6400e-003	0.7462	4.0000e-005		4.0900e-003	4.0900e-003		4.0900e-003	4.0900e-003	0.0000	1.2129	1.2129	1.1900e-003	0.0000	1.2379
Total	**0.5454**	**8.6400e-003**	**0.7462**	**4.0000e-005**		**4.0900e-003**	**4.0900e-003**		**4.0900e-003**	**4.0900e-003**	**0.0000**	**1.2129**	**1.2129**	**1.1900e-003**	**0.0000**	**1.2379**

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	0.0602					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4624					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0228	8.6400e-003	0.7462	4.0000e-005		4.0900e-003	4.0900e-003		4.0900e-003	4.0900e-003	0.0000	1.2129	1.2129	1.1900e-003	0.0000	1.2379
Total	**0.5454**	**8.6400e-003**	**0.7462**	**4.0000e-005**		**4.0900e-003**	**4.0900e-003**		**4.0900e-003**	**4.0900e-003**	**0.0000**	**1.2129**	**1.2129**	**1.1900e-003**	**0.0000**	**1.2379**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	30.8489	0.1712	4.2900e-003	35.7731
Unmitigated	39.4037	0.2140	5.3700e-003	45.5623

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	5.01686 / 3.1628	30.3409	0.1648	4.1300e-003	35.0830
Single Family Housing	1.49854 / 0.944733	9.0629	0.0492	1.2300e-003	10.4793
Total		**39.4037**	**0.2140**	**5.3600e-003**	**45.5623**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	4.01349 / 2.53024	23.7536	0.1318	3.3000e-003	27.5453
Single Family Housing	1.19883 / 0.755787	7.0952	0.0394	9.9000e-004	8.2278
Total		**30.8489**	**0.1712**	**4.2900e-003**	**35.7731**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	11.7142	0.6923	0.0000	26.2523
Unmitigated	13.0158	0.7692	0.0000	29.1692

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	35.42	7.1899	0.4249	0.0000	16.1131
Single Family Housing	28.7	5.8258	0.3443	0.0000	13.0561
Total		**13.0158**	**0.7692**	**0.0000**	**29.1692**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	31.878	6.4710	0.3824	0.0000	14.5018
Single Family Housing	25.83	5.2433	0.3099	0.0000	11.7505
Total		**11.7142**	**0.6923**	**0.0000**	**26.2523**

9.0 Operational Offroad

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

10.0 Vegetation

Appendix 4.8 Phase I Environmental Site Assessment prepared by TRAK Environmental Group dated October 31, 2014

TRAK Environmental Group
3637 B Arundell Circle
Ventura California 93003

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PHASE I ENVIRONMENTAL SITE ASSESSMENT
THE GROVE, COPLAND DRIVE PROPERTY
(4515 COPLAND DRIVE)
VENTURA, CALIFORNIA

APN 079-0-240-035

Prepared for:

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Bradford S. Newman, PG, CHG
President

October 31, 2014

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Appendix A: Regulatory Documentation (User Questionnaire, Agency and Building Records)

Appendix B: EDR Environmental Lien Search Report, Historical Aerial Photographs, Historical City Directories, Historical Sanborn Maps, Historical Topographic Maps, Assessor Map

Appendix C: EDR Radius Map (Executive Summary, Overview Map, Detail Map, Map Findings Summary). Complete EDR Radius Map Report™ with GeoCheck® is included on CD-ROM of Phase I ESA, enclosed in pocket at end of this report.

REPORT POCKET

Complete Copy of Phase I ESA Report (CD-ROM)

1 EXECUTIVE SUMMARY

This Phase I Environmental Site Assessment (ESA) of property identified as The Grove, Copland Drive Property, SP-9, PCN 723, A-326, Z 915, S 5126, DA 37, City of Ventura Project Number 00723, in unincorporated Ventura County, California, APN 079-0-240-035 (subject property) was performed by TRAK Environmental Group, Inc. (TRAK) for the User. This Phase I ESA was performed in general accordance with the scope and limitations of American Society for Testing and Materials (ASTM) Standard Practice E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, and the standards and practices for All Appropriate Inquiries (AAI) under 40 CFR Part 312. Any exceptions to, or deletions from, this scope of work are described in Section 10 of this report. TRAK finds the following:

SITE OBSERVATIONS

The subject property is a generally-rectangular parcel of approximately 25.65 acres, primarily in agricultural land use, with a residential/ranchstead plot in the southwest corner of property. The parcel is unincorporated land within the east-central portion of the City of Ventura. The subject property is bounded by State Highway 126 (north), Copland Drive (south and southwest), the La Posada Mobile Home Park (west), and residential developments on the east, including the New Traditions 8 (single-family homes) and Colony Parc apartments. Copland Drive is a short road that runs along the south-southwest side of property adjacent to the embankment of U.S. Highway 101, providing access from Telephone Road on the south, to a drive that leads north into the property.

The residential/ranchstead plot in parcel's southwestern corner includes a one-story, frame-constructed residence with covered porch on east side, a one-story, frame-constructed garage/shed with three bays and covered parking area on west side, and several storage sheds, including a wood-sided shed west of garage/shed, and metal- and wood-sided sheds west of the residence. The residence is sided on east and west by lawn-covered yards, and on south by a paved drive/parking area, which separates the residence from the garage/shed. Parked in this drive on south side of residence is a house trailer. On east side of the east yard is a drive that extends north beyond the residential/ranchstead plot, providing access to the rest of the property. The residential/ranchstead plot is bordered by overgrown landscape trees and shrubs, on the east and north.

The interior of the garage/shed is used for storage and parking of equipment and vehicles, including vintage auto, motorcycles and quads, air compressor, tools, auto parts, automotive fluids, lubricants, cleaners, solvents and paint, and fuel cans. On exterior of garage/shed are parking and storage areas, including boat, trailer and ATV (east side); trailers (vehicle, flat-bed, landscape) and vehicles (south side); and vehicles (VW and golf cart) and equipment (covered west side area). The wood-sided shed located west of garage/shed is used for storage and shop, with workbench, equipment, storage cabinets and shelving, with typical maintenance-type chemicals, including lubricants, cleaners, automotive fluids, small containers of fuel. The metal-sided shed includes storage for miscellaneous materials, such as roof-patch compound, empty containers, and construction materials. North of the metal-sided shed is a small utility trailer with welding equipment, including compressed-gas cylinders. The sheds are located along the western boundary of parcel, an overgrown area with storage of miscellaneous materials, such as compressor tanks and tarp-covered stacks.

On north side of residential/ranchstead plot is an open, dirt-surfaced yard, used for storage and parking of agricultural equipment, implements, vehicles, and miscellaneous materials. Equipment and vehicles include tractors, utility and tank trailers, box trucks, a trailer-mounted engine with power take-off, camper shell, sprayers, cultivation implements, irrigation pipe, pallets, water and fertilizer ASTs, and fuel (diesel) AST on steel stand with dispensing hose. Two hoop houses are located in this area, and used for storage of miscellaneous materials, such as nursery stock, containers, poly drums, and empty 5-gallon buckets, tank trailer and backpack spray rigs.

The remainder of parcel is in row-cultivation for production of flowers. The parcel is bisected by three, east-west oriented roads that divide the agricultural acreage into approximate quarters. The acreage is cultivated and furrowed in general north-south direction, with portions of the fields in flower production and portions fallowed. Hoop houses are utilized for coverage of some cultivated rows in the central portion of parcel. Along the southern property margin, near the southeast corner, is a water well (02N22W07P01S) for agricultural water supply. The well is connected by above-ground discharge piping to a riser that connects to underground piping, located slightly west of well, near the utility drop.

No recognizable environmental concerns were noted on or adjoining the subject site based on the observations of the site reconnaissance and database review.

FINDINGS

A *Recognized Environmental Condition* (REC) is defined by ASTM Standard Practice E1527-13 as the presence or likely presence of any *hazardous substances* or *petroleum products* in, on, or at a *property*: (*1*) due to any *release* to the *environment*; (*2*) under conditions indicative of a *release* to the *environment*; or (*3*) under conditions that pose a *material threat* of a future *release* to the *environment*. *De minimis* conditions are not *recognized environmental conditions*.

- This assessment has revealed no evidence of *recognized environmental conditions* in connection with the subject *property*.

A *Controlled Recognized Environmental Condition* (CREC) is defined by ASTM Standard Practice E1527-13 as a *recognized environmental condition* resulting from a past *release* of *hazardous substances* or *petroleum products* that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with *hazardous substances* or petroleum products allowed to remain in place subject to the implementation of required controls (for example, *property* use restrictions, *activity and use limitations, institutional controls,* or *engineering controls*). A condition considered by the *environmental professional* to be a *controlled recognized environmental condition* shall be listed in the Findings section of the *Phase I Environmental Site Assessment report*, and as a *recognized environmental condition* in the Conclusions section of the *Phase I Environmental Site Assessment report*.

- This assessment has revealed no evidence of *controlled recognized environmental conditions* in connection with the subject *property*.

A *Historical Recognized Environmental Condition* (HREC) is defined by ASTM Standard Practice E1527-13 as a past *release* of any *hazardous substances* or *petroleum products* that has occurred in connection with the *property* and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the *property* to any required controls (for example, *property* use restrictions, *activity and use limitations*, *institutional controls*, or *engineering controls*). If the *environmental professional* considers the past *release* to be a *recognized environmental condition* at the time the Phase I ESA is conducted, the condition shall be included in the Conclusions section of the report as a *recognized environmental condition*.

- This assessment has revealed no evidence of *historical recognized environmental condition*s in connection with the subject *property*.

A *De Minimis Condition* is defined by ASTM Standard Practice E1527-13 as a condition that generally does 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. Conditions determined to be *de minimis conditions* are not *recognized environmental conditions* nor *controlled recognized environmental conditions*.

- This assessment has revealed no evidence of *de minimis conditions* in connection with the subject *property*.

Non-Scope Considerations may be environmental issues or conditions at a property that parties may wish to assess in connection with commercial real estate that are outside the scope of ASTM Standard Practice E1527-13 (non-scope considerations). TRAK's assessment has revealed the following non-scope consideration associated with the subject property:

- The structures onsite were constructed prior to 1981. Based on the age of construction, building materials in onsite structures may contain asbestos containing materials (ACM), and certain building materials are presumed to contain ACM (PACM), unless testing has shown otherwise. As of October 1, 1995, OSHA made building owners responsible for complying with the asbestos construction standard, for buildings built in 1981 or earlier. The building owner is responsible for identifying the presence, location and quantity of asbestos containing building materials. The building owner must tell employees, other employers, and tenants in the building of the presence and location of asbestos or presumed asbestos containing materials (PACM). If the building owner intends to demolish or remodel the structure(s), it is suggested that the building owner contact a California Certified Asbestos Consultant for assistance in compliance.

- The subject parcel has been in agricultural land use for many decades, including citrus orchard (circa 1960s to 2003) and flower cultivation (to present). If future plans for the parcel contemplate possible change in land use, such as to residential uses, it may be warranted to investigate the site's shallow soils for the potential of agricultural chemicals possibly associated with historical farming activities, including organochlorine pesticides (OCP) and arsenic. Soil investigation might include reconnaissance sampling for general evaluation, or more thorough sampling in accordance with guidelines of the *Interim Guidance for Sampling Agricultural Properties (Third Revision)*, California Department of Toxic Substances Control (August 7, 2008).

CONCLUSIONS

TRAK has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Standard Practice E1527-13 of site identified as The Grove, Copland Drive Property, SP-9, PCN 723, A-326, Z 915, S 5126, DA 37, City of Ventura Project Number 00723, in unincorporated Ventura County, California, APN 079-0-240-035, the subject *property*. Any exceptions to, or deletions from, this practice are described in Section 10 of this report.

- This assessment has revealed no evidence of *recognized environmental conditions* in connection with the subject *property*.

RECOMMENDATIONS

The onsite structures were constructed prior to 1981, and therefore require conformance with the OSHA asbestos construction standard. If the client intends to demolish or remodel the structure(s), TRAK recommends contacting a California Certified Asbestos Consultant for assistance in complying with this and other applicable asbestos regulations.

The subject parcel has been in agricultural land use for many decades, including citrus orchard (circa 1960s to 2003) and flower cultivation (to present). If future plans for the parcel contemplate possible change in land use, such as to residential uses, it may be warranted to investigate the site's shallow soils for the potential of agricultural chemicals possibly associated with historical farming activities, including organochlorine pesticides (OCP) and arsenic. Soil investigation might include reconnaissance sampling for general evaluation, or more thorough sampling in accordance with guidelines of the *Interim Guidance for Sampling Agricultural Properties (Third Revision)*, California Department of Toxic Substances Control (August 7, 2008).

2 INTRODUCTION

This Phase I Environmental Site Assessment (ESA) of property identified as The Grove, Copland Drive Property, SP-9, PCN 723, A-326, Z 915, S 5126, DA 37, City of Ventura Project Number 00723, in unincorporated Ventura County, California, APN 079-0-240-035 (subject property), was performed by TRAK Environmental Group, Inc. (TRAK) for the User. This Phase I ESA was performed in general accordance with the scope and limitations of American Society for Testing and Materials (ASTM) Standard Practice E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, and the standards and practices for All Appropriate Inquiries (AAI) under 40 CFR Part 312. Any exceptions to, or deletions from, this scope of work are described in Section 10 of this report.

2.1 PURPOSE

The Phase I ESA was conducted, in accordance with good commercial and customary practice, with the goal to identify *recognized environmental conditions* (RECs) associated with the subject property. The term *recognized environmental conditions* means the presence or likely presence of any *hazardous substances* or *petroleum products* in, on, or at a *property*: (*1*) due to any *release* to the *environment*; (*2*) under conditions indicative of a *release* to the *environment*; or (*3*) under conditions that pose a *material threat* of a future *release* to the *environment*. The term is not intended to include *de minimis* conditions, which 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 Phase I ESA was conducted to permit the User to satisfy one of the requirements to qualify for the *innocent landowner*, *contiguous property owner*, or *bona fide prospective purchaser* limitations on CERCLA (Comprehensive Environmental Response, Compensation and Liability Act) liability (hereinafter, the "*landowner liability protections*," or "*LLPs*"): that is, the practice that constitutes *all appropriate inquiries* into the previous ownership and uses of the *property* consistent with good commercial and customary practice as defined at 42 U.S.C. §9601(35)(B).

2.2 SCOPE OF SERVICES

The following sections of this report describe TRAK's work scope:

- Section 3, **Site Description**, is a compilation of information concerning the site location, regional hydrogeology, and adjacent property use.

- Section 4, **User Provided Information**, is a compilation of user provided information (e.g., available title records, environmental liens, specialized knowledge, valuation reduction information for environmental issues, owner, property manager and occupant information).

- Section 5, **Records** Review, is a compilation of TRAK's review of record information from governmental jurisdictions that is reasonably ascertainable including, (1) information that is publicly available, (2) information that is obtainable from its source within reasonable time and cost constraints, and (3) information that is practically reviewable. Review included standard federal, state, and tribal environmental record sources, supplemental and local sources compiled by Environmental Data Resources, Inc. (EDR), and also regulatory agency files and records in regard to subject property, and adjoining properties if warranted.

- Section 6, **Site History**, summarizes the history of the site and adjoining properties based on various sources which may include a review of aerial photographs, historical maps (topographic, Sanborn), city or suburban directories.

- Section 7, **Site Reconnaissance and Interviews**, describes TRAK's observations made during the site reconnaissance and interviews.

- Section 8, **Findings and Conclusions**, presents findings and conclusions regarding recognized environmental conditions, controlled recognized environmental conditions, historical recognized environmental conditions and *de minimis* conditions, with opinion regarding the presence of recognized environmental conditions associated with subject site.

- Section 9 presents TRAK's **Recommendations.**

- Section 10, **Deviations**, provides a statement regarding deviations and/or deletions from, or additions to, the Standard Practice for Environmental Site Assessments (ASTM E1527-13).

- Section 11 presents the **Limitations** of this assessment.

- Section 12 includes the **Qualifications of Environmental Professionals** performing the assessment, and the Environmental Professionals Statement.

- Section 13 presents our **References**.

- **Tables** are included within the chapters where they are referenced.

- The **Plates** section at the end of the report text includes figures (location map and site map) and site photographs.

- The **Appendices** contain User Questionnaire, regulatory file information, user provided documents (if provided), copies of historical information (e.g., aerial photographs, topographic and Sanborn maps, city directories), and regulatory database report.

2.3 LIMITATIONS

This report was designed to meet the *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, outlined by American Society for Testing and Materials (ASTM) Standard Practice E1527-13, subject to limitations presented in Section 11.

2.4 RELIANCE

This report is exclusively for the use and benefit of the client identified on the title page of this report. The purpose for which this report shall be used shall be limited to the use as stated in the contract between the client and TRAK. This report is not for the use or benefit of, nor may it be relied upon by any other person or entity, for any purpose without the advance written consent of TRAK.

2.5 DATA GAPS

A data gap is a lack of, or inability to obtain information required by ASTM E1527-13 despite good faith efforts by the environmental professional to gather such information, including, but not limited to site reconnaissance and interviews. A data gap is only significant if other information and/or professional experience raise reasonable concerns involving the data gap. Data failure is one type of data gap, being a failure to achieve the historical research objectives of ASTM E1527-13, even after reviewing the standard historical sources that are reasonably ascertainable and likely to be useful. Notwithstanding a data failure, standard historical sources may be excluded if the sources are not reasonably ascertainable, or if past experience indicates that the sources are not likely to be sufficiently useful, accurate, or complete in terms of satisfying the objectives.

No significant data gaps were identified during the research and development of this report.

3 SITE DESCRIPTION

The site setting is presented in this Section to describe the condition of the site at the time of the Phase I ESA. Tables 3-1 through 3-2 summarize the physical characteristics of the site and adjacent properties. The site location is shown on Figure 1.

The information presented in Table 3-1 includes the physical location of the site, as well as the size, and current and proposed use of the subject property. This information was obtained from review of various maps (such as topographic maps, aerial photographs, and assessor maps), and/or review of public records at city and/or county offices. As shown on Figure 1, the subject property is located in an area of residential, agricultural and commercial land uses.

3.1 SITE DESCRIPTION

Table 3-1 provides information regarding the location of the subject property. Additional site description information was obtained during the site reconnaissance visit. Please refer to Chapter 7 of this report for this information.

TABLE 3-1
SITE LOCATION AND LAND USE

LOCATION	Copland Drive, Ventura, CA 93003; portions of site associated with address of 4515 Copland Drive, Ventura, California.
ASSESSOR'S PARCEL # AND SIZE	APN 079-0-240-035 (approximately 25.65 acre)
CURRENT USE	Cultivated agricultural land, residence
PROPOSED USE	Unknown

3.2 REGIONAL HYDROGEOLOGY

Information regarding regional hydrogeology is reported below. This information was obtained from available previous reports, published data, and maps of the site vicinity.

Groundwater information for subject site area is provided in *Quarterly Status Report – Second Quarter 2011, Former 76 Station No. 6991, 4210 East Main Street, Ventura*, California*, VCEHD File No. C95072* (Stantec, July 30, 2011) for the former service station site approximately ¼ mile southwest of subject site. Groundwater monitoring data for the May 2011 event indicate groundwater depths in range of about 3 to 6 feet. Groundwater flow direction is estimated to be generally westerly.

3.3 ADJACENT AREA LAND USE

A brief drive-by survey of the area adjacent to the parcel was performed on October 15, 2014, the same day as site reconnaissance visit. Adjacent properties are identified in relation to the parcel address in closest proximity, summarized in Table 3-2.

TABLE 3-2
PROPERTIES ADJACENT TO PARCEL

Direction	**Land Use Description**
NORTH	State Highway 126 freeway; beyond is The Patrician Mobile Home Park (4700 Aurora Drive).
EAST	Northeast-adjoining residential development (New Traditions 8, single-family homes), between Highway 126 and Thille Street; southeast-adjoining residential (Colony Parc apartments), between Thille Street and Telephone Road.
SOUTH	Copland Drive and Telephone Road; southeast beyond is retail center (including Barnes & Noble), and southwest beyond is U.S. Highway 101 freeway.
WEST	La Posada Mobile Home Park; beyond is interchange of State Highway 126 and U.S. Highway 101.

4 USER PROVIDED INFORMATION

4.1 LOCATION AND LEGAL DESCRIPTION

The subject property is identified as The Grove, Copland Drive Property, SP-9, PCN 723, A-326, Z 915, S 5126, DA 37, City of Ventura Project Number 00723, in unincorporated Ventura County, California, APN 079-0-240-035 (subject property), in an area of residential, agricultural and commercial land uses in Ventura. Portions of site are associated with address of 4515 Copland Drive, Ventura, California. The legal description was not provided to TRAK by client.

4.2 TITLE RECORDS

A Preliminary Title Report for subject property was not provided to TRAK by user for review to identify environmental liens or activity and use limitations, if any, which are currently recorded against property. Deed information was obtained by EDR Environmental Lien Search Report; title to parcel identified by APN 079-0-240-035 is vested in The Groves LLC.

4.3 ENVIRONMENTAL LIENS OR ACTIVITY AND USE LIMITATIONS

TRAK ordered the EDR Environmental Lien Search Report, prepared by Environmental Data Resources, Inc. (EDR) of Southport, Connecticut. The EDR Environmental Lien Search Report is intended to assist in the search for environmental liens filed in land title records. Data provided in the EDR Environmental Lien Search Report include deed information, legal description, findings regarding environmental liens, and findings regarding other activity and use limitations (AULs).

No environmental liens or other activity and use limitations were found for the property. The entire EDR Environmental Lien Search Report is included in Appendix B.

The User of this Phase I ESA was asked to complete a User Questionnaire, regarding any knowledge of the existence of environmental liens encumbering the subject property, or activity and land use limitations in connection to the property. The User Questionnaire completed by Mr. Kioren Moss indicated no knowledge regarding any environmental liens or activity and land use limitations in place. A copy of the User Questionnaire is included in Appendix A.

4.4 SPECIALIZED KNOWLEDGE

The User is typically asked whether the User has specialized knowledge and experience or actual knowledge that may be material to recognized environmental conditions in connection to the site or nearby properties. The User Questionnaire completed by Mr. Kioren Moss indicated no specialized knowledge or experience related to the property or nearby properties. A copy of the User Questionnaire is included in Appendix A.

4.5 COMMONLY KNOWN OR REASONABLY ASCERTAINABLE INFORMATION

The User is typically asked whether the User is aware of commonly known or reasonably ascertainable information about the subject property, which would help the environmental professional to identify conditions indicative of releases or threatened releases. The User Questionnaire completed by Mr. Kioren Moss indicated that the User had no knowledge of past uses of the property, or other reasonably ascertainable information about the subject property. A copy of the User Questionnaire is included in Appendix A.

4.6 VALUATION REDUCTION FOR ENVIRONMENTAL LIENS

The User is typically asked if the purchase price being paid for the property reasonably reflects the fair market value of the property, and if not, has the User considered whether the difference may be due to known or suspected contamination. The User Questionnaire completed by Mr. Kioren Moss indicated no information in regard to any valuation reduction for environmental liens or environmental conditions regarding the subject property. A copy of User Questionnaire is included in Appendix A.

4.7 OWNER, PROPERTY MANAGER, AND OCCUPANT INFORMATION

The User was asked to provide TRAK with information regarding the owner, property manager, and occupant information. The site contact is listed as Mr. Kioren Moss.

4.8 REASON FOR PERFORMING PHASE I

The reason for completing this Phase I ESA was for purposes of qualifying for Landowner Liability Protections (LLPs) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) unless otherwise so stated in this report.

5 RECORDS REVIEW

The records review was conducted to help identify recognized environmental conditions in connection with the subject property. TRAK's record review included information from governmental jurisdictions that is reasonably ascertainable, comprising (1) information that is publicly available, (2) information that is obtainable from its source within reasonable time and cost constraints, and (3) information that is practically reviewable.

TRAK contracted a government database search completed by Environmental Data Resources, Inc. (EDR) of Southport, Connecticut (Appendix C). EDR database search included standard federal, state, and tribal environmental record sources, supplemental and local sources, as discussed in Section 5.1. TRAK also conducted review of regulatory agency files and records in regard to subject property, as discussed in Section 5.2 following, and also for adjoining properties if warranted in accordance with ASTM E1527-13 Section 8.2.2.

Standard records (acronyms defined in EDR report) searched are summarized in Table 5-1.

TABLE 5-1
RECORDS REVIEWED AND SEARCH DISTANCES

ASTM Standard			
Federal	**Distance**	**State and Tribal**	**Distance**
NPL	1-mile	AWP	1-mile
CERCLIS	½-mile	HIST CAL-SITES/BEP	½-mile
NFRAP	½-mile	SWIS (SWF/LF)/WMUDS	½-mile
RCRA-TSDF	½-mile	SWAT	½-mile
RCRA-GEN (LQG & SQG)	Site & Adjoining	LUST	½-mile
ERNS	Site	UST/CA FID	Site & Adjoining
RCRA-CORRACTS	1-mile	HIST UST	Site & Adjoining
INSTITUTIONAL CONTROLS	Site	CORTESE	½-mile
ENGINEERING CONTROLS	Site	CHMIRS	Site & Adjoining
		NOTIFY 65	1-mile
		Toxic Pits	1-mile
ASTM Supplemental			
Federal		**Distance**	
FINDS		Site & Adjoining	
Tribal, State or Local		**Distance**	
HAZNET		Site & Adjoining	
CA SLIC		½-mile	
WDS		Site	
CLEANERS		Site & Adjoining	
VCP		½-mile	
AST		Site	

EDR utilizes a geographical information system to plot the site locations of reported data references. This information is reviewed by TRAK to help establish if the site or nearby properties are identified in one or more of the standard environmental record sources. The EDR report includes an Executive Summary that lists search results for subject property and properties within the standard search radii, two maps that show locations of referenced properties with respect to the site, a tabulation of map findings, and summaries of pertinent information for these properties. A copy of the EDR report is included in Appendix C, and results of EDR database search summarized in following section.

5.1 RESULTS OF DATABASE SEARCH

The following sections in this chapter contain information on the results of EDR's record search. Listed search distances are those specified in the ASTM standard. The subject site is not listed in any ASTM standard database, nor other listing of ascertainable records.

5.1.1 Federal Lists

NPL — National Priority List (NPL) sites are CERCLIS sites that US EPA has identified as having priority to address conditions believed to pose a threat to public health and/or the environment. No NPL or proposed NPL site was listed within the ASTM search distance of 1 mile.

CERCLIS — The CERCLIS list is compilation of sites reported to US EPA that were, or are under investigation for release or potential release of hazardous materials. No CERCLIS site was listed within ASTM search distance of ½ mile.

NFRAP — As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) were removed from CERCLIS. NFRAP sites may be sites where, following initial investigation, no contamination found, contamination removed quickly without need for site to be placed on NPL, or contamination not serious enough to require Federal Superfund action or NPL consideration. One NFRAP site was listed within the ASTM search distance of ½ mile; Welex (1301 Callens Rd., EDR ID E31, ¼ - ½ mile WSW), with NPL Status: Not on the NPL. In TRAK's opinion, the referenced features are unlikely to pose risk to the subject site, due to agency case status, localized or *de minimus* nature, distance from and/or hydrogeologic position relative to the subject site.

RCRA-TSDF Resource Conservation and Recovery Information System (RCRIS) includes selective information on sites which transport, store, treat and/or dispose of hazardous waste (referred to as TSDF sites) as defined by the Resource Conservation and Recovery Act (RCRA). No TSDF sites were listed within the ASTM search distance of ½ mile.

RCRA-GEN RCRIS also includes RCRA generator (GEN) listings that indicate hazardous wastes are generated on facility's premises as part of the company's business practices. No large quantity generator (LQG) facility was listed within the ASTM search distance of ¼ mile. Two small quantity generator (SQG) facilities were listed within ¼ mile, but not within ASTM reporting distance of site or adjoining properties.

ERNS The Emergency Response Notification System (ERNS) listing is a compilation of reported spills of petroleum products or hazardous substances. The ASTM reporting search distance is the site itself. The subject site was not listed in the ERNS database.

CORRACTS The RCRA Corrective Action Report (CORRACTS) identifies hazardous waste handlers with RCRA corrective action activity. No CORRACTS sites were listed within the ASTM search distance of 1 mile.

INSTITUTIONAL CONTROLS 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. The ASTM reporting search distance is the site itself. No INSTITUTIONAL CONTROLS were listed within ASTM search distance.

ENGINEERING CONTROLS An Engineering Control listing is 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. The ASTM reporting search distance is the site itself. No ENGINEERING CONTROLS were listed within the ASTM search distance.

5.1.2 State and Tribal Lists

RESPONSE — The State of California Department of Toxic Substances Control (DTSC) maintains a list of NPL-equivalent sites identified as high-priority with confirmed releases. One RESPONSE site was listed within the ASTM search distance of 1 mile: Master Plating (1255 Callens Rd., EDR ID E26, ¼ - ½ mile WSW), with Comments (Staff review of the Addendum to the PEA indicates that the soil at the site in its present condition poses no threat to human health or the environment. Groundwater contamination at the site requires monitoring and/or remediation. RP has been notified and referred to RWQCB). In TRAK's opinion, the referenced features are unlikely to pose risk to the subject site, due to agency case status, localized or *de minimus* nature, distance from and/or hydrogeologic position relative to the subject site.

ENVIROSTOR — The State of California Department of Toxic Substances Control (DTSC) maintains a list of CERCLIS-equivalent sites with confirmed or suspected releases. Six ENVIROSTOR sites were listed within the ASTM search distance of 1 mile, including two sites within ½ mile; Welex (1301 Callens Rd., EDR ID E31, ¼ - ½ mile WSW) previously referenced in NFRAP, and Master Plating (1255 Callens Rd., EDR ID E26, ¼ - ½ mile WSW) previously referenced in RESPONSE. In TRAK's opinion, the referenced features are unlikely to pose risk to the subject site, due to agency case status, localized or *de minimus* nature, distance from and/or hydrogeologic position relative to the subject site.

CAL-SITES — The California Environmental Protection Agency (Cal/EPA) maintained a database of potentially hazardous waste facilities identified as the Historical Cal-Sites list, formerly known as the Abandoned Sites Program Information System (ASPIS). The DTSC was lead agency for Cal-Sites. The Cal-Sites database is no longer updated and has been replaced by ENVIROSTOR. No Historic Cal-Sites were listed within the ASTM search distance of 1 mile.

SWIS — The California Integrated Waste Management Board (CIWMB) maintains the SWIS database of information regarding active, inactive, and closed landfills, and transfer and composting stations. The database is published annually. SWIS is also known as Solid Waste Fills/Land Fills (SWF/LF). No SWF/LF site was listed within the ASTM search distance of 1 mile.

SWAT/WMUDS The Solid Waste Assessment Test (SWAT) database contains information regarding solid waste landfills where known migration of hazardous chemicals has been reported from investigations conducted at the landfills. The Waste Management Unit Database (WMUDS) is used by the state for program tracking and inventory of waste management units. No SWAT/WMUDS site was listed within the ASTM search distance of ½ mile.

LUST The LUST list is maintained by the State Water Resources Control Board. Thirteen (7 actual sites) cases located within the ASTM search distance appeared on the State of California's LUST list. Of these, six LUST sites listed have been closed, and one site (Master Plating, 1255 Callens Rd., EDR ID E26, ¼ - ½ mile WSW) is listed with Priority (LOP/LOW – Minor or no potential water resource impact). In TRAK's opinion, the referenced features are unlikely to pose risk to the subject site, due to agency case status, localized or *de minimus* nature, distance from and/or hydrogeologic position relative to the subject site.

CA FID/UST The Facility Inventory Database (CA FID) contains active and inactive underground storage tank (UST) locations. The source is the State Water Resource Control Board. No CA FID UST sites were reported within the ASTM reporting search distance of subject site and adjoining properties.

The California UST database is a list of registered underground storage tanks within California that has also been commonly known as the SWEEPS Report; this report is no longer updated or maintained. No SWEEPS UST sites were reported within the ASTM reporting search distance of subject site and adjoining properties.

VCP The VCP database contains low threat level properties with either confirmed or unconfirmed releases, and project proponents have requested that DTSC oversee investigation and/or cleanup activities and agreed to provide coverage for DTSC costs. No VCP sites were listed within the ASTM search distance.

HIST UST This database identifies historical registered USTs. No HIST UST sites were reported within ASTM reporting search distance of site or adjoining properties.

CORTESE This database identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified by the abandoned site assessment program, sites with USTs having a reportable release, and solid waste disposal facilities with known migration. The source is the Cal/EPA Office of Emergency Information. The State Water Resource Control Board (LUST), Integrated Waste Board (SWF/LS), and Department of Toxic Substances Control Board (Cal-Sites) designate the sites for listing. This list is no longer updated by the state. Six Historic CORTESE files were listed within the ASTM search distance of ½ mile; typically also listed as LUST sites, as previously discussed. In TRAK's opinion, the referenced features are unlikely to pose risk to the subject site, due to agency case status, distance from and/or hydrogeologic position relative to the subject site.

CHMIRS The California Hazardous Material Incident Report System (CHMIRS) contains information on reported hazardous material incidents (i.e., accidental releases or spills). The source is the California Office of Emergency Services. No CHMIRS sites were listed within the ASTM search distance.

NOTIFY 65 Notify 65 records contain facility notifications about any release that could impact drinking water and thereby expose the public to a potential health risk. The data come from the State Water Resource Control Board's Proposition 65 database. One Notify 65 reference was listed within the ASTM search distance; Unocal Service Station (4210 Main Street, EDR ID A16, ⅛ – ¼ mile WSW), with Incident Description (90731), all other information Not Reported.

TOXIC PITS This database is a list of Toxic Pits cleanup sites and identifies sites suspected of containing hazardous wastes where cleanup has not yet been completed. The data are from the State Water Resource Control Board. No Toxic Pits sites were listed within the ASTM search distance.

5.1.3 Supplemental Federal, Tribal, State, and Local Lists

FINDS Facility Index System/Facility Identification Initiative Program Summary Report (FINDS) contains both facility information and pointers to other sources that contain more detail. No FINDS site was listed within ASTM search distance of site or adjoining properties.

HAZNET — The HAZNET database is extracted from the copies of hazardous waste manifests received each year by DTSC. No HAZNET site was listed within the ASTM search distance of subject site and adjoining properties.

CA SLIC — The California Spills, Leaks, Investigations, and Cleanups (CA SLIC) list, is maintained by Regional Water Quality Control Board, and includes contaminated sites that impact groundwater or have the potential to impact groundwater. Three CA SLIC sites were reported within the ASTM search distance of ½ mile. Of these, two SLIC sites listed have been closed, and one site (Master Plating, 1255 Callens Rd., EDR ID E26, ¼ - ½ mile WSW) is listed with Facility Status (Open – Site Assessment). In TRAK's opinion, the referenced features are unlikely to pose risk to the subject site, due to agency case status, localized or *de minimus* nature, distance from and/or hydrogeologic position relative to the subject site.

WDS — The Waste Discharge System (WDS) list is a State Water Resources Control Board listing of sites that have been issued waste discharge requirements. The subject site is not listed as a WDS site.

AST — The SWRCB AST list is a list of aboveground petroleum storage tank facilities. The subject site is not listed as an AST site.

CLEANERS — This database contains information on the location of dry-cleaning facilities that have EPA ID numbers. The source for this list is the Department of Toxic Substance Control. No DRY CLEANERS site was within the ASTM reporting search distance of site and adjoining sites.

OGW — This database contains information on the location and production information for regulated oil and gas wells (OGW) located in the State of California. This database did not contain information regarding the subject site. Information regarding oil and gas fields was also obtained from the 1994 Munger Map Book. No oil or gas fields in the immediate site vicinity were noted.

5.1.4 "Orphan" List

TRAK reviewed the list of sites known as "orphan sites" that could not be plotted by EDR. In TRAK's opinion, these sites are unlikely to impact the subject site, due to distance from the subject site, or hydrogeologic position relative to the subject site.

5.2 OTHER RECORDS REVIEWED

The following additional sources of environmental records were reviewed during this Phase I ESA for the purposes of meeting the ASTM standard, with applicable copies in Appendix A.

5.2.1 National Pipeline Mapping System

The U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA), National Pipeline Mapping System (NPMS) database public map viewer was accessed for location information on hazardous liquid and natural gas pipelines. Review of NPMS map for subject site area indicates one Natural Gas pipeline system in the area, with information tabulated:

NPMS Database Information:

OPERATOR ID:	18484
OPERATOR NAME:	SOUTHERN CALIFORNIA GAS CO
SYSTEM NAME:	DISTRIBUTION
COMMODITY CATEGORY:	Natural Gas
COMMODITY DESCRIPTION:	Natural Gas
INTERSTATE DESIGNATION:	N
PIPELINE STATUS CODE:	In Service
PERSON TO CONTACT:	Jeff Koskie (Pipeline Safety Advisor)
CONTACT ADDRESS:	555 East 5th Street, GT11A5, Los Angeles, CA 90013
PHONE/FAX/EMAIL:	Phone: (213) 244-5036 Email:NPMS_Inquiries@semprautilities.com

The Southern California Gas Company pipeline runs approximately east-west along Telephone Road, on the south side of the subject site.

5.2.2 State Water Resources Control Board

The State Water Resources Control Board GeoTracker website was accessed regarding records concerning groundwater for the subject site and adjoining properties. The LUST database was searched for possible leaking UST contamination for the subject site address and adjoining site addresses. TRAK also searched the GeoTracker website regarding the Other Cleanup Sites database for the site address and adjoining properties. No records were found for the subject site, or adjoining properties.

5.2.3 Ventura County Environmental Health Division

TRAK searched Ventura County Environmental Health Division (VCEHD) databases for the subject property. Databases that were reviewed included:

- Leaking Underground Fuel Tanks (LUFT) and Voluntary Cleanup Program (VCP) - 1984 - May 2008
- Leaking Underground Fuel Tanks (LUFT) and Voluntary Cleanup Program (VCP) - June 2008 - Present
- Solid Waste - 1980 - May 2002
- Individual Sewage Disposal Systems -1978 - December 2009
- Hazardous Materials Program & Underground Tanks (CUPA) Active 1984 - June 2009
- Hazardous Material Program (CUPA) Inactive 1984 - May 2008
- Underground Tank Inactive - 1984 - May 2008
- Hazardous Material Release Reports (Prop 65)-1987-2009

No database references for the subject property location were listed. The VCEHD database search did not indicate any current compliance issues or violations, nor evidence of any recognized environmental conditions in connection to the site or nearby properties**.**

5.2.4 Ventura County Air Pollution Control District

TRAK searched the Ventura County Air Pollution Control District (VCAPCD) database for the subject site location. The VCAPCD database contains public information about VCAPCD regulated facilities (facilities that are required to have a permit to operate equipment that releases pollutants into the air). The database is called the Facility Info System (FIS).

The search indicated no site references for the FIS database searched. The database search did not indicate any current compliance issues or violations, nor evidence of any recognized environmental conditions in connection to the site.

5.2.5 Ventura County Assessor

Subject parcel was researched in Ventura County Assessor records. Current APN data, for corresponding Parcel, including acreage, address, and property use, is tabulated as follow:

APN: 079-0-240-035
Address: Copland Drive, Ventura
Acreage: total 25.65 acres
Property Use: Lemons
Current zoning (per County View): AE-40 ac. (agriculture – urban reserve)

5.2.6 Ventura County Land Records Management System

TRAK accessed the County of Ventura land records management system, an online database (Ventura County Citizen Access). The database includes records (permits and notices) for Building & Safety, Planning, Code Compliance, Pubic Works, and Fire, and also General Information. Database information is summarized in Table 5-2.

TABLE 5-2
VENTURA COUNTY LAND RECORDS MANAGEMENT SYSTEM

APN 079-0-240-035 (Owner: Groves LLC)				
Record	**Division**	**Type**	**Location**	**Description**
E00-000402	Building	Electrical Agricultural	4499 Copland Dr.	100 AMP SERVICE FOR 60 HP AG PUMP.
ZC91910	Planning	Zoning Clearance		ZC 91910 AG PUMP
GW-8384	Public Works			State Well Number: 02N22W07P01S Main Use: Agricultural GW Basin: Mound Description: Well is northeast of the intersection of Telephone and Copland, across Telephone from the 101 freeway offramp. 50 feet west of Colony Apartments property line, and 75 feet north of Telephone. Bore Depth (ft): 580 Bore Diameter (in): 18 Case Depth (ft): 580 Case Diameter (in): 10 Record Status: Active on 08/03/2005 by TBD
GWP-4763	Public Works	Well Permit	Copland Circle Telephone Rd	Water Supply Well – New Fee Paid: 03/23/2012
GWP-4951	Public Works	Well Permit	Copland Circle	Water Supply Well – Modify or Repair Fee Paid: 03/23/2012
GWP-6138	Public Works	Well Permit	Copland Dr.	Water Supply Well – Repair/Modify Fee Paid: 03/23/2012

The database search did not indicate any current compliance issues or violations, nor evidence of any recognized environmental conditions in connection to the site.

5.2.7 Ventura County Water and Environmental Resources Division

TRAK contacted the Ventura County Resources Management Agency, Water and Environmental Resources Division, Groundwater Section regarding water well permit information for the subject property.

The Groundwater Section confirmed one active agricultural well on the property, with State Well Number 02N22W07P01S. The map provided by Groundwater Section shows the location of well 02N22W07P01S, in the extreme southeast corner of subject property (copy in Appendix A). The plotted position is on south edge of cultivated field, west of the Colony Apartments property line (approximately 50-60 feet) and north of Telephone Road sidewalk (approximately 80-90 feet); the well location is east of the curve in Copland Drive.

Groundwater Section also provided the most recent (10/22/2013) water quality monitoring data for this well, which included; Total Hardness (1620), Calcium (408), Magnesium (146), Potassium (13), Sodium (313), Total Cations (46.3), Boron (1.2), Iron (290), Manganese (360), SAR (3.4), Total Alkalinity (500), Bicarbonate (610), Sulfate (1300), Chloride (110), Nitrate (29.2), Total Anions (40.6), pH (7.1), EC (3450), TDS by Summation (2930). A copy of the Groundwater Section water quality table is included in Appendix A.

Information regarding this well (02N22W07P01S) is also included in the County of Ventura land records management system (Ventura County Citizen Access). According to this database, the well (agricultural use) is located northeast of the intersection of Telephone and Copland, across Telephone from the 101 freeway offramp, 50 feet west of Colony Apartments property line, and 75 feet north of Telephone Road. Well completion information includes total depth (580 feet), cased depth (580 feet), and casing diameter (10 inch).

5.3 EVALUATION FOR POTENTIAL OF VAPOR ENCROACHMENT

To augment the Phase I ESA, a preliminary screening evaluation for potential for vapor encroachment was conducted, based on guidelines of ASTM Standard Guide E 2600-10, "Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions". As stated in E 2600-10, “This guide may be used in conjunction with Practice E1527 but does not alter or in any way define the scope of that practice. In addition, performance of this guide is not a requirement of and does not constitute, expand, or in any way define ‘all appropriate inquiry’ as defined and approved by the U.S. Environmental Protection Agency (EPA) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the regulations there under, including 40 CFR Sec. 312.11.”

5.3.1 Vapor Encroachment Overview

ASTM Standard Guide E 2600-10 provides guidelines for conducting a *vapor encroachment screen (VES)* on a property with respect to *chemicals of concern (COC)* that may migrate as vapors onto a property as a result of contaminated soil and groundwater on or near the property. The goal of conducting a *VES* is to identify a *vapor encroachment condition (VEC)*, which is the presence or likely presence of COC vapors in the sub-surface of the *target property (TP)* caused by the release of vapors from contaminated soil or groundwater either on or near the *TP* as identified by Tier 1 or Tier 2 procedures.

A Tier 1 screen typically evaluates *Phase I ESA*-type information for properties within an *area of concern (AOC)*, identified as the distance from *TP* to a *contaminated property* with known or suspect *COC* contamination of soil or groundwater or both; for petroleum hydrocarbon *COCs*, the *AOC* search distance is 1/10 mile (for other *COCs*, 1/3 mile). The possible conclusion from a Tier 1 screening is *(1)* a *VEC* exists, *(2)* a *VEC* likely exists; *(3)* a *VEC* cannot be ruled out; or *(4)* a *VEC* can be ruled out because a *VEC* does not or is not likely to exist.

A Tier 2 evaluation is indicated if a *VEC* cannot be ruled out by the Tier 1 screen, and uses numeric screening criteria to existing or newly collected soil, soil gas, and/or groundwater testing results to evaluate whether or not a *VEC* can be ruled out. The Tier 2 screen has two data collection components: non-invasive and invasive. Non-invasive evaluation is a review of accessible information (regulatory agency files or other available documents) for a *contaminated property*, to determine the status of remediation, the size of the *contaminated plume* and its behavior, the specific *COC* and respective concentrations, and whether the *TP* is within the *critical distance* of the *contaminated plume.* The *critical distance* represents an estimate of the lineal distance *COC* vapors volatilized from contaminated groundwater or contaminated soil

might migrate in the vadose zone to the *TP.* The *critical distance* is the lineal distance in any direction between the nearest edge of the *contaminated plume* and the nearest *TP* boundary, and is equal to 30 feet for dissolved petroleum hydrocarbon *COC* (100 feet for other *COC*).

If the plume test identifies that the *TP* boundary is within the *critical distance* from the nearest edge of the *contaminated plume*, then the *environmental professional* should, through investigation and analysis of data and information compiled as part of the screening evaluation, determine if a *VEC* exists at the *TP*. If the plume test identifies the distance between the nearest edge of the *contaminated plume* and the nearest *TP* boundary as equal to or greater than the *critical distance*, then the *environmental professional* may conclude that migrating vapor from the edge of the groundwater *contaminated plume* is not likely to reach the subsurface of the *TP.* The possible conclusion from a Tier 2 screening is: *(1)* a *VEC* exists, *(2)* a *VEC* likely exists, *(3)* a *VEC* cannot be ruled out, or *(4)* a *VEC* can be ruled out because a does not or is not likely to exist at the *TP*.

5.3.2 Vapor Encroachment Evaluation

The Tier 1 evaluation indicates that a vapor encroachment condition (VEC) can be ruled out because a *VEC* does not or is not likely to exist.

6 SITE HISTORY

The history of the site was researched to identify obvious uses of the site parcel dating back to the first developed use or 40 years ago, whichever is earlier.

6.1 HISTORICAL AERIAL PHOTOGRAPHS

A review of historical aerial photography may indicate past activities at a site that may not be documented by other means, or observed during a site visit. Effectiveness of the technique depends on scale and quality of the photographs and available coverage. Aerial photographs were obtained through EDR from several historical photograph collections. A tabulation of the aerial photographs reviewed is shown in Table 6-1. Copies are included in Appendix B.

TABLE 6-1
LISTING OF HISTORICAL AERIAL PHOTOGRAPHS REVIEWED

Date	Scale	Source
1938	1” = 500’	Laval
1947	1” = 500’	USGS
1959	1” = 500’	Robinson
1967	1” = 500’	USGS
1977	1” = 500’	Teledyne
1985	1” = 500’	USGS
1994	1” = 500’	USGS/DOQQ
2005	1” = 500’	USGS/NAIP
2009	1” = 500’	USGS/NAIP
2010	1” = 500’	USGS/NAIP
2012	1” = 500’	USGS/NAIP

Note: Aerial photographs only provide information on indications of land use and no conclusions regarding the release of hazardous substances or petroleum products can be drawn from the review of photographs alone.

Project Site

Land uses are described for each of the historical periods documented by the aerial photographs, as summarized:

<u>1938</u> Subject property is portion of larger rectangular parcel that is bounded on south by Telephone Road, and on north by Arundell Barranca. The parcel is in cultivated, agricultural land use, with appearance of forage or grain crops. A small ranchstead is located in the central portion of this parcel, near the western margin; several structures are located on the ranchstead, including a barn, a possible residence (with shade trees), and a small shed.

1947 Subject property is portion of larger rectangular parcel that is bounded on south by Telephone Road, and on north by Arundell Barranca. The parcel is in cultivated, agricultural land use, with appearance of forage or grain crops, and similar to that shown in 1938 aerial photograph. A small ranchstead is located in the central portion of this parcel, near the western margin; several structures are located on the ranchstead, including a barn, a possible residence (with shade trees), and a small shed.

1959 Subject property is portion of larger rectangular parcel that is bounded on south by Telephone Road, and on north by Arundell Barranca. The parcel is in agricultural land use, planted to citrus orchard. The former small ranchstead that was located in west-central portion of parcel, as observed in previous photographs, is no longer present. A small ranchstead is located in the southwest corner of parcel, accessed by drive that runs north from Telephone Road along the western property margin. The ranchstead includes two or three structures adjacent to Telephone Road frontage, and two structures slightly north, at end of drive; the two structures include the residence and garage/shed that are presently located in this area.

1967 Subject property is comprised of present parcel in the current configuration, with northern margin bounded by Highway 126, and southwest corner truncated by, and bounded by, the U.S. Highway 101 freeway. The subject parcel is in agricultural land use, planted to citrus orchard. The southern portion of the small ranchstead in southwest corner of parcel (formerly included two or three structures adjacent to Telephone Road frontage) is no longer present; this corner area is covered by the embankment and north-bound lanes of U.S. Highway 101. The northern portion of the small ranchstead in southwest corner of parcel remains, and includes residence and garage/shed structures in present configuration; this area is accessed by a drive that runs diagonally, parallel to the freeway embankment, thence easterly along the north side of Telephone Road to a junction across from the entrance to the 101 Drive-In theater.

1977 Subject property is comprised of present parcel in the current configuration, with northern margin bounded by Highway 126, southwest corner truncated by, and bounded by, the U.S. Highway 101 freeway, and southern edge along Telephone Road. The subject parcel is in agricultural land use, planted to citrus orchard, with small ranchstead in southwest corner of parcel, which includes the present residence and garage/shed structures in current configuration, and a shed structure west of the residence. This area is accessed by a driveway that runs north from Copland Drive; Copland Drive runs diagonally, parallel to the U.S. Highway 101 freeway embankment, connecting from Telephone Road on site's southern margin, and providing access to the west-adjoining La Posada Mobile Home Park.

1985 Surrounding area land use is similar to that shown in 1977 aerial photograph, with additional development to the north, across Highway 126, and to the south, across U.S. Highway 101. To the north, on north side of Highway 126 freeway, is The Patrician Mobile Home Park (4700 Aurora Drive) that extends to south edge of Arundell Barranca. To the south-southwest, across U.S. Highway 101, the strip of land on north side of East Main Street is developed with retail center, and south of East Main Street is significantly built-out with commercial development.

1994 Surrounding area land use is similar to that shown in 1985 aerial photograph, with additional development to the east, and to the south, across U.S. Highway 101. To the east, the southern portion of east-adjoining parcel is developed with the Colony Parc Apartments; the north portion of parcel remains in orchard. To the south-southwest, across U.S. Highway 101, on south side of East Main Street is additional build-out of commercial development.

2005 Surrounding area land use is similar to that shown in 1994 aerial photograph, with additional development to the east, and to the southeast, across Telephone Road. To the east, the northern portion of east-adjoining parcel is developed with the New Traditions 8 residential project. To the southeast, across Telephone Road, the former 101 Drive-in theater is redeveloped with a large retail center (including Barnes & Noble).

2009 Surrounding land use relatively similar to that of 2005 aerial photograph.

2010 Surrounding land use relatively similar to that of 2009 aerial photograph.

2012 Surrounding land use relatively similar to that of 2010 aerial photograph.

No recognizable environmental concerns were noted on or adjoining the site parcel based on the historical aerial photograph review.

6.2 HISTORICAL TOPOGRAPHIC MAPS

Historical topographical maps covering the site were obtained for the years 1903, 1941, 1951, and 1967. USGS historical topographic maps were purchased through EDR. The topographic maps reviewed for this assessment are described on the following page. Copies of selected topographic maps are included in the Appendix.

TABLE 6-2
LISTING OF HISTORICAL TOPOGRAPHIC MAPS REVIEWED

Year	Quadrangle	Series	Scale
1903	Santa Paula, CA	15 minute	1:62,500
1941	Santa Paula, CA	15 minute	1:62,500
1951	Saticoy, CA	7.5 minute	1:24,000
1967 Photorevised	Saticoy, CA	7.5 minute	1:24,000

Project Site and Surrounding Area

The 1903 topographic map shows the subject property and surrounding area as open land, with a few roads and scattered structures, indicative of agricultural land use. Property is bounded on south by Telephone Road, which extends easterly from a junction with Ventura Boulevard (U.S. Highway 101) located southwest of site. An unimproved road is shown along the west margin of property, extending from Telephone Road to Arundell Barranca in the north. One small structure is shown on the east side of the road, approximately one-half the distance to Arundell Barranca (on subject property).

The 1941 topographic map shows the subject property as open land, and surrounding areas with overlay that depicts agricultural land use (generally orchard), with scattered structures along major roadways and unimproved roads that extend into agricultural parcels. Property is bounded on south by Telephone Road (identified as State Highway 118), which extends easterly from a junction with East Main Street/Ventura Boulevard (U.S. Highway 101) located southwest of site. An unimproved road is shown along the west margin of property, extending from Telephone Road to Arundell Barranca in the north. One small structure is shown on east side of the road, approximately one-half the distance to Arundell Barranca (on subject property).

The 1951 topographic map shows the subject property as open land, and surrounding areas with overlay that depicts agricultural land use (generally orchard), with scattered structures along major roadways and unimproved roads that extend into agricultural parcels. Property is bounded on south by Telephone Road (identified as State Highway 118), which extends easterly from a junction with divided roadway of East Main Street/Ventura Boulevard (U.S. Highway 101) located southwest of site. An unimproved road is shown along the west margin of property, extending from Telephone Road to Arundell Barranca in the north. One small structure is shown in southwest corner of subject property, adjacent to Telephone Road. Across Telephone Road, to the southeast, is parcel identified as Drive-In Theater.

The 1967 topographic map shows the subject property as open land, and surrounding areas to the east, south, west and northwest with overlay that depicts agricultural land use (generally orchard). North-adjoining is State Highway 126, which connects with the U.S. Highway 101

interchange west of site. North of Highway 126 is the colored overlay that depicts urban development, with street layout typical for residential subdivisions. To the south, across U.S. Highway 101, East Main Street is shown to connect with Telephone Road at the freeway overpass; scattered development is shown on the south side of East Main Street, and west of Callens Road. On subject property, one small structure is shown in southwest corner of parcel, adjacent to Telephone Road, and accessed by roadway that connects to Telephone Road further east across from the 101 Drive-In theater.

The site is at an approximate elevation of 140 to 170 feet above sea level with a topographic gradient to the southwest.

No recognizable environmental concerns were noted on or adjoining the subject site based on the historical topographical map review.

6.3 HISTORICAL SANBORN MAPS

A Certified Sanborn® Map Report was ordered from EDR, which verified area as unmapped.

6.4 HISTORICAL CITY DIRECTORY

The site address was researched in the Cole, Haines & Company, Pacific Bell, GTE, Pacific Telephone, Polk, General Telephone directories. The search address was not listed in the directories searched.

6.5 CHAIN OF TITLE

The client did not provide a 50-Year Chain of Title to TRAK to review as part of Phase I ESA.

7 SITE RECONNAISSANCE AND INTERVIEWS

TRAK's assessment activities included a site reconnaissance and a brief drive-by survey of the area adjacent to the site. This chapter summarizes the findings from the site reconnaissance.

7.1 SITE RECONNAISSANCE

Mr. Robert Cashier of TRAK performed a site reconnaissance on October 15, 2014. The site reconnaissance included a visual review of the site parcel to identify the presence or likely presence of hazardous substances or petroleum hydrocarbons under conditions that indicate an existing release, a past release, or threat of release into structures, soil, groundwater, or surface water at the site (recognized environmental conditions). Table 7-1 summarizes site reconnaissance observations:

TABLE 7-1
GENERAL SITE OBSERVATIONS

GENERAL OBSERVATIONS		**Observed**	**Not Observed**
	Remarks		
Current Use	Agricultural, cultivated for flowers; residential.	X	
Past Use	Agricultural, citrus orchard, residential.		X
Structures (Permanent)	One-story, wood frame residence; one-story, wood frame garage/shed.	X	
Terrain	Relatively flat.	X	
Hazardous substances and petroleum products use, storage, or disposal	Small quantities of typical agricultural chemicals (pesticides, herbicides, fertilizers), compressed gases (welding), fuel cans, automotive fluids, lubricants, cleaners, solvents, paints.	X	
Storage Tanks (USTs)	None observed.		X
Storage Tanks (ASTs)	Poly and steel water tanks, liquid fertilizer tanks, trailer-mounted tanks, sprayer tanks, steel diesel AST.	X	
Odors	None observed.		X
Pools of Liquid	None observed.		X
Drums	Poly drums, empty steel drums for storage.	X	
Containers; contents, and origin is unknown	None observed.		X
Electrical equipment	Typical for agriculture use/residential occupancy.	X	
Chemical storage areas, chemical mixing areas	Garage/shed, storage sheds, yard on north side of ranchstead, hoop houses in southern portion of site.	X	

TABLE 7-1 (Continued)

INTERIOR OBSERVATIONS		Observed	Not Observed
	Remarks		
Heating/cooling system	Typical for residential occupancy.	X	
Stains or corrosion	None observed.		X
Drains & piping	None observed.		X
Water supplies (potable and process)	Typical for residential occupancy.	X	
Raw material areas	None observed.		X
Sumps & clarifiers	None observed.		X
Below-grade vaults	None observed.		X
Industrial waste treatment equipment	None observed.		X
EXTERIOR OBSERVATIONS		**Observed**	**Not Observed**
	Remarks		
Pits, Ponds, or Lagoons	None observed.		X
Discolored soil or water	None observed.		X
Stressed vegetation	None observed.		X
Stained pavement or concrete	None observed.		X
Wastewater	None observed.		X
Wells	Water well, southeast property corner (02N22W07P01S).	X	
Wastewater sewers	None observed.		X
Solid waste	None observed.		X
Surface water	None observed.		X
Septic tanks	Associated with onsite septic system	X	
Leach Fields	Associated with onsite septic system	X	
Sanitary systems	None observed.		X
Catch basins	None observed.		X
Storm drains	None observed.		X
Sumps & clarifiers	None observed.		X
Drains	None observed.		X
Hazardous waste storage	None observed.		X
Below grade vaults	None observed.		X

7.2 RESULTS OF SITE RECONNAISSANCE

The subject property is a generally-rectangular parcel of approximately 25.65 acres, primarily in agricultural land use, with a residential/ranchstead plot in the southwest corner of property. The parcel is unincorporated land within the east-central portion of the City of Ventura. The subject property is bounded by State Highway 126 (north), Copland Drive (south and southwest), the La Posada Mobile Home Park (west), and residential developments on the east, including the New Traditions 8 (single-family homes) and Colony Parc apartments. Copland Drive is a short road that runs along the south-southwest side of property adjacent to the embankment of U.S. Highway 101, providing access from Telephone Road on the south, to a drive that leads north into the property.

The residential/ranchstead plot in parcel's southwestern corner includes a one-story, frame-constructed residence with covered porch on east side, a one-story, frame-constructed garage/shed with three bays and covered parking area on west side, and several storage sheds, including a wood-sided shed west of garage/shed, and metal- and wood-sided sheds west of the residence. The residence is sided on east and west by lawn-covered yards, and on south by a paved drive/parking area, which separates the residence from the garage/shed. Parked in this drive on south side of residence is a house trailer. On east side of the east yard is a drive that extends north beyond the residential/ranchstead plot, providing access to the rest of the property. The residential/ranchstead plot is bordered by overgrown landscape trees and shrubs, on the east and north.

The interior of the garage/shed is used for storage and parking of equipment and vehicles, including vintage auto, motorcycles and quads, air compressor, tools, auto parts, automotive fluids, lubricants, cleaners, solvents and paint, and fuel cans. On exterior of garage/shed are parking and storage areas, including boat, trailer and ATV (east side); trailers (vehicle, flat-bed, landscape) and vehicles (south side); and vehicles (VW and golf cart) and equipment (covered west side area). The wood-sided shed located west of garage/shed is used for storage and shop, with workbench, equipment, storage cabinets and shelving, with typical maintenance-type chemicals, including lubricants, cleaners, automotive fluids, small containers of fuel. The metal-sided shed includes storage for miscellaneous materials, such as roof-patch compound, empty containers, and construction materials. North of the metal-sided shed is a small utility trailer with welding equipment, including compressed-gas cylinders. The sheds are located along the western boundary of parcel, an overgrown area with storage of miscellaneous materials, such as compressor tanks and tarp-covered stacks.

On north side of residential/ranchstead plot is an open, dirt-surfaced yard, used for storage and parking of agricultural equipment, implements, vehicles, and miscellaneous materials. Equipment and vehicles include tractors, utility and tank trailers, box trucks, a trailer-mounted engine with power take-off, camper shell, sprayers, cultivation implements, irrigation pipe, pallets, water and fertilizer ASTs, and fuel (diesel) AST on steel stand with dispensing hose. Two hoop houses are located in this area, and used for storage of miscellaneous materials, such as nursery stock, containers, poly drums, and empty 5-gallon buckets, tank trailer and backpack spray rigs.

The remainder of parcel is in row-cultivation for production of flowers. The parcel is bisected by three, east-west oriented roads that divide the agricultural acreage into approximate quarters. The acreage is cultivated and furrowed in general north-south direction, with portions of the fields in flower production and portions fallowed. Hoop houses are utilized for coverage of some cultivated rows in the central portion of parcel. Along the southern property margin, near the southeast corner, is a water well (02N22W07P01S) for agricultural water supply. The well is connected by above-ground discharge piping to a riser that connects to underground piping, located slightly west of well, near the utility drop.

No recognizable environmental concerns were noted on or adjoining the subject site based on the observations of the site reconnaissance.

7.3 INTERVIEWS

General observations regarding the site's features and known historical information were discussed with Mr. Kioren Moss, MAI (project manager), David Esquivel (residential tenant) and Francisco Rodriguez (agricultural tenant). Those interviewed had no knowledge of any current compliance issues or violations, nor of any recognized environmental conditions in connection to the site or adjacent properties.

8 FINDINGS AND CONCLUSIONS

8.1 FINDINGS

The purpose of this assessment was to evaluate recognizable environmental conditions associated with the present or past usage, storage, or disposal of hazardous substances or petroleum hydrocarbons at the subject property. Findings and opinions of this Phase I ESA are presented below, and are based on TRAK's observations of site conditions and information gathered during our review. These findings and opinions are subject to the limitations presented at the end of this report and may change if additional information becomes available.

8.1.1 Site Observations

The subject property is a generally-rectangular parcel of approximately 25.65 acres, primarily in agricultural land use, with a residential/ranchstead plot in the southwest corner of property. The parcel is unincorporated land within the east-central portion of the City of Ventura. The subject property is bounded by State Highway 126 (north), Copland Drive (south and southwest), the La Posada Mobile Home Park (west), and residential developments on the east, including the New Traditions 8 (single-family homes) and Colony Parc apartments. Copland Drive is a short road that runs along the south-southwest side of property adjacent to the embankment of U.S. Highway 101, providing access from Telephone Road on the south, to a drive that leads north into the property.

The residential/ranchstead plot in parcel's southwestern corner includes a one-story, frame-constructed residence with covered porch on east side, a one-story, frame-constructed garage/shed with three bays and covered parking area on west side, and several storage sheds, including a wood-sided shed west of garage/shed, and metal- and wood-sided sheds west of the residence. The residence is sided on east and west by lawn-covered yards, and on south by a paved drive/parking area, which separates the residence from the garage/shed. Parked in this drive on south side of residence is a house trailer. On east side of the east yard is a drive that extends north beyond the residential/ranchstead plot, providing access to the rest of the property. The residential/ranchstead plot is bordered by overgrown landscape trees and shrubs, on the east and north.

The interior of the garage/shed is used for storage and parking of equipment and vehicles, including vintage auto, motorcycles and quads, air compressor, tools, auto parts, automotive fluids, lubricants, cleaners, solvents and paint, and fuel cans. On exterior of garage/shed are parking and storage areas, including boat, trailer and ATV (east side); trailers (vehicle, flat-bed, landscape) and vehicles (south side); and vehicles (VW and golf cart) and equipment (covered west side area). The wood-sided shed located west of garage/shed is used for storage and shop, with workbench, equipment, storage cabinets and shelving, with typical maintenance-type chemicals, including lubricants, cleaners, automotive fluids, small containers of fuel. The metal-sided shed includes storage for miscellaneous materials, such as roof-patch compound, empty containers, and construction materials. North of the metal-sided shed is a small utility trailer with welding equipment, including compressed-gas cylinders. The sheds are located along the western boundary of parcel, an overgrown area with storage of miscellaneous materials, such as compressor tanks and tarp-covered stacks.

On north side of residential/ranchstead plot is an open, dirt-surfaced yard, used for storage and parking of agricultural equipment, implements, vehicles, and miscellaneous materials. Equipment and vehicles include tractors, utility and tank trailers, box trucks, a trailer-mounted engine with power take-off, camper shell, sprayers, cultivation implements, irrigation pipe, pallets, water and fertilizer ASTs, and fuel (diesel) AST on steel stand with dispensing hose. Two hoop houses are located in this area, and used for storage of miscellaneous materials, such as nursery stock, containers, poly drums, and empty 5-gallon buckets, tank trailer and backpack spray rigs.

The remainder of parcel is in row-cultivation for production of flowers. The parcel is bisected by three, east-west oriented roads that divide the agricultural acreage into approximate quarters. The acreage is cultivated and furrowed in general north-south direction, with portions of the fields in flower production and portions fallowed. Hoop houses are utilized for coverage of some cultivated rows in the central portion of parcel. Along the southern property margin, near the southeast corner, is a water well (02N22W07P01S) for agricultural water supply. The well is connected by above-ground discharge piping to a riser that connects to underground piping, located slightly west of well, near the utility drop.

No recognizable environmental concerns were noted on or adjoining the subject site based on the observations of the site reconnaissance and database review.

8.1.2 Findings of Conditions

A *Recognized Environmental Condition* (REC) is defined by ASTM Standard Practice E1527-13 as the presence or likely presence of any *hazardous substances* or *petroleum products* in, on, or at a *property*: (*1*) due to any *release* to the *environment*; (*2*) under conditions indicative of a *release* to the *environment*; or (*3*) under conditions that pose a *material threat* of a future *release* to the *environment*. *De minimis* conditions are not *recognized environmental conditions*.

- This assessment has revealed no evidence of *recognized environmental conditions* in connection with the subject *property*.

A *Controlled Recognized Environmental Condition* (CREC) is defined by ASTM Standard Practice E1527-13 as a *recognized environmental condition* resulting from a past *release* of *hazardous substances* or *petroleum products* that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with *hazardous substances* or petroleum products allowed to remain in place subject to the implementation of required controls (for example, *property* use restrictions, *activity and use limitations, institutional controls,* or *engineering controls*). A condition considered by the *environmental professional* to be a *controlled recognized environmental condition* shall be listed in the Findings section of the *Phase I Environmental Site Assessment report*, and as a *recognized environmental condition* in the Conclusions section of the *Phase I Environmental Site Assessment report*.

- This assessment has revealed no evidence of *controlled recognized environmental conditions* in connection with the subject *property*.

A *Historical Recognized Environmental Condition* (HREC) is defined by ASTM Standard Practice E1527-13 as a past *release* of any *hazardous substances* or *petroleum products* that has occurred in connection with the *property* and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the *property* to any required controls (for example, *property* use restrictions, *activity and use limitations*, *institutional controls*, or *engineering controls*). If the *environmental professional* considers the past *release* to be a *recognized environmental condition* at the time the Phase I ESA is conducted, the condition shall be included in the Conclusions section of the report as a *recognized environmental condition*.

- This assessment has revealed no evidence of *historical recognized environmental condition*s in connection with the subject *property*.

A *De Minimis Condition* is defined by ASTM Standard Practice E1527-13 as a condition that generally does 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. Conditions determined to be *de minimis conditions* are not *recognized environmental conditions* nor *controlled recognized environmental conditions*.

- This assessment has revealed no evidence of *de minimis conditions* in connection with the subject *property*.

Non-Scope Considerations may be environmental issues or conditions at a property that parties may wish to assess in connection with commercial real estate that are outside the scope of ASTM Standard Practice E1527-13 (non-scope considerations). TRAK's assessment has revealed the following non-scope consideration associated with the subject property:

- The structures onsite were constructed prior to 1981. Based on the age of construction, building materials in onsite structures may contain asbestos containing materials (ACM), and certain building materials are presumed to contain ACM (PACM), unless testing has shown otherwise. As of October 1, 1995, OSHA made building owners responsible for complying with the asbestos construction standard, for buildings built in 1981 or earlier. The building owner is responsible for identifying the presence, location and quantity of asbestos containing building materials. The building owner must tell employees, other employers, and tenants in the building of the presence and location of asbestos or presumed asbestos containing materials (PACM). If the building owner intends to demolish or remodel the structure(s), it is suggested that the building owner contact a California Certified Asbestos Consultant for assistance in compliance.

- The subject parcel has been in agricultural land use for many decades, including citrus orchard (circa 1960s to 2003) and flower cultivation (to present). If future plans for the parcel contemplate possible change in land use, such as to residential uses, it may be warranted to investigate the site's shallow soils for the potential of agricultural chemicals possibly associated with historical farming activities, including organochlorine pesticides (OCP) and arsenic. Soil investigation might include reconnaissance sampling for general evaluation, or more thorough sampling in accordance with guidelines of the *Interim Guidance for Sampling Agricultural Properties (Third Revision)*, California Department of Toxic Substances Control (August 7, 2008).

8.2 CONCLUSIONS

TRAK has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Standard Practice E1527-13 of site identified The Grove, Copland Drive Property, SP-9, PCN 723, A-326, Z 915, S 5126, DA 37, City of Ventura Project Number 00723, in unincorporated Ventura County, California, APN 079-0-240-035, the subject *property*. Any exceptions to, or deletions from, this practice are described in Section 10 of this report.

- This assessment has revealed no evidence of *recognized environmental conditions* in connection with the subject *property*.

9 RECOMMENDATIONS

This Phase I ESA was performed in accordance with the All Appropriate Inquiries Final Rule and scope and limitations of ASTM Standard Practice E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. Any exceptions to, or deviations from, this practice are described in Section 10 of this report. The recommendations of this Phase I ESA are presented below and are based on TRAK's observations of site conditions and information gathered during our review.

- The onsite structures were constructed prior to 1981, and therefore require conformance with the OSHA asbestos construction standard. If the client intends to demolish or remodel the structure(s), TRAK recommends contacting a California Certified Asbestos Consultant for assistance in complying with this and other applicable asbestos regulations.

- The subject parcel has been in agricultural land use for many decades, including citrus orchard (circa 1960s to 2003) and flower cultivation (to present). If future plans for the parcel contemplate possible change in land use, such as to residential uses, it may be warranted to investigate the site's shallow soils for the potential of agricultural chemicals possibly associated with historical farming activities, including organochlorine pesticides (OCP) and arsenic. Soil investigation might include reconnaissance sampling for general evaluation, or more thorough sampling in accordance with guidelines of the *Interim Guidance for Sampling Agricultural Properties (Third Revision)*, California Department of Toxic Substances Control (August 7, 2008).

10 DEVIATIONS

During the preparation of this Phase I ESA, there were no deviations from, no deletions, and no additions to, the *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM E1527-13).

11 LIMITATIONS

This report was designed to meet the *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, as outlined by American Society for Testing and Materials (ASTM) Standard Practice E1527-13. The TRAK Environmental Group, Inc. (TRAK) duties, liabilities, and obligations, and Scope of Work are set forth in its proposal.

This Phase I ESA did not assess environmental issues or concerns that are outside the scope of ASTM Standard Practice E1527-13. Environmental issues or concerns outside the scope of ASTM Standard Practice E1527-13 include, but are not limited to, asbestos-containing materials (ACM), radon, mold, lead-based paint, lead in drinking water, wetlands, regulatory compliance, cultural and historic resources, industrial hygiene, health and safety, ecological resources, endangered species, indoor air quality, biological agents, and high voltage (EMF) power lines. These items, unless specifically included in the TRAK Scope of Work, are not included in this Phase I ESA.

The Phase I ESA included preliminary evaluation and consideration of impacts, of possible vapor intrusion conditions, generally based on guidelines of ASTM Standard Guide E 2600-10, "Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions". As stated in Standard Guide E 2600-10, “This guide may be used in conjunction with Practice E1527 but does not alter or in any way define the scope of that practice. In addition, performance of this guide is not a requirement of and does not constitute, expand, or in any way define ‘all appropriate inquiry’ as defined and approved by the U.S. Environmental Protection Agency (EPA) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the regulations there under, including 40 CFR Sec. 312.11.”

This Phase I ESA did not include subsurface exploration, soil or water sampling, chemical analysis, or evaluation of geotechnical conditions or hazards.

The professional opinions presented herein apply to site conditions and regulatory standards at the time of the investigation. The investigation was conducted with that level of care and skill ordinarily exercised by reputable members of the profession, practicing in the same locality, under similar budget and time constraints. The passage of time may result in a change in the environmental circumstances at the study site and surrounding properties. Regulatory standards applicable to the subject site are subject to change as a result of legislation or changes in implementation guidelines.

This document was prepared for the sole use of the client, their representatives and assignees. TRAK intends that this document be used only in its entirety. Others who draw conclusions based on information drawn from portions of this report should independently determine the adequacy of the information for their intended use and time.

The findings and recommendations included in this report reflect TRAK’s opinion based on the sources are believed, but not guaranteed, to be reliable. TRAK is not responsible for information withheld by agencies, client, or other sources.

12 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

12.1 ENVIRONMENTAL PROFESSIONALS STATEMENT

We declare that, to the best of our professional knowledge and belief, we meet the definition of *Environmental Professional* as defined in §312.10 of 40 CFR 312.

We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Bradford S. Newman, PG, CHG
President

Robert Cashier, CAC #93-1158, REA II
Director of Environmental Programs

12.2 EXPERIENCE AND QUALIFICATIONS

Bradford S. Newman, PG, CHG - President, TRAK Environmental Group, Inc.

Mr. Newman is noted for his breadth of knowledge in addressing the assessment and remediation of environmentally impaired resources. He is a professional geologist specializing in hydrogeological analysis, site evaluations, and the characterization of hazardous material deposition. He has over forty years of experience in natural resource evaluation, surface and subsurface assessments, contamination plume identification and mapping, and design of remediation systems. His expertise is in managing all phases and types of site cleanup from initial characterization through closure.

Professional Registrations and Certifications

California Certified Hydrogeologist 515
California Professional Geologist 3562
California General Engineering Contractor 709623
California Certification Hazardous Substance Removal and Remedial Actions
California Well Drilling Classification C-57
Registered Well Inspector, Ventura County

Academic Background

Credential in Groundwater Science--Ohio State University
Doctoral Program in Environmental Science and Engineering--UCLA
M.S. Geology--UCLA; Thesis entitled Geology and Water Chemistry, North Fork Drainage, Bishop Creek, CA
B.S. Geology--UCLA
M.B.A.--California State College, Bakersfield

Robert Cashier, CAC #93-1158, REA II - Director of Environmental Programs

Mr. Cashier has over twenty-five years of experience in pollution liability litigation, design and implementation of Phase I assessments, Phase II soil and groundwater investigations, and in providing project oversight and management services for corrective action and agency closure. He has used his extensive field experience and education in providing clients with peer review of scientific reports and remedial plans, and expert witness testimony on pollution liability cases. Mr. Cashier provides project oversight, technical data interpretation, and client development for TRAK's pollution liability investigations.

Professional Registrations and Certifications

C.P.S.Sc., Certified Professional Soil Scientist, No. 21685, American Federation of Agriculture and Environmental Sciences, Society of Agronomy
California Registered Environmental Assessor II, DTSC No. 20084
Cal-OSHA-Certified Asbestos Consultant, No. 93-1158
Certified Lead Abatement Supervisor, DHS No. 12589
OSHA 29 CFR 1910.120 and CCR Title 8, 5192 40-Hour Training

Academic Background

M.S. Environmental Management--West Coast University, 1996
B.S. Soil Science, Concentration: Hydrocarbon Biodegradation--California Polytechnic State University, San Luis Obispo, 1979

13 REFERENCES

California Department of Public Works, Division of Water Resources (CDPW), *California's Ground Water,* Bulletin 118, 1975.

Environmental Data Resources, Inc., 2014, The EDR Radius Map with GeoCheck®, 4515 Copland Drive, Ventura, CA 93001, October 13, 2014.

Stantec, 2011, *Quarterly Status Report – Second Quarter 2011, Former 76 Station No. 6991, 4210 East Main Street, Ventura*, California*, VCEHD File No. C95072*, July 30, 2011.

U.S. Dept. of Transportation Pipeline and Hazardous Materials Safety Administration

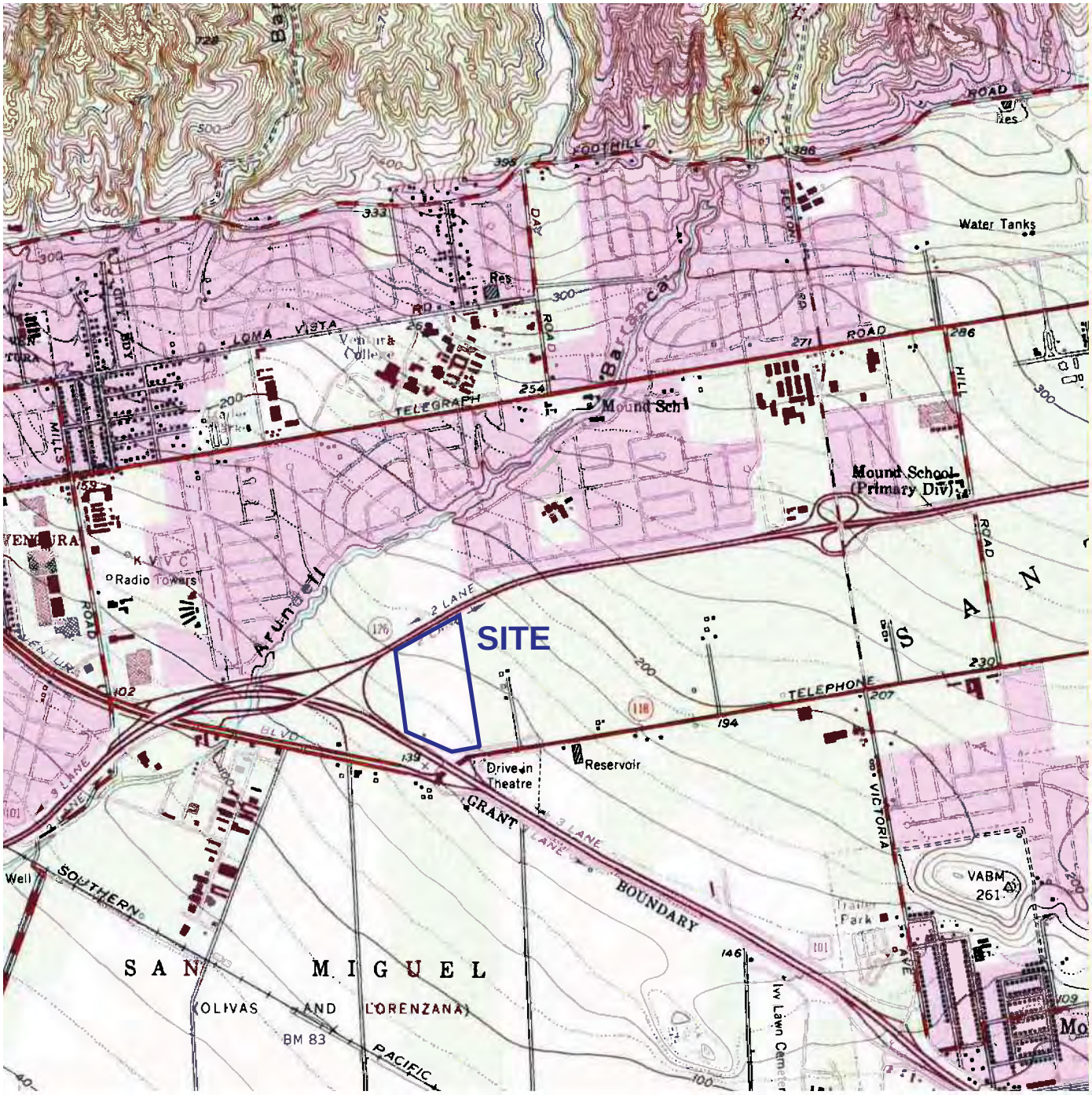
Ventura County Air Pollution Control District

Ventura County Assessor

Ventura County Environmental Health Division

PLATES

FIGURE 1
FIGURE 2
SITE PHOTOGRAPHS



SCALE 1:24000

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

TRAK Environmental Group 3637 B Arundell Circle Ventura, California 93003	FILE NAME:	DATE:	**SITE LOCATION MAP** **THE GROVE, COPLAND DRIVE PROPERTY** **VENTURA, CALIFORNIA**	**FIGURE** 1
	SOURCE: U.S.G.S. 7.5 MINUTE TOPOGRAPHIC QUADRANGLE MAP			

PARCEL OUTLINE

N

TRAK Environmental Group 3637 B Arundell Circle Ventura, California 93003	FILE NAME: SOURCE:	DATE:	**SITE MAP** **THE GROVE, COPLAND DRIVE PROPERTY** **VENTURA, CALIFORNIA**	**FIGURE** 2

1. View northwest from Copland Drive. Driveway at right is main entry to subject site; Copland Drive extends along southwestern property margin, past driveway, to entrance of La Posada Mobile Home Park (at speed bump).

2. View southeast from driveway entrance to site, at Copland Drive. Row cultivation at left is along southern margin of subject property. Copland Drive extends southeasterly to Telephone Road in far distance.

3. View north from Copland Drive, along driveway that leads to residential area of subject site. In photo center is residence; at left-center (behind foliage) is shed/garage.

PROPERTY PHOTOGRAPHS	
Copland Drive Ventura, California	
Date taken: October 15, 2014	TRAK

4. View southwest from drive, toward shed/garage. Boat trailer parked on east side of shed/garage, with trailers parked behind (on south side).

5. View west, from drive, showing parking area for trailers on south side of shed/garage.

6. Shed/garage interior (typical).

PROPERTY PHOTOGRAPHS	
Copland Drive Ventura, California	
Date taken: October 15, 2014	TRAK

7. Covered storage/parking area on west side of shed/garage; view south. Fence in distance is boundary fence along Copland Drive.

8. Yard on west side of residence; view west towards west-adjoining La Posada Mobile Home Park. Storage sheds along west property margin, including metal shed, wood-sided shed, and small trailer (at right). Pen/coop at right.

9. Interior of small trailer used as storage shed, welding equipnment, on west side of property.

PROPERTY PHOTOGRAPHS	
Copland Drive Ventura, California	
Date taken: October 15, 2014	TRAK

10 View south from yard on west side of residence. Small trailer with welding equipment in center, residence at left, and shed/garage in distance.

11. View north from yard, showing northwest corner of residence. Foliage at left delineates west property boundary.

12. View north from drive/parking area in front of residence, showing residence, and covered porch area on east side. In foreground is house trailer.

PROPERTY PHOTOGRAPHS	
Copland Drive Ventura, California	
Date taken: October 15, 2014	TRAK

13. Residence interior, kitchen.

14. Residence interior, living room.

15. Yard on east side of residence; view south. At far right is covered porch on east side of house.

PROPERTY PHOTOGRAPHS	
Copland Drive Ventura, California	
Date taken: October 15, 2014	TRAK

16. View northeast from northern portion of yard on east side of residence, showing parked vehicles in drive that leads out to cultivated area.

17. View north along drive that runs along east side of residence, showing parked vehicles (stakebed truck, tractor) in drive.

18. View southwest to drive on east side of residence, showing parked vehicles, and residence (beyond).

PROPERTY PHOTOGRAPHS	
Copland Drive Ventura, California	
Date taken: October 15, 2014	TRAK

19. View northwest to agricultural equipment storage/parking area, located on north side of residential parcel.

20. View west to agricultural equipment storage/parking area, located on north side of residential parcel. In distance is boundary fence along property's west side; beyond is west-adjoining La Posada Mobile Home Park.

21. Camper shell (blue tarp), mobile engine/power take-off (in center), and AST (at right' located along southern edge of agricultural equipment storage area.

PROPERTY PHOTOGRAPHS	
Copland Drive Ventura, California	
Date taken: October 15, 2014	TRAK

22. View east from northeast corner of residential parcel, towards eastern side of agricultural equipment storage/parking area; showing hoop-house used for storage, and parked box-trucks.

23. View northeast from northeast corner of residential parcel, towards eastern side of agricultural equipment storage/parking area; showing north end of hoop house. At far left is steel, trailer-mounted water tank. In distance are hoop houses over cultivated rows.

24. Hoop house interior (typical).

PROPERTY PHOTOGRAPHS

Copland Drive
Ventura, California

Date taken:
October 15, 2014

TRAK

25. View west along north side of agricultural equipment storage/parking area. Beyond fence in distance is west-adjoining La Posada Mobile Home Park.

26. View north along west side of subject property; drive extends along property's west side all the way to northern margin at Highway 126. At right is agricultural equipment storage/parking area; at far left, beyond fence is west-adjoining La Posada Mobile Home Park.

27. View south from northern portion of subject property. At left are hoop houses that cover cultivated rows; road at center-right is main north-south agricultural roadway that extends to south margin of property, along east side of residential parcel.

PROPERTY PHOTOGRAPHS	
Copland Drive Ventura, California	
Date taken: October 15, 2014	TRAK

28. Hoop house interior (typical), covering of cultivated rows; showing drip irrigation system.

29. View northeast from central portion of subject property, towards eastern property boundary; beyond are east-adjoining homes in the New Traditions 8 residential development. Visible in lower right is onsite east-west roadway that approximately bisects the cultivated portion of subject property.

30. View southeast from central portion of subject property. At left is eastern property boundary; beyond are east-adjoining residential areas (New Traditions 8 homes, Colony Parc apartments). At right, in far distance, is tree-line at southern property boundary.

PROPERTY PHOTOGRAPHS	
Copland Drive Ventura, California	
Date taken: October 15, 2014	TRAK

31. View north along eastern property boundary, from east-west bisecting road. At right, beyond fence are east-adjoining residential properties (New Traditions 8 development). In distance is northern property margin; beyond is Highway 126.

32. View south along eastern property boundary, from east-west bisecting road. At left, beyond fence are east-adjoining residential properties (New Traditions 8 development). In distance, at tree line, is southern property margin at Telephone Road.

33. View west from eastern property margin, along the southern, east-west trending roadway, towards the agricultural equipment storage/parking area in far distance (left of roadway).

PROPERTY PHOTOGRAPHS	
Copland Drive Ventura, California	
Date taken: October 15, 2014	TRAK

34. View north along eastern property boundary, from southeast corner of property. At right, beyond fence are east-adjoining residential properties (Colony Parc apartments). In foreground is onsite water well (02N22W07P01S).

35. View west along southern margin of property, from southeast corner of property. At right is onsite water well (02N22W07P01S), in center is utility drop for well system.

36. View southwest along southern margin of property, from southeast corner of property. At right is road that runs along southern margin of cultivated fields. At left is onsite water well (02N22W07P01S), in center is utility drop for well system. In distance is Telephone Road.

PROPERTY PHOTOGRAPHS	
Copland Drive Ventura, California	
Date taken: October 15, 2014	TRAK

37. Onsite water well (02N22W07P01S), located in southeastern corner of subject property. View southwest towards Telephone Road; crossing Telephone Road in distance is overpass of U.S. Highway 101.

38. View of water well system piping along southern margin of subject site. In foreground is well-water distribution piping, from the well discharge at wellhead in middle distance. View east towards property's southeast corner; beyond fenceline is east-adjoining Colony Parc apartments.

39. View north-northwest from property's southern margin.

PROPERTY PHOTOGRAPHS	
Copland Drive Ventura, California	
Date taken: October 15, 2014	TRAK

APPENDIX A

REGULATORY DOCUMENTATION
(User Questionnaire, Agency and Building Records)

USER QUESTIONNAIRE

TRAK

Questionnaire 1 - User Questionnaire (ASTM E 1527-13)

In order to qualify for one of the Landowner Liability Protections (LLPs) offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 the user must provide the following information (if available) to the environmental professional. Failure to provide this information could result in a determination that "all appropriate inquiry" is not complete.

Site Address: 4515 Copland Dr., Ventura, CA 93003

	USER		
	yes	no	unknown
1. **Environmental cleanup liens that are filed or recorded against the property (40CFF 312.25).** Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?		✓	
2. **Activity and land use limitations that are in place on the property or that have been filed or recorded in a registry (40 CFR 312.26).** Are you aware of any AULs, such as engineering controls, land use restrictions or institutional controls that are in place at the property and/or have been filed or recorded in a registry under federal, tribal, state, or local law?		✓	
3. **Specialized knowledge or experience of the person seeking to qualify for the LLP (40 CFR 312.28).** As the user of this ESA do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property so that you would have specialized knowledge of the chemicals and processes used by this type of business?		✓	
4. **Relationship of the purchase price to the fair market value of the property if it were not contaminated (40 CFR 312.29).** Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, have you considered whether the lower price is because contamination is known or believed to be present in the property?			✓
5. **Commonly known or reasonably ascertainable information about the property (40 CFR 312.30).** Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example, as user,			
(a). Do you know the past uses of the property?			✓
(b). Do you know of specific chemicals that are present or once were present at the property?		✓	
(c). Do you know of spills or other chemical releases that have taken place at the property?		✓	
(d). Do you know of any environmental cleanups that have taken place at the property?		✓	
6. **The degree of obviousness of the presence of likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation (40 CFR 312.31).** As the user of this ESA, based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property?		✓	

Name: Kioren Moss, Project Manager, Moss & Associates

Signature: Kioren Moss

Date: 10/6/14

Questionnaire 2 - Additional Information

1. This Phase I required due to:

   EIR for the City of Ventura and LAFCO.

2. The type of property is (i.e.; commercial, residential, industrial, manufacturing):

   Agricultural.

3. The type of property transaction (i.e.; sale, purchase, exchange, refinance):

   No transaction is involved.

4. Site contact and how he/she can be reached.

   Name: Kioren Moss, Project Manager, Moss & Associates 805.339.0613; kdmven@earthlink.net

   Phone Number:

   Email Address:

5. Identify all parties who will rely on the Phase I report:

   1.) Property owner, The Groves, LLC; 2.) Project Manager, Kioren Moss; 3.) City of San Buenaventura Planning Department; 4.) Consultants to 1-3 above; 5.) The public, since the EIR will be published. 6.) The Local Agency Formation Commission, LAFCO.

6. Complete property address and/or historical site addresses linked to the property:

   4515 Copland Dr.; 4515 Telephone Rd., Ventura, Calif. APN 079-0-240-035

7. Key site manager, owners and past owners including names and contact information when available:

   John S. Broome, Alden Broome, shareholders in the LLC, 805.488.8333; 1 Caryl Drive Oxnard, Calif. 93033-8214 John@BroomeRanches.com. Since 1952. Previous owners are presumed to be deceased.

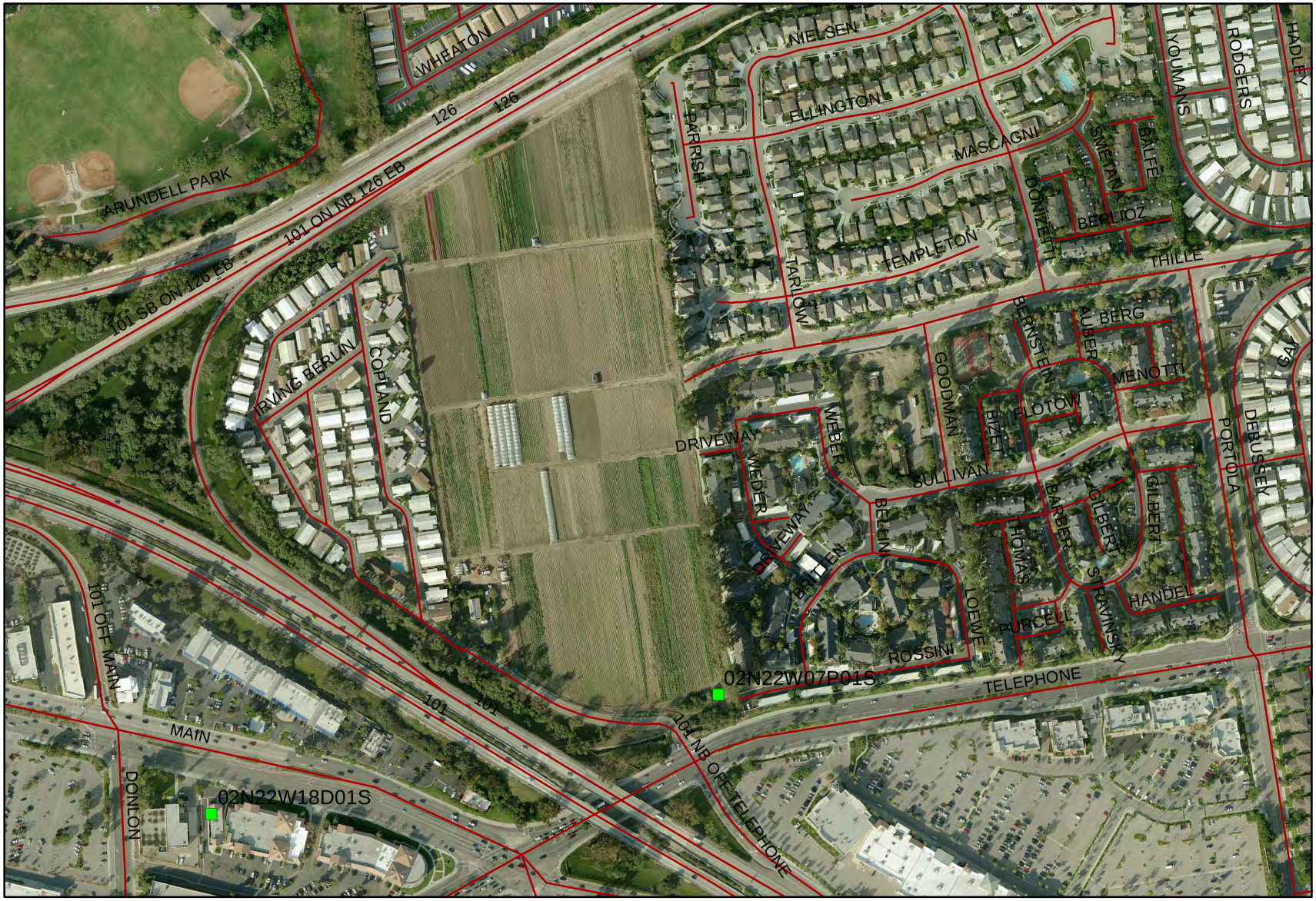
8. If additional information pertinent to the Phase I activities is available, please respond on this page or additional pages:

   Lemon trees were removed in approximately 2005; they had been there since approximately 1960.

   Tenant farmer cultivates flowers on the property, since approximately 2005.

AGENCY AND BUILDING RECORDS

02N22W07P01S



0 150 300 600 900 1,200 Feet

DISCLAIMER: The information contained herein was created by the County of Ventura Water and Environmental Resources, Groundwater Section for its own use. The County of Ventura assumes no liability for damages incurred directly or indirectly as a result of errors, omissions or discrepancies

Brad Newman

From: Council, Barbara <Barbara.Council@ventura.org>
Sent: Friday, October 24, 2014 9:03 AM
To: brad@trakenviro.com
Subject: RE: Well Records for Property in Ventura
Attachments: 02N22W07P01S Quality data.xlsx

Brad,

Our records show just the one well that you mentioned below. I have attached the water quality data for the well. It is listed as an active agricultural well.

Barbara

From: Brad Newman [mailto:brad@trakenviro.com]
Sent: Thursday, October 23, 2014 6:24 PM
To: Council, Barbara
Subject: Well Records for Property in Ventura

Hi Barbara,

We are conducting a Phase I ESA on an agricultural property in Ventura, located in the triangular piece of land formed by, and east of the Highway 126/101 interchange, on north side of Telephone Road (across from the Highway 101 northbound offramp).

The property includes one parcel: APN 079-0-240-035

The site addresses have been referenced as:

4499 Copland Drive, Ventura (Ventura County unincorporated)
also 4415 Copland Drive, Ventura
also Copland Circle and Telephone Road, Ventura

Wells that have been referenced to the site include:

02N22W07P01S

Do you have any records of water well(s) for this parcel?

Thank you,

Brad Newman
President
TRAK Environmental Group, Inc.

3637 B Arundell Circle, Ventura, CA 93003
Office: (805) 650-5333
Fax: (805) 650-7213
www.trakenviro.com

SWN	Date Sampled	Total Hardness	Calcium	Magnesium	Potassium	Sodium	Total Cations	Boron	Copper(ug/l)	Iron(ug/l)	Manganese (ug/l)
02N22W07P01S	15-Sep-08	1050	282	84	8	183		0.6	-10	190	140
02N22W07P01S	11-Sep-09	1080	293	86	9	193	30.3	0.6	-10	200	200
02N22W07P01S	16-Aug-10	1160	306	96	8	193	31.8	0.7	-10	180	200
02N22W07P01S	10-Aug-11	1220	331	96	9	190	32.9	0.6	-10	260	150
02N22W07P01S	15-Aug-12	1310	352	106	9	221		0.8	-10	310	160
02N22W07P01S	22-Oct-13	1620	408	146	13	313	46.3	1.2	-10	290	360

SWN	Date Sampled	Zinc (ug/l)	Gypsum Requirement	SAR	Total Alkalinity	Hydroxide	Carbonate	Bicarbonate	Sulfate	Chloride	Nitrate
02N22W07P01S	15-Sep-08	-20	0	2.5	260		-10	320	1000	94	34.2
02N22W07P01S	11-Sep-09	-20	0	2.5	280	-10	-10	340	1120	102	40.9
02N22W07P01S	16-Aug-10	-20	0	2.5	290	-10	-10	350	1210	120	41.1
02N22W07P01S	10-Aug-11	-20	0	2.4	270	-10	-10	320	1140	105	38.9
02N22W07P01S	15-Aug-12	-20	0	2.7	260		-10	320	1300	120	49
02N22W07P01S	22-Oct-13	-20	0	3.4	500	-10	-10	610	1300	110	29.2

SWN	Date Sampled	Fluoride	Total Anions	pH	E C	TDS by Summation	Aluminum (ug/l)	Antimony (ug/l)	Arsenic(ug/l)	Barium(ug/l)	Beryllium(ug/l)
02N22W07P01S	15-Sep-08	0.3		6.9	2470	2010					
02N22W07P01S	11-Sep-09	-0.1	32.4	7.1	2540	2180					
02N22W07P01S	16-Aug-10	0.4	35	7.1	2590	2320	-10	-1	2	25.5	-0.2
02N22W07P01S	10-Aug-11	0.3	32.6	7.2	2510	2230	-10	-1	2	27	-1
02N22W07P01S	15-Aug-12	0.1		7.2	2880	2480					
02N22W07P01S	22-Oct-13	0.2	40.6	7.1	3450	2930					

SWN	Date Sampled	Cadmium (ug/l)	Chromium (ug/l)	Lead(ug/l)	Mercury (ug/l)	Nickel(ug/l)	Selenium (ug/l)	Silver(ug/l)	Thallium (ug/l)	Vanadium (ug/l)
02N22W07P01S	15-Sep-08						49			
02N22W07P01S	11-Sep-09						52			
02N22W07P01S	16-Aug-10	-0.2	2	-0.2	-0.02	-2	73	-1	-0.2	3
02N22W07P01S	10-Aug-11	-1	-1	-0.2	-0.02	1	56	-1	-1	3
02N22W07P01S	15-Aug-12									
02N22W07P01S	22-Oct-13									

Look Up Property Information

Enter information below to look up property information.

- Address
- Parcel Information

Select the search type from the drop-down list.

Look Up by Parcel Information

Look Up by Parcel Information

Parcel Number:
0790240035

Lot:	Block:	Subdivision:

Look Up Clear

1 results found matching lookup criteria

Click any of the results below to view more details.

Showing 1-1 of 1

Parcel Number	Owner	Address
0790240035	GROVES LLC	

Property Information:

Owner Details

GROVES LLC
1 CARYL DR OXNARD ,CA 93033-8214
Phone:
Fax:
Status:Enabled

Addresses

Showing 0-0 of 0

Parcel Number	Owner	Address

No records found.

Parcels

Showing 1-1 of 1

Parcel Number	Lot	Block	Subdivision
0790240035			

uilding & Safety
Counter Hours - 7:30AM - 5 PM
No financial transactions after 4:30 PM

Home Building Code Compliance Fire Planning
Public Works Check/Research Permits

Notice:
The record is not completed or has been paid; it cannot be added to cart.

Record E00-000402:

Add to cart Add to collectio

Electrical Agricultural

Work Location

4499 COPLAND DR
Ventura County Unincorp

Record Details

Project Description:

100 AMP SERVICE FOR 60 HP AG PUMP

More Details

Application Information

ELECTRICAL

Issuance Fee:	No
Main Electrical Service to 600V:	0
Subpanel:	0
Receptacle, Switch, Light:	0
Pole or Platform Fixture:	0
Underground Conduit:	1
SFR / Condo / Townhouse:	0

Parcel Information

Bore Diameter (in):	18
Case Depth (ft):	580
Case Diameter (in):	10

Parcel Information

Parcel Number:

0790240035

Fees

No records found.

Processing Status

Record Status

Active on 08/03/2005 by TBD

Active on 06/08/2001 by TBD

Active on 06/28/2000 by TBD

Related Records

View Entire Tree »

Record Number	Record Type
GW-8384	*PublicWorks/Ground Water/We*

Planning
Counter Hours - 7:30 AM - 4:30PM

Home Building Code Compliance Fire Planning
Public Works Check/Research Permits

Record ZC91910:

Add to cart Add to collectio

Zoning Clearance

Work Location

Record Details

Project Description:

ZC 91910
AG PUMP

More Details

Parcel Information

Parcel Number:

0790240035

Fees

No records found.

Processing Status

Application Submittal
Plan Review
Closed

Related Records

View Entire Tree »

No records found.

Public Works
Counter Hours
County Surveyor - 7:30 AM - 4:30 PM
Development Services - 8:00 AA - 4:00 PM
Transportation - 8:00 AM - 4:30 PM
Integrated Waste Management - 8:00 AM - 5:00 PM
Watershed Protection District - 8:00 AM - 4:00 PM

Record GW-8384:

Add to cart Add to collectio

Ground Water Well

Work Location

Record Details

Owner:

John S. Broome
1 Caryl Drive
Oxnard CA 93033-8214

More Details

Application Information

GENERAL INFORMATION

State Well Number:	02N22W07P01S
Main Use:	Agricultural
Ground Water Basin:	Mound
DWR Basin:	Oxnard Hydrologic Subarea
Latitude:	34 15 47.5
Longitude:	119 13 44.6
X Coordinate:	1628653.72700
Y Coordinate:	280000.00000
Location Description:	

Well is northeast of the intersection of Telephone and Copland, across Telephone from the 101 freeway offramp. 50 feet west of Colony Apartments property line, and 75 feet north of Telephone

Bore Depth (ft):	580

Parcel Number:
0790240035

Parcel Area:
25.65

Land Value:
834301

Improved Value:
0

Fees

No records found.

Processing Status

- Permit Application
- In Plan Check
- Plans Approved
- Inspections
- Close

Related Records

View Entire Tree »

No records found.

Public Works

Counter Hours

County Surveyor - 7:30 AM - 4:30 PM
Development Services - 8:00 AA - 4:00 PM
Transportation - 8:00 AM - 4:30 PM
Integrated Waste Management - 8:00 AM - 5:00 PM
Watershed Protection District - 8:00 AM - 4:00 PM

To see information under each section cliick the > next to the description on each gray section header

Record GWP-4763:

Add to cart Add to collectio

Well Permit

Work Location

Copland Circle & Telephone Rd
Unincorporated

Record Details

Project Description:

Water Supply Well - New

Owner:

John Broome/ Broome Ranch
1 Caryle Dr.
Oxnard CA 93033

More Details

Parcel Information

Parcel Number:

079024003

Fees

Paid:

Date	Invoice Number	Amount	
03/23/2012	37240	$475.00	View Details

Total paid fees: $475.00

Processing Status

- ✔ Process Permit
  - ✔ Manager Approval
  - ✔ Inspection
- ✔ Close

Related Records

View Entire Tree »

Record Number	Record Type
GW-8384	PublicWorks/Ground Water/Well/NA

Public Works

Counter Hours

County Surveyor - 7:30 AM - 4:30 PM
Development Services - 8:00 AA - 4:00 PM
Transportation - 8:00 AM - 4:30 PM
Integrated Waste Management - 8:00 AM - 5:00 PM
Watershed Protection District - 8:00 AM - 4:00 PM

To see information under each section cliick the > next to the description on each gray section header

Record GWP-4951:

Add to cart Add to collectio

Well Permit

Work Location

Copland Circle
Unincorporated

Record Details

Project Description:

Water Supply Well - Modify or Repair

Owner:

Broome Ranches
1 Caryle Dr.
Oxnard CA 93033

More Details

Parcel Information

Parcel Number:

079024003

Fees

Paid:

Date	Invoice Number	Amount	
03/23/2012	37421	$475.00	View Details

Total paid fees: $475.00

Processing Status

- ✔ Process Permit
  - ✔ Manager Approval
  - ✔ Inspection
- ✔ Close

Related Records

View Entire Tree »

Record Number	Record Type
GW-8384	PublicWorks/Ground Water/Well/NA

To see information under each section click the > next to the description on each gray section header

Record GWP-6138:

Add to cart Add to collectio

Well Permit

Work Location

Copland Dr.
Ventura

Record Details

Project Description:

Water Supply Well - Repair/Modify

Owner:

John Broome, Broome Ranches
1 Caryl Drive
Oxnard CA 93033

More Details

Parcel Information

Parcel Number:

0790240035

Fees

Paid:

Date	Invoice Number	Amount	
03/23/2012	38607	$610.00	View Details

Total paid fees: $610.00

Processing Status

- ✔ Process Permit
- Manager Approval
- Inspection
- Close

Related Records

View Entire Tree »

Record Number	Record Type
GW-8384	PublicWorks/Ground Water/Well/NA

Copland Drive land use

Printed: Oct 13, 2014

WARNING:The information contained hereon was created by the Ventura County Geographic Information System (GIS), which is designed and operated solely for the convenience of the County and related contract entities. The County does not warrant the accuracy of this information, and no decision involving a risk of economic loss or physical injury should be made in reliance thereon.

Print This Page

Property Characteristics & Values

Use the form below to look up property characteristics and values for any property in Ventura County. Fill out either the APN (Assessor's Parcel Number) **OR** the street address.

Search Tips

- Enter either an APN **OR** an Address
- When searching for an address, **enter as little information as possible**.
  For example, if you are looking for 92993 West Calle La Sombra Street , just enter **92993** in the Street Number field and **calle** in the street name field
- You can enter in partial street numbers or names to get a list of addresses to choose from
- Use a city name to narrow down your search

APN: _____
10 digit Assessor's Parcel Number

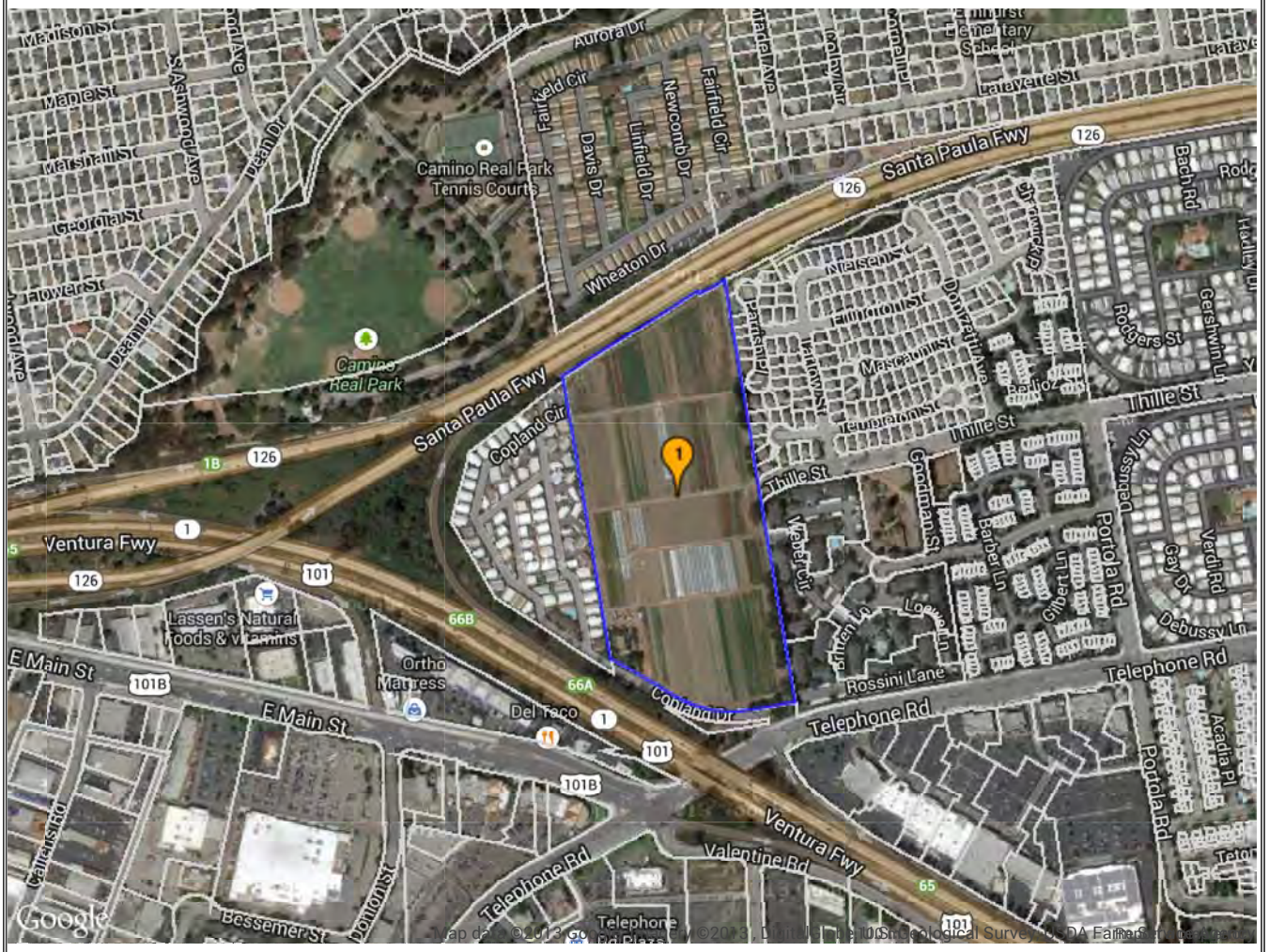
Address: _____ _____ _____ _____
Street Number Street Name Unit City

Submit Reset

Property Identification	
Assessor Parcel Number	079-0-240-035
Property Address	**Copland Drive, Ventura** *(link to Google Maps)*
Last Changed	02/13/2014
Values	**Click to see values** *(link to Tax Collector's site)*

Land Use & Mapping Information			
Base Year	1975/1976	**Previous Parcel Number**	*Unavailable*
Tract Number	*Unavailable*	**Document Number**	070182359
Block Within Tract	*Unavailable*	**Document Date**	09/24/2007
Lot Number Within Tract	*Unavailable*	**Condo Building Number**	*Unavailable*
Map Number	**079-24**	**Condo Unit Number**	*Unavailable*
Zoning	*Unavailable*	**Non-Taxable Status**	*Unavailable*
Assessor Property Use Description			
LEMONS			

Property Characteristics Information			
Total Living Area (SQFT)	*Unavailable*	**Acreage**	25.65
Lot Size (SQFT)	1,117,314	**Year Built**	*Unavailable*

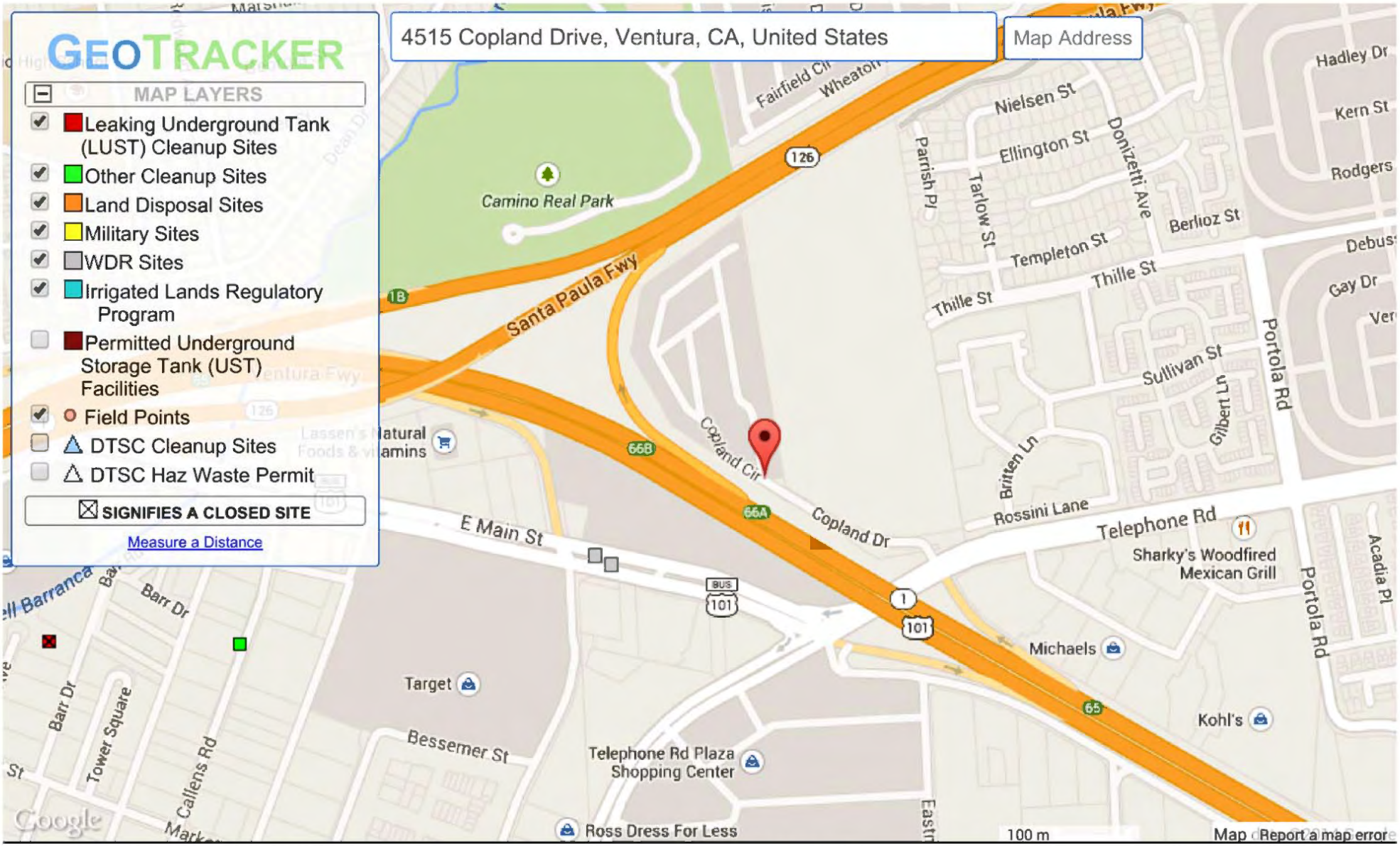


Lat: 34.264177° **Zoom**
Lon: -119.223661° 16

ID	Co / APN	Owner	Address	Map
1 ☑	VEN 079-0-240-035	GROVES LLC	VENTURA CA	MAP INDEX Co Idx

page size: 50

**The information provided here is deemed reliable, but is not guaranteed.

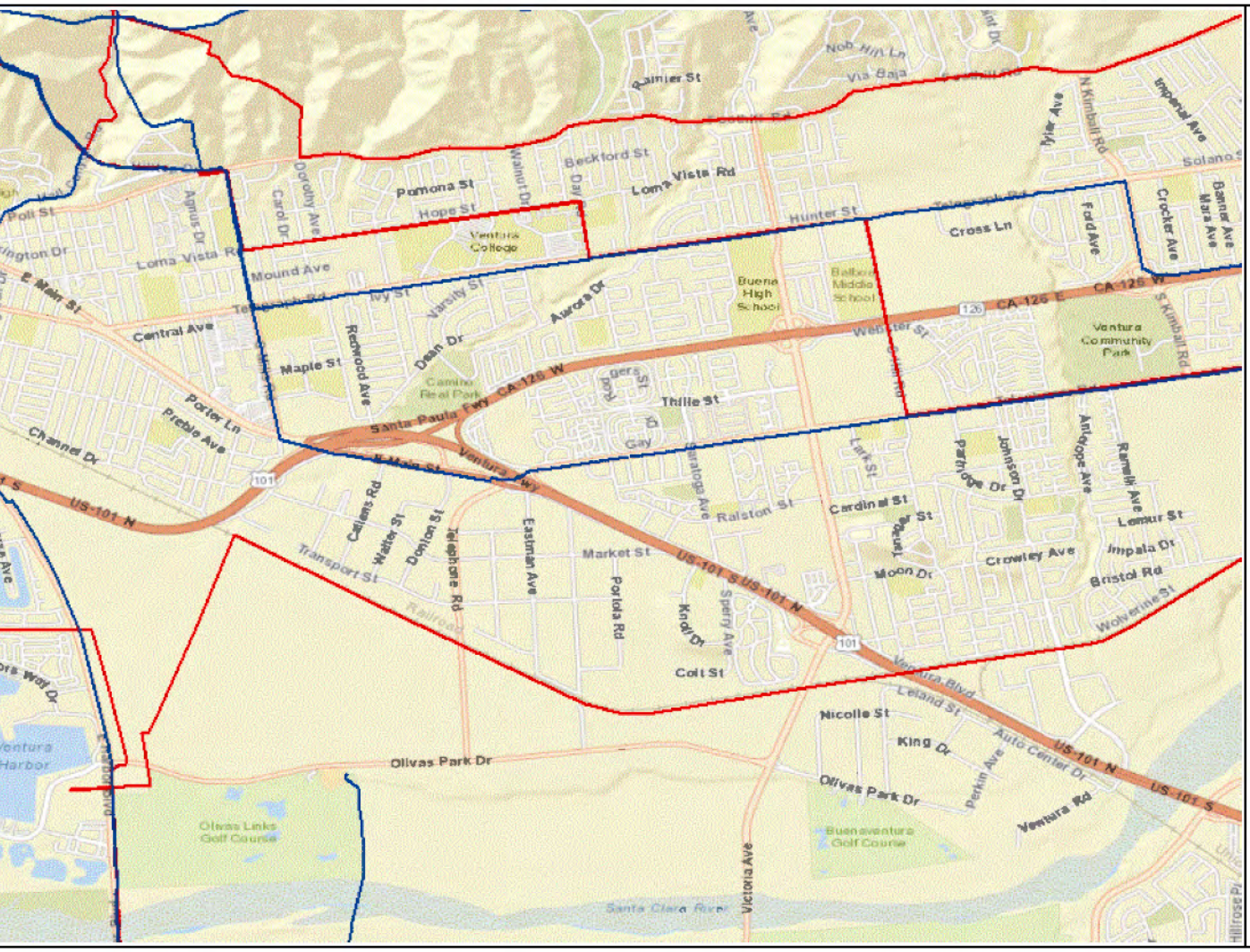


SITES CURRENTLY VISIBLE ON MAP — 4 SITES LISTED — EXPORT THIS LIST TO EXCEL

SITE NAME	GLOBAL ID	STATUS	ADDRESS	CITY
CARLSON TOWING	T0611101147	COMPLETED - CASE CLOSED	1300 FLEET AVE	VENTURA
FORMER 76 SERVICE STATION #6991	WDR100001425	HISTORICAL - WDR	4210 EAST MAIN STREET	VENTURA
FORMER 76 SERVICE STATION #6991	WDR100001421	HISTORICAL - WDR	4210 EAST MAIN STREET	VENTURA
MASTER PLATING	T0611100025	OPEN - SITE ASSESSMENT	1255 CALLENS RD	VENTURA

nd Hazardous
Safety Administration

NATIONAL PIPELINE MAPPING SYSTEM



Legend

Gas Transmission P

Hazardous Liquid P

0 0.3 Mil

Pipelines depicted on this map re
transmission and hazardous liquid
gathering and gas distribution sys
represented.

This map should never be used a
contacting a one-call center prior
activities. Please call 811 before
occurs.

Questions regarding this map or
directed to npms-nn@mbakercorp

Projection: Geographic

Datum: NAD83

Map produced by the NPMS Publ
www.npms.phmsa.dot.gov

Date Printed: Oct 13, 2014

811 Know what's below. Call before you dig.

APPENDIX B

ENVIRONMENTAL LIEN SEARCH REPORT
HISTORICAL AERIAL PHOTOGRAPHS
HISTORICAL CITY DIRECTORIES
HISTORICAL SANBORN MAPS
HISTORICAL TOPOGRAPHIC MAPS
TAX ASSESSOR MAP

Copland Drive
4515 Copland Drive
Ventura, CA 93003

Inquiry Number: 4103880.7
October 14, 2014

EDR Environmental Lien and AUL Search

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

EDR Environmental Lien and AUL Search

The EDR Environmental Lien and AUL Search Report provides results from a search of available current land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls.

A network of professional, trained researchers, following established procedures, uses client supplied address information to:

- search for parcel information and/or legal description;
- search for ownership information;
- research official land title documents recorded at jurisdictional agencies such as recorders' offices, registries of deeds, county clerks' offices, etc.;
- access a copy of the deed;
- search for environmental encumbering instrument(s) associated with the deed;
- provide a copy of any environmental encumbrance(s) based upon a review of key words in the instrument(s) (title, parties involved, and description); and
- provide a copy of the deed or cite documents reviewed.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EDR Environmental Lien and AUL Search

TARGET PROPERTY INFORMATION

ADDRESS

4515 Copland Drive
Copland Drive
Ventura, CA 93003

RESEARCH SOURCE

Source 1:

Ventura Recorder
Ventura, CA

PROPERTY INFORMATION

Deed 1:

Type of Deed:	deed
Title is vested in:	The Groves LLC
Title received from:	John S & Patricia P Broome Trustees John S Broome
Deed Dated	12/26/2006
Deed Recorded:	9/24/2007
Book:	NA
Page:	na
Volume:	na
Instrument:	na
Docket:	NA
Land Record Comments:	
Miscellaneous Comments:	
Legal Description:	See Exhibit
Legal Current Owner:	The Groves LLC
Parcel # / Property Identifier:	079-0-240-035
Comments:	See Exhibit

ENVIRONMENTAL LIEN

Environmental Lien: Found ☐ Not Found ☒

OTHER ACTIVITY AND USE LIMITATIONS (AULs)

AULs: Found ☐ Not Found ☒

Deed Exhibit 1

RECORDED AT THE REQUEST OF
CHICAGO TITLE CO.-72

20070924-00182359-0 1/6
Ventura County Clerk and Recorder
Philip J. Schmit
09/24/2007 08:00:00 AM
130871 $22.00 MA

RECORDING REQUESTED BY
AND WHEN RECORDED MAIL TO:
HATHAWAY LAW FIRM
Post Office Box 3577
Ventura, CA 93006
MAIL TAX STATEMENTS TO:
THE GROVES, LLC
1 Caryl Drive
Oxnard, CA 93033

AC2007-51

QUITCLAIM DEED

THE UNDERSIGNED GRANTOR(s) DECLARE(s):
Documentary Transfer Tax is $ 0*
Parcel No. 079-0-240-035

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,
JOHN S. BROOME AND PATRICIA P. BROOME, TRUSTEES OF THE BROOME FAMILY TRUST DATED JANUARY 21, 1982, as to an undivided 99% interest, and JOHN S. BROOME, JR., TRUSTEE OF THE BROOME MANAGEMENT TRUST, as to an undivided 1% interest, as tenants in common,

hereby REMISE, RELEASE AND FOREVER QUITCLAIM to
THE GROVES, LLC, a Delaware Limited Liability Company,

all of their right, title and interest in and to the following described real property in the County of Ventura, State of California:

SEE EXHIBIT "A" FOR LEGAL DESCRIPTION, WHICH IS INCORPORATED HEREIN BY THIS REFERENCE AND MADE A PART HEREOF

AKA: Dingaling Ranch, Block B at Telephone Road and Copland Drive, Ventura, CA

* This transfer is exempt from documentary transfer tax pursuant to Revenue & Taxation Code Section 11911.

** This conveyance and transfer to an LLC is not a change of ownership and is excluded and is exempt from reassessment pursuant to Revenue & Taxation Code Sections 62(a)(2).

DATED: 12 - 26, 2006 THE BROOME FAMILY TRUST DATED JANUARY 21, 1982

This document filed for record by Chicago Title Company of Ventura as an ACCOMMODATION ONLY It has not been examined as to its execution or as to its effect upon the title.

By _____
JOHN S. BROOME, Trustee

By Patricia P Broome
PATRICIA P. BROOME, Trustee

DATED: 12 - 26, 2006 THE BROOME MANAGEMENT TRUST

By _____
JOHN S. BROOME, JR., Trustee

State of California)
) ss
County of Ventura)

On 12-26, 2006, before me, DOROTHY A. PRAIRIE, the undersigned Notary Public, personally appeared PATRICIA P. BROOME personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her authorized capacity, and that by her signature on the instrument the person, or entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

DOROTHY A. PRAIRIE
Commission # 1441290
Notary Public - California
Ventura County
My Comm. Expires Oct 9, 2007

NOTARY PUBLIC

State of California)
) ss
County of Ventura)

On 12-26, 2006, before me, DOROTHY A. PRAIRIE, the undersigned Notary Public, personally appeared JOHN S. BROOME personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

DOROTHY A. PRAIRIE
Commission # 1441290
Notary Public - California
Ventura County
My Comm. Expires Oct 9, 2007

NOTARY PUBLIC

State of California)
) ss
County of Ventura)

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WITNESS my hand and official seal.

DOROTHY A. PRAIRIE
Commission # 1441290
Notary Public - California
Ventura County
My Comm. Expires Oct 9, 2007

NOTARY PUBLIC

DESCRIPTION

APN: 079-240-035

Parcel A:

A portion of Alhambra Avenue, vacated, in Alhambra Orchard Tract, a portion in the City of San Buenaventura, County of Ventura, State of California, as per Map recorded in Book 2, Page 145 Miscellaneous Records, in the office of the County Recorder of said County, described as follows:

Beginning at a point on the center line of said Alhambra Avenue, as shown on said map, distant thereon North 10° 19′ 25" West 200 feet from the North line of Telephone Road, as shown on said map; thence

1st: North 44° 09′ West to a point on a line parallel with said center line and distant Westerly 13 feet measured at right angles from said center line; thence along said parallel line,

2nd: North 10° 19′ 25" West to a point in the Northerly end of said Alhambra Avenue; thence,

3rd: Easterly along the Northerly end of said Avenue to the Northerly terminus of the center line thereof; thence,

4th: South 10° 19′ 25" East along said center line to the point of beginning.

EXCEPT the interest as reserved in deed from Lorena V. Montgomery to Montgomery Corporation, recorded May 27, 1948, in Book 828, Page 490 of Official Records, as follows:

"Reserving unto the grantor an undivided one-half interest in and to all oils and minerals in and under said land above described during her life, and upon her death to her heirs, executors, administrators, successor or assigns so long thereafter as oil is produced from said land in commercial quantities and then to the grantee herein in fee simple absolute; provided, however, that if oil is not produced therefrom in commercial quantities during the terms of said grantor's life, then this reservation shall cease and end at the date of her death".

ALSO EXCEPT that portion of said land lying within the following described land:

Beginning at the most Easterly corner of the Poinsettia Park Tract as shown on a map recorded in Book 23, Page 28 of Miscellaneous Records, in the office of the County Recorder of said County; thence along the Northerly line of Telephone Road North 80° 54′ 14" East 608.06 feet to the Southeast corner of said Alhambra

DESCRIPTION

Orchard Tract, thence along the Easterly line of said lot North 8° 43′ 26" West 66.00 feet to a line parallel with and distant along said parallel line South 30° 54′ 14" West 189.70 feet to the point of tangency of this course with a curve concave Northeasterly having a radius of 472.00 feet; thence Northwesterly along said curve through an angle of 40° 27′ 58" an arc distant of 333.36 feet; thence tangent to said curve North 58° 37′ 48" West 294.99 feet to the Easterly line of said Poinsettia Park; thence Southerly and Southeasterly along last mentioned Easterly line to the point of beginning.

ALSO EXCEPT that portion of said land lying Northerly of the hereinafter described 1st and 2nd course:

Beginning at a point in the East line of said Alhambra Orchard Tract distant thereon South 8° 43′ 26" East 449.84 feet from the North line of Lot 105 of the Rancho Santa Paula y Saticoy, as shown on map of said Rancho, recorded in Book A, Page 290 of Miscellaneous Records, in the office of the County Recorder of said County; thence

1st: Southwesterly along a curve concave Southwesterly having a radius of 4917.00 feet from which a tangent bears South 61° 17′ 47" West through an angle of 1° 22′ 02" an arc distance of 117.33 feet; thence tangent to said curve,

2nd: South 59° 55′ 45" West 662.79 feet to a line parallel with and distant Westerly 13.00 feet, measured at right angles from the center line of said Alhambra Avenue.

Parcel B:

Lots 1, 6, 7, 10 and a portion of Lot 2, Alhambra Orchard Tract and a portion of Alhambra Avenue, vacated by the Board of Supervisors of Ventura County, in the City of San Buenaventura, County of Ventura, State of California, as per Map recorded in Book 2, Page 145 Miscellaneous Records, in the office of the County Recorder of said County, described as follows:

Beginning at a 3 inch iron pipe in the North line of Telephone Road at the Southeast corner of said Alhambra Orchard; thence along the North line of said road,

1st: South 79° 36′ West 608.06 feet, more or less to a point distant North 79° 36′ East 100 feet from the center line of said Alhambra Avenue; thence

2nd: Northwesterly along a tangent curve concave to the Northeast, having a

DESCRIPTION

radius of 20 feet and a central angle of 90° 00′ a distance of 31.42 feet to the beginning of a reverse curve concave to the Southwest having a radius of 200 feet and a central angle of 33° 45′ 00"; thence

3rd: Northwesterly along said curve a distance of 117.81 feet; thence tangent to said curve,

4th: North 44° 09′ 00" West 106.20 feet to a point on a line parallel with and distant Westerly 13 feet, measured at right angles from the center line of said Alhambra Avenue; thence along said parallel line

5th: North 10° 19′ 25" West to a point in the North line of said Alhambra Orchard; thence,

6th: Northeasterly along the Northerly line of said Alhambra Orchard to the Northeast corner thereof; thence

7th: Southerly along the Easterly line of said tract to the point of beginning.

EXCEPT the West 13 feet thereof.

ALSO EXCEPT that portion of said land lying within the following described land:

Beginning at the most Easterly corner of the Poinsettia Park Tract, as per Map recorded in Book 23, Page 28 Miscellaneous Records, in the office of the County Recorder of said County; thence along the Northerly line of Telephone Road, North 80° 54′ 14" East 608.96 feet to the Southeast corner of said Alhambra Orchard Tract; thence along the Easterly line of said lot North 8° 43′ 26" West 66.00 feet to a line parallel with and distant Northerly 66.00 feet, measured at right angles from said Northerly line thence along said parallel line South 30° 54′ 14" West 189.70 feet to the point of tangency of this curve with a curve concave Northeasterly having a radius of 472.00 feet; thence Northwesterly along said curve through an angle of 40° 27′ 58" an arc distance of 333.36 feet; thence tangent to said curve North 58° 37′ 48" West 294.99 feet to the Easterly line of said Poinsettia Park; thence Southerly and Southeasterly along last mentioned Easterly line to the point of beginning.

ALSO EXCEPT that portion of said land lying Northerly of the hereinafter described 1st and 2nd courses,

Beginning at a point in the East line of said Alhambra Orchard Tract, distant

DESCRIPTION

thereon South 8° 43′ 26" East 449.84 feet from the North line of Lot 105 of the Rancho Santa Paula y Saticoy, as per Map recorded in Book A, Page 290 of Miscellaneous Records, in the office of the County Recorder of said Ventura County; thence,

1st: Southwesterly along a curve concave Southeasterly having a radius of 4917.00 feet, from which a tangent bears South 61° 17′ 47" West through an angle of 1° 22′ 02" an arc distance of 117.33 feet; thence tangent to said curve,

2nd: South 59° 55′ 45" West 662.79 feet to a line parallel with and distant Westerly 13.00 feet measured at right angles from the center line of said Alhambra Avenue.

Copland Drive
4515 Copland Drive
Ventura, CA 93003

Inquiry Number: 4103880.12
October 14, 2014

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th Floor
Shelton, Connecticut 06484
Toll Free: 800.352.0050
www.edrnet.com

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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Date EDR Searched Historical Sources:

Aerial Photography October 14, 2014

Target Property:

4515 Copland Drive

Ventura, CA 93003

Year	***Scale***	***Details***	***Source***
1938	Aerial Photograph. Scale: 1"=500'	Flight Year: 1938	Laval
1947	Aerial Photograph. Scale: 1"=500'	Flight Year: 1947	USGS
1959	Aerial Photograph. Scale: 1"=500'	Flight Year: 1959	Robinson
1967	Aerial Photograph. Scale: 1"=500'	Flight Year: 1967	USGS
1977	Aerial Photograph. Scale: 1"=500'	Flight Year: 1977	Teledyne
1985	Aerial Photograph. Scale: 1"=500'	Flight Year: 1985	USGS
1994	Aerial Photograph. Scale: 1"=500'	/DOQQ - acquisition dates: 1994	USGS/DOQQ
2005	Aerial Photograph. Scale: 1"=500'	Flight Year: 2005	USDA/NAIP
2009	Aerial Photograph. Scale: 1"=500'	Flight Year: 2009	USDA/NAIP
2010	Aerial Photograph. Scale: 1"=500'	Flight Year: 2010	USDA/NAIP
2012	Aerial Photograph. Scale: 1"=500'	Flight Year: 2012	USDA/NAIP

INQUIRY #: 4103880.12
YEAR: 1938
= 500'
N
EDR

INQUIRY #: 4103880.12
YEAR: 1947
= 500'
N
EDR

INQUIRY #: 4103880.12
YEAR: 1959
= 500'
N
EDR

INQUIRY #: 4103880.12
YEAR: 1967
= 500'
N
EDR

INQUIRY #: 4103880.12
YEAR: 1977
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EDR

INQUIRY #: 4103880.12
YEAR: 1985
= 500'
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EDR

INQUIRY #: 4103880.12
YEAR: 1994
= 500'
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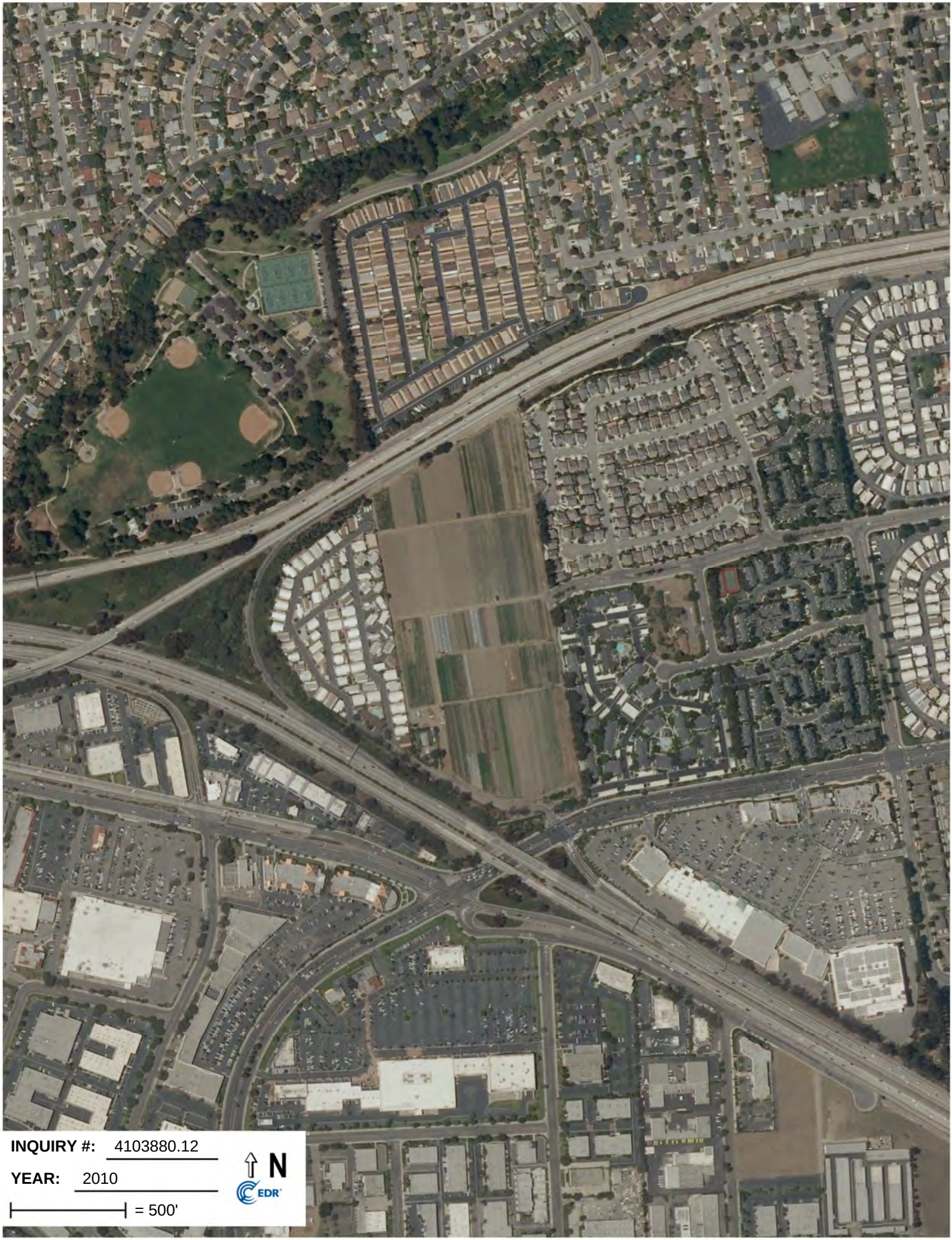
EDR

INQUIRY #: 4103880.12
YEAR: 2005
= 500'
N
EDR

INQUIRY #: 4103880.12
YEAR: 2009
= 500'
N
EDR


INQUIRY #: 4103880.12
YEAR: 2010
= 500'
N
EDR

INQUIRY #: 4103880.12
YEAR: 2012
= 500'
N
EDR

Copland Drive
4515 Copland Drive
Ventura, CA 93003

Inquiry Number: 4103880.5
October 14, 2014

The EDR-City Directory Abstract

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

Executive Summary

Findings

City Directory Images

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract 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 Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1926 through 2013. This report compiles information gathered in this review by geocoding the latitude and longitude of properties identified and gathering information about properties within 660 feet of the target property.

A summary of the information obtained is provided in the text of this report.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. An "X" indicates where information was identified in the source and provided in this report.

Year	Source	TP	Adjoining	Text Abstract	Source Image
2013	Cole Information Services	-	-	-	-
2008	Cole Information Services	-	X	X	-
2003	Cole Information Services	-	X	X	-
2002	Haines & Company, Inc.	-	X	X	-
2000	Pacific Bell Telephone Co	-	-	-	-
1996	Pacific Bell	-	X	X	-
1993	GTE	-	X	X	-
1986	Pacific Bell	-	X	X	-
1985	Pacific Telephone Co	-	X	X	-
1980	Polk	-	X	X	-
1976	R. L. Polk & Co.	-	-	-	-
1975	General Telephone Company of California	-	X	X	-
	Pacific Telephone Co	-	X	X	-
	Polk	-	X	X	-
1971	B&G Publications	-	-	-	-
1970	General Telephone Company of California	-	-	-	-
1968	B&G Publications	-	-	-	-
1965	Polk	-	-	-	-
1964	Pacific Telephone Co	-	-	-	-
1961	R. L. Polk & Co.	-	-	-	-
1957	R. L. Polk & Co.	-	-	-	-
1953	R. L. Polk & Co. of California	-	-	-	-
1949	Los Angeles Directory Co.	-	-	-	-
1940	Southern California	-	-	-	-

EXECUTIVE SUMMARY

Year	Source	TP	Adjoining	Text Abstract	Source Image
1930	Los Angeles Directory Co.	-	-	-	-
1926	Los Angeles Directory Co.	-	-	-	-

EXECUTIVE SUMMARY

SELECTED ADDRESSES

The following addresses were selected by the client, for EDR to research. An "X" indicates where information was identified.

Address	***Type***	***Findings***
4515 Copland Drive	Client Entered	

FINDINGS

TARGET PROPERTY INFORMATION

ADDRESS

4515 Copland Drive
Ventura, CA 93003

FINDINGS DETAIL

Target Property research detail.

FINDINGS

ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

COPLAND CIR

17 COPLAND CIR

Year	Uses	Source
1986	Jorgenson Harold & Lois @Ventura	Pacific Bell
	Jorgenson H M	Pacific Bell
1985	Jorgenson H ii	Pacific Telephone Co
1980	Jorgenson H M	Polk
1975	Williams Oscar	Polk

18 COPLAND CIR

Year	Uses	Source
2002	f 89 KC 0 Ceta	Haines & Company, Inc.
	FEAKRobe 4 805 450 540 S	Haines & Company, Inc.
1986	Shoffner Lance & Kerry	Pacific Bell
1985	Shoffner Lance & Kerry	Pacific Telephone Co
1980	Fox J R	Polk
1975	Koch Gustav M	Polk

19 COPLAND CIR

Year	Uses	Source
1980	Retz Albert	Polk
1975	Retz Albert	General Telephone Company of California
	Retz Albert	Pacific Telephone Co
	Retz A	Polk

20 COPLAND CIR

Year	Uses	Source
2002	Sb OWt MANDai W	Haines & Company, Inc.
	KANA 28 TZEAdeen	Haines & Company, Inc.
1993	Bowman Daryl	GTE
	Bowman Daryl	GTE
1986	Armitage H L	Pacific Bell
1985	Armitage H L	Pacific Telephone Co
1975	Stewart Nellie	Polk

FINDINGS

21 COPLAND CIR

Year	Uses	Source
1993	Myers Clarence W Jim	GTE
	Myers Clarence W Jim	GTE
1986	Myers Clarence W Jim	Pacific Bell
1985	Myers Clarence W Jim	Pacific Telephone Co
1980	Myers Clarence W Jim	Polk
1975	Myers Clarence W Jim	General Telephone Company of California
	Myers Clarence W Jim	Pacific Telephone Co
	Myers Jim	Polk

22 COPLAND CIR

Year	Uses	Source
2002	0 TEENOB 8matlin	Haines & Company, Inc.
1996	Ganz Harold & Isabelle	Pacific Bell
1993	I Ganz Harold & Isabelle	GTE
	Ganz Albert	GTE
	I Ganz Harold & Isabelle	GTE
1985	Gurr H J	Pacific Telephone Co
1980	Gurr H D	Polk
1975	Parks John F	Pacific Telephone Co
	Parks John F	General Telephone Company of California
	Parks John	Polk

23 COPLAND CIR

Year	Uses	Source
2002	SMi TH Grans	Haines & Company, Inc.
1993	Sifth Hrey	GTE
	Sifth Hrey	GTE
	Sofith H a zel	GTE
1975	Palmer F C	Pacific Telephone Co
	Palmer FC	General Telephone Company of California
	Palmer Fred	Polk

24 COPLAND CIR

Year	Uses	Source
2002	AD 6005 K	Haines & Company, Inc.
1975	Barton Rosemarie	Polk

FINDINGS

25 COPLAND CIR

Year	Uses	Source
2002	DEPASQUALEn Emslt	Haines & Company, Inc.
1993	Johannesson F A	GTE
	Johanns M	GTE
	Johannsen E	GTE
	Johannesson F A	GTE
1986	Johannesson F A	Pacific Bell
1985	Johannesson F A	Pacific Telephone Co
	Retz B	Pacific Telephone Co
1980	Johannesson John E	Polk
1975	Brockminller Vera P	General Telephone Company of California
	Brockmiller Vera	Polk
	Brockmiller Vera P	Pacific Telephone Co

26 COPLAND CIR

Year	Uses	Source
1986	Brown J A	Pacific Bell
1985	Brown J A	Pacific Telephone Co
1980	Brown J A	Polk
1975	Brown J A	Polk
	Brown J A	Pacific Telephone Co
	Brown J A	General Telephone Company of California

27 COPLAND CIR

Year	Uses	Source
1996	Robinson Minton F	Pacific Bell
1993	Robinson Minton F	GTE
	Robinson Myron W	GTE
	Robinson Minton F	GTE
	Robinson Myma @Oxnard	GTE
1980	Bloom Clarence M Sr	Polk
1975	Bloom Clarence M Sr	General Telephone Company of California
	Bloom Clarence	Polk
	Bloom Clarence M Sr	Pacific Telephone Co

28 COPLAND CIR

Year	Uses	Source
1986	Doyle J H	Pacific Bell
1985	Doyle J H	Pacific Telephone Co

FINDINGS

Year	Uses	Source
1980	Doyle J H	Polk
1975	Doyle J H	Pacific Telephone Co
	Doyle Joseph H	Polk

29 COPLAND CIR

Year	Uses	Source
1975	r Hempenius J	Polk

30 COPLAND CIR

Year	Uses	Source
2002	0 XXX	Haines & Company, Inc.
	XXXX	Haines & Company, Inc.
1986	No Charge To Calling Party	Pacific Bell
	Information Only	Pacific Bell
	Dennison Park	Pacific Bell
	Dennison Ron @Thousand Oaks	Pacific Bell
	Dennison M M	Pacific Bell
	Dennison Park 7250 @Ojai @ Santa Paula Rd Ojai	Pacific Bell
1985	Dennison M M	Pacific Telephone Co
1980	Dennison Martha M	Polk
1975	Dennison M M	General Telephone Company of California
	Dennison M M	Pacific Telephone Co
	Dennison Marth	Polk

31 COPLAND CIR

Year	Uses	Source
2002	o XXx	Haines & Company, Inc.
1986	Thompson V M	Pacific Bell
1985	Thompson V M	Pacific Telephone Co
1980	Thompson V M	Polk
1975	Thompson Vera M	Pacific Telephone Co
	Thompson Vera M	Polk
	Thompson Vera M	General Telephone Company of California

32 COPLAND CIR

Year	Uses	Source
1975	Hall Glen	Polk

FINDINGS

33 COPLAND CIR

Year	Uses	Source
1993	Chapman International Inc P OBox	GTE
	Chapman Geo A	GTE
	Chapman Geo A	GTE
1986	Chapman Geo A	Pacific Bell
	Chapman Glenn & Carol @Oxnard	Pacific Bell
1985	Chapman Geo A	Pacific Telephone Co
1980	Chapman Geo A	Polk
1975	Chapman Geo A	Pacific Telephone Co
	Chapman Geo A	General Telephone Company of California
	Chapman George	Polk

34 COPLAND CIR

Year	Uses	Source
2002	OSSMM	Haines & Company, Inc.
1996	Ross M M	Pacific Bell
1993	Ross M M	GTE
	Ross M M	GTE
1986	Ross Mark A TOks	Pacific Bell
	Ross Mark	Pacific Bell
	Ross M M	Pacific Bell
1985	Ross M M	Pacific Telephone Co
1980	Ross M M	Polk
1975	Smith Frank B	Pacific Telephone Co
	Larnmb P D	Polk
	Smith Frank B	General Telephone Company of California

35 COPLAND CIR

Year	Uses	Source
1993	Butler Ronald P @Westlake Village	GTE
	i Butler Thomas P & Audra	GTE
	i Butler Thomas P & Audra	GTE
1986	Malone Terry	Pacific Bell
	Malone T E	Pacific Bell
1980	Roberts Chas L	Polk
1975	Roberts Chas L	General Telephone Company of California
	Roberts Charles	Polk
	Roberts Chas L	Pacific Telephone Co

FINDINGS

36 COPLAND CIR

Year	Uses	Source
2002	CLARKSONM 4uno	Haines & Company, Inc.
	X 0 XX	Haines & Company, Inc.
1993	Flynn Gorman	GTE
	Flynn James K & Mary	GTE
	Flynn Gorman	GTE
1986	Flynn German	Pacific Bell
1985	Flynn German	Pacific Telephone Co
1980	Flynn Gorman	Polk
1975	Flynn Gorman	General Telephone Company of California
	Flynn Gorman	Polk

37 COPLAND CIR

Year	Uses	Source
1993	OHearn VJ	GTE
	OHearn VJ	GTE
1985	OHearn V J	Pacific Telephone Co
1980	OHearn V J	Polk
1975	Haser Frank R	Polk

38 COPLAND CIR

Year	Uses	Source
1986	Wells Leonard F	Pacific Bell
1985	Wells Leonard F	Pacific Telephone Co
1980	Wells Leonard F	Polk
1975	Wilding Cedric	Polk
	Wilding Cedric	Pacific Telephone Co

39 COPLAND CIR

Year	Uses	Source
2002	MOOE 8lnna	Haines & Company, Inc.
1993	Thornton Ford H	GTE
	Thornton Ford H	GTE
1986	Thornton Ford H	Pacific Bell
1985	Thornton Ford H	Pacific Telephone Co
1980	Thornton Ford H	Polk
1975	Thormnton F	Polk

FINDINGS

40 COPLAND CIR

Year	Uses	Source
1980	Tidwell E M	Polk
1975	Simmnins Ed	Polk
	Simmons Edw	General Telephone Company of California

74 COPLAND CIR

Year	Uses	Source
1975	Belongia Elmer	Polk

75 COPLAND CIR

Year	Uses	Source
2002	SEC 05 E 0e	Haines & Company, Inc.
1996	Secor Elaine	Pacific Bell
1993	Secor David	GTE
	Secor David	GTE
1985	House Cecil J	Pacific Telephone Co
1975	House Cecil	Polk
	House Cecil J	Pacific Telephone Co
	House Cecil J	General Telephone Company of California

76 COPLAND CIR

Year	Uses	Source
2002	BE 6 SFIEL 0 SJ	Haines & Company, Inc.
1993	Gentile Ernest & Betty	GTE
	Gentile Kathleen &Jos @Thousand Oaks	GTE
	Gentile Ernest & Betty	GTE
1986	Gentile Ernest & Betty	Pacific Bell
1985	Gentile Ernest & Betty	Pacific Telephone Co
1980	Gentile Ernest	Polk
1975	Price Earle T	General Telephone Company of California
	Price Earl W	General Telephone Company of California
	Price Earl	Polk

77 COPLAND CIR

Year	Uses	Source
1993	Manly Cifford	GTE
	Manly Cifford	GTE
1986	Manly Cifford	Pacific Bell
1985	Manly Cifford	Pacific Telephone Co
1980	Fleenor Leon E	Polk

FINDINGS

Year	Uses	Source
1975	Fleenor Leon E	Pacific Telephone Co
	Fleenor Leon E	Polk
	Fleenor Leon E	General Telephone Company of California

78 COPLAND CIR

Year	Uses	Source
1975	Williams Fred	Polk

79 COPLAND CIR

Year	Uses	Source
2002	BUCEMA	Haines & Company, Inc.
1993	Moore MO	GTE
	Moore MO	GTE
1985	Moore Myron M	Pacific Telephone Co
1980	Moore Myron M	Polk
1975	Moore Myron M	Polk
	Moore Myron M	General Telephone Company of California
	Moore Myron M	Pacific Telephone Co

80 COPLAND CIR

Year	Uses	Source
2002	SCASEY Robrt 4 8 B	Haines & Company, Inc.
1996	Casey Robt G	Pacific Bell
1986	Roberts Wm A	Pacific Bell
1985	Roberts Wm A	Pacific Telephone Co
1980	Halsten Cecil	Polk
1975	Vacant	Polk

81 COPLAND CIR

Year	Uses	Source
2002	0 RRRaya 805 442 4 A	Haines & Company, Inc.
1996	Orr Ray A	Pacific Bell
1993	Orr Ray A	GTE
	Orr Ray A	GTE
1986	Snider Merte	Pacific Bell
1985	Snider Merle	Pacific Telephone Co
1980	Snider Merle	Polk
1975	Snider Merle	Polk

FINDINGS

82 COPLAND CIR

Year	Uses	Source
2002	84 GLA 0 DJS	Haines & Company, Inc.
1993	England J S	GTE
	England J S	GTE
1986	Boydston Robt E	Pacific Bell
1985	Boydston Robt E	Pacific Telephone Co
1980	Williams Volley J	Polk
1975	Wiiams Volley J	Pacific Telephone Co
	Williams Volley J	General Telephone Company of California
	No Return	Polk

83 COPLAND CIR

Year	Uses	Source
2002	OAGGASRuh	Haines & Company, Inc.
1975	Peterson Donald C	General Telephone Company of California
	Peterson Donald C	Pacific Telephone Co
	Shimmin E	Polk

84 COPLAND CIR

Year	Uses	Source
2002	BOWER Fred	Haines & Company, Inc.
1993	Sasbury ack D	GTE
	Sasbury ack D	GTE
1986	Salisbury Jack D	Pacific Bell
1985	Salisbury Jack D	Pacific Telephone Co
1980	Salisbury Jack D	Polk
1975	Pollack Orville	Polk

IRVING BERLIN DR

59 IRVING BERLIN DR

Year	Uses	Source
2002	CLi G George	Haines & Company, Inc.
1986	Secor David	Pacific Bell
1985	Secor David	Pacific Telephone Co
1980	Arneson Bryce	Polk
1975	Bermingham Jas T	General Telephone Company of California
	Bermingham Jim M BCopland Cir @Ventura	General Telephone Company of California
	Pierce G	Polk

FINDINGS

Year	Uses	Source
1975	Berminghani Jas T	Pacific Telephone Co

60 IRVING BERLIN DR

Year	Uses	Source
2002	XXXX	Haines & Company, Inc.
1996	Mc Kinnon J	Pacific Bell
1993	Mc Kinnon J	GTE
	Mc Kinnon Jim	GTE
	Mc Kinnon J	GTE
1986	Jones Mae	Pacific Bell
	Jones MV	Pacific Bell
1985	Jones M V	Pacific Telephone Co
1980	Jones Myrtle	Polk
1975	Jones Myrtle	Polk
	Jones Myrtle	General Telephone Company of California
	Jones Myrtle	Pacific Telephone Co

61 IRVING BERLIN DR

Year	Uses	Source
2002	0 CRUME 0 Ter 1y	Haines & Company, Inc.
1996	Glass Leila	Pacific Bell
1993	Glass Leila	GTE
	Glass Leila	GTE
1986	Glass Leila	Pacific Bell
1985	Iass Leila	Pacific Telephone Co
1980	Glass Leila	Polk
1975	Glass Leila	Pacific Telephone Co
	Glass Leila	Polk

62 IRVING BERLIN DR

Year	Uses	Source
2002	XXXX	Haines & Company, Inc.
1993	Barr Miriam	GTE
	Barr Miriam	GTE
1980	Bristow Elaine	Polk
1975	Ri Sg Harry J	Pacific Telephone Co
	Rigg Harry J	Polk
	Rigg Harry J	General Telephone Company of California

FINDINGS

TEMPLETON ST

4616 TEMPLETON ST

Year	Uses	Source
2003	R TRAILER REPAIRS	Cole Information Services
2002	MADRID Ruben	Haines & Company, Inc.
	ITRAILER REPAIRS	Haines & Company, Inc.

4633 TEMPLETON ST

Year	Uses	Source
2002	ROGERS Suzan	Haines & Company, Inc.
	ROGERS Chales	Haines & Company, Inc.

4657 TEMPLETON ST

Year	Uses	Source
2002	409ST 00 E 44 L	Haines & Company, Inc.

4671 TEMPLETON ST

Year	Uses	Source
2002	TEMPLETON 53003 0 C	Haines & Company, Inc.
	ENDERLEDsnm Os	Haines & Company, Inc.

THILLE ST

4858 THILLE ST

Year	Uses	Source
2002	MOOR 9 Donna	Haines & Company, Inc.

WEBER CIR

1011 WEBER CIR

Year	Uses	Source
2002	JACOBSONMunel SCOTT	Haines & Company, Inc.
	VANBrasclr Ke 16y 805 676 1145 C	Haines & Company, Inc.
1996	102 Jacobson Muriel	Pacific Bell
	+ 201 Bortoni J G	Pacific Bell
	203 Beery Kathleen	Pacific Bell
1993	I Thompson James	GTE
	Thompson Jas A	GTE
	Baker F	GTE
	Johnson Philip D	GTE

FINDINGS

Year	Uses	Source
1993	Thompson Jas	GTE
	I Thompson James	GTE
	Baker F	GTE
	Johnson Philip D	GTE
	Johnson Phillip @Westlake Village	GTE

900 WEBER CIR

Year	Uses	Source
2008	FISKE ENTERPRISES	Cole Information Services
	LEGACIE ENTERPRISES LLC	Cole Information Services

935 WEBER CIR

Year	Uses	Source
2002	KOLODZEIJJe II	Haines & Company, Inc.
	BERTHOLD Donald	Haines & Company, Inc.
	APARTMENTS	Haines & Company, Inc.
	ALONZOVincent H	Haines & Company, Inc.
1993	Soto R M	GTE
	Shelton Stephen	GTE
	Shelton Scott	GTE
	Rosen AL	GTE
	Rosemond Harry	GTE
	Kuntasal Gurkan	GTE
	Colborn Rockey	GTE
	Kuntasal Gurkan	GTE
	Rosemond Harry	GTE
	Shelton Scott	GTE
	Soto R M	GTE
	Colborn Rockey	GTE

936 WEBER CIR

Year	Uses	Source
2002	PHILLIPS SIeve G	Haines & Company, Inc.
	MACLEANJamie	Haines & Company, Inc.
	KEGLERAMIn	Haines & Company, Inc.
	HOLMESGregory L	Haines & Company, Inc.
	APARTMENTS	Haines & Company, Inc.
1993	Purvis Keith	GTE
	Chicken Daryl	GTE

FINDINGS

Year	Uses	Source
1993	Chicken Daryl	GTE
	Purvis Keith	GTE

964 WEBER CIR

Year	Uses	Source
2008	OCEAN BLUE TOOLS	Cole Information Services
2003	OCEAN BLUE TOOLS	Cole Information Services
2002	LEE Sangchun	Haines & Company, Inc.
	KELLYE 805 642 9240 C	Haines & Company, Inc.
	GARCIAEVa	Haines & Company, Inc.
	FLEMING Sen	Haines & Company, Inc.
	DOWNING William E	Haines & Company, Inc.
	APARTMENTS	Haines & Company, Inc.
1996	204 Torrevillas L T	Pacific Bell
	201 Harding Alvin	Pacific Bell
1993	Catapusan N	GTE
	Catastrophic Illness Advocate Systems	GTE
	Mc Nally Jim	GTE
	Arce Peter & Diana	GTE
	Avery Susan M	GTE
	Catapusan N	GTE
	Mc Nally Jim	GTE
	Arce Peter & Diana	GTE
	Avery Susan M	GTE

979 WEBER CIR

Year	Uses	Source
2003	XTREME SOLUTIONS	Cole Information Services
2002	APARTMENTS	Haines & Company, Inc.
	BAKER F	Haines & Company, Inc.
1996	203 Baker F	Pacific Bell
1993	Penrose D	GTE
	Mitchell Gary	GTE
	Penrose D	GTE
	Mitchell George D MD Cardiology Associates Medical Group	GTE
	Mitchell Gary	GTE

FINDINGS

TARGET PROPERTY: ADDRESS NOT IDENTIFIED IN RESEARCH SOURCE

The following Target Property addresses were researched for this report, and the addresses were not identified in the research source.

Address Researched	Address Not Identified in Research Source
4515 Copland Drive	2013, 2008, 2003, 2002, 2000, 1996, 1993, 1986, 1985, 1980, 1976, 1975, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926

ADJOINING PROPERTY: ADDRESSES NOT IDENTIFIED IN RESEARCH SOURCE

The following Adjoining Property addresses were researched for this report, and the addresses were not identified in research source.

Address Researched	Address Not Identified in Research Source
1011 WEBER CIR	2013, 2008, 2003, 2000, 1986, 1985, 1980, 1976, 1975, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
17 COPLAND CIR	2013, 2008, 2003, 2002, 2000, 1996, 1993, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
18 COPLAND CIR	2013, 2008, 2003, 2000, 1996, 1993, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
19 COPLAND CIR	2013, 2008, 2003, 2002, 2000, 1996, 1993, 1986, 1985, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
20 COPLAND CIR	2013, 2008, 2003, 2000, 1996, 1980, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
21 COPLAND CIR	2013, 2008, 2003, 2002, 2000, 1996, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
22 COPLAND CIR	2013, 2008, 2003, 2000, 1986, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
23 COPLAND CIR	2013, 2008, 2003, 2000, 1996, 1986, 1985, 1980, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
24 COPLAND CIR	2013, 2008, 2003, 2000, 1996, 1993, 1986, 1985, 1980, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
25 COPLAND CIR	2013, 2008, 2003, 2000, 1996, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
26 COPLAND CIR	2013, 2008, 2003, 2002, 2000, 1996, 1993, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
27 COPLAND CIR	2013, 2008, 2003, 2002, 2000, 1986, 1985, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
28 COPLAND CIR	2013, 2008, 2003, 2002, 2000, 1996, 1993, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
29 COPLAND CIR	2013, 2008, 2003, 2002, 2000, 1996, 1993, 1986, 1985, 1980, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
30 COPLAND CIR	2013, 2008, 2003, 2000, 1996, 1993, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
31 COPLAND CIR	2013, 2008, 2003, 2000, 1996, 1993, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926

FINDINGS

Address Researched	Address Not Identified in Research Source
32 COPLAND CIR	2013, 2008, 2003, 2002, 2000, 1996, 1993, 1986, 1985, 1980, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
33 COPLAND CIR	2013, 2008, 2003, 2002, 2000, 1996, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
34 COPLAND CIR	2013, 2008, 2003, 2000, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
35 COPLAND CIR	2013, 2008, 2003, 2002, 2000, 1996, 1985, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
36 COPLAND CIR	2013, 2008, 2003, 2000, 1996, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
37 COPLAND CIR	2013, 2008, 2003, 2002, 2000, 1996, 1986, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
38 COPLAND CIR	2013, 2008, 2003, 2002, 2000, 1996, 1993, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
39 COPLAND CIR	2013, 2008, 2003, 2000, 1996, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
40 COPLAND CIR	2013, 2008, 2003, 2002, 2000, 1996, 1993, 1986, 1985, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
4616 TEMPLETON ST	2013, 2008, 2003, 2000, 1996, 1993, 1986, 1985, 1980, 1976, 1975, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
4616 TEMPLETON ST	2013, 2008, 2002, 2000, 1996, 1993, 1986, 1985, 1980, 1976, 1975, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
4633 TEMPLETON ST	2013, 2008, 2003, 2000, 1996, 1993, 1986, 1985, 1980, 1976, 1975, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
4657 TEMPLETON ST	2013, 2008, 2003, 2000, 1996, 1993, 1986, 1985, 1980, 1976, 1975, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
4671 TEMPLETON ST	2013, 2008, 2003, 2000, 1996, 1993, 1986, 1985, 1980, 1976, 1975, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
4858 THILLE ST	2013, 2008, 2003, 2000, 1996, 1993, 1986, 1985, 1980, 1976, 1975, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
59 IRVING BERLIN DR	2013, 2008, 2003, 2000, 1996, 1993, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
60 IRVING BERLIN DR	2013, 2008, 2003, 2000, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
61 IRVING BERLIN DR	2013, 2008, 2003, 2000, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
62 IRVING BERLIN DR	2013, 2008, 2003, 2000, 1996, 1986, 1985, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
74 COPLAND CIR	2013, 2008, 2003, 2002, 2000, 1996, 1993, 1986, 1985, 1980, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
75 COPLAND CIR	2013, 2008, 2003, 2000, 1986, 1980, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
76 COPLAND CIR	2013, 2008, 2003, 2000, 1996, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
77 COPLAND CIR	2013, 2008, 2003, 2002, 2000, 1996, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
78 COPLAND CIR	2013, 2008, 2003, 2002, 2000, 1996, 1993, 1986, 1985, 1980, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926

FINDINGS

Address Researched	Address Not Identified in Research Source
79 COPLAND CIR	2013, 2008, 2003, 2000, 1996, 1986, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
80 COPLAND CIR	2013, 2008, 2003, 2000, 1993, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
81 COPLAND CIR	2013, 2008, 2003, 2000, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
82 COPLAND CIR	2013, 2008, 2003, 2000, 1996, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
83 COPLAND CIR	2013, 2008, 2003, 2000, 1996, 1993, 1986, 1985, 1980, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
84 COPLAND CIR	2013, 2008, 2003, 2000, 1996, 1976, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
900 WEBER CIR	2013, 2003, 2002, 2000, 1996, 1993, 1986, 1985, 1980, 1976, 1975, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
935 WEBER CIR	2013, 2008, 2003, 2000, 1996, 1986, 1985, 1980, 1976, 1975, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
936 WEBER CIR	2013, 2008, 2003, 2000, 1996, 1986, 1985, 1980, 1976, 1975, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
964 WEBER CIR	2013, 2008, 2003, 2000, 1986, 1985, 1980, 1976, 1975, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
964 WEBER CIR	2013, 2002, 2000, 1996, 1993, 1986, 1985, 1980, 1976, 1975, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
979 WEBER CIR	2013, 2008, 2003, 2000, 1986, 1985, 1980, 1976, 1975, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926
979 WEBER CIR	2013, 2008, 2002, 2000, 1996, 1993, 1986, 1985, 1980, 1976, 1975, 1971, 1970, 1968, 1965, 1964, 1961, 1957, 1953, 1949, 1940, 1930, 1926

Copland Drive
4515 Copland Drive
Ventura, CA 93003

Inquiry Number: 4103880.3
October 14, 2014

Certified Sanborn® Map Report

6 Armstrong Road, 4th Floor
Shelton, Connecticut 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

10/14/14

Site Name:
Copland Drive
4515 Copland Drive
Ventura, CA 93003

Client Name:
Trak Environmental Group
3637 B Arundell Circle
Ventura, CA 93003

EDR Inquiry # 4103880.3

Contact: Sharon Newman

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Trak Environmental Group were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Site Name: Copland Drive
Address: 4515 Copland Drive
City, State, Zip: Ventura, CA 93003
Cross Street:
P.O. # 1777
Project: NA
Certification # 8784-4DA4-8DBA

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.

Sanborn® Library search results
Certification # 8784-4DA4-8DBA

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others 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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Copland Drive
4515 Copland Drive
Ventura, CA 93003

Inquiry Number: 4103880.4
October 14, 2014

EDR Historical Topographic Map Report

6 Armstrong Road, 4th Floor
Shelton, Connecticut 06484
Toll Free: 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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Please contact EDR at 1-800-352-0050
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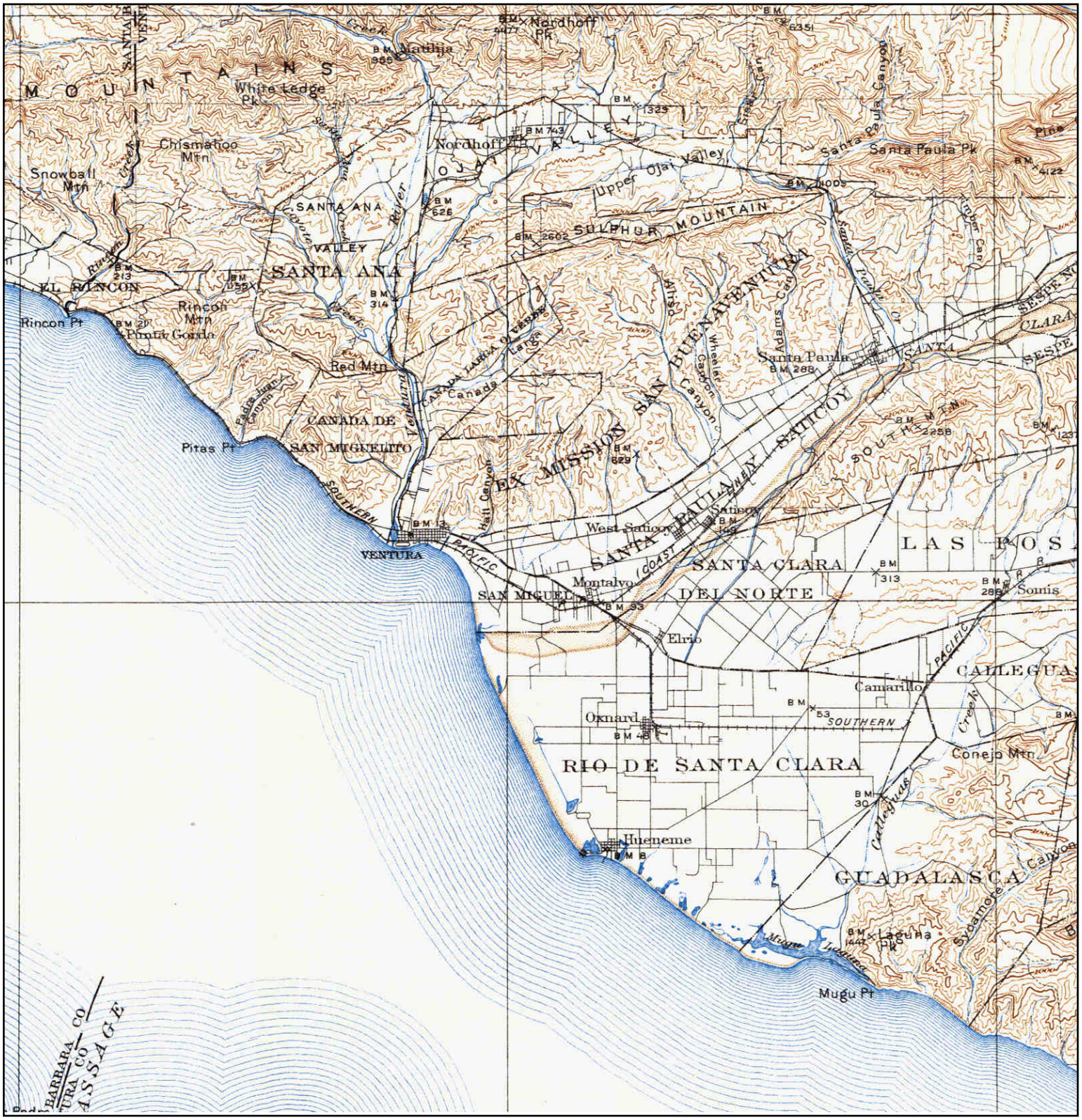
Historical Topographic Map

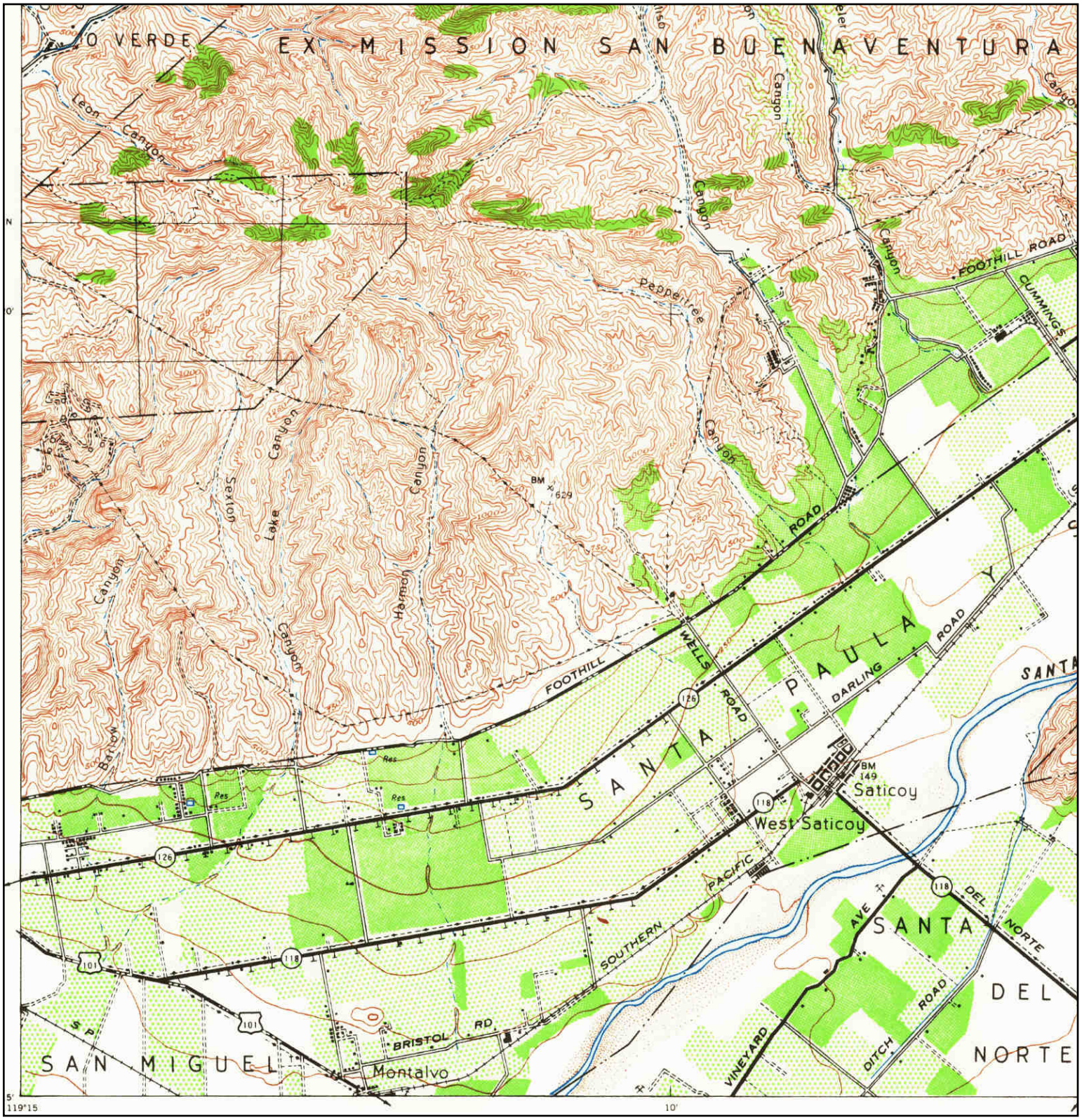
N	TARGET QUAD NAME: SANTA PAULA MAP YEAR: 1903 SERIES: 15 SCALE: 1:62500	SITE NAME: Copland Drive ADDRESS: 4515 Copland Drive Ventura, CA 93003 LAT/LONG: 34.265 / -119.2313	CLIENT: Trak Environmental Group CONTACT: Sharon Newman INQUIRY#: 4103880.4 RESEARCH DATE: 10/14/2014

Historical Topographic Map



N	TARGET QUAD NAME: SOUTHERN CA SHEET 3 MAP YEAR: 1910 SERIES: 60 SCALE: 1:250000	SITE NAME: Copland Drive ADDRESS: 4515 Copland Drive Ventura, CA 93003 LAT/LONG: 34.265 / -119.2313	CLIENT: Trak Environmental Group CONTACT: Sharon Newman INQUIRY#: 4103880.4 RESEARCH DATE: 10/14/2014

Historical Topographic Map

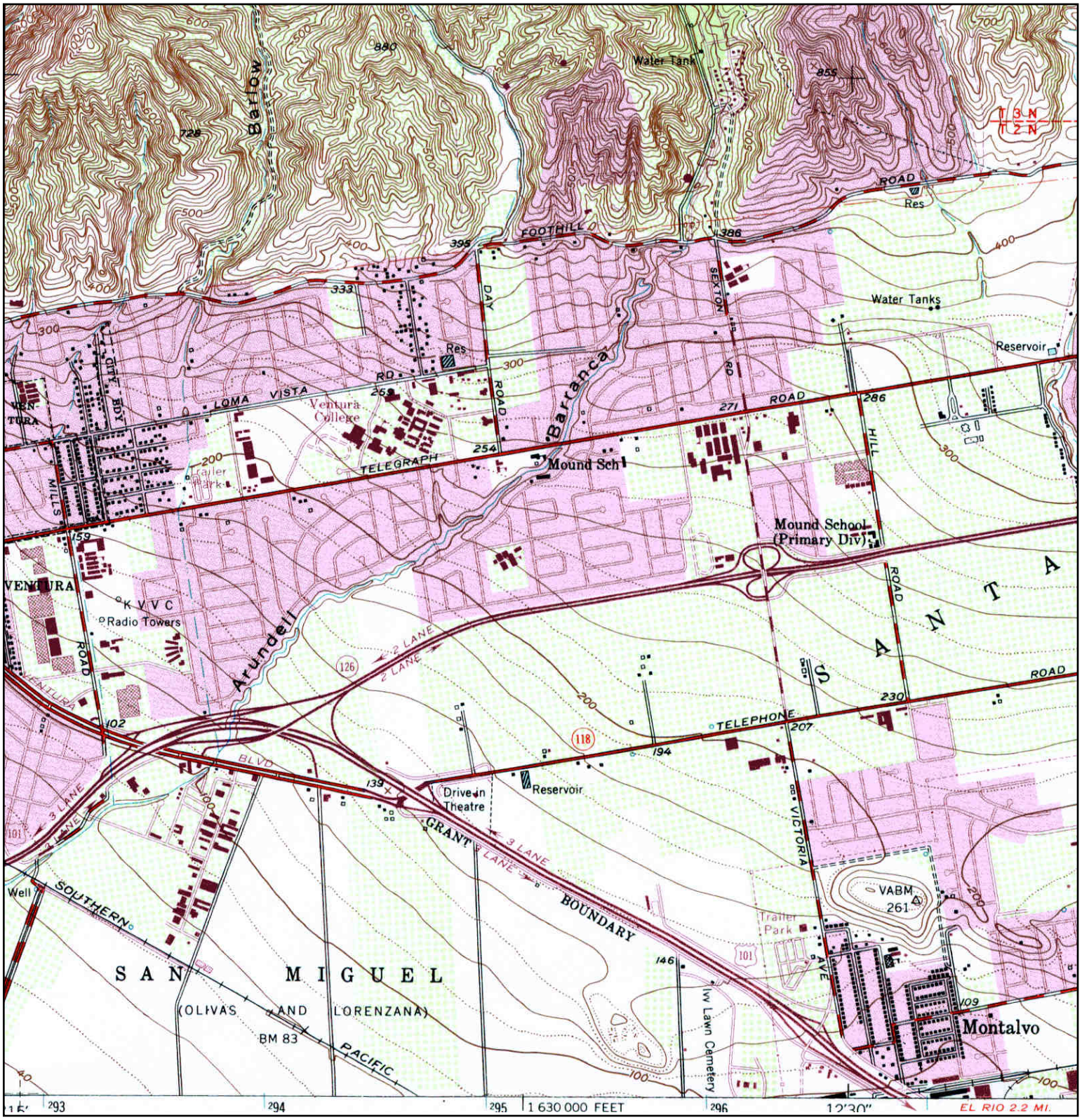


N	**TARGET QUAD** NAME: SANTA PAULA MAP YEAR: 1941 SERIES: 15 SCALE: 1:62500	SITE NAME: Copland Drive ADDRESS: 4515 Copland Drive Ventura, CA 93003 LAT/LONG: 34.265 / -119.2313	CLIENT: Trak Environmental Group CONTACT: Sharon Newman INQUIRY#: 4103880.4 RESEARCH DATE: 10/14/2014

Historical Topographic Map

N	TARGET QUAD NAME: SATICOY MAP YEAR: 1951 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Copland Drive ADDRESS: 4515 Copland Drive Ventura, CA 93003 LAT/LONG: 34.265 / -119.2313	CLIENT: Trak Environmental Group CONTACT: Sharon Newman INQUIRY#: 4103880.4 RESEARCH DATE: 10/14/2014

Historical Topographic Map



N	TARGET QUAD NAME: SATICOY MAP YEAR: 1967 PHOTOREVISED FROM :1951 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Copland Drive ADDRESS: 4515 Copland Drive Ventura, CA 93003 LAT/LONG: 34.265 / -119.2313	CLIENT: Trak Environmental Group CONTACT: Sharon Newman INQUIRY#: 4103880.4 RESEARCH DATE: 10/14/2014

Copland Drive
4515 Copland Drive
Ventura, CA 93003

Inquiry Number: 4103880.6
October 13, 2014

The EDR Property Tax Map Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

EDR Property Tax Map Report

Environmental Data Resources, Inc.'s EDR Property Tax Map Report is designed to assist environmental professionals in evaluating potential environmental conditions on a target property by understanding property boundaries and other characteristics. The report includes a search of available property tax maps, which include information on boundaries for the target property and neighboring properties, addresses, parcel identification numbers, as well as other data typically used in property location and identification.

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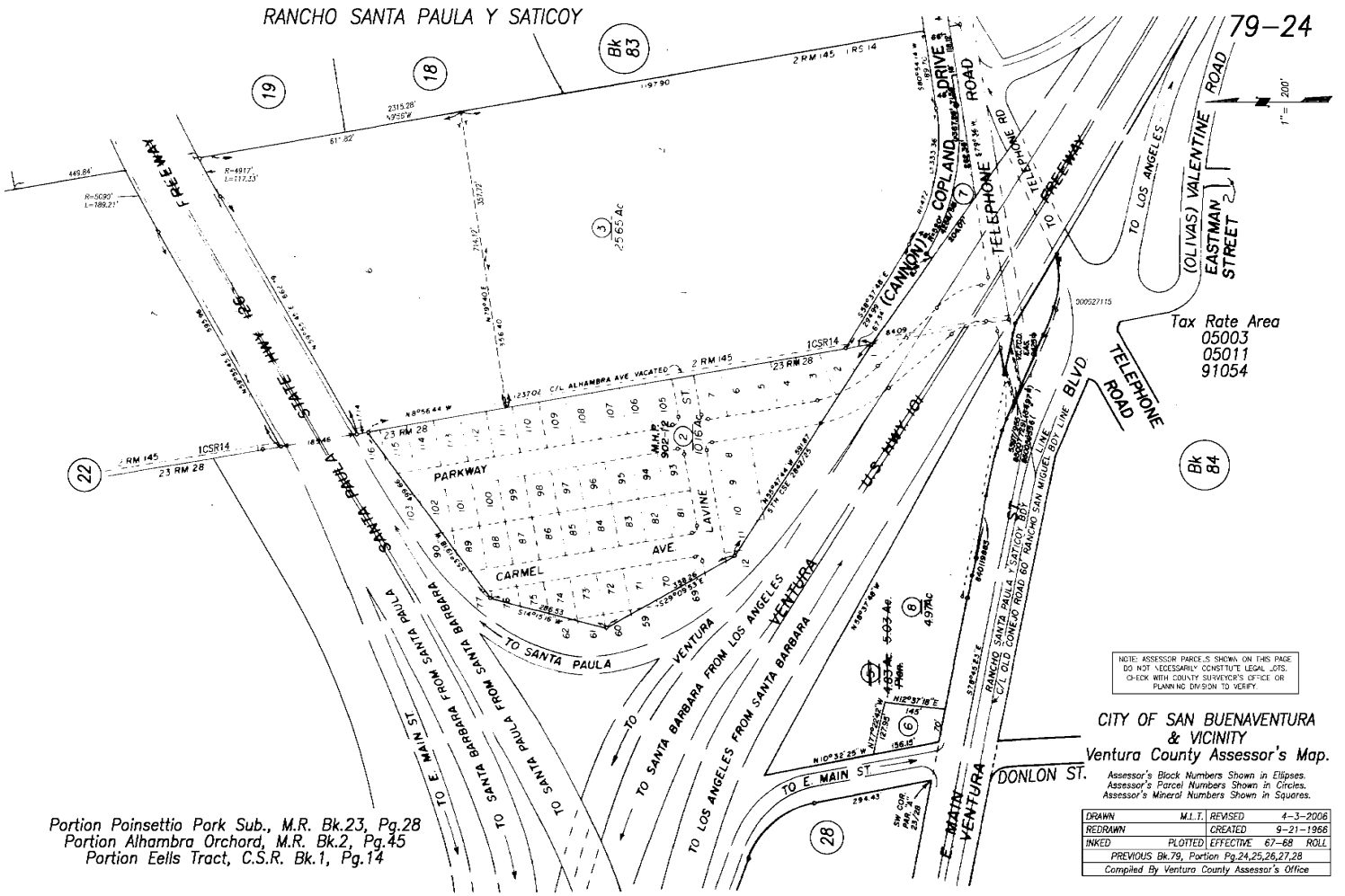
RANCHO SANTA PAULA Y SATICOY
79-24
Bk 83
Bk 84
19
18
22
28
3
25.65 Ac
2 RM 145
1 RS 14
1 CSR 14
23 RM 28
C/L ALHAMBRA AVE VACATED
PARKWAY
CARMEL AVE
LAVINE ST
M.H.P. 502-16
0.16 Ac
SANTA PAULA FREEWAY
STATE HWY 126
U.S. HWY 101
COPLAND DRIVE
(CANNON) ROAD
TELEPHONE RD
TELEPHONE ROAD
TO FREEWAY
TO LOS ANGELES
(OLIVAS) VALENTINE ROAD
EASTMAN STREET
TO SANTA PAULA
TO SANTA PAULA FROM SANTA BARBARA
TO SANTA BARBARA FROM SANTA PAULA
TO SANTA BARBARA FROM LOS ANGELES
TO LOS ANGELES FROM SANTA BARBARA
TO E. MAIN ST
TO E. MAIN ST
E. MAIN ST
VENTURA
DONLON ST.
RANCHO SANTA PAULA Y SATICOY
C/L OLD CONEJO ROAD 60' RANCHO SAN MIGUEL BDY LINE
TELEPHONE ROAD BLVD
Tax Rate Area
05003
05011
91054
NOTE: ASSESSOR PARCELS SHOWN ON THIS PAGE DO NOT NECESSARILY CONSTITUTE LEGAL LOTS. CHECK WITH COUNTY SURVEYOR'S OFFICE OR PLANNING DIVISION TO VERIFY.
CITY OF SAN BUENAVENTURA
& VICINITY
Ventura County Assessor's Map.
Assessor's Block Numbers Shown in Ellipses.
Assessor's Parcel Numbers Shown in Circles.
Assessor's Mineral Numbers Shown in Squares.
DRAWN M.L.T. REVISED 4-3-2006
REDRAWN CREATED 9-21-1968
INKED PLOTTED EFFECTIVE 67-68 ROLL
PREVIOUS Bk.79, Portion Pg.24,25,26,27,28
Compiled By Ventura County Assessor's Office
Portion Poinsettia Park Sub., M.R. Bk.23, Pg.28
Portion Alhambra Orchard, M.R. Bk.2, Pg.45
Portion Eells Tract, C.S.R. Bk.1, Pg.14

APPENDIX C

EDR RADIUS MAP REPORT
(EXECUTIVE SUMMARY, OVERVIEW MAP, DETAIL MAP, MAP FINDINGS SUMMARY)

NOTE: REMAINING SECTIONS OF EDR RADIUS MAP REPORT ARE INCLUDED ON CD-ROM ENCLOSED IN POCKET AT END OF THIS REPORT

Copland Drive
4515 Copland Drive
Ventura, CA 93003

Inquiry Number: 4103880.2s
October 13, 2014

The EDR Radius Map™ Report with GeoCheck®

EDR® Environmental Data Resources Inc

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	8
Orphan Summary	102
Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting SSURGO Soil Map	A-5
Physical Setting Source Map	A-9
Physical Setting Source Map Findings	A-11
Physical Setting Source Records Searched	PSGR-1

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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 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

4515 COPLAND DRIVE
VENTURA, CA 93003

COORDINATES

Latitude (North):	34.2650000 - 34˚ 15' 54.00''
Longitude (West):	119.2313000 - 119˚ 13' 52.68''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	294562.5
UTM Y (Meters):	3793597.0
Elevation:	155 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	34119-C2 SATICOY, CA
Most Recent Revision:	1967

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20120506
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 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-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 landfill and/or solid waste disposal site lists

SWF/LF ..... Solid Waste Information System

State and tribal leaking storage tank lists

INDIAN LUST ..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

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

EXECUTIVE SUMMARY

Local Lists of Landfill / Solid Waste Disposal Sites

DEBRIS REGION 9	Torres Martinez Reservation Illegal Dump Site Locations
ODI	Open Dump Inventory
SWRCY	Recycler Database
HAULERS	Registered Waste Tire Haulers Listing
INDIAN ODI	Report on the Status of Open Dumps on Indian Lands
WMUDS/SWAT	Waste Management Unit Database

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 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 / No Longer Regulated
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

EXECUTIVE SUMMARY

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
CUPA Listings	CUPA Resources List
DRYCLEANERS	Cleaner Facilities
WIP	Well Investigation Program Case List
VENTURA CO. BWT	Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
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
MED WASTE VENTURA	Medical Waste Program List
LEAD SMELTERS	Lead Smelter Sites
EPA WATCH LIST	EPA WATCH LIST
2020 COR ACTION	2020 Corrective Action Program List
PROC	Certified Processors Database
Financial Assurance	Financial Assurance Information Listing
US FIN ASSUR	Financial Assurance Information
HWP	EnviroStor Permitted Facilities Listing
US AIRS	Aerometric Information Retrieval System Facility Subsystem
WDS	Waste Discharge System
PRP	Potentially Responsible Parties
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
MWMP	Medical Waste Management Program Listing
COAL ASH DOE	Steam-Electric Plant Operation Data
HWT	Registered Hazardous Waste Transporter Database

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	EDR Proprietary Manufactured Gas Plants

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF	Recovered Government Archive Solid Waste Facilities List
RGA LUST	Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS 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. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

STANDARD ENVIRONMENTAL RECORDS

Federal CERCLIS NFRAP site List

CERC-NFRAP: 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.

A review of the CERC-NFRAP list, as provided by EDR, and dated 10/25/2013 has revealed that there is 1 CERC-NFRAP site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
WELEX	1301 CALLENS RD	WSW 1/4 - 1/2 (0.479 mi.)	E31	69

Federal RCRA generators list

RCRA-SQG: 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.

A review of the RCRA-SQG list, as provided by EDR, and dated 06/10/2014 has revealed that there are 2 RCRA-SQG sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
ALPHAGRAPHICS	4221-A E MAIN ST	WSW 1/8 - 1/4 (0.187 mi.)	A7	11
TARGET T0298	***4200 E MAIN ST***	***WSW 1/8 - 1/4 (0.202 mi.)***	***A19***	***32***

State- and tribal - equivalent NPL

RESPONSE: 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.

A review of the RESPONSE list, as provided by EDR, and dated 08/05/2014 has revealed that there is 1 RESPONSE site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MASTER PLATING INC THE	***1255 CALLENS RD***	***WSW 1/4 - 1/2 (0.460 mi.)***	***E26***	***52***

State- and tribal - equivalent CERCLIS

ENVIROSTOR: 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.

A review of the ENVIROSTOR list, as provided by EDR, and dated 08/05/2014 has revealed that there are 6 ENVIROSTOR sites within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MASTER PLATING INC THE Status: Refer: RWQCB	***1255 CALLENS RD***	***WSW 1/4 - 1/2 (0.460 mi.)***	***E26***	***52***
WELEX Status: Refer: Other Agency	***1301 CALLENS RD.***	***WSW 1/4 - 1/2 (0.479 mi.)***	***E30***	***66***
JANUS ENTERPRISES, INC Status: No Further Action	***4748 MCGRATH STREET***	***SSE 1/2 - 1 (0.597 mi.)***	***33***	***72***
T.W. BROWN OIL CO Status: Refer: 1248 Local Agency	***1457 FLEET AVE***	***WSW 1/2 - 1 (0.682 mi.)***	***34***	***74***
KAL GARD FACILITY Status: Refer: 1248 Local Agency Status: Refer: RWQCB	***4476 DUPONT***	***S 1/2 - 1 (0.763 mi.)***	***35***	***94***
NOWCAM/CAMCO Status: No Further Action	***3530 ARUNDELL CIRCLE***	***WSW 1/2 - 1 (0.956 mi.)***	***36***	***98***

State and tribal leaking storage tank lists

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

A review of the LUST list, as provided by EDR, and dated 07/30/2014 has revealed that there are 13 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
POLICE/FIRE ADMIN HEADQUARTERS Status: Completed - Case Closed	***1425 DOWELL DR***	***SE 1/4 - 1/2 (0.463 mi.)***	***F28***	***63***
POLICE/FIRE ADMIN HEADQUARTERS	1425 DOWELL DR	SE 1/4 - 1/2 (0.463 mi.)	F29	65

Lower Elevation	Address	Direction / Distance	Map ID	Page
UNICAL SERVICE STATION Status: Completed - Case Closed	***4210 MAIN ST***	***WSW 1/8 - 1/4 (0.195 mi.)***	***A16***	***19***
TOSCO - 76 SS #6991 (FORMER)	4210 MAIN ST	WSW 1/8 - 1/4 (0.195 mi.)	A17	30
UNOCAL #6991 (FORMER TOSCO - 7	4210 MAIN ST	WSW 1/8 - 1/4 (0.221 mi.)	A20	34

EXECUTIVE SUMMARY

Lower Elevation	Address	Direction / Distance	Map ID	Page
TAFT ELECTRIC	1699 EASTMAN AVE	S 1/4 - 1/2 (0.351 mi.)	C21	34
TAFT ELECTRIC COMPANY	***1694 EASTMAN AVENUE***	***S 1/4 - 1/2 (0.388 mi.)***	***C22***	***35***
TAFT ELECTRIC	***1694 EASTMAN AVE***	***S 1/4 - 1/2 (0.388 mi.)***	***C23***	***40***
Status: Completed - Case Closed				
A.L.L. ROOFING & BUILDING MATE	***1435 WALTER ST***	***SW 1/4 - 1/2 (0.457 mi.)***	***D24***	***45***
Status: Completed - Case Closed				
ALL ROOFING	1435 WALTER ST	SW 1/4 - 1/2 (0.457 mi.)	D25	52
MASTER PLATING INC THE	***1255 CALLENS RD***	***WSW 1/4 - 1/2 (0.460 mi.)***	***E26***	***52***
PACIFIC BELL (KD-161)	***1264 CALLENS RD***	***WSW 1/4 - 1/2 (0.462 mi.)***	***E27***	***58***
Status: Completed - Case Closed				
UNISEAL VALVE CO	***1334 CALLENS RD***	***WSW 1/4 - 1/2 (0.489 mi.)***	***E32***	***69***
Status: Completed - Case Closed				

SLIC: SLIC Region comes from the California Regional Water Quality Control Board.

A review of the SLIC list, as provided by EDR, and dated 07/30/2014 has revealed that there are 3 SLIC sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
CALIFORNIA HIGHWAY PATROL	***4656 VALENTINE RD***	***SSE 1/8 - 1/4 (0.190 mi.)***	***B12***	***14***
Facility Status: Completed - Case Closed				
MASTER PLATING INC THE	***1255 CALLENS RD***	***WSW 1/4 - 1/2 (0.460 mi.)***	***E26***	***52***
Facility Status: Open - Site Assessment				
WELEX	***1301 CALLENS RD.***	***WSW 1/4 - 1/2 (0.479 mi.)***	***E30***	***66***
Facility Status: Completed - Case Closed				

State and tribal registered storage tank lists

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, and dated 07/30/2014 has revealed that there are 2 UST sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
PAC BELL KD-157	4220 E MAIN ST	WSW 1/8 - 1/4 (0.189 mi.)	A10	13
CALIFORNIA HIGHWAY PATROL	***4656 VALENTINE RD***	***SSE 1/8 - 1/4 (0.190 mi.)***	***B12***	***14***

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Registered Storage Tanks

EXECUTIVE SUMMARY

CA FID UST: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, and dated 10/31/1994 has revealed that there are 4 CA FID UST sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
FIRE STATION 5	***4225 E MAIN ST***	***WSW 1/8 - 1/4 (0.183 mi.)***	***A6***	***10***
PACIFIC BELL (KD-157)	***4220 E MAIN ST***	***WSW 1/8 - 1/4 (0.189 mi.)***	***A8***	***12***
CALIFORNIA HIGHWAY PATROL	4656 VALENTINE RD	SSE 1/8 - 1/4 (0.190 mi.)	B11	14
SERVICE STATION 6991	***4210 E MAIN ST***	***WSW 1/8 - 1/4 (0.195 mi.)***	***A14***	***17***

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there are 7 HIST UST sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
RANCHO PLACENTIA	4765 TELEPHONE RD	SSE 0 - 1/8 (0.016 mi.)	1	8
CALIFORNIA HIGHWAY PATROL	4565 VALENTINE RD.	SSE 1/8 - 1/4 (0.135 mi.)	4	9
FIRE STATION 5	4225 E MAIN ST	WSW 1/8 - 1/4 (0.183 mi.)	A5	10
PACIFIC BELL (KD-157)	***4220 E MAIN ST***	***WSW 1/8 - 1/4 (0.189 mi.)***	***A9***	***13***
CALIFORNIA HIGHWAY PATROL	***4656 VALENTINE RD***	***SSE 1/8 - 1/4 (0.190 mi.)***	***B12***	***14***
DIKES UNION 76 SELF-SERVE	4210 E MAIN ST	WSW 1/8 - 1/4 (0.195 mi.)	A15	18
TARGET STORE #T0298	***4200 E MAIN ST***	***WSW 1/8 - 1/4 (0.202 mi.)***	***A18***	***31***

SWEEPS UST: 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.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there are 4 SWEEPS UST sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
FIRE STATION 5	***4225 E MAIN ST***	***WSW 1/8 - 1/4 (0.183 mi.)***	***A6***	***10***
PACIFIC BELL (KD-157)	***4220 E MAIN ST***	***WSW 1/8 - 1/4 (0.189 mi.)***	***A8***	***12***
CALIFORNIA HIGHWAY PATROL	***4656 VALENTINE RD***	***SSE 1/8 - 1/4 (0.190 mi.)***	***B12***	***14***
SERVICE STATION 6991	***4210 E MAIN ST***	***WSW 1/8 - 1/4 (0.195 mi.)***	***A14***	***17***

Other Ascertainable Records

HIST CORTESE: 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.

A review of the HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there are 6 HIST CORTESE sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
UNICAL SERVICE STATION	***4210 MAIN ST***	***WSW 1/8 - 1/4 (0.195 mi.)***	***A16***	***19***

Lower Elevation	Address	Direction / Distance	Map ID	Page
TAFT ELECTRIC	*1694 EASTMAN AVE*	*S 1/4 - 1/2 (0.388 mi.)*	*C23*	*40*
MASTER PLATING INC THE	*1255 CALLENS RD*	*WSW 1/4 - 1/2 (0.460 mi.)*	*E26*	*52*
PACIFIC BELL (KD-161)	*1264 CALLENS RD*	*WSW 1/4 - 1/2 (0.462 mi.)*	*E27*	*58*
WELEX	*1301 CALLENS RD.*	*WSW 1/4 - 1/2 (0.479 mi.)*	*E30*	*66*
UNISEAL VALVE CO	*1334 CALLENS RD*	*WSW 1/4 - 1/2 (0.489 mi.)*	*E32*	*69*

Notify 65: 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.

A review of the Notify 65 list, as provided by EDR, and dated 10/21/1993 has revealed that there is 1 Notify 65 site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
UNICAL SERVICE STATION	*4210 MAIN ST*	*WSW 1/8 - 1/4 (0.195 mi.)*	*A16*	*19*

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR US Hist Auto Stat: 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.

A review of the EDR US Hist Auto Stat list, as provided by EDR, has revealed that there are 2 EDR US Hist Auto Stat sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
Not reported	4616 TEMPLETON ST	NE 0 - 1/8 (0.031 mi.)	2	9

Lower Elevation	Address	Direction / Distance	Map ID	Page
Not reported	4756 TELEPHONE RD	SSW 1/8 - 1/4 (0.193 mi.)	13	16

EDR US Hist 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.

A review of the EDR US Hist Cleaners list, as provided by EDR, has revealed that there is 1 EDR US Hist Cleaners site within approximately 0.25 miles of the target property.

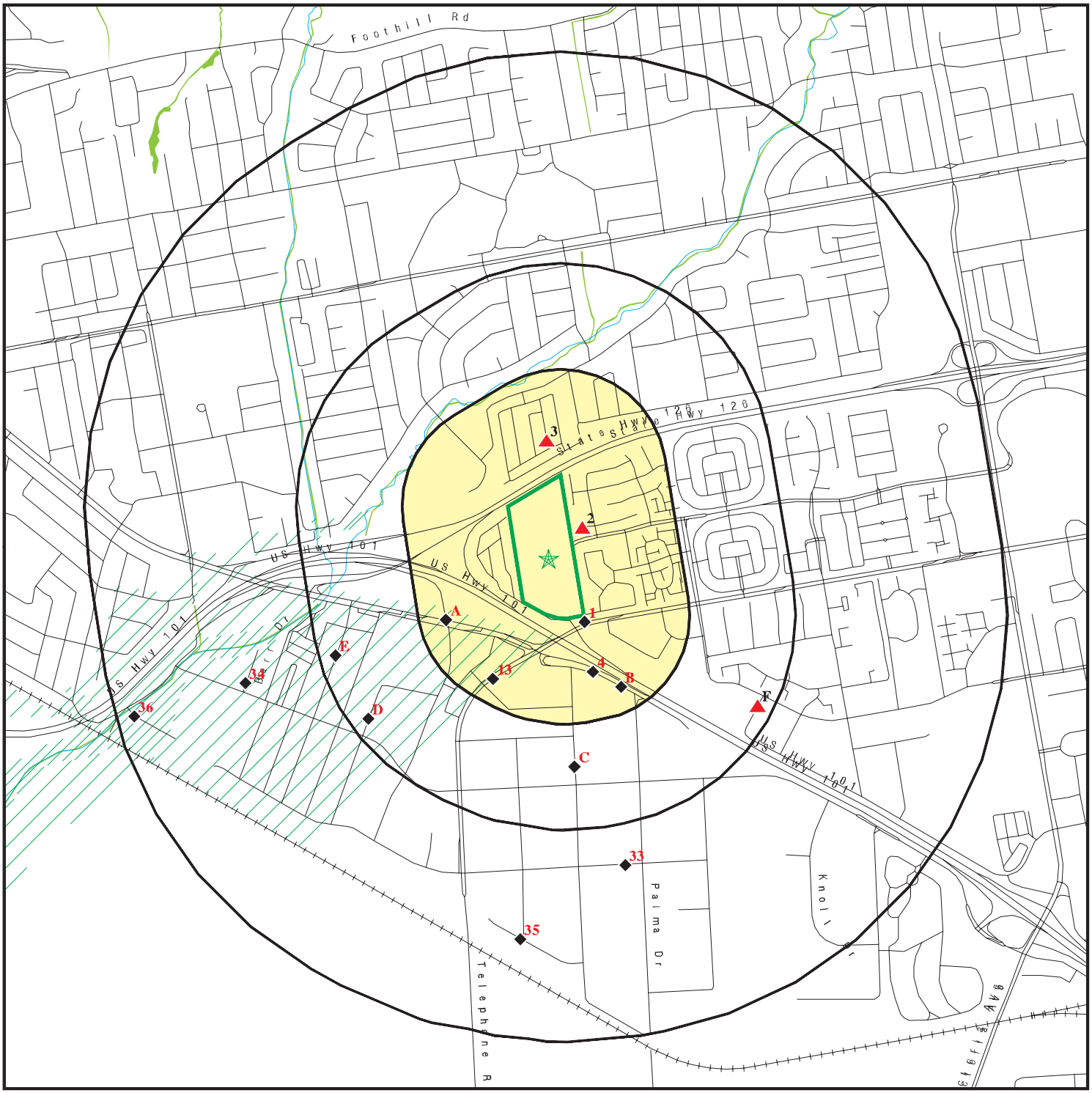
Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
Not reported	85 NEWCOMB DR	N 0 - 1/8 (0.088 mi.)	3	9

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 14 records.

Site Name	Database(s)
SYCAMORE DRIVE COMMUNITY CT	RGA LUST
HUMACID CORP & DUNCAN MACLEOD	CERC-NFRAP
GETTY OIL VENTURA AVE OIL FLD	CERC-NFRAP
HALLS CANYON	LUST
AMERICAN TOWER CORP.	UST
VCFPD STN #25	UST
RINCON ISLAND, STATE LEASE 146	HIST UST
RINCON ISLAND - STATE LEASE 14	HIST UST
VENOCO RINCON PIPELINE STN	AST
	AST
RINCON IS LDT PARTNERSHIP PRC145 A	RCRA-SQG
RINCON IS LMT PARTNERSHIP	RCRA-SQG
SCHLUMBERGER TECHNOLOGY CORP	RCRA-LQG
RINCON DEL MAR RANCH	SLIC

OVERVIEW MAP - 4103880.2S



0 1/4 1/2 1 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- 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: Copland Drive	CLIENT: Trak Environmental Group
ADDRESS: 4515 Copland Drive Ventura CA 93003	CONTACT: Sharon Newman
LAT/LONG: 34.265 / 119.2313	INQUIRY #: 4103880.2s
	DATE: October 13, 2014 8:04 pm

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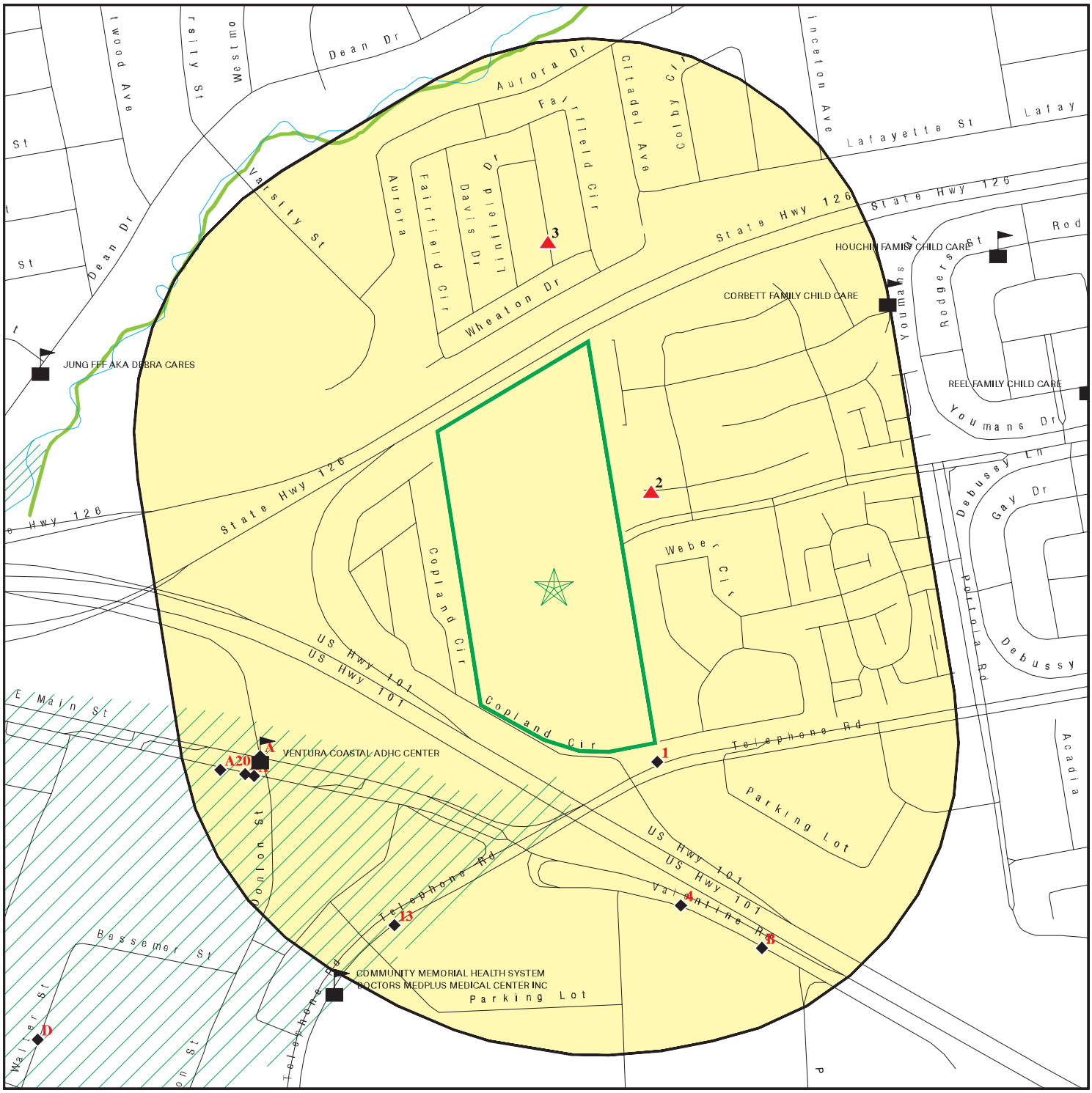
DETAIL MAP - 4103880.2S



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

0 1/16 1/8 1/4 Miles

Indian Reservations BIA

Oil & Gas pipelines from USGS

100-year flood zone

500-year flood zone

National Wetland Inventory

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: Copland Drive	CLIENT: Trak Environmental Group
ADDRESS: 4515 Copland Drive Ventura CA 93003	CONTACT: Sharon Newman INQUIRY #: 4103880.2s
LAT/LONG: 34.265 / 119.2313	DATE: October 13, 2014 8:05 pm

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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	1	NR	NR	1
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	2	NR	NR	NR	2
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	1	0	NR	1
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	2	4	NR	6
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	3	10	NR	NR	13

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	1	2	NR	NR	3
INDIAN LUST	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
UST	0.250		0	2	NR	NR	NR	2
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								
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	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
WMUDS/SWAT	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	4	NR	NR	NR	4
HIST UST	0.250		1	6	NR	NR	NR	7
SWEEPS UST	0.250		0	4	NR	NR	NR	4
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	1	5	NR	NR	6
CUPA Listings	0.250		0	0	NR	NR	NR	0
Notify 65	1.000		0	1	0	0	NR	1
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
VENTURA CO. BWT	TP		NR	NR	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
MED WASTE VENTURA	TP		NR	NR	NR	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
HWP	1.000		0	0	0	0	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
WDS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	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
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
HWT	0.250		0	0	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR US Hist Auto Stat	0.250		1	1	NR	NR	NR	2
EDR US Hist Cleaners	0.250		1	0	NR	NR	NR	1
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

1 SSE < 1/8 0.016 mi. 83 ft. | **RANCHO PLACENTIA 4765 TELEPHONE RD VENTURA, CA 93001** | **HIST UST** | **U001579017 N/A**

Relative: Lower

Actual: 150 ft.

HIST UST:

Region:	STATE
Facility ID:	00000033584
Facility Type:	Other
Other Type:	FARM
Total Tanks:	0004
Contact Name:	HOFFMAN, VANCE & WORTHINGTON
Telephone:	8056420211
Owner Name:	RANCHO PLACENTIA
Owner Address:	1000 SOUTH SEAWARD AVE
Owner City,St,Zip:	VENTURA, CA 93001
Tank Num:	001
Container Num:	#1
Year Installed:	1939
Tank Capacity:	00000550
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Tank Construction:	Not reported
Leak Detection:	Visual
Tank Num:	002
Container Num:	#2
Year Installed:	1933
Tank Capacity:	00000500
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Tank Construction:	Not reported
Leak Detection:	None
Tank Num:	003
Container Num:	#3
Year Installed:	1933
Tank Capacity:	00000550
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Tank Construction:	Not reported
Leak Detection:	None
Tank Num:	004
Container Num:	#4
Year Installed:	1926
Tank Capacity:	00000550
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Tank Construction:	Not reported
Leak Detection:	None

2
NE
< 1/8
0.031 mi.
164 ft.

4616 TEMPLETON ST
VENTURA, CA 93003

EDR US Hist Auto Stat **1015507328**
N/A

Relative:
Higher

Actual:
164 ft.

EDR Historical Auto Stations:

Name:	R TRAILER REPAIRS
Year:	2001
Address:	4616 TEMPLETON ST
Name:	R TRAILER REPAIRS
Year:	2002
Address:	4616 TEMPLETON ST
Name:	R TRAILER REPAIRS
Year:	2003
Address:	4616 TEMPLETON ST
Name:	R TRAILER REPAIRS
Year:	2004
Address:	4616 TEMPLETON ST
Name:	R TRAILER REPAIRS
Year:	2005
Address:	4616 TEMPLETON ST

3
North
< 1/8
0.088 mi.
467 ft.

85 NEWCOMB DR
VENTURA, CA 93003

EDR US Hist Cleaners **1015101098**
N/A

Relative:
Higher

Actual:
178 ft.

EDR Historical Cleaners:

Name:	ARNIES CARPET CLEANING
Year:	2004
Address:	85 NEWCOMB DR

4
SSE
1/8-1/4
0.135 mi.
715 ft.

CALIFORNIA HIGHWAY PATROL
4565 VALENTINE RD.
VENTURA, CA 93006

HIST UST **U001579191**
N/A

Relative:
Lower

Actual:
146 ft.

HIST UST:

Region:	STATE
Facility ID:	00000035449
Facility Type:	Other
Other Type:	CHP
Total Tanks:	0001
Contact Name:	Not reported
Telephone:	9163225310
Owner Name:	CALIFORNIA HIGHWAY PATROL
Owner Address:	P.O. BOX 898
Owner City,St,Zip:	SACRAMENTO, CA 95804
Tank Num:	001
Container Num:	765-2

CALIFORNIA HIGHWAY PATROL (Continued) **U001579191**

Year Installed: Not reported
Tank Capacity: 00000000
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: None

A5
WSW
1/8-1/4
0.183 mi.
964 ft.

FIRE STATION 5
4225 E MAIN ST
VENTURA, CA 93003

HIST UST **U001579094**
N/A

Site 1 of 13 in cluster A

Relative:
Lower

Actual:
128 ft.

HIST UST:
Region: STATE
Facility ID: 00000030909
Facility Type: Other
Other Type: PUBLIC AGENCY
Total Tanks: 0001
Contact Name: DON EDWARDS
Telephone: 8056547800
Owner Name: CITY OF SAN BUENAVENTURA
Owner Address: 501 POLI ST
Owner City,St,Zip: VENTURA, CA 93001

Tank Num: 001
Container Num: 12
Year Installed: 77
Tank Capacity: 00001000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: Stock Inventor

A6
WSW
1/8-1/4
0.183 mi.
964 ft.

FIRE STATION 5
4225 E MAIN ST
VENTURA, CA 93003

CA FID UST **S101629445**
SWEEPS UST **N/A**

Site 2 of 13 in cluster A

Relative:
Lower

Actual:
128 ft.

CA FID UST:
Facility ID: 56004921
Regulated By: UTNKA
Regulated ID: 00030909
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 8056547800
Mail To: Not reported
Mailing Address: P O BOX
Mailing Address 2: Not reported
Mailing City,St,Zip: VENTURA 93003
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported

FIRE STATION 5 (Continued) **S101629445**

Comments: Not reported
Status: Active

SWEEPS UST:
Status: Active
Comp Number: 30909
Number: 4
Board Of Equalization: 44-030990
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88
Owner Tank Id: 12
SWRCB Tank Id: 56-020-030909-000001
Tank Status: A
Capacity: 1000
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: 1

A7 WSW 1/8-1/4 0.187 mi. 985 ft. **ALPHAGRAPHICS** **RCRA-SQG** **1000984943**
4221-A E MAIN ST **CAR000000521**
VENTURA, CA 93003

Site 3 of 13 in cluster A

Relative: Lower

Actual: 128 ft.

RCRA-SQG:
Date form received by agency: 02/27/1995
Facility name: ALPHAGRAPHICS
Facility address: 4221-A E MAIN ST
VENTURA, CA 93003
EPA ID: CAR000000521
Mailing address: E MAIN ST
VENTURA, CA 93003
Contact: CHRIS BRASHEARS
Contact address: 4221 A E MAIN ST
VENTURA, CA 93003
Contact country: US
Contact telephone: (805) 642-6797
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: JEWITT MIKE
Owner/operator address: PO 8906
INCLINE VILLAGE, NV 89452
Owner/operator country: Not reported
Owner/operator telephone: (805) 647-0800
Legal status: Private
Owner/Operator Type: Owner

ALPHAGRAPHICS (Continued) **1000984943**

Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

A8
WSW
1/8-1/4
0.189 mi.
998 ft.

PACIFIC BELL (KD-157) **CA FID UST** **S101619918**
4220 E MAIN ST **SWEEPS UST** **N/A**
VENTURA, CA 93003

Site 4 of 13 in cluster A

Relative:
Lower

Actual:
127 ft.

CA FID UST:
Facility ID: 56001596
Regulated By: UTNKA
Regulated ID: 00057824
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 4155426758
Mail To: Not reported
Mailing Address: 370 3RD ST
Mailing Address 2: Not reported
Mailing City,St,Zip: VENTURA 93003
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

SWEEPS UST:
Status: Active
Comp Number: 57824
Number: 9
Board Of Equalization: 44-031035
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88
Owner Tank Id: 1
SWRCB Tank Id: 56-020-057824-000001
Tank Status: A

PACIFIC BELL (KD-157) (Continued) **S101619918**

Capacity: 10000
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: 1

A9
WSW
1/8-1/4
0.189 mi.
998 ft.

PACIFIC BELL (KD-157) **HIST UST** **U001579115**
4220 E MAIN ST **VENTURA CO. BWT** **N/A**
VENTURA, CA 93003

Site 5 of 13 in cluster A

Relative:
Lower

Actual:
127 ft.

HIST UST:
Region: STATE
Facility ID: 00000057824
Facility Type: Other
Other Type: SIC 4800
Total Tanks: 0001
Contact Name: E.J.KOEHLER
Telephone: 4155426758
Owner Name: PACIFIC BELL
Owner Address: 370 THIRD STREET
Owner City,St,Zip: SAN FRANCISCO, CA 94107

Tank Num: 001
Container Num: 1
Year Installed: 1973
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: None

VENTURA CO. BWT:
Facility ID: FA0006469
Program: BUSINESS PLAN - VENTURA CITY/VENTURA CITY UNDERGROUND TANK

A10
WSW
1/8-1/4
0.189 mi.
998 ft.

PAC BELL KD-157 **UST** **U003778534**
4220 E MAIN ST **N/A**
VENTURA, CA 93003

Site 6 of 13 in cluster A

Relative:
Lower

Actual:
127 ft.

UST:
Facility ID: 056-001-004415
Latitude: 34.2636274
Longitude: -119.2335596
Permitting Agency: VENTURA COUNTY

B11
SSE
1/8-1/4
0.190 mi.
1005 ft.

CALIFORNIA HIGHWAY PATROL
4656 VALENTINE RD
VENTURA, CA 93006

Site 1 of 2 in cluster B

CA FID UST **S101630013**
N/A

Relative:
Lower

Actual:
148 ft.

CA FID UST:

Facility ID:	56002985
Regulated By:	UTNKA
Regulated ID:	00017981
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	8056544571
Mail To:	Not reported
Mailing Address:	P O BOX
Mailing Address 2:	Not reported
Mailing City,St,Zip:	VENTURA 93006
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

B12
SSE
1/8-1/4
0.190 mi.
1005 ft.

CALIFORNIA HIGHWAY PATROL
4656 VALENTINE RD
VENTURA, CA 93003

Site 2 of 2 in cluster B

SLIC **U001579192**
UST **N/A**
HIST UST
SWEEPS UST
VENTURA CO. BWT

Relative:
Lower

Actual:
148 ft.

SLIC:

Region:	STATE
Facility Status:	**Completed - Case Closed**
Status Date:	07/16/2010
Global Id:	T10000002311
Lead Agency:	VENTURA COUNTY LOP
Lead Agency Case Number:	Not reported
Latitude:	34.2604968
Longitude:	-119.228672
Case Type:	Cleanup Program Site
Case Worker:	EKO
Local Agency:	VENTURA COUNTY LOP
RB Case Number:	Not reported
File Location:	Not reported
Potential Media Affected:	Other Groundwater (uses other than drinking water), Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

UST:

Facility ID:	056-001-003374
Latitude:	34.2618458
Longitude:	-119.227323
Permitting Agency:	VENTURA COUNTY

HIST UST:

Region:	STATE

CALIFORNIA HIGHWAY PATROL (Continued) **U001579192**

Facility ID: 00000017981
Facility Type: Other
Other Type: CHP
Total Tanks: 0003
Contact Name: Not reported
Telephone: 8056544571
Owner Name: CALIFORNIA HIGHWAY PATROL
Owner Address: P.O. BOX 898
Owner City,St,Zip: SACRAMENTO, CA 95804

Tank Num: 001
Container Num: 2
Year Installed: Not reported
Tank Capacity: 00000550
Tank Used for: Not reported
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: None

Tank Num: 002
Container Num: 765-1
Year Installed: 1976
Tank Capacity: 00012000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: Visual, Stock Inventor

Tank Num: 003
Container Num: 765-3
Year Installed: 1975
Tank Capacity: 00000550
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: Stock Inventor

SWEEPS UST:
Status: Active
Comp Number: 17981
Number: 9
Board Of Equalization: 44-000236
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88
Owner Tank Id: 2
SWRCB Tank Id: 56-020-017981-000001
Tank Status: A
Capacity: 550
Active Date: 07-01-85
Tank Use: UNKNOWN
STG: P
Content: Not reported
Number Of Tanks: 3

Status: Active
Comp Number: 17981

CALIFORNIA HIGHWAY PATROL (Continued) **U001579192**

Number: 9
Board Of Equalization: 44-000236
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88
Owner Tank Id: 765-1
SWRCB Tank Id: 56-020-017981-000002
Tank Status: A
Capacity: 12000
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: Active
Comp Number: 17981
Number: 9
Board Of Equalization: 44-000236
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88
Owner Tank Id: 765-3
SWRCB Tank Id: 56-020-017981-000003
Tank Status: A
Capacity: 550
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: Not reported

VENTURA CO. BWT:
Facility ID: FA0006013
Program: HAZARDOUS WASTE GENERATOR/BUSINESS PLAN - VENTURA CITY

---

13 **EDR US Hist Auto Stat** **1015512647**
SSW **4756 TELEPHONE RD** **N/A**
1/8-1/4 **VENTURA, CA 93003**
0.193 mi.
1019 ft.

Relative:
Lower

Actual:
127 ft.

EDR Historical Auto Stations:
Name: GMAC GREG MITCHELL AUTO CTR
Year: 2004
Address: 4756 TELEPHONE RD

A14 WSW 1/8-1/4 0.195 mi. 1032 ft. | **SERVICE STATION 6991**
4210 E MAIN ST
VENTURA, CA 93003

Site 7 of 13 in cluster A

CA FID UST | **S101596329**
SWEEPS UST | **N/A**

Relative: Lower

Actual: 126 ft.

CA FID UST:

Facility ID:	56000489
Regulated By:	UTNKA
Regulated ID:	00020373
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	Not reported
Mail To:	Not reported
Mailing Address:	4200 MAIN ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	VENTURA 93003
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	Active
Comp Number:	20373
Number:	9
Board Of Equalization:	44-030966
Referral Date:	07-03-90
Action Date:	07-03-90
Created Date:	02-29-88
Owner Tank Id:	6991-1B
SWRCB Tank Id:	56-020-020373-000001
Tank Status:	A
Capacity:	12000
Active Date:	07-01-85
Tank Use:	M.V. FUEL
STG:	P
Content:	REG UNLEADED
Number Of Tanks:	4

Status:	Active
Comp Number:	20373
Number:	9
Board Of Equalization:	44-030966
Referral Date:	07-03-90
Action Date:	07-03-90
Created Date:	02-29-88
Owner Tank Id:	6991-1A
SWRCB Tank Id:	56-020-020373-000002
Tank Status:	A
Capacity:	12000
Active Date:	07-01-85
Tank Use:	M.V. FUEL
STG:	P
Content:	REG UNLEADED
Number Of Tanks:	Not reported

SERVICE STATION 6991 (Continued) **S101596329**

Status:	Active
Comp Number:	20373
Number:	9
Board Of Equalization:	44-030966
Referral Date:	07-03-90
Action Date:	07-03-90
Created Date:	02-29-88
Owner Tank Id:	6991-3
SWRCB Tank Id:	56-020-020373-000003
Tank Status:	A
Capacity:	12000
Active Date:	07-01-85
Tank Use:	M.V. FUEL
STG:	P
Content:	DIESEL
Number Of Tanks:	Not reported

Status:	Active
Comp Number:	20373
Number:	9
Board Of Equalization:	44-030966
Referral Date:	07-03-90
Action Date:	07-03-90
Created Date:	02-29-88
Owner Tank Id:	6991-2
SWRCB Tank Id:	56-020-020373-000004
Tank Status:	A
Capacity:	12000
Active Date:	07-01-85
Tank Use:	M.V. FUEL
STG:	P
Content:	REG UNLEADED
Number Of Tanks:	Not reported

A15 **DIKES UNION 76 SELF-SERVE** **HIST UST** **U001579087**
WSW **4210 E MAIN ST** **N/A**
1/8-1/4 **VENTURA, CA 93003**
0.195 mi.
1032 ft. **Site 8 of 13 in cluster A**

Relative:
Lower

Actual:
126 ft.

HIST UST:

Region:	STATE
Facility ID:	00000061461
Facility Type:	Gas Station
Other Type:	Not reported
Total Tanks:	0004
Contact Name:	ALAN DIKES
Telephone:	8056587402
Owner Name:	ALAN F. DIKES
Owner Address:	1664 HARPER
Owner City,St,Zip:	VENTURA, CA 93004

Tank Num:	001
Container Num:	#64
Year Installed:	1977
Tank Capacity:	00012000
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED

DIKES UNION 76 SELF-SERVE (Continued) **U001579087**

Tank Construction: Not reported
Leak Detection: Pressure Test

Tank Num: 002
Container Num: #63
Year Installed: 1977
Tank Capacity: 00012000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: Pressure Test

Tank Num: 003
Container Num: #G1
Year Installed: 1977
Tank Capacity: 00012000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: Pressure Test

Tank Num: 004
Container Num: #62
Year Installed: 1977
Tank Capacity: 00012000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: Pressure Test

A16 **UNICAL SERVICE STATION** **HIST CORTESE** **S100178590**
WSW **4210 MAIN ST** **LUST** **N/A**
1/8-1/4 **VENTURA, CA 90731** **Notify 65**
0.195 mi.
1032 ft. **Site 9 of 13 in cluster A**

Relative:
Lower

Actual:
126 ft.

HIST CORTESE:
Region: CORTESE
Facility County Code: 56
Reg By: LTNKA
Reg Id: C-95072

LUST:
Region: STATE
Global Id: T0611100971
Latitude: 34.261330627
Longitude: -119.235918939
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 10/18/2011
Lead Agency: VENTURA COUNTY LOP
Case Worker: Not reported
Local Agency: Not reported
RB Case Number: 95072
LOC Case Number: 95072
File Location: Local Agency Warehouse
Potential Media Affect: Other Groundwater (uses other than drinking water)

UNICAL SERVICE STATION (Continued) **S100178590**

Potential Contaminants of Concern: Gasoline
Site History: BLANK

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0611100971
Contact Type: Regional Board Caseworker
Contact Name: DANIEL PIROTTON
Organization Name: LOS ANGELES RWQCB (REGION 4)
Address: Not reported
City: R4 UNKNOWN
Email: dpirotton@waterboards.ca.gov
Phone Number: 2135766714

Status History:
Global Id: T0611100971
Status: Open - Remediation
Status Date: 08/01/2000

Global Id: T0611100971
Status: Open - Remediation
Status Date: 10/15/2001

Global Id: T0611100971
Status: Open - Verification Monitoring
Status Date: 05/01/1988

Global Id: T0611100971
Status: Open - Verification Monitoring
Status Date: 09/17/2011

Global Id: T0611100971
Status: Open - Verification Monitoring
Status Date: 09/17/2011

Global Id: T0611100971
Status: Open - Site Assessment
Status Date: 08/15/1989

Global Id: T0611100971
Status: Open - Site Assessment
Status Date: 08/16/1990

Global Id: T0611100971
Status: Open - Remediation
Status Date: 09/16/2004

Global Id: T0611100971
Status: Open - Remediation
Status Date: 09/17/2004

Global Id: T0611100971
Status: Open - Site Assessment
Status Date: 04/18/1988

Global Id: T0611100971

UNICAL SERVICE STATION (Continued) **S100178590**

Status: Completed - Case Closed
Status Date: 10/18/2011

Global Id: T0611100971
Status: Open - Remediation
Status Date: 08/15/1989

Global Id: T0611100971
Status: Open - Case Begin Date
Status Date: 04/18/1988

Regulatory Activities:

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 05/07/2008
Action: File review

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 03/05/2008
Action: File review

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 10/27/2005
Action: * No Action - #L24

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 10/24/2006
Action: File review

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 08/05/2005
Action: File review

Global Id: T0611100971
Action Type: Other
Date: 01/01/1950
Action: Leak Stopped

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 08/08/2011
Action: Staff Letter - #P&A

Global Id: T0611100971
Action Type: RESPONSE
Date: 01/30/2009
Action: Monitoring Report - Quarterly

Global Id: T0611100971
Action Type: REMEDIATION
Date: 01/01/1950
Action: In Situ Physical/Chemical Treatment (other than SVE)

UNICAL SERVICE STATION (Continued) **S100178590**

Global Id: T0611100971
Action Type: RESPONSE
Date: 07/30/2004
Action: Monitoring Report - Quarterly

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 04/10/2006
Action: Technical Correspondence / Assistance / Other - #L27

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 05/07/2002
Action: * Historical Enforcement

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 07/10/2002
Action: * Historical Enforcement

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 02/26/2002
Action: * Historical Enforcement

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 09/17/2002
Action: * Historical Enforcement

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 08/05/2008
Action: File review

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 01/11/2005
Action: * No Action - #L23

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 05/27/2010
Action: File review

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 06/23/2011
Action: LOP Case Closure Summary to RB - #ClR

Global Id: T0611100971
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

Global Id: T0611100971
Action Type: ENFORCEMENT

UNICAL SERVICE STATION (Continued) **S100178590**

Date: 02/10/2011
Action: File review

Global Id: T0611100971
Action Type: RESPONSE
Date: 09/14/2009
Action: Monitoring Report - Other

Global Id: T0611100971
Action Type: REMEDIATION
Date: 01/01/1950
Action: In Situ Physical/Chemical Treatment (other than SVE)

Global Id: T0611100971
Action Type: REMEDIATION
Date: 01/01/1950
Action: Monitored Natural Attenuation

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 07/23/2007
Action: Technical Correspondence / Assistance / Other - #L31

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 01/23/2007
Action: Technical Correspondence / Assistance / Other - #L30

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 02/06/2006
Action: Technical Correspondence / Assistance / Other - #L25

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 08/02/2005
Action: * No Action

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 08/17/2009
Action: Staff Letter - #CPGWM

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 09/16/2009
Action: File review

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 08/12/2009
Action: Staff Letter - #GWM

Global Id: T0611100971
Action Type: RESPONSE
Date: 01/18/2010
Action: Pilot Study/ Treatability Report

UNICAL SERVICE STATION (Continued) **S100178590**

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 10/17/2011
Action: Closure/No Further Action Letter - #RACC

Global Id: T0611100971
Action Type: REMEDIATION
Date: 01/01/1950
Action: Excavation

Global Id: T0611100971
Action Type: RESPONSE
Date: 10/17/2011
Action: Well Destruction Report

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 06/08/2009
Action: Staff Letter

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 06/11/2008
Action: File review

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 06/24/2009
Action: Waste Discharge Requirements

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 03/23/2009
Action: Staff Letter - #L36

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 10/13/2008
Action: Staff Letter - #L35

Global Id: T0611100971
Action Type: REMEDIATION
Date: 01/01/1950
Action: Excavation

Global Id: T0611100971
Action Type: REMEDIATION
Date: 01/01/1950
Action: Other (Use Description Field)

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 05/23/2006
Action: Technical Correspondence / Assistance / Other - #L29

Global Id: T0611100971
Action Type: ENFORCEMENT

UNICAL SERVICE STATION (Continued) **S100178590**

Date: 08/07/2006
Action: File review

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 10/30/2006
Action: File review

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 11/09/2009
Action: File review

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 12/31/2009
Action: Staff Letter - #L38

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 01/28/2010
Action: Staff Letter - #L39

Global Id: T0611100971
Action Type: RESPONSE
Date: 10/27/2008
Action: Corrective Action Plan / Remedial Action Plan

Global Id: T0611100971
Action Type: RESPONSE
Date: 10/15/2009
Action: NPDES / WDR Reports

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 10/29/2004
Action: * No Action

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 04/15/2005
Action: * No Action

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 11/15/2005
Action: * No Action

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 07/24/2003
Action: * No Action

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 07/22/2004
Action: * No Action

UNICAL SERVICE STATION (Continued) **S100178590**

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 04/06/2010
Action: Meeting

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 08/08/2011
Action: File review

Global Id: T0611100971
Action Type: RESPONSE
Date: 05/11/2006
Action: Respond to Petition

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 05/08/2006
Action: File review

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 11/15/2007
Action: File review

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 09/17/2008
Action: Staff Letter - #L34

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 07/22/2008
Action: Meeting

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 11/07/2008
Action: File review

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 02/18/2009
Action: File review

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 02/12/2010
Action: File review

Global Id: T0611100971
Action Type: Other
Date: 01/01/1950
Action: Leak Discovery

Global Id: T0611100971
Action Type: RESPONSE

UNICAL SERVICE STATION (Continued) **S100178590**

Date: 05/19/2006
Action: Remedial Progress Report

Global Id: T0611100971
Action Type: RESPONSE
Date: 09/03/2007
Action: Other Workplan

Global Id: T0611100971
Action Type: RESPONSE
Date: 09/25/2008
Action: Other Report / Document

Global Id: T0611100971
Action Type: RESPONSE
Date: 01/15/2008
Action: Well Installation Report

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 02/15/2005
Action: * No Action

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 09/06/2007
Action: Technical Correspondence / Assistance / Other - #L32

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 05/22/2002
Action: * Historical Enforcement

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 05/10/2004
Action: * No Action

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 04/03/2006
Action: 13308 Time Schedule Order - #L26

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 05/11/2009
Action: File review

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 02/23/2010
Action: File review

Global Id: T0611100971
Action Type: RESPONSE
Date: 04/30/2008
Action: Monitoring Report - Quarterly

UNICAL SERVICE STATION (Continued) **S100178590**

Global Id: T0611100971
Action Type: RESPONSE
Date: 05/26/2002
Action: Other Report / Document

Global Id: T0611100971
Action Type: RESPONSE
Date: 05/31/2002
Action: Other Report / Document

Global Id: T0611100971
Action Type: RESPONSE
Date: 05/26/2002
Action: Other Report / Document

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 10/25/2007
Action: File review

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 07/26/2006
Action: * No Action

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 08/13/2007
Action: File review

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 02/17/2009
Action: File review

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 02/19/2004
Action: * Historical Enforcement - #L22

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 07/26/2002
Action: * Historical Enforcement

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 09/09/2010
Action: File review

Global Id: T0611100971
Action Type: REMEDIATION
Date: 01/01/1950
Action: In Situ Physical/Chemical Treatment (other than SVE)

Global Id: T0611100971
Action Type: ENFORCEMENT

UNICAL SERVICE STATION (Continued) **S100178590**

Date: 01/21/2005
Action: * No Action

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 07/30/2003
Action: * No Action

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 04/23/2007
Action: File review

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 12/19/2007
Action: Meeting

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 01/22/2008
Action: Technical Correspondence / Assistance / Other - #L33

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 07/20/2007
Action: File review

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 05/11/2007
Action: File review

Global Id: T0611100971
Action Type: RESPONSE
Date: 04/30/2007
Action: Monitoring Report - Quarterly

Global Id: T0611100971
Action Type: RESPONSE
Date: 07/30/2006
Action: Monitoring Report - Quarterly

Global Id: T0611100971
Action Type: ENFORCEMENT
Date: 12/09/2010
Action: File review

Notify 65:
Date Reported: Not reported
Staff Initials: Not reported
Board File Number: Not reported
Facility Type: Not reported
Discharge Date: Not reported
Incident Description: 90731

A17 WSW 1/8-1/4 0.195 mi. 1032 ft. | **TOSCO - 76 SS #6991 (FORMER)**
4210 MAIN ST
VENTURA, CA 93003

Site 10 of 13 in cluster A

LUST | **S101306065**
N/A

Relative: Lower

Actual: 126 ft.

LUST REG 4:

Region:	4
Regional Board:	04
County:	Ventura
Facility Id:	C-95072
Status:	Remedial action (cleanup) Underway
Substance:	Gasoline
Substance Quantity:	Not reported
Local Case No:	95072
Case Type:	Groundwater
Abatement Method Used at the Site:	Not reported
Global ID:	T0611100971
W Global ID:	W0603900640
Staff:	UNK
Local Agency:	56000L
Cross Street:	Not reported
Enforcement Type:	None Taken
Date Leak Discovered:	4/18/1988
Date Leak First Reported:	4/18/1988
Date Leak Record Entered:	Not reported
Date Confirmation Began:	4/18/1988
Date Leak Stopped:	Not reported
Date Case Last Changed on Database:	Not reported
Date the Case was Closed:	Not reported
How Leak Discovered:	Not reported
How Leak Stopped:	Not reported
Cause of Leak:	Not reported
Leak Source:	Not reported
Operator:	Not reported
Water System:	SIERRA MEADOWS HOSPITAL
Well Name:	Not reported
Approx. Dist To Production Well (ft):	1554.69153609118026417804586 66
Source of Cleanup Funding:	F
Preliminary Site Assessment Workplan Submitted:	4/18/1988
Preliminary Site Assessment Began:	4/18/1988
Pollution Characterization Began:	8/16/1990
Remediation Plan Submitted:	Not reported
Remedial Action Underway:	10/15/2001
Post Remedial Action Monitoring Began:	5/1/1988
Enforcement Action Date:	10/23/1995
Historical Max MTBE Date:	7/30/1996
Hist Max MTBE Conc in Groundwater:	11000
Hist Max MTBE Conc in Soil:	1500
Significant Interim Remedial Action Taken:	Not reported
GW Qualifier:	Not reported
Soil Qualifier:	=
Organization:	Not reported
Owner Contact:	Not reported
Responsible Party:	DAN TRUZZOLINO
RP Address:	CONOCOPHILLIPS, P.O. BOX 25376
Program:	LUST
Lat/Long:	34.2638455 / -1
Local Agency Staff:	DCS

TOSCO - 76 SS #6991 (FORMER) (Continued) **S101306065**

Beneficial Use: Not reported
Priority: Not reported
Cleanup Fund Id: Not reported
Suspended: Not reported
Assigned Name: 2000640-001GEN
Summary: Not reported

A18 WSW 1/8-1/4 0.202 mi. 1066 ft. **TARGET STORE #T0298** **HIST UST** **U001579129**
4200 E MAIN ST **VENTURA CO. BWT** **N/A**
VENTURA, CA 93003 **MED WASTE VENTURA**

Site 11 of 13 in cluster A

Relative: Lower

Actual: 126 ft.

HIST UST:
Region: STATE
Facility ID: 00000020373
Facility Type: Gas Station
Other Type: Not reported
Total Tanks: 0004
Contact Name: ALAN F. DIKES
Telephone: 8056429968
Owner Name: UNION OIL COMPANY OF CALIF.
Owner Address: 3701 WILSHIRE BOULEVARD-ST 830
Owner City,St,Zip: LOS ANGELES, CA 90010

Tank Num: 001
Container Num: 6991-1B
Year Installed: Not reported
Tank Capacity: 00012000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: Stock Inventor, Pressure Test

Tank Num: 002
Container Num: 6991-1A
Year Installed: Not reported
Tank Capacity: 00012000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: Stock Inventor, Pressure Test

Tank Num: 003
Container Num: 6991-3
Year Installed: Not reported
Tank Capacity: 00012000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: Stock Inventor, Pressure Test

Tank Num: 004
Container Num: 6991-2
Year Installed: Not reported
Tank Capacity: 00012000
Tank Used for: PRODUCT
Type of Fuel: PREMIUM

TARGET STORE #T0298 (Continued) **U001579129**

Tank Construction: Not reported
Leak Detection: Stock Inventor, Pressure Test

VENTURA CO. BWT:
Facility ID: FA0006845
Program: BUSINESS PLAN - VENTURA CITY/HAZARDOUS WASTE GENERATOR

MED WASTE VENTURA:
File Id: FA0023756
Permits: - MEDICAL WASTE SMALL QTY GENERATOR RECORDS

A19 WSW 1/8-1/4 0.202 mi. 1066 ft. | **TARGET T0298** | **RCRA-SQG FINDS** | **1014465393 CAR000218594**
4200 E MAIN ST
VENTURA, CA 93003

Site 12 of 13 in cluster A

Relative: Lower

Actual: 126 ft.

RCRA-SQG:
Date form received by agency: 04/11/2011
Facility name: TARGET STORE NO 0298
Facility address: 4200 E MAIN ST
VENTURA, CA 93003
EPA ID: CAR000218594
Mailing address: PO BOX 111
MINNEAPOLIS, MN 55440-0111
Contact: MARK W SCHWARZE
Contact address: PO BOX 111
MINNEAPOLIS, MN 55440-0111
Contact country: US
Contact telephone: 800-587-2228
Contact email: CORPORATE.COMPLIANCE@TARGET.COM
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: TARGET CORP
Owner/operator address: PO BOX 111
MINNEAPOLIS, MN 55440
Owner/operator country: US
Owner/operator telephone: 800-587-2228
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 07/22/1987
Owner/Op end date: Not reported

Owner/operator name: TARGET CORP
Owner/operator address: Not reported
Not reported
Owner/operator country: US
Owner/operator telephone: Not reported
Legal status: Private

TARGET T0298 (Continued) **1014465393**

Owner/Operator Type: Operator
Owner/Op start date: 07/22/1987
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Hazardous Waste Summary:
Waste code: D001
Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

Waste code: D002
Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

Waste code: D005
Waste name: BARIUM

Waste code: D008
Waste name: LEAD

Waste code: D009
Waste name: MERCURY

Waste code: D011
Waste name: SILVER

Waste code: D016
Waste name: 2,4-D

Waste code: P001

TARGET T0298 (Continued) **1014465393**

Waste name: 2H-1-BENZOPYRAN-2-ONE, 4-HYDROXY-3-(3-OXO-1-PHENYLBUTYL)-, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3%

Waste code: P046
Waste name: BENZENEETHANAMINE, ALPHA,ALPHA-DIMETHYL-

Waste code: P075
Waste name: NICOTINE, & SALTS

Violation Status: No violations found

FINDS:

Registry ID: 110055912981

Environmental Interest/Information System

A20 WSW 1/8-1/4 0.221 mi. 1166 ft. | **UNOCAL #6991 (FORMER TOSCO - 76 SS)** | **LUST** | **S105974853**
4210 MAIN ST | **N/A**
VENTURA, CA

Site 13 of 13 in cluster A

Relative: Lower
Actual: 124 ft.

VENTURA CO. LUST:
Region: VENTURA
Facility ID: 95072
Status: Remedial action (cleanup) Underway

C21 South 1/4-1/2 0.351 mi. 1851 ft. | **TAFT ELECTRIC** | **LUST** | **S105774484**
1699 EASTMAN AVE | **N/A**
VENTURA, CA 93003

Site 1 of 3 in cluster C

Relative: Lower
Actual: 125 ft.

LUST REG 4:
Region: 4
Regional Board: 04
County: Ventura
Facility Id: C-02022
Status: Not reported
Substance: 8006619,1203
Substance Quantity: Not reported
Local Case No: 02022
Case Type: Undefined
Abatement Method Used at the Site: Not reported
Global ID: T0611104326
W Global ID: Not reported
Staff: UNK
Local Agency: 56000L
Cross Street: MARKET ST
Enforcement Type: LFOR
Date Leak Discovered: 10/10/2002
Date Leak First Reported: 10/30/2002
Date Leak Record Entered: Not reported
Date Confirmation Began: Not reported
Date Leak Stopped: 10/10/2002
Date Case Last Changed on Database: Not reported

TAFT ELECTRIC (Continued) **S105774484**

Date the Case was Closed:		Not reported
How Leak Discovered:	Tank Closure	
How Leak Stopped:	Close Tank	
Cause of Leak:	UNK	
Leak Source:	UNK	
Operator:	Not reported	
Water System:	Not reported	
Well Name:	Not reported	
Approx. Dist To Production Well (ft):		Not reported
Source of Cleanup Funding:		UNK
Preliminary Site Assessment Workplan Submitted:		Not reported
Preliminary Site Assessment Began:		Not reported
Pollution Characterization Began:		Not reported
Remediation Plan Submitted:		Not reported
Remedial Action Underway:		Not reported
Post Remedial Action Monitoring Began:		Not reported
Enforcement Action Date:		Not reported
Historical Max MTBE Date:		Not reported
Hist Max MTBE Conc in Groundwater:		Not reported
Hist Max MTBE Conc in Soil:		Not reported
Significant Interim Remedial Action Taken:		Not reported
GW Qualifier:	Not reported	
Soil Qualifier:	Not reported	
Organization:	Not reported	
Owner Contact:	Not reported	
Responsible Party:	CHRIS HARGETT	
RP Address:	1694 EASTMAN AVE.	
Program:	LUST	
Lat/Long:	0 / 0	
Local Agency Staff:	KCK	
Beneficial Use:	Not reported	
Priority:	Not reported	
Cleanup Fund Id:	Not reported	
Suspended:	Not reported	
Assigned Name:	Not reported	
Summary:	TANK/PRODUCT LINES REMOVED. CONTAMINATION (SOIL & GROUNDWATER)CONFIRMED THROUGH CORRESPONDING SAMPLING.	

C22 **TAFT ELECTRIC COMPANY** **RCRA-SQG** **1000391885**
South **1694 EASTMAN AVENUE** **FINDS** **CAD982463671**
1/4-1/2 **VENTURA, CA 93003** **LUST**
0.388 mi. **CA FID UST**
2048 ft. **Site 2 of 3 in cluster C** **HIST UST**
SWEEPS UST

Relative:
Lower

Actual:
123 ft.

RCRA-SQG:

Date form received by agency:	01/24/1989
Facility name:	TAFT ELECTRIC COMPANY
Facility address:	1694 EASTMAN AVENUE VENTURA, CA 93003
EPA ID:	CAD982463671
Contact:	ENVIRONMENTAL MANAGER
Contact address:	1694 EASTMAN AVENUE VENTURA, CA 93003
Contact country:	US
Contact telephone:	(805) 642-0121
Contact email:	Not reported
EPA Region:	09

TAFT ELECTRIC COMPANY (Continued) **1000391885**

Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: HARTMAN WOEO PRES
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002816944

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and

TAFT ELECTRIC COMPANY (Continued) **1000391885**

corrective action activities required under RCRA.

LUST REG 4:

Region:	4	
Regional Board:	04	
County:	Ventura	
Facility Id:	C-99003	
Status:	Case Closed	
Substance:	Waste Oil	
Substance Quantity:	Not reported	
Local Case No:	99003	
Case Type:	Soil	
Abatement Method Used at the Site:		No Action Required
Global ID:	T0611101204	
W Global ID:	W0603900640	
Staff:	UNK	
Local Agency:	56000L	
Cross Street:	Not reported	
Enforcement Type:	CLOS	
Date Leak Discovered:	12/15/1998	
Date Leak First Reported:		12/15/1998
Date Leak Record Entered:	Not reported	
Date Confirmation Began:	12/28/1998	
Date Leak Stopped:	Not reported	
Date Case Last Changed on Database:		Not reported
Date the Case was Closed:		3/15/1999
How Leak Discovered:	Not reported	
How Leak Stopped:	Not reported	
Cause of Leak:	Not reported	
Leak Source:	Not reported	
Operator:	Not reported	
Water System:	SIERRA MEADOWS HOSPITAL	
Well Name:	Not reported	
Approx. Dist To Production Well (ft):		3643.7081291911835310548636631
Source of Cleanup Funding:		F
Preliminary Site Assessment Workplan Submitted:		12/28/1998
Preliminary Site Assessment Began:		3/15/1998
Pollution Characterization Began:		Not reported
Remediation Plan Submitted:		Not reported
Remedial Action Underway:		Not reported
Post Remedial Action Monitoring Began:		Not reported
Enforcement Action Date:		Not reported
Historical Max MTBE Date:		Not reported
Hist Max MTBE Conc in Groundwater:		Not reported
Hist Max MTBE Conc in Soil:		Not reported
Significant Interim Remedial Action Taken:		Not reported
GW Qualifier:	Not reported	
Soil Qualifier:	Not reported	
Organization:	Not reported	
Owner Contact:	Not reported	
Responsible Party:	TAFT ELECTRIC CO	
RP Address:	Not reported	
Program:	LUST	
Lat/Long:	34.2579368 / -1	
Local Agency Staff:	KCK	
Beneficial Use:	Not reported	

TAFT ELECTRIC COMPANY (Continued) **1000391885**

Priority: Not reported
Cleanup Fund Id: Not reported
Suspended: Not reported
Assigned Name: 2000640-001GEN
Summary: Not reported

VENTURA CO. LUST:
Region: VENTURA
Facility ID: 99003
Status: Case Closed

Region: VENTURA
Facility ID: 02022
Status: Case Closed

CA FID UST:
Facility ID: 56002755
Regulated By: UTNKA
Regulated ID: 00012592
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 8056420121
Mail To: Not reported
Mailing Address: 1694 EASTMAN AVE
Mailing Address 2: Not reported
Mailing City,St,Zip: VENTURA 93003
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

HIST UST:
Region: STATE
Facility ID: 00000012592
Facility Type: Other
Other Type: ELECTRICAL CONTRACTO
Total Tanks: 0004
Contact Name: W.E. HARTMAN
Telephone: 8056420121
Owner Name: TAFT ELECTRIC COMPANY, INC.
Owner Address: 1694 EASTMAN AVENUE
Owner City,St,Zip: VENTURA, CA 93003

Tank Num: 001
Container Num: 1
Year Installed: 1981
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: None

Tank Num: 002

TAFT ELECTRIC COMPANY (Continued) **1000391885**

Container Num: 2
Year Installed: 1981
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: None

Tank Num: 003
Container Num: 3
Year Installed: 1981
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: REGULAR
Tank Construction: Not reported
Leak Detection: None

Tank Num: 004
Container Num: 4
Year Installed: 1981
Tank Capacity: 00001000
Tank Used for: WASTE
Type of Fuel: WASTE OIL
Tank Construction: Not reported
Leak Detection: None

SWEEPS UST:
Status: Active
Comp Number: 12592
Number: 9
Board Of Equalization: 44-030942
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88
Owner Tank Id: 1
SWRCB Tank Id: 56-020-012592-000001
Tank Status: A
Capacity: 10000
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: 4

Status: Active
Comp Number: 12592
Number: 9
Board Of Equalization: 44-030942
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88
Owner Tank Id: 2
SWRCB Tank Id: 56-020-012592-000002
Tank Status: A
Capacity: 10000
Active Date: 07-01-85
Tank Use: M.V. FUEL

TAFT ELECTRIC COMPANY (Continued) **1000391885**

STG:	P
Content:	REG UNLEADED
Number Of Tanks:	Not reported

Status:	Active
Comp Number:	12592
Number:	9
Board Of Equalization:	44-030942
Referral Date:	07-01-85
Action Date:	Not reported
Created Date:	02-29-88
Owner Tank Id:	3
SWRCB Tank Id:	56-020-012592-000003
Tank Status:	A
Capacity:	10000
Active Date:	07-01-85
Tank Use:	M.V. FUEL
STG:	P
Content:	LEADED
Number Of Tanks:	Not reported

Status:	Active
Comp Number:	12592
Number:	9
Board Of Equalization:	44-030942
Referral Date:	07-01-85
Action Date:	Not reported
Created Date:	02-29-88
Owner Tank Id:	4
SWRCB Tank Id:	56-020-012592-000004
Tank Status:	A
Capacity:	1000
Active Date:	07-01-85
Tank Use:	OIL
STG:	W
Content:	WASTE OIL
Number Of Tanks:	Not reported

C23 **TAFT ELECTRIC** **HIST CORTESE** **S104993973**
South **1694 EASTMAN AVE** **LUST** **N/A**
1/4-1/2 **VENTURA, CA 93003** **VENTURA CO. BWT**
0.388 mi.
2048 ft. **Site 3 of 3 in cluster C**

Relative:
Lower

Actual:
123 ft.

HIST CORTESE:

Region:	CORTESE
Facility County Code:	56
Reg By:	LTNKA
Reg Id:	C-99003

LUST:

Region:	STATE
Global Id:	T0611104326
Latitude:	34.2579365
Longitude:	-119.2298848
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed

TAFT ELECTRIC (Continued) **S104993973**

Status Date:	01/26/2006
Lead Agency:	VENTURA COUNTY LOP
Case Worker:	GLT
Local Agency:	VENTURA, CITY OF
RB Case Number:	C02022
LOC Case Number:	02022
File Location:	Local Agency
Potential Media Affect:	Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern:	Gasoline, Diesel
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0611104326
Contact Type:	Local Agency Caseworker
Contact Name:	GINA TERESA
Organization Name:	VENTURA COUNTY LOP
Address:	800 S. VICTORIA AVE.
City:	VENTURA
Email:	gina.teresa@ventura.org
Phone Number:	Not reported

Global Id:	T0611104326
Contact Type:	Regional Board Caseworker
Contact Name:	DANIEL PIROTTON
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	Not reported
City:	R4 UNKNOWN
Email:	dpirotton@waterboards.ca.gov
Phone Number:	2135766714

Status History:

Global Id:	T0611104326
Status:	Open - Site Assessment
Status Date:	06/30/2003

Global Id:	T0611104326
Status:	Open - Site Assessment
Status Date:	03/11/2004

Global Id:	T0611104326
Status:	Open - Case Begin Date
Status Date:	10/10/2002

Global Id:	T0611104326
Status:	Open - Verification Monitoring
Status Date:	05/12/2005

Global Id:	T0611104326
Status:	Completed - Case Closed
Status Date:	01/26/2006

Regulatory Activities:

Global Id:	T0611104326
Action Type:	Other
Date:	01/01/1950

TAFT ELECTRIC (Continued) **S104993973**

Action: Leak Stopped

Global Id: T0611104326
Action Type: ENFORCEMENT
Date: 05/19/2005
Action: * Historical Enforcement - #12

Global Id: T0611104326
Action Type: ENFORCEMENT
Date: 02/10/2004
Action: * Historical Enforcement - #8

Global Id: T0611104326
Action Type: ENFORCEMENT
Date: 02/25/2004
Action: * Historical Enforcement - #9

Global Id: T0611104326
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

Global Id: T0611104326
Action Type: ENFORCEMENT
Date: 01/01/2016
Action: File review

Global Id: T0611104326
Action Type: RESPONSE
Date: 04/15/2004
Action: Soil and Water Investigation Workplan

Global Id: T0611104326
Action Type: RESPONSE
Date: 02/16/2004
Action: Other Workplan

Global Id: T0611104326
Action Type: ENFORCEMENT
Date: 01/24/2006
Action: * Historical Enforcement - #13

Global Id: T0611104326
Action Type: ENFORCEMENT
Date: 01/26/2006
Action: Closure/No Further Action Letter - #14

Global Id: T0611104326
Action Type: ENFORCEMENT
Date: 11/03/2003
Action: * Historical Enforcement - #7

Global Id: T0611104326
Action Type: ENFORCEMENT
Date: 09/10/2003
Action: File review - #6

TAFT ELECTRIC (Continued) **S104993973**

Global Id:	T0611104326
Action Type:	ENFORCEMENT
Date:	10/18/2005
Action:	File review - #11
Global Id:	T0611104326
Action Type:	Other
Date:	01/01/1950
Action:	Leak Discovery
Global Id:	T0611104326
Action Type:	RESPONSE
Date:	10/31/2005
Action:	Monitoring Report - Quarterly
Global Id:	T0611104326
Action Type:	ENFORCEMENT
Date:	03/22/2004
Action:	* Historical Enforcement - #10
Global Id:	T0611104326
Action Type:	ENFORCEMENT
Date:	12/20/2005
Action:	LOP Case Closure Summary to RB - #12
Global Id:	T0611104326
Action Type:	ENFORCEMENT
Date:	09/12/2005
Action:	* Historical Enforcement - #10
Global Id:	T0611104326
Action Type:	RESPONSE
Date:	07/29/2005
Action:	Monitoring Report - Quarterly
Global Id:	T0611104326
Action Type:	RESPONSE
Date:	07/29/2005
Action:	Electronic Reporting Submittal Due

Region:	STATE
Global Id:	T0611101204
Latitude:	34.257803
Longitude:	-119.229484
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	03/15/1999
Lead Agency:	VENTURA COUNTY LOP
Case Worker:	Not reported
Local Agency:	Not reported
RB Case Number:	C99003
LOC Case Number:	99003
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Waste Oil / Motor / Hydraulic / Lubricating
Site History:	Not reported

TAFT ELECTRIC (Continued) **S104993973**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0611101204
Contact Type:	Regional Board Caseworker
Contact Name:	DANIEL PIROTTON
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	Not reported
City:	R4 UNKNOWN
Email:	dpirotton@waterboards.ca.gov
Phone Number:	2135766714

Status History:

Global Id:	T0611101204
Status:	Open - Site Assessment
Status Date:	12/28/1998
Global Id:	T0611101204
Status:	Completed - Case Closed
Status Date:	03/15/1999
Global Id:	T0611101204
Status:	Open - Case Begin Date
Status Date:	03/15/1998
Global Id:	T0611101204
Status:	Open - Site Assessment
Status Date:	03/15/1998

Regulatory Activities:

Global Id:	T0611101204
Action Type:	Other
Date:	01/01/1950
Action:	Leak Reported
Global Id:	T0611101204
Action Type:	ENFORCEMENT
Date:	03/15/1999
Action:	Closure/No Further Action Letter
Global Id:	T0611101204
Action Type:	Other
Date:	01/01/1950
Action:	Leak Discovery

VENTURA CO. BWT:

Facility ID:	FA0005900
Program:	HAZARDOUS WASTE GENERATOR/BUSINESS PLAN - VENTURA CITY

D24 SW 1/4-1/2 0.457 mi. 2415 ft. | **A.L.L. ROOFING & BUILDING MATE** | **LUST** | **U001579065**
1435 WALTER ST | **HIST UST** | **N/A**
VENTURA, CA 93003 | **VENTURA CO. BWT**

Site 1 of 2 in cluster D

Relative: Lower

Actual: 101 ft.

LUST:

Region:	STATE
Global Id:	T0611179383
Latitude:	34.25967
Longitude:	-119.239234
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	08/09/2011
Lead Agency:	VENTURA COUNTY LOP
Case Worker:	Not reported
Local Agency:	VENTURA, CITY OF
RB Case Number:	05009
LOC Case Number:	05009
File Location:	Local Agency
Potential Media Affect:	Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0611179383
Contact Type:	Regional Board Caseworker
Contact Name:	DANIEL PIROTTON
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	Not reported
City:	R4 UNKNOWN
Email:	dpirotton@waterboards.ca.gov
Phone Number:	2135766714

Status History:

Global Id:	T0611179383
Status:	Open - Site Assessment
Status Date:	05/31/2005
Global Id:	T0611179383
Status:	Open - Site Assessment
Status Date:	05/10/2006
Global Id:	T0611179383
Status:	Open - Site Assessment
Status Date:	04/11/2007
Global Id:	T0611179383
Status:	Open - Site Assessment
Status Date:	08/10/2007
Global Id:	T0611179383
Status:	Open - Site Assessment
Status Date:	01/30/2008
Global Id:	T0611179383
Status:	Open - Verification Monitoring

A.L.L. ROOFING & BUILDING MATE (Continued) **U001579065**

Status Date: 04/30/2008

Global Id: T0611179383
Status: Open - Case Begin Date
Status Date: 02/11/2005

Global Id: T0611179383
Status: Completed - Case Closed
Status Date: 07/28/2011

Global Id: T0611179383
Status: Completed - Case Closed
Status Date: 08/09/2011

Global Id: T0611179383
Status: Open - Remediation
Status Date: 04/30/2008

Regulatory Activities:
Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 06/04/2008
Action: Technical Correspondence / Assistance / Other - #23

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 02/23/2007
Action: Technical Correspondence / Assistance / Other - #14

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 04/11/2011
Action: Staff Letter - #P&A

Global Id: T0611179383
Action Type: Other
Date: 01/01/1950
Action: Leak Stopped

Global Id: T0611179383
Action Type: RESPONSE
Date: 05/31/2010
Action: CAP/RAP - Other Report

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 10/20/2010
Action: File review - #L05

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 07/10/2006
Action: Technical Correspondence / Assistance / Other - #10

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 09/25/2006

A.L.L. ROOFING & BUILDING MATE (Continued) **U001579065**

Action: Technical Correspondence / Assistance / Other - #11

Global Id: T0611179383
Action Type: RESPONSE
Date: 10/31/2006
Action: Monitoring Report - Quarterly

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 04/19/2010
Action: Staff Letter - #L04

Global Id: T0611179383
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

Global Id: T0611179383
Action Type: RESPONSE
Date: 10/30/2009
Action: Monitoring Report - Semi-Annually

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 04/12/2005
Action: * Historical Enforcement - #1

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 10/21/2009
Action: File review

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 12/02/2009
Action: Staff Letter - #L02

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 05/22/2007
Action: Technical Correspondence / Assistance / Other - #16

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 01/09/2009
Action: Staff Letter - #24

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 04/24/2006
Action: Technical Correspondence / Assistance / Other - #7

Global Id: T0611179383
Action Type: RESPONSE
Date: 10/31/2008
Action: Well Installation Report

A.L.L. ROOFING & BUILDING MATE (Continued) **U001579065**

Global Id: T0611179383
Action Type: RESPONSE
Date: 04/30/2008
Action: Remedial Progress Report

Global Id: T0611179383
Action Type: RESPONSE
Date: 04/28/2006
Action: Monitoring Report - Quarterly

Global Id: T0611179383
Action Type: RESPONSE
Date: 10/31/2007
Action: Monitoring Report - Quarterly

Global Id: T0611179383
Action Type: RESPONSE
Date: 11/15/2005
Action: Soil and Water Investigation Report

Global Id: T0611179383
Action Type: RESPONSE
Date: 10/30/2010
Action: Monitoring Report - Semi-Annually

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 07/10/2007
Action: Technical Correspondence / Assistance / Other - #18

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 01/17/2006
Action: * Historical Enforcement - #6

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 05/12/2006
Action: Technical Correspondence / Assistance / Other - #8

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 11/29/2005
Action: * Historical Enforcement - #5

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 10/01/2007
Action: Technical Correspondence / Assistance / Other - #20

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 07/31/2009
Action: Staff Letter - #26

Global Id: T0611179383
Action Type: ENFORCEMENT

A.L.L. ROOFING & BUILDING MATE (Continued) **U001579065**

Date: 10/26/2009
Action: Staff Letter - #L01

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 10/01/2009
Action: Staff Letter

Global Id: T0611179383
Action Type: RESPONSE
Date: 12/07/2007
Action: Well Installation Report

Global Id: T0611179383
Action Type: RESPONSE
Date: 04/30/2009
Action: Monitoring Report - Quarterly

Global Id: T0611179383
Action Type: RESPONSE
Date: 01/30/2009
Action: Monitoring Report - Quarterly

Global Id: T0611179383
Action Type: REMEDIATION
Date: 01/01/1950
Action: Excavation

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 04/12/2007
Action: Technical Correspondence / Assistance / Other - #15

Global Id: T0611179383
Action Type: RESPONSE
Date: 01/31/2008
Action: Soil and Water Investigation Workplan

Global Id: T0611179383
Action Type: RESPONSE
Date: 05/31/2005
Action: Soil and Water Investigation Workplan

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 01/29/2007
Action: Technical Correspondence / Assistance / Other - #13

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 08/14/2007
Action: Technical Correspondence / Assistance / Other - #19

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 02/26/2008
Action: Technical Correspondence / Assistance / Other - #22

A.L.L. ROOFING & BUILDING MATE (Continued) **U001579065**

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 08/18/2005
Action: * Historical Enforcement - #4

Global Id: T0611179383
Action Type: Other
Date: 01/01/1950
Action: Leak Discovery

Global Id: T0611179383
Action Type: RESPONSE
Date: 08/10/2007
Action: Soil and Water Investigation Workplan

Global Id: T0611179383
Action Type: RESPONSE
Date: 09/22/2008
Action: Correspondence

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 12/11/2007
Action: Technical Correspondence / Assistance / Other - #21

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 05/12/2009
Action: Staff Letter - #25

Global Id: T0611179383
Action Type: RESPONSE
Date: 07/31/2006
Action: Monitoring Report - Quarterly

Global Id: T0611179383
Action Type: RESPONSE
Date: 06/02/2006
Action: Soil and Water Investigation Workplan

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 06/07/2007
Action: Technical Correspondence / Assistance / Other - #17

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 11/23/2009
Action: Staff Letter - #L03

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 03/31/2010
Action: File review

Global Id: T0611179383
Action Type: ENFORCEMENT

A.L.L. ROOFING & BUILDING MATE (Continued) **U001579065**

Date: 03/07/2011
Action: LOP Case Closure Summary to RB - #Clr

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 11/20/2006
Action: Technical Correspondence / Assistance / Other - #12

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 05/31/2006
Action: Technical Correspondence / Assistance / Other - #9

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 09/25/2008
Action: Staff Letter

Global Id: T0611179383
Action Type: RESPONSE
Date: 04/28/2006
Action: Monitoring Report - Quarterly

Global Id: T0611179383
Action Type: RESPONSE
Date: 04/16/2007
Action: Soil and Water Investigation Workplan

Global Id: T0611179383
Action Type: RESPONSE
Date: 01/31/2007
Action: Monitoring Report - Quarterly

Global Id: T0611179383
Action Type: RESPONSE
Date: 09/01/2006
Action: Well Installation Report

Global Id: T0611179383
Action Type: RESPONSE
Date: 06/30/2007
Action: Other Report / Document

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 05/25/2011
Action: Staff Letter - #L06

Global Id: T0611179383
Action Type: ENFORCEMENT
Date: 08/09/2011
Action: Closure/No Further Action Letter - #RACC

Global Id: T0611179383
Action Type: RESPONSE
Date: 08/01/2011
Action: Well Destruction Report

A.L.L. ROOFING & BUILDING MATE (Continued) **U001579065**

HIST UST:

Region:	STATE
Facility ID:	00000041774
Facility Type:	Other
Other Type:	DISTRIBUTOR
Total Tanks:	0002
Contact Name:	CURTIS LESSEL
Telephone:	8056566319
Owner Name:	A.L.L. ROOFING & BUILDING MATE
Owner Address:	3645 LONG BEACH BLVD.
Owner City,St,Zip:	LONG BEACH, CA 90807

Tank Num:	001
Container Num:	1
Year Installed:	1983
Tank Capacity:	00002000
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Tank Construction:	Not reported
Leak Detection:	Pressure Test

Tank Num:	002
Container Num:	2
Year Installed:	1983
Tank Capacity:	00002000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Tank Construction:	Not reported
Leak Detection:	Pressure Test

VENTURA CO. BWT:

Facility ID:	FA0006597
Program:	BUSINESS PLAN - VENTURA CITY

D25 **ALL ROOFING** **LUST** **U003778555**
SW **1435 WALTER ST** **N/A**
1/4-1/2 **VENTURA, CA**
0.457 mi.
2415 ft. **Site 2 of 2 in cluster D**

Relative:
Lower

Actual:
101 ft.

VENTURA CO. LUST:

Region:	VENTURA
Facility ID:	05009
Status:	Pollution Characterization

E26 **MASTER PLATING INC THE** **RCRA-SQG** **1000401528**
WSW **1255 CALLENS RD** **FINDS** **CAD059217265**
1/4-1/2 **VENTURA, CA 93003** **HIST CORTESE**
0.460 mi. **LUST**
2429 ft. **Site 1 of 5 in cluster E** **SLIC**
RESPONSE
ENVIROSTOR

Relative:
Lower

Actual:
104 ft.

RCRA-SQG:
Date form received by agency: 09/01/1996

MASTER PLATING INC THE (Continued) **1000401528**

Facility name:	MASTER PLATING INC THE
Facility address:	1255 CALLENS RD VENTURA, CA 93003
EPA ID:	CAD059217265
Mailing address:	1255 CALLENS ROAD VENTURA, CA 93003
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No

MASTER PLATING INC THE (Continued) **1000401528**

Used oil transporter: No

Historical Generators:
Date form received by agency: 09/01/1996
Site name: MASTER PLATING INC THE
Classification: Small Quantity Generator

Date form received by agency: 02/10/1981
Site name: MASTER PLATING INC THE
Classification: Large Quantity Generator

Violation Status: No violations found

FINDS:

Registry ID: 110002651924

Environmental Interest/Information System
California Department of Toxic Substances Control EnviroStor System (DTSC-EnviroStor) is an online search and Geographic Information System (GIS) tool for identifying sites that have known contamination or sites for which there may be reasons to investigate further. The EnviroStor 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.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HIST CORTESE:
Region: CORTESE
Facility County Code: 56
Reg By: LTNKA
Reg Id: 930030052

LUST REG 4:
Region: 4
Regional Board: 04
County: Ventura
Facility Id: 930030052
Status: Pollution Characterization
Substance: Solvents
Substance Quantity: Not reported
Local Case No: Not reported
Case Type: Soil
Abatement Method Used at the Site: Not reported
Global ID: T0611100025
W Global ID: W0603900640
Staff: SLC
Local Agency: 56020

MASTER PLATING INC THE (Continued) **1000401528**

Cross Street:	MAIN	
Enforcement Type:	Not reported	
Date Leak Discovered:	Not reported	
Date Leak First Reported:		5/13/1987
Date Leak Record Entered:	9/9/1987	
Date Confirmation Began:	Not reported	
Date Leak Stopped:	Not reported	
Date Case Last Changed on Database:		6/21/1988
Date the Case was Closed:		Not reported
How Leak Discovered:	Not reported	
How Leak Stopped:	Not reported	
Cause of Leak:	UNK	
Leak Source:	UNK	
Operator:	Not reported	
Water System:	SIERRA MEADOWS HOSPITAL	
Well Name:	Not reported	
Approx. Dist To Production Well (ft):		4610.1493862276870920689079918
Source of Cleanup Funding:		UNK
Preliminary Site Assessment Workplan Submitted:		Not reported
Preliminary Site Assessment Began:		Not reported
Pollution Characterization Began:		6/21/1988
Remediation Plan Submitted:		Not reported
Remedial Action Underway:		Not reported
Post Remedial Action Monitoring Began:		Not reported
Enforcement Action Date:		Not reported
Historical Max MTBE Date:		Not reported
Hist Max MTBE Conc in Groundwater:		Not reported
Hist Max MTBE Conc in Soil:		Not reported
Significant Interim Remedial Action Taken:		Not reported
GW Qualifier:	Not reported	
Soil Qualifier:	Not reported	
Organization:	Not reported	
Owner Contact:	Not reported	
Responsible Party:	BLANK RP	
RP Address:	Not reported	
Program:	SLIC	
Lat/Long:	34.2617806 / -1	
Local Agency Staff:	UNK	
Beneficial Use:	Not reported	
Priority:	LOP/LOW - MINOR OR NO POTENTIAL WATER RESOURCE IMPACT	
Cleanup Fund Id:	Not reported	
Suspended:	Not reported	
Assigned Name:	2000640-001GEN	
Summary:	VCEH LEAD. BOARD STAFF PROVIDING TECHNICAL SUPPORT.	

SLIC:

Region:	STATE
Facility Status:	**Open - Site Assessment**
Status Date:	06/21/1988
Global Id:	T0611100025
Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Lead Agency Case Number:	Not reported
Latitude:	34.2617806
Longitude:	-119.2400523
Case Type:	Cleanup Program Site
Case Worker:	SLC
Local Agency:	VENTURA, CITY OF

MASTER PLATING INC THE (Continued) **1000401528**

RB Case Number:	930030052
File Location:	Not reported
Potential Media Affected:	Soil
Potential Contaminants of Concern:	* Solvents
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

RESPONSE:

Facility ID:	56340105
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	Not reported
National Priorities List:	NO
Cleanup Oversight Agencies:	DTSC
Lead Agency Description:	* DTSC
Project Manager:	Not reported
Supervisor:	* Harlan Jeche
Division Branch:	Cleanup Chatsworth
Site Code:	Not reported
Site Mgmt. Req.:	NONE SPECIFIED
Assembly:	37
Senate:	19
Special Program Status:	Not reported
Status:	Refer: RWQCB
Status Date:	04/07/1995
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	34.26166
Longitude:	-119.24
APN:	NONE SPECIFIED
Past Use:	NONE SPECIFIED
Potential COC :	* UNSPECIFIED ACID SOLUTION Cyanide (free
Confirmed COC:	NONE SPECIFIED
Potential Description:	NONE SPECIFIED
Alias Name:	110002651924
Alias Type:	EPA (FRS #)
Alias Name:	56340105
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Report
Completed Date:	04/07/1995
Comments:	Staff review of the Addendum to the PEA indicates that the soil at the site in its present condition poses no threat to human health or the environment. Groundwater contamin- ation at the site requires monitoring and/or remediation. RP has been notified and referred to RWQCB.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Report
Completed Date:	06/16/1994
Comments:	Not reported

MASTER PLATING INC THE (Continued) **1000401528**

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 09/27/1991
Comments: A medium priority pea is required because of the evidence of contamination. The property filed bankruptcy and the trust holding the property is interested in site cleanup.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Discovery
Completed Date: 12/21/1983
Comments: FACILITY IDENTIFIED ID FROM INDUSTRY DIR-VENTURA CO 1974. ELECTROPLATING, METAL FINISHING.

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

ENVIROSTOR:
Facility ID: 56340105
Status: Refer: RWQCB
Status Date: 04/07/1995
Site Code: Not reported
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: Not reported
NPL: NO
Regulatory Agencies: DTSC
Lead Agency: DTSC
Program Manager: Not reported
Supervisor: * Harlan Jeche
Division Branch: Cleanup Chatsworth
Assembly: 37
Senate: 19
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Responsible Party
Latitude: 34.26166
Longitude: -119.24
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: * UNSPECIFIED ACID SOLUTION Cyanide (free
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: 110002651924
Alias Type: EPA (FRS #)
Alias Name: 56340105
Alias Type: Envirostor ID Number

MASTER PLATING INC THE (Continued) **1000401528**

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Report
Completed Date:	04/07/1995
Comments:	Staff review of the Addendum to the PEA indicates that the soil at the site in its present condition poses no threat to human health or the environment. Groundwater contamin- ation at the site requires monitoring and/or remediation. RP has been notified and referred to RWQCB.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Report
Completed Date:	06/16/1994
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	09/27/1991
Comments:	A medium priority pea is required because of the evidence of contamination. The property filed bankruptcy and the trust holding the property is interested in site cleanup.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Discovery
Completed Date:	12/21/1983
Comments:	FACILITY IDENTIFIED ID FROM INDUSTRY DIR-VENTURA CO 1974. ELECTROPLATING, METAL FINISHING.

Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

E27 **PACIFIC BELL (KD-161)** **HIST CORTESE** **1000250648**
WSW **1264 CALLENS RD** **LUST** **N/A**
1/4-1/2 **VENTURA, CA 93003** **CA FID UST**
0.462 mi. **HIST UST**
2441 ft. **Site 2 of 5 in cluster E** **SWEEPS UST**
VENTURA CO. BWT

Relative:
Lower

Actual:
104 ft.

HIST CORTESE:

Region:	CORTESE
Facility County Code:	56
Reg By:	LTNKA
Reg Id:	C-95047

LUST:

Region:	STATE

PACIFIC BELL (KD-161) (Continued) **1000250648**

Global Id:	T0611100947
Latitude:	34.2582527
Longitude:	-119.2415566
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	05/08/2000
Lead Agency:	VENTURA COUNTY LOP
Case Worker:	Not reported
Local Agency:	Not reported
RB Case Number:	C-95047
LOC Case Number:	95047
File Location:	Not reported
Potential Media Affect:	Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern:	Waste Oil / Motor / Hydraulic / Lubricating
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0611100947
Contact Type:	Regional Board Caseworker
Contact Name:	DANIEL PIROTTON
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	Not reported
City:	R4 UNKNOWN
Email:	dpirotton@waterboards.ca.gov
Phone Number:	2135766714

Status History:

Global Id:	T0611100947
Status:	Completed - Case Closed
Status Date:	05/08/2000
Global Id:	T0611100947
Status:	Open - Site Assessment
Status Date:	07/30/1987
Global Id:	T0611100947
Status:	Open - Case Begin Date
Status Date:	07/30/1987

Regulatory Activities:

Global Id:	T0611100947
Action Type:	Other
Date:	01/01/1950
Action:	Leak Reported
Global Id:	T0611100947
Action Type:	ENFORCEMENT
Date:	09/19/1995
Action:	* Historical Enforcement
Global Id:	T0611100947
Action Type:	RESPONSE
Date:	12/17/2002
Action:	Tank Removal Report / UST Sampling Report

PACIFIC BELL (KD-161) (Continued) **1000250648**

Global Id:	T0611100947
Action Type:	Other
Date:	01/01/1950
Action:	Leak Discovery

Global Id:	T0611100947
Action Type:	ENFORCEMENT
Date:	05/08/2000
Action:	Closure/No Further Action Letter

LUST REG 4:

Region:	4
Regional Board:	04
County:	Ventura
Facility Id:	C-95047
Status:	Case Closed
Substance:	Waste Oil
Substance Quantity:	Not reported
Local Case No:	95047
Case Type:	Groundwater
Abatement Method Used at the Site:	Not reported
Global ID:	T0611100947
W Global ID:	W0603900640
Staff:	UNK
Local Agency:	56000L
Cross Street:	Not reported
Enforcement Type:	CLOS
Date Leak Discovered:	7/30/1987
Date Leak First Reported:	7/30/1987
Date Leak Record Entered:	Not reported
Date Confirmation Began:	Not reported
Date Leak Stopped:	Not reported
Date Case Last Changed on Database:	5/8/2000
Date the Case was Closed:	5/8/2000
How Leak Discovered:	Not reported
How Leak Stopped:	Not reported
Cause of Leak:	Not reported
Leak Source:	Tank
Operator:	Not reported
Water System:	SIERRA MEADOWS HOSPITAL
Well Name:	Not reported
Approx. Dist To Production Well (ft):	4579.6643908654337733303014161
Source of Cleanup Funding:	Tank
Preliminary Site Assessment Workplan Submitted:	7/30/1987
Preliminary Site Assessment Began:	Not reported
Pollution Characterization Began:	Not reported
Remediation Plan Submitted:	Not reported
Remedial Action Underway:	Not reported
Post Remedial Action Monitoring Began:	Not reported
Enforcement Action Date:	9/19/1995
Historical Max MTBE Date:	Not reported
Hist Max MTBE Conc in Groundwater:	Not reported
Hist Max MTBE Conc in Soil:	Not reported
Significant Interim Remedial Action Taken:	Not reported
GW Qualifier:	Not reported
Soil Qualifier:	Not reported

PACIFIC BELL (KD-161) (Continued) **1000250648**

Organization:	Not reported
Owner Contact:	Not reported
Responsible Party:	PACIFIC BELL
RP Address:	P.O. 5095, 3E00S, SAN RAMON, CA 94583
Program:	LUST
Lat/Long:	34.2616216 / -1
Local Agency Staff:	EHD
Beneficial Use:	Not reported
Priority:	Not reported
Cleanup Fund Id:	Not reported
Suspended:	Not reported
Assigned Name:	2000640-001GEN
Summary:	Not reported

VENTURA CO. LUST:

Region:	VENTURA
Facility ID:	95047
Status:	Case Closed

CA FID UST:

Facility ID:	56000164
Regulated By:	UTNKA
Regulated ID:	00057822
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	4155426758
Mail To:	Not reported
Mailing Address:	370 3RD ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	VENTURA 93003
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

HIST UST:

Region:	STATE
Facility ID:	00000057822
Facility Type:	Other
Other Type:	SIC 4800
Total Tanks:	0002
Contact Name:	E.J.KOEHLER
Telephone:	4155426758
Owner Name:	PACIFIC BELL
Owner Address:	370 THIRD STREET
Owner City,St,Zip:	SAN FRANCISCO, CA 94107

Tank Num:	001
Container Num:	1
Year Installed:	1979
Tank Capacity:	00012000
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED

PACIFIC BELL (KD-161) (Continued) **1000250648**

Tank Construction: Not reported
Leak Detection: None

Tank Num: 002
Container Num: 2
Year Installed: 1979
Tank Capacity: 00000550
Tank Used for: WASTE
Type of Fuel: WASTE OIL
Tank Construction: Not reported
Leak Detection: None

SWEEPS UST:
Status: Active
Comp Number: 57822
Number: 9
Board Of Equalization: 44-031033
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88
Owner Tank Id: 1
SWRCB Tank Id: 56-020-057822-000001
Tank Status: A
Capacity: 12000
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: 2

Status: Active
Comp Number: 57822
Number: 9
Board Of Equalization: 44-031033
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88
Owner Tank Id: 2
SWRCB Tank Id: 56-020-057822-000002
Tank Status: A
Capacity: 550
Active Date: 07-01-85
Tank Use: OIL
STG: W
Content: WASTE OIL
Number Of Tanks: Not reported

VENTURA CO. BWT:
Facility ID: FA0005889
Program: BUSINESS PLAN - VENTURA CITY/HAZARDOUS WASTE GENERATOR

F28 SE 1/4-1/2 0.463 mi. 2442 ft. | **POLICE/FIRE ADMIN HEADQUARTERS**
1425 DOWELL DR
VENTURA, CA 93003 | **LUST** **U001579116**
HIST UST **N/A**
VENTURA CO. BWT

Site 1 of 2 in cluster F

Relative: Higher

Actual: 158 ft.

LUST:

Region:	STATE
Global Id:	T0611164115
Latitude:	34.2600218
Longitude:	-119.2225833
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	12/16/2004
Lead Agency:	VENTURA COUNTY LOP
Case Worker:	DBW
Local Agency:	VENTURA, CITY OF
RB Case Number:	C03020
LOC Case Number:	03020
File Location:	Stored electronically as an E-file
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0611164115
Contact Type:	Local Agency Caseworker
Contact Name:	DIANE B. WAHL
Organization Name:	VENTURA COUNTY LOP
Address:	800 S. VICTORIA AVE.
City:	VENTURA
Email:	diane.wahl@ventura.org
Phone Number:	8056545040

Global Id:	T0611164115
Contact Type:	Regional Board Caseworker
Contact Name:	DANIEL PIROTTON
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	Not reported
City:	R4 UNKNOWN
Email:	dpirotton@waterboards.ca.gov
Phone Number:	2135766714

Status History:

Global Id:	T0611164115
Status:	Open - Site Assessment
Status Date:	03/19/2003

Global Id:	T0611164115
Status:	Open - Site Assessment
Status Date:	04/28/2003

Global Id:	T0611164115
Status:	Open - Remediation
Status Date:	03/23/2003

Global Id:	T0611164115

POLICE/FIRE ADMIN HEADQUARTERS (Continued) **U001579116**

Status: Open - Case Begin Date
Status Date: 02/21/2003

Global Id: T0611164115
Status: Completed - Case Closed
Status Date: 12/16/2004

Regulatory Activities:

Global Id: T0611164115
Action Type: ENFORCEMENT
Date: 10/27/2004
Action: * Historical Enforcement - #2

Global Id: T0611164115
Action Type: Other
Date: 01/01/1950
Action: Leak Stopped

Global Id: T0611164115
Action Type: ENFORCEMENT
Date: 12/16/2004
Action: Closure/No Further Action Letter - #3

Global Id: T0611164115
Action Type: RESPONSE
Date: 11/30/2004
Action: Other Report / Document

Global Id: T0611164115
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

Global Id: T0611164115
Action Type: REMEDIATION
Date: 01/01/1950
Action: Excavation

Global Id: T0611164115
Action Type: ENFORCEMENT
Date: 06/09/2003
Action: * Historical Enforcement - #1

Global Id: T0611164115
Action Type: Other
Date: 01/01/1950
Action: Leak Discovery

HIST UST:

Region: STATE
Facility ID: 00000030923
Facility Type: Other
Other Type: PUBLIC AGENCY
Total Tanks: 0002
Contact Name: DON EDWARDS

POLICE/FIRE ADMIN HEADQUARTERS (Continued) **U001579116**

Telephone: 8056547800
Owner Name: CITY OF SAN BUENAVENTURA
Owner Address: 501 POLI ST
Owner City,St,Zip: VENTURA, CA 93001

Tank Num: 001
Container Num: 6
Year Installed: 81
Tank Capacity: 00014000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: 5/16 inches
Leak Detection: Stock Inventor

Tank Num: 002
Container Num: 7
Year Installed: 81
Tank Capacity: 00001000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: 10 gauge
Leak Detection: Stock Inventor

VENTURA CO. BWT:
Facility ID: FA0006624
Program: VENTURA CITY UNDERGROUND TANK/BUSINESS PLAN - VENTURA CITY

F29 **POLICE/FIRE ADMIN HEADQUARTERS** **LUST** **S105974819**
SE **1425 DOWELL DR** **N/A**
1/4-1/2 **VENTURA, CA 93003**
0.463 mi.
2442 ft. **Site 2 of 2 in cluster F**

Relative:
Higher

Actual:
158 ft.

LUST REG 4:
Region: 4
Regional Board: 04
County: Ventura
Facility Id: C-03020
Status: Leak being confirmed
Substance: Gasoline
Substance Quantity: Not reported
Local Case No: 03020
Case Type: Soil
Abatement Method Used at the Site: Not reported
Global ID: T0611164115
W Global ID: Not reported
Staff: UNK
Local Agency: 56000L
Cross Street: RALSTON
Enforcement Type: LFOR
Date Leak Discovered: 2/21/2003
Date Leak First Reported: 4/28/2003
Date Leak Record Entered: Not reported
Date Confirmation Began: 4/28/2003
Date Leak Stopped: 2/21/2003
Date Case Last Changed on Database: Not reported
Date the Case was Closed: Not reported

POLICE/FIRE ADMIN HEADQUARTERS (Continued) **S105974819**

How Leak Discovered:	OM
How Leak Stopped:	RPP
Cause of Leak:	Structure Failure
Leak Source:	Piping
Operator:	Not reported
Water System:	Not reported
Well Name:	Not reported
Approx. Dist To Production Well (ft):	Not reported
Source of Cleanup Funding:	Piping
Preliminary Site Assessment Workplan Submitted:	Not reported
Preliminary Site Assessment Began:	Not reported
Pollution Characterization Began:	Not reported
Remediation Plan Submitted:	Not reported
Remedial Action Underway:	Not reported
Post Remedial Action Monitoring Began:	Not reported
Enforcement Action Date:	Not reported
Historical Max MTBE Date:	Not reported
Hist Max MTBE Conc in Groundwater:	Not reported
Hist Max MTBE Conc in Soil:	Not reported
Significant Interim Remedial Action Taken:	Not reported
GW Qualifier:	Not reported
Soil Qualifier:	Not reported
Organization:	Not reported
Owner Contact:	Not reported
Responsible Party:	MARY JOYCE IVERS
RP Address:	501 POLI ST
Program:	LUST
Lat/Long:	0 / 0
Local Agency Staff:	KEA
Beneficial Use:	Not reported
Priority:	Not reported
Cleanup Fund Id:	Not reported
Suspended:	Not reported
Assigned Name:	Not reported
Summary:	Not reported

VENTURA CO. LUST:

Region:	VENTURA
Facility ID:	03020
Status:	Case Closed

E30
WSW
1/4-1/2
0.479 mi.
2528 ft.

WELEX
1301 CALLENS RD.
VENTURA, CA 93003

Site 3 of 5 in cluster E

HIST CORTESE **S103627769**
SLIC **N/A**
VENTURA CO. BWT
ENVIROSTOR

Relative:
Lower

Actual:
102 ft.

HIST CORTESE:

Region:	CORTESE
Facility County Code:	56
Reg By:	CALSI
Reg Id:	56130020

SLIC:

Region:	STATE
Facility Status:	**Completed - Case Closed**
Status Date:	11/02/2000

WELEX (Continued) **S103627769**

Global Id:	T10000000838
Lead Agency:	VENTURA COUNTY LOP
Lead Agency Case Number:	SR314664
Latitude:	34.2611367
Longitude:	-119.240256
Case Type:	Cleanup Program Site
Case Worker:	Not reported
Local Agency:	Not reported
RB Case Number:	Not reported
File Location:	Local Agency Warehouse
Potential Media Affected:	Not reported
Potential Contaminants of Concern:	Not reported
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

Region:	STATE
Facility Status:	**Completed - Case Closed**
Status Date:	10/14/2002
Global Id:	T10000000866
Lead Agency:	VENTURA COUNTY LOP
Lead Agency Case Number:	SR3146644
Latitude:	34.261469
Longitude:	-119.240591
Case Type:	Cleanup Program Site
Case Worker:	Not reported
Local Agency:	Not reported
RB Case Number:	Not reported
File Location:	Local Agency Warehouse
Potential Media Affected:	Not reported
Potential Contaminants of Concern:	Not reported
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

VENTURA CO. BWT:

Facility ID:	FA0005374
Program:	BUSINESS PLAN - VENTURA CITY

ENVIROSTOR:

Facility ID:	56130020
Status:	Refer: Other Agency
Status Date:	08/31/1995
Site Code:	Not reported
Site Type:	Historical
Site Type Detailed:	* Historical
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	* Mmonroy
Division Branch:	Cleanup Chatsworth
Assembly:	37
Senate:	19
Special Program:	* CERC2

WELEX (Continued) **S103627769**

Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported
Latitude: 34.26146
Longitude: -119.2405
APN: 138012106
Past Use: NONE SPECIFIED
Potential COC: * DETERGENT & SOAP * UNSPECIFIED OIL CONTAINING WASTE * UNSPECIFIED SOLVENT MIXTURES * WASTE OIL & MIXED OIL
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: 138012106
Alias Type: APN
Alias Name: CAD982359663
Alias Type: CERCLIS ID
Alias Name: 56130020
Alias Type: Envirostor ID Number

Completed Info:

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 03/01/1995
Comments: DATABASE VALIDATION PROGRAM CONFIRMS NFA FOR DTSC.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Assessment Report
Completed Date: 04/25/1988
Comments: PRELIM ASSESS DONE S.I. SHOULD INCLUDE SAMPLING ON W. PORTN OF FACILITY WHERE STAINS OBSERVED. ALSO, SHOULD BE AWARE OF U/G SUMP WHICH STORED PETROLEUM WASTE.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 04/15/1987
Comments: SITE SCREENING DONE

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Discovery
Completed Date: 12/21/1983
Comments: FACILITY IDENTIFIED ID FROM INDUSTRY DIR-VENTURA CO 1974. OIL FIELD SERVICES.

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

E31 WSW 1/4-1/2 0.479 mi. 2528 ft. | **WELEX 1301 CALLENS RD VENTURA, CA 93003** | **CERC-NFRAP** | **1003879074 CAD982359663**

Site 4 of 5 in cluster E

Relative: Lower

Actual: 102 ft.

CERC-NFRAP:

Site ID:	0902582
Federal Facility:	Not a Federal Facility
NPL Status:	Not on the NPL
Non NPL Status:	NFRAP-Site does not qualify for the NPL based on existing information

CERCLIS-NFRAP Site Contact Details:

Contact Sequence ID:	13287689.00000
Person ID:	13003854.00000
Contact Sequence ID:	13293284.00000
Person ID:	13003858.00000
Contact Sequence ID:	13299142.00000
Person ID:	13004003.00000

CERCLIS-NFRAP Assessment History:

Action:	DISCOVERY
Date Started:	/ /
Date Completed:	11/01/87
Priority Level:	Not reported
Action:	ARCHIVE SITE
Date Started:	/ /
Date Completed:	11/29/88
Priority Level:	Not reported
Action:	PRELIMINARY ASSESSMENT
Date Started:	/ /
Date Completed:	11/29/88
Priority Level:	NFRAP-Site does not qualify for the NPL based on existing information

---

E32 WSW 1/4-1/2 0.489 mi. 2583 ft. | **UNISEAL VALVE CO 1334 CALLENS RD VENTURA, CA 93003** | **HIST CORTESE LUST** | **S102439617 N/A**

Site 5 of 5 in cluster E

Relative: Lower

Actual: 101 ft.

HIST CORTESE:

Region:	CORTESE
Facility County Code:	56
Reg By:	LTNKA
Reg Id:	C-95105

LUST:

Region:	STATE
Global Id:	T0611101003
Latitude:	34.261071
Longitude:	-119.239666
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	10/27/1997

UNISEAL VALVE CO (Continued) **S102439617**

Lead Agency:	VENTURA COUNTY LOP
Case Worker:	Not reported
Local Agency:	Not reported
RB Case Number:	C-95105
LOC Case Number:	95105
File Location:	Not reported
Potential Media Affect:	Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0611101003
Contact Type:	Regional Board Caseworker
Contact Name:	DANIEL PIROTTON
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	Not reported
City:	R4 UNKNOWN
Email:	dpirotton@waterboards.ca.gov
Phone Number:	2135766714

Status History:

Global Id:	T0611101003
Status:	Open - Case Begin Date
Status Date:	02/07/1991
Global Id:	T0611101003
Status:	Completed - Case Closed
Status Date:	10/27/1997
Global Id:	T0611101003
Status:	Open - Site Assessment
Status Date:	02/07/1991
Global Id:	T0611101003
Status:	Open - Remediation
Status Date:	09/30/1996
Global Id:	T0611101003
Status:	Open - Site Assessment
Status Date:	07/09/1996

Regulatory Activities:

Global Id:	T0611101003
Action Type:	Other
Date:	01/01/1950
Action:	Leak Reported
Global Id:	T0611101003
Action Type:	Other
Date:	01/01/1950
Action:	Leak Discovery

LUST REG 4:

UNISEAL VALVE CO (Continued) **S102439617**

Region:	4
Regional Board:	04
County:	Ventura
Facility Id:	C-95105
Status:	Case Closed
Substance:	Gasoline
Substance Quantity:	Not reported
Local Case No:	95105
Case Type:	Groundwater
Abatement Method Used at the Site:	Not reported
Global ID:	T0611101003
W Global ID:	W0603900640
Staff:	UNK
Local Agency:	56000L
Cross Street:	Not reported
Enforcement Type:	Not reported
Date Leak Discovered:	2/7/1991
Date Leak First Reported:	2/7/1991
Date Leak Record Entered:	Not reported
Date Confirmation Began:	2/7/1991
Date Leak Stopped:	Not reported
Date Case Last Changed on Database:	Not reported
Date the Case was Closed:	10/27/1997
How Leak Discovered:	Not reported
How Leak Stopped:	Not reported
Cause of Leak:	Not reported
Leak Source:	Not reported
Operator:	Not reported
Water System:	SIERRA MEADOWS HOSPITAL
Well Name:	Not reported
Approx. Dist To Production Well (ft):	4751.5382161049668691154399 53
Source of Cleanup Funding:	F
Preliminary Site Assessment Workplan Submitted:	2/7/1991
Preliminary Site Assessment Began:	7/9/1996
Pollution Characterization Began:	7/9/1996
Remediation Plan Submitted:	9/30/1996
Remedial Action Underway:	Not reported
Post Remedial Action Monitoring Began:	Not reported
Enforcement Action Date:	Not reported
Historical Max MTBE Date:	Not reported
Hist Max MTBE Conc in Groundwater:	Not reported
Hist Max MTBE Conc in Soil:	Not reported
Significant Interim Remedial Action Taken:	Not reported
GW Qualifier:	Not reported
Soil Qualifier:	Not reported
Organization:	Not reported
Owner Contact:	Not reported
Responsible Party:	WILBUR ELLIS CO
RP Address:	Not reported
Program:	LUST
Lat/Long:	34.2610277 / -1
Local Agency Staff:	EHD
Beneficial Use:	Not reported
Priority:	Not reported
Cleanup Fund Id:	Not reported
Suspended:	Not reported
Assigned Name:	2000640-001GEN

UNISEAL VALVE CO (Continued) **S102439617**

Summary: Not reported

VENTURA CO. LUST:
Region: VENTURA
Facility ID: 95105
Status: Case Closed

33
SSE
1/2-1
0.597 mi.
3154 ft.

JANUS ENTERPRISES, INC
4748 MCGRATH STREET
VENTURA, CA 93003

CHMIRS **S100275815**
ENVIROSTOR **N/A**

Relative:
Lower

Actual:
115 ft.

CHMIRS:
OES Incident Number: 9011397
OES notification: Not reported
OES Date: Not reported
OES Time: Not reported
Incident Date: 17-JUN-90
Date Completed: 18-JUN-90
Property Use: 762
Agency Id Number: 56025
Agency Incident Number: 2696
Time Notified: 1847
Time Completed: 1215
Surrounding Area: 600
Estimated Temperature: 60
Property Management: P
More Than Two Substances Involved?: N
Resp Agncy Personel # Of Decontaminated: 18
Responding Agency Personel # Of Injuries: 0
Responding Agency Personel # Of Fatalities: 0
Others Number Of Decontaminated: 0
Others Number Of Injuries: 0
Others Number Of Fatalities: 0
Vehicle Make/year: Not reported
Vehicle License Number: Not reported
Vehicle State: Not reported
Vehicle Id Number: Not reported
CA/DOT/PUC/ICC Number: Not reported
Company Name: Not reported
Reporting Officer Name/ID: C. QUINTANA F913
Report Date: 25-JUN-90
Comments: N
Facility Telephone: 805 654-7750
Waterway Involved: Not reported
Waterway: Not reported
Spill Site: Not reported
Cleanup By: Not reported
Containment: Not reported
What Happened: Not reported
Type: Not reported
Measure: Not reported
Other: Not reported
Date/Time: Not reported
Year: 88-92
Agency: Not reported

JANUS ENTERPRISES, INC (Continued) **S100275815**

Incident Date:	Not reported
Admin Agency:	Not reported
Amount:	Not reported
Contained:	Not reported
Site Type:	Not reported
E Date:	20-MAY-91
Substance:	Not reported
Quantity Released:	Not reported
BBLS:	Not reported
Cups:	Not reported
CUFT:	Not reported
Gallons:	Not reported
Grams:	Not reported
Pounds:	Not reported
Liters:	Not reported
Ounces:	Not reported
Pints:	Not reported
Quarts:	Not reported
Sheen:	Not reported
Tons:	Not reported
Unknown:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported
Description:	Not reported

ENVIROSTOR:

Facility ID:	56360089
Status:	No Further Action
Status Date:	06/30/1985
Site Code:	Not reported
Site Type:	Historical
Site Type Detailed:	* Historical
Acres:	0
NPL:	NO
Regulatory Agencies:	HWMP
Lead Agency:	HWMP
Program Manager:	Not reported
Supervisor:	* Mmonroy
Division Branch:	Cleanup Chatsworth
Assembly:	37
Senate:	19
Special Program:	* Site Char & Assess Grant (CERCLA 104)
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	Not reported
Latitude:	34.25414
Longitude:	-119.2281
APN:	084001302
Past Use:	METAL FINISHING, METAL PLATING - CHROME, METAL PLATING - OTHER
Potential COC:	* HALOGENATED SOLVENTS * OXYGENATED SOLVENTS * ACID SOLUTION 2>PH WITH METALS * ACID SOLUTION WITHOUT METALS * UNSPECIFIED ACID SOLUTION * UNSPECIFIED AQUEOUS SOLUTION * UNSPECIFIED SLUDGE WASTE Cyanide (free
Confirmed COC:	NONE SPECIFIED
Potential Description:	SED, SOIL, SV
Alias Name:	084001302

JANUS ENTERPRISES, INC (Continued) **S100275815**

Alias Type: APN
Alias Name: CAD077253243
Alias Type: EPA Identification Number
Alias Name: 110002659052
Alias Type: EPA (FRS #)
Alias Name: 56360089
Alias Type: Envirostor ID Number

Completed Info:

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 11/15/1994
Comments: CALSITES VALIDATION PROGRAM CONFIRMS NFA FOR DTSC.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Assessment Report
Completed Date: 06/30/1985
Comments: ABANDONED IW DISP SURVEY 1984: SOURCE ACT: MFG PRINTED CIRCUIT BOARDS FAC TYPE: ABOVE-G PLASTIC TANKS (2 1000 GAL & 1 3000 GAL). HAULED TO CASMALIA. SUBMIT TO EPA PRELIM ASSESS DONE CERCLA 104

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Discovery
Completed Date: 10/12/1983
Comments: FACILITY IDENTIFIED ID FROM ERRIS

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Discovery
Completed Date: 06/21/1982
Comments: FACILITY IDENTIFIED ID FROM 1982 DOHS DMI FILE LISTING. SIC=3679 ELECTRONIC COMPONENTS.

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

34
WSW
1/2-1
0.682 mi.
3603 ft.

Relative:
Lower

Actual:
89 ft.

T.W. BROWN OIL CO **HIST CORTESE** **S101699805**
1457 FLEET AVE **LUST** **N/A**
VENTURA, CA 93003 **SLIC**
VENTURA CO. BWT
ENF
ENVIROSTOR

HIST CORTESE:

Region: CORTESE
Facility County Code: 56
Reg By: LTNKA
Reg Id: C-95118

T.W. BROWN OIL CO (Continued) **S101699805**

LUST:

Region:	STATE
Global Id:	T0611101016
Latitude:	34.2609517
Longitude:	-119.2437474
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	06/16/2014
Lead Agency:	VENTURA COUNTY LOP
Case Worker:	GLT
Local Agency:	VENTURA COUNTY LOP
RB Case Number:	C95118
LOC Case Number:	95118
File Location:	Not reported
Potential Media Affect:	Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern:	Gasoline
Site History:	BLANK

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0611101016
Contact Type:	Regional Board Caseworker
Contact Name:	DANIEL PIROTTON
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	Not reported
City:	R4 UNKNOWN
Email:	dpirotton@waterboards.ca.gov
Phone Number:	2135766714

Global Id:	T0611101016
Contact Type:	Local Agency Caseworker
Contact Name:	GINA TERESA
Organization Name:	VENTURA COUNTY LOP
Address:	800 S. VICTORIA AVE.
City:	VENTURA
Email:	gina.teresa@ventura.org
Phone Number:	Not reported

Status History:

Global Id:	T0611101016
Status:	Open - Site Assessment
Status Date:	02/15/2001

Global Id:	T0611101016
Status:	Open - Site Assessment
Status Date:	10/15/2002

Global Id:	T0611101016
Status:	Open - Site Assessment
Status Date:	10/15/2003

Global Id:	T0611101016
Status:	Open - Site Assessment
Status Date:	08/15/1991

Global Id:	T0611101016

T.W. BROWN OIL CO (Continued) **S101699805**

Status: Open - Site Assessment
Status Date: 08/20/1991

Global Id: T0611101016
Status: Open - Site Assessment
Status Date: 01/13/2005

Global Id: T0611101016
Status: Open - Site Assessment
Status Date: 06/01/2007

Global Id: T0611101016
Status: Open - Verification Monitoring
Status Date: 10/08/1996

Global Id: T0611101016
Status: Open - Case Begin Date
Status Date: 08/15/1991

Global Id: T0611101016
Status: Open - Verification Monitoring
Status Date: 06/01/2007

Global Id: T0611101016
Status: Open - Eligible for Closure
Status Date: 01/07/2014

Global Id: T0611101016
Status: Completed - Case Closed
Status Date: 06/16/2014

Global Id: T0611101016
Status: Open - Remediation
Status Date: 02/01/2005

Global Id: T0611101016
Status: Open - Remediation
Status Date: 12/15/2005

Global Id: T0611101016
Status: Open - Remediation
Status Date: 08/20/1991

Global Id: T0611101016
Status: Open - Site Assessment
Status Date: 09/15/1996

Global Id: T0611101016
Status: Open - Site Assessment
Status Date: 04/15/1997

Global Id: T0611101016
Status: Open - Remediation
Status Date: 02/23/2012

Global Id: T0611101016
Status: Open - Remediation

T.W. BROWN OIL CO (Continued) **S101699805**

Status Date: 05/16/2012

Global Id: T0611101016
Status: Open - Site Assessment
Status Date: 04/15/1998

Regulatory Activities:
Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 01/28/2008
Action: File review

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 12/26/2007
Action: File review

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 06/15/2004
Action: * Historical Enforcement - #7

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 12/19/2005
Action: Staff Letter - #18

Global Id: T0611101016
Action Type: RESPONSE
Date: 02/15/2006
Action: Other Report / Document

Global Id: T0611101016
Action Type: Other
Date: 01/01/1950
Action: Leak Stopped

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 06/13/2011
Action: Staff Letter - #L28, 2011

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 09/02/2010
Action: File review

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 09/20/2005
Action: * Historical Enforcement - #16

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 06/30/2005
Action: * Historical Enforcement - #14

T.W. BROWN OIL CO (Continued) **S101699805**

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 08/07/2008
Action: File review

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 03/31/2004
Action: * Historical Enforcement - #5

Global Id: T0611101016
Action Type: RESPONSE
Date: 06/30/2014
Action: Well Destruction Report

Global Id: T0611101016
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

Global Id: T0611101016
Action Type: RESPONSE
Date: 12/19/2003
Action: Soil and Water Investigation Report

Global Id: T0611101016
Action Type: RESPONSE
Date: 05/19/2004
Action: Soil and Water Investigation Report

Global Id: T0611101016
Action Type: RESPONSE
Date: 05/28/2004
Action: CAP/RAP - Feasibility Study Report

Global Id: T0611101016
Action Type: RESPONSE
Date: 06/30/2004
Action: Soil and Water Investigation Workplan

Global Id: T0611101016
Action Type: RESPONSE
Date: 06/30/2004
Action: Soil and Water Investigation Report

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 07/06/2007
Action: Technical Correspondence / Assistance / Other - #L18

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 03/09/2005
Action: * Historical Enforcement - #12

Global Id: T0611101016
Action Type: ENFORCEMENT

T.W. BROWN OIL CO (Continued) **S101699805**

Date: 09/27/2007
Action: Notice to Comply - #L21

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 08/19/2009
Action: Staff Letter - #GWM

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 09/16/2009
Action: File review

Global Id: T0611101016
Action Type: RESPONSE
Date: 06/17/2005
Action: Preliminary Site Assessment Report

Global Id: T0611101016
Action Type: RESPONSE
Date: 11/30/2005
Action: Corrective Action Plan / Remedial Action Plan

Global Id: T0611101016
Action Type: RESPONSE
Date: 06/17/2005
Action: Other Report / Document

Global Id: T0611101016
Action Type: RESPONSE
Date: 10/15/2007
Action: Well Installation Report

Global Id: T0611101016
Action Type: RESPONSE
Date: 01/02/2007
Action: Other Workplan

Global Id: T0611101016
Action Type: RESPONSE
Date: 10/22/2007
Action: Other Report / Document

Global Id: T0611101016
Action Type: RESPONSE
Date: 11/05/2007
Action: Other Report / Document

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 02/06/2012
Action: File review

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 08/06/2013
Action: Staff Letter

T.W. BROWN OIL CO (Continued) **S101699805**

Global Id: T0611101016
Action Type: RESPONSE
Date: 09/14/2009
Action: Other Report / Document

Global Id: T0611101016
Action Type: RESPONSE
Date: 10/13/2008
Action: Other Report / Document

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 03/06/2012
Action: File review

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 06/20/2006
Action: Technical Correspondence / Assistance / Other - #L12

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 04/05/2007
Action: File review

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 04/27/2006
Action: File review - #L11

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 07/10/2006
Action: Technical Correspondence / Assistance / Other - #L13

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 07/12/2005
Action: * Historical Enforcement - #15

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 09/08/2009
Action: Staff Letter - #GWM2

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 10/12/2010
Action: File review

Global Id: T0611101016
Action Type: RESPONSE
Date: 04/30/2013
Action: Remedial Progress Report

Global Id: T0611101016
Action Type: RESPONSE

T.W. BROWN OIL CO (Continued) **S101699805**

Date: 10/30/2013
Action: Remedial Progress Report

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 04/06/2012
Action: File review

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 04/02/2012
Action: File review

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 09/05/2007
Action: Technical Correspondence / Assistance / Other - #L20

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 10/06/2004
Action: * Historical Enforcement - #8

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 04/24/2008
Action: Technical Correspondence / Assistance / Other - #L24

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 11/25/2003
Action: * Historical Enforcement - #4

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 07/17/2003
Action: File review - #1

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 08/01/2003
Action: File review - #2

Global Id: T0611101016
Action Type: RESPONSE
Date: 11/30/2005
Action: Other Report / Document

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 08/11/2011
Action: File review

Global Id: T0611101016
Action Type: RESPONSE
Date: 10/27/2008
Action: Remedial Progress Report

T.W. BROWN OIL CO (Continued) **S101699805**

Global Id: T0611101016
Action Type: RESPONSE
Date: 09/24/2009
Action: Other Report / Document

Global Id: T0611101016
Action Type: RESPONSE
Date: 12/30/2011
Action: Clean Up Fund - 5-Year Review Summary - Regulator Responded

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 01/07/2014
Action: Staff Letter

Global Id: T0611101016
Action Type: RESPONSE
Date: 01/13/2010
Action: Clean Up Fund - 5-Year Review Summary

Global Id: T0611101016
Action Type: RESPONSE
Date: 12/16/2009
Action: Clean Up Fund - 5-Year Review Summary

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 08/14/2003
Action: * Historical Enforcement - #3

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 11/20/2006
Action: Technical Correspondence / Assistance / Other - #L15

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 05/20/2005
Action: * Historical Enforcement - #13

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 09/06/2006
Action: File review - #L14

Global Id: T0611101016
Action Type: Other
Date: 01/01/1950
Action: Leak Discovery

Global Id: T0611101016
Action Type: RESPONSE
Date: 10/07/2005
Action: Other Report / Document

Global Id: T0611101016
Action Type: RESPONSE

T.W. BROWN OIL CO (Continued) **S101699805**

Date: 07/02/2007
Action: Well Installation Report

Global Id: T0611101016
Action Type: RESPONSE
Date: 10/30/2013
Action: Monitoring Report - Quarterly

Global Id: T0611101016
Action Type: RESPONSE
Date: 01/21/2008
Action: Well Installation Report

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 10/29/2012
Action: Staff Letter

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 04/29/2014
Action: File review

Global Id: T0611101016
Action Type: REMEDIATION
Date: 01/01/1950
Action: Soil Vapor Extraction (SVE)

Global Id: T0611101016
Action Type: RESPONSE
Date: 03/15/2005
Action: Other Report / Document

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 03/18/2008
Action: File review

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 03/25/2008
Action: * Verbal Communication

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 01/12/2005
Action: * Historical Enforcement - #11

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 12/27/2004
Action: * Historical Enforcement - #10

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 01/13/2011
Action: File review

T.W. BROWN OIL CO (Continued) **S101699805**

Global Id: T0611101016
Action Type: RESPONSE
Date: 01/27/2012
Action: Clean Up Fund - 5-Year Review Summary - Regulator Responded

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 06/16/2014
Action: Closure/No Further Action Letter

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 06/05/2007
Action: Technical Correspondence / Assistance / Other - #L17

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 12/14/2006
Action: File review

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 07/10/2007
Action: Notice to Comply - #L19

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 11/18/2005
Action: * Historical Enforcement - #17

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 01/23/2006
Action: * Historical Enforcement - #19

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 10/12/2004
Action: * Historical Enforcement - #9

Global Id: T0611101016
Action Type: RESPONSE
Date: 09/29/2006
Action: Soil and Water Investigation Workplan

Global Id: T0611101016
Action Type: RESPONSE
Date: 07/30/2013
Action: Monitoring Report - Semi-Annually - Regulator Responded

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 04/28/2004
Action: * Historical Enforcement - #6

Global Id: T0611101016
Action Type: ENFORCEMENT

T.W. BROWN OIL CO (Continued) **S101699805**

Date: 01/22/2007
Action: Technical Correspondence / Assistance / Other - #L16

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 12/21/2007
Action: Notice to Comply - #L22

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 04/02/2008
Action: Technical Correspondence / Assistance / Other - #L23

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 09/30/2008
Action: Staff Letter - #L25

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 11/26/2008
Action: File review

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 11/18/2008
Action: File review

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 03/19/2008
Action: File review

Global Id: T0611101016
Action Type: RESPONSE
Date: 12/21/2012
Action: Remedial Progress Report

Global Id: T0611101016
Action Type: ENFORCEMENT
Date: 04/29/2010
Action: File review

Global Id: T0611101016
Action Type: RESPONSE
Date: 05/12/2008
Action: Interim Remedial Action Plan

Global Id: T0611101016
Action Type: RESPONSE
Date: 01/30/2014
Action: Remedial Progress Report

Global Id: T0611101016
Action Type: RESPONSE
Date: 11/25/2013
Action: Clean Up Fund - 5-Year Review Summary

T.W. BROWN OIL CO (Continued) **S101699805**

Global Id:	T0611101016
Action Type:	RESPONSE
Date:	01/06/2014
Action:	Correspondence

Global Id:	T0611101016
Action Type:	ENFORCEMENT
Date:	09/26/2011
Action:	File review

Global Id:	T0611101016
Action Type:	ENFORCEMENT
Date:	10/20/2010
Action:	Staff Letter - #L27

Global Id:	T0611101016
Action Type:	RESPONSE
Date:	02/21/2014
Action:	Fact Sheets - Public Participation - Regulator Responded

Global Id:	T0611101016
Action Type:	RESPONSE
Date:	07/18/2011
Action:	Interim Remedial Action Report

Region:	STATE
Global Id:	T0611110416
Latitude:	34.2609803470144
Longitude:	-119.243881149056
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	06/16/2014
Lead Agency:	VENTURA COUNTY LOP
Case Worker:	GLT
Local Agency:	VENTURA COUNTY LOP
RB Case Number:	C04028
LOC Case Number:	04028
File Location:	Not reported
Potential Media Affect:	Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern:	Gasoline
Site History:	BLANK

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0611110416
Contact Type:	Local Agency Caseworker
Contact Name:	GINA TERESA
Organization Name:	VENTURA COUNTY LOP
Address:	800 S. VICTORIA AVE.
City:	VENTURA
Email:	gina.teresa@ventura.org
Phone Number:	Not reported

Global Id:	T0611110416
Contact Type:	Regional Board Caseworker
Contact Name:	DANIEL PIROTTON

T.W. BROWN OIL CO (Continued) **S101699805**

Organization Name: LOS ANGELES RWQCB (REGION 4)
Address: Not reported
City: R4 UNKNOWN
Email: dpirotton@waterboards.ca.gov
Phone Number: 2135766714

Status History:

Global Id: T0611110416
Status: Open - Site Assessment
Status Date: 11/04/2004

Global Id: T0611110416
Status: Open - Site Assessment
Status Date: 04/29/2005

Global Id: T0611110416
Status: Open - Site Assessment
Status Date: 11/02/2005

Global Id: T0611110416
Status: Open - Case Begin Date
Status Date: 01/28/2004

Global Id: T0611110416
Status: Open - Verification Monitoring
Status Date: 11/02/2005

Global Id: T0611110416
Status: Completed - Case Closed
Status Date: 06/16/2014

Global Id: T0611110416
Status: Open - Eligible for Closure
Status Date: 07/29/2013

Regulatory Activities:

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 12/03/2004
Action: * Historical Enforcement - #3

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 04/18/2005
Action: * Historical Enforcement - #4

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 06/30/2005
Action: * Historical Enforcement - #5

Global Id: T0611110416
Action Type: RESPONSE
Date: 05/31/2005
Action: Soil and Water Investigation Report

T.W. BROWN OIL CO (Continued) **S101699805**

Global Id: T0611110416
Action Type: RESPONSE
Date: 06/30/2014
Action: Well Destruction Report

Global Id: T0611110416
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 01/01/2008
Action: File review

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 08/06/2013
Action: Staff Letter

Global Id: T0611110416
Action Type: RESPONSE
Date: 11/05/2004
Action: Preliminary Site Assessment Workplan

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 01/23/2006
Action: * Historical Enforcement - #6

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 07/06/2007
Action: Technical Correspondence / Assistance / Other

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 04/05/2007
Action: File review

Global Id: T0611110416
Action Type: RESPONSE
Date: 08/31/2005
Action: Soil and Water Investigation Workplan

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 11/08/2010
Action: File review

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 08/12/2009
Action: Staff Letter - #GWM

Global Id: T0611110416
Action Type: RESPONSE

T.W. BROWN OIL CO (Continued) **S101699805**

Date: 10/30/2013
Action: Monitoring Report - Quarterly

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 01/07/2014
Action: Staff Letter

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 04/27/2006
Action: * No Action - #L01

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 09/06/2006
Action: Technical Correspondence / Assistance / Other

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 03/18/2008
Action: File review

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 09/27/2008
Action: Technical Correspondence / Assistance / Other

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 09/27/2007
Action: Technical Correspondence / Assistance / Other

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 12/14/2006
Action: File review

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 11/20/2006
Action: Technical Correspondence / Assistance / Other

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 07/10/2006
Action: Technical Correspondence / Assistance / Other

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 08/07/2008
Action: File review

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 04/24/2008
Action: Technical Correspondence / Assistance / Other

T.W. BROWN OIL CO (Continued) **S101699805**

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 04/02/2008
Action: Technical Correspondence / Assistance / Other

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 03/25/2008
Action: Verbal Enforcement

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 03/19/2008
Action: File review

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 01/28/2008
Action: File review

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 12/26/2007
Action: File review

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 12/21/2007
Action: Technical Correspondence / Assistance / Other

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 07/10/2007
Action: Technical Correspondence / Assistance / Other

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 01/22/2007
Action: Technical Correspondence / Assistance / Other

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 06/20/2006
Action: Technical Correspondence / Assistance / Other

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 09/05/2007
Action: Technical Correspondence / Assistance / Other

Global Id: T0611110416
Action Type: ENFORCEMENT
Date: 06/05/2007
Action: Technical Correspondence / Assistance / Other

Global Id: T0611110416
Action Type: Other

T.W. BROWN OIL CO (Continued) **S101699805**

Date:	01/01/1950
Action:	Leak Discovery
Global Id:	T0611110416
Action Type:	RESPONSE
Date:	10/30/2013
Action:	Remedial Progress Report
Global Id:	T0611110416
Action Type:	ENFORCEMENT
Date:	04/29/2014
Action:	File review
Global Id:	T0611110416
Action Type:	ENFORCEMENT
Date:	10/12/2004
Action:	* Historical Enforcement - #2
Global Id:	T0611110416
Action Type:	ENFORCEMENT
Date:	06/16/2014
Action:	Closure/No Further Action Letter
Global Id:	T0611110416
Action Type:	ENFORCEMENT
Date:	08/27/2004
Action:	Notice of Responsibility - #1
Global Id:	T0611110416
Action Type:	ENFORCEMENT
Date:	04/25/2013
Action:	File review
Global Id:	T0611110416
Action Type:	RESPONSE
Date:	02/21/2014
Action:	Fact Sheets - Public Participation
Global Id:	T0611110416
Action Type:	ENFORCEMENT
Date:	08/11/2011
Action:	File review

SLIC:

Region:	STATE
Facility Status:	**Completed - Case Closed**
Status Date:	01/26/2006
Global Id:	T10000000850
Lead Agency:	VENTURA COUNTY LOP
Lead Agency Case Number:	SR3146667
Latitude:	34.261196
Longitude:	-119.244056
Case Type:	Cleanup Program Site
Case Worker:	EKO
Local Agency:	VENTURA COUNTY LOP
RB Case Number:	Not reported

T.W. BROWN OIL CO (Continued) **S101699805**

File Location: Local Agency Warehouse
Potential Media Affected: Not reported
Potential Contaminants of Concern: Diesel, Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

VENTURA CO. BWT:
Facility ID: FA0024064
Program: BUSINESS PLAN - VENTURA CITY/VENTURA CITY UNDERGROUND TANK

ENF:

Region:	4
Facility Id:	262773
Agency Name:	T.W. Brown Oil Co
Place Type:	Facility
Place Subtype:	Not reported
Facility Type:	All other facilities
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	Not reported
Place Longitude:	Not reported
SIC Code 1:	Not reported
SIC Desc 1:	Not reported
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	Not reported
Threat To Water Quality:	Not reported
Complexity:	Not reported
Pretreatment:	Not reported
Facility Waste Type:	Not reported
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	AGT
Program Category1:	TANKS
Program Category2:	TANKS
# Of Programs:	1
WDID:	4CUPA000213
Reg Measure Id:	167333
Reg Measure Type:	Unregulated
Region:	4
Order #:	Not reported
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported

T.W. BROWN OIL CO (Continued) **S101699805**

Reclamation:	Not reported
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	Not reported
Status:	Never Active
Status Date:	02/20/2013
Effective Date:	Not reported
Expiration/Review Date:	Not reported
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	N
Individual/General:	I
Fee Code:	Not reported
Direction/Voice:	Passive
Enforcement Id(EID):	236907
Region:	4
Order / Resolution Number:	SEL
Enforcement Action Type:	Staff Enforcement Letter
Effective Date:	06/19/2001
Adoption/Issuance Date:	Not reported
Achieve Date:	Not reported
Termination Date:	06/19/2001
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	Enforcement - 4CUPA000213
Description:	Notice of Noncompliance sent 6/19/01 for failure to pay fees.
Program:	AGT
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0
Total $ Paid/Completed Amount:	0

ENVIROSTOR:

Facility ID:	56510014
Status:	Refer: 1248 Local Agency
Status Date:	10/04/2001
Site Code:	Not reported
Site Type:	Evaluation
Site Type Detailed:	Evaluation
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Referred - Not Assigned

T.W. BROWN OIL CO (Continued) **S101699805**

Division Branch:	Cleanup Cypress
Assembly:	37
Senate:	19
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	Not Applicable
Latitude:	34.26119
Longitude:	-119.2440
APN:	NONE SPECIFIED
Past Use:	NONE SPECIFIED
Potential COC:	NONE SPECIFIED
Confirmed COC:	NONE SPECIFIED
Potential Description:	NONE SPECIFIED
Alias Name:	56510014
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	Not reported
Completed Sub Area Name:	Not reported
Completed Document Type:	Not reported
Completed Date:	Not reported
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

---

35 **KAL GARD FACILITY** **SLIC** **S104404799**
South **4476 DUPONT** **ENF** **N/A**
1/2-1 **VENTURA, CA 93003** **ENVIROSTOR**
0.763 mi.
4028 ft.

Relative:
Lower

Actual:
89 ft.

SLIC:

Region:	STATE
Facility Status:	**Completed - Case Closed**
Status Date:	01/30/2006
Global Id:	T0611130533
Lead Agency:	VENTURA COUNTY LOP
Lead Agency Case Number:	SR0001425
Latitude:	34.251892
Longitude:	-119.233221
Case Type:	Cleanup Program Site
Case Worker:	EKO
Local Agency:	VENTURA COUNTY LOP
RB Case Number:	Not reported
File Location:	Local Agency Warehouse
Potential Media Affected:	Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern:	Tetrachloroethylene (PCE)
Site History:	Not reported

KAL GARD FACILITY (Continued) **S104404799**

Click here to access the California GeoTracker records for this facility:

SLIC REG 4:

Region:	4
Facility Status:	Site Assessment
SLIC:	0583
Substance:	VOCs
Staff:	RE

ENF:

Region:	4
Facility Id:	226217
Agency Name:	Kalgard Facility (Former)
Place Type:	Facility
Place Subtype:	Not reported
Facility Type:	All other facilities
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	34.252040999999
Place Longitude:	-119.23245
SIC Code 1:	Not reported
SIC Desc 1:	Not reported
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	Not reported
Threat To Water Quality:	Not reported
Complexity:	Not reported
Pretreatment:	Not reported
Facility Waste Type:	Not reported
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	SLIC
Program Category1:	TANKS
Program Category2:	TANKS
# Of Programs:	1
WDID:	4SLIC583
Reg Measure Id:	168944
Reg Measure Type:	Unregulated
Region:	4
Order #:	Not reported
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported
Reclamation:	Not reported

KAL GARD FACILITY (Continued) **S104404799**

Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	Not reported
Status:	Never Active
Status Date:	02/20/2013
Effective Date:	Not reported
Expiration/Review Date:	Not reported
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	N
Individual/General:	I
Fee Code:	Not reported
Direction/Voice:	Passive
Enforcement Id(EID):	238597
Region:	4
Order / Resolution Number:	UNKNOWN
Enforcement Action Type:	Staff Enforcement Letter
Effective Date:	09/05/2001
Adoption/Issuance Date:	Not reported
Achieve Date:	Not reported
Termination Date:	09/05/2001
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	Enforcement - 4SLIC583
Description:	Notice of Noncompliance sent 9/5/01 for overdue supplemental technical report.
Program:	SLIC
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0
Total $ Paid/Completed Amount:	0

ENVIROSTOR:

Facility ID:	56000002
Status:	Refer: 1248 Local Agency
Status Date:	09/29/2004
Site Code:	Not reported
Site Type:	Evaluation
Site Type Detailed:	Evaluation
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Referred - Not Assigned
Division Branch:	Cleanup Cypress

KAL GARD FACILITY (Continued) **S104404799**

Assembly: 35
Senate: Not reported
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not Applicable
Latitude: 0
Longitude: 0
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: 110002835291
Alias Type: EPA (FRS #)
Alias Name: 56000002
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

Facility ID: 56550005
Status: Refer: RWQCB
Status Date: 11/21/1995
Site Code: Not reported
Site Type: Historical
Site Type Detailed: * Historical
Acres: Not reported
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: * Mmonroy
Division Branch: Cleanup Chatsworth
Assembly: 37
Senate: 19
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported
Latitude: 34.25194
Longitude: -119.2327
APN: 084013208
Past Use: NONE SPECIFIED

KAL GARD FACILITY (Continued) **S104404799**

Potential COC: * HALOGENATED ORGANIC COMPOUNDS * HALOGENATED SOLVENTS * HYDROCARBON SOLVENTS * OTHER ORGANIC SOLIDS * OXYGENATED SOLVENTS * CONTAMINATED SOIL * UNSPECIFIED OIL CONTAINING WASTE * UNSPECIFIED SOLVENT MIXTURES * WASTE OIL & MIXED OIL * ORGANIC LIQUIDS (NONSOLVENTS) WITH HALOGENS * UNSPECIFIED ORGANIC LIQUID MIXTURE
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: EXCEL AUTOMOTIVE PRODUCTS, INC.
Alias Type: Alternate Name
Alias Name: JDB AUTOMOTIVE, INC.
Alias Type: Alternate Name
Alias Name: KAL GARD COATING AND MANUFACTURING CORP.
Alias Type: Alternate Name
Alias Name: KG INDUSTRIES, INC.
Alias Type: Alternate Name
Alias Name: L. A. AEROSOL, INC.
Alias Type: Alternate Name
Alias Name: 084013208
Alias Type: APN
Alias Name: 56550005
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 11/21/1995
Comments: DTSC received a notice of intent to sue under RCRA. The site is contaminated with halogenated organic compounds such as 1,1,1-TCA, PCE and 1,1-DCA. The former operator left approximately 300 containers of hazardous substances at the the site when they terminated their lease. Ventura County Fire Department removed some of the containers. LA RWQCB is currently reviewing the Workplan and overseeing the remedial investigations. Therefore, DTSC is referring this site to RWQCB.

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

36
WSW
1/2-1
0.956 mi.
5050 ft.

NOWCAM/CAMCO
3530 ARUNDELL CIRCLE
VENTURA, CA 93003

NPDES **S104993811**
SLIC **N/A**
VENTURA CO. BWT
ENVIROSTOR
WDS

Relative:
Lower

Actual:
65 ft.

NPDES:
Npdes Number: CAS000001
Facility Status: Active
Agency Id: 0
Region: 4
Regulatory Measure Id: 192746

NOWCAM/CAMCO (Continued) **S104993811**

Order No:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place Id:	Not reported
WDID:	4 56I016044
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	08/25/2000
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Dowell Inc
Discharge Address:	3530 Arundell Cir
Discharge City:	Ventura
Discharge State:	California
Discharge Zip:	93003

SLIC:

Region:	STATE
Facility Status:	**Completed - Case Closed**
Status Date:	08/18/1999
Global Id:	T10000000774
Lead Agency:	VENTURA COUNTY LOP
Lead Agency Case Number:	SR3146608
Latitude:	34.258735
Longitude:	-119.247616
Case Type:	Cleanup Program Site
Case Worker:	Not reported
Local Agency:	Not reported
RB Case Number:	Not reported
File Location:	Local Agency Warehouse
Potential Media Affected:	Not reported
Potential Contaminants of Concern:	Not reported
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

VENTURA CO. BWT:

Facility ID:	FA0005877
Program:	BUSINESS PLAN - VENTURA CITY/HAZARDOUS WASTE GENERATOR

ENVIROSTOR:

Facility ID:	56130040
Status:	No Further Action
Status Date:	06/28/1991
Site Code:	300258
Site Type:	Historical
Site Type Detailed:	* Historical
Acres:	1
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	* Mmonroy
Division Branch:	Cleanup Chatsworth
Assembly:	37
Senate:	19
Special Program:	Not reported

NOWCAM/CAMCO (Continued) **S104993811**

Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported
Latitude: 34.25873
Longitude: -119.2476
APN: 138017023
Past Use: NONE
Potential COC: TPH-gas
Confirmed COC: TPH-gas
Potential Description: SOIL
Alias Name: 138017023
Alias Type: APN
Alias Name: 110002645727
Alias Type: EPA (FRS #)
Alias Name: 300258
Alias Type: Project Code (Site Code)
Alias Name: 56130040
Alias Type: Envirostor ID Number

Completed Info:

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 10/27/1994
Comments: CalSites Validation Program confirms NFA for DTSC.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 06/28/1991
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 10/04/1990
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Discovery
Completed Date: 10/04/1990
Comments: PEA completed. Soil on site contained minimal level of TPH and other constituents all of which were below PEA soil ingestion screening values. Therefore, no further action is appropriate.

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

CA WDS:

NOWCAM/CAMCO (Continued) **S104993811**

Facility ID:	4 56I016044
Facility Type:	Other - Does not fall into the category of Municipal/Domestic, Industrial, Agricultural or Solid Waste (Class I, II or III)
Facility Status:	Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number:	CAS000001 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion:	4
Facility Telephone:	8056448160
Facility Contact:	Steve Emerick
Agency Name:	DOWELL A DIV OF SCHLUMBER
Agency Address:	Not reported
Agency City,St,Zip:	0
Agency Contact:	Not reported
Agency Telephone:	Not reported
Agency Type:	Private
SIC Code:	0
SIC Code 2:	Not reported
Primary Waste Type:	Not reported
Primary Waste:	Not reported
Waste Type2:	Not reported
Waste2:	Not reported
Primary Waste Type:	Not reported
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Design Flow:	0
Baseline Flow:	0
Reclamation:	Not reported
POTW:	Not reported
Treat To Water:	Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.
Complexity:	Category C - Facilities having no waste treatment systems, such as cooling water dischargers or thosewho must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

Count: 14 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
LA CONCHITA	S109521479	RINCON DEL MAR RANCH	NORTHEAST CORNER OF HWY 101 AN	93001	SLIC
VENTURA	U003913115	AMERICAN TOWER CORP.	3 MILES N OF E MAIN		UST
VENTURA	1003879091	HUMACID CORP & DUNCAN MACLEOD	NEAR SPRR TRACKS & N VENTURA A	93001	CERC-NFRAP
VENTURA	1016168184	SCHLUMBERGER TECHNOLOGY CORP	1.6 MI NW OF HWY 33 OF	93001	RCRA-LQG
VENTURA	S105974862	HALLS CANYON	NORTH OF E MAIN ST	93001	LUST
VENTURA	U003996651	VCFPD STN #25	7674 PACIFIC COAST HWY		UST
VENTURA	U001579022	RINCON ISLAND, STATE LEASE 146	W. PACIFIC COAST HIGHWAY	93001	HIST UST
VENTURA	U001579021	RINCON ISLAND - STATE LEASE 14	W. PACIFIC COAST HIGHWAY	93001	HIST UST
VENTURA	A100346261	VENOCO RINCON PIPELINE STN	577 W PACIFIC COAST HWY		AST
VENTURA	A100344665		188 W SANTA CLARA STL		AST
VENTURA	1003878792	GETTY OIL VENTURA AVE OIL FLD	SEC25-27 T3N R23W	93001	CERC-NFRAP
VENTURA	1001075618	RINCON IS LDT PARTNERSHIP PRC145 A	STATE LEASE PRC 145 AND 410.1	93001	RCRA-SQG
VENTURA	1001075617	RINCON IS LMT PARTNERSHIP	STATE LEASE PRC 1466 RINCON IS	93001	RCRA-SQG
VENTURA	S114697974	SYCAMORE DRIVE COMMUNITY CT	1692 SYCAMORE DR		RGA LUST

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: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 01/28/2014
Number of Days to Update: 78

Source: EPA
Telephone: N/A
Last EDR Contact: 10/08/2014
Next Scheduled EDR Contact: 01/19/2015
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 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

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: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 01/28/2014
Number of Days to Update: 78

Source: EPA
Telephone: N/A
Last EDR Contact: 10/08/2014
Next Scheduled EDR Contact: 01/19/2015
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: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 11/11/2013	Telephone: N/A
Date Made Active in Reports: 01/28/2014	Last EDR Contact: 10/08/2014
Number of Days to Update: 78	Next Scheduled EDR Contact: 01/19/2015
	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: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 11/11/2013	Telephone: 703-412-9810
Date Made Active in Reports: 02/13/2014	Last EDR Contact: 08/28/2014
Number of Days to Update: 94	Next Scheduled EDR Contact: 12/08/2014
	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: 04/01/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/08/2014	Telephone: 703-603-8704
Date Made Active in Reports: 08/22/2014	Last EDR Contact: 10/07/2014
Number of Days to Update: 45	Next Scheduled EDR Contact: 01/19/2015
	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: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 11/11/2013	Telephone: 703-412-9810
Date Made Active in Reports: 02/13/2014	Last EDR Contact: 08/28/2014
Number of Days to Update: 94	Next Scheduled EDR Contact: 12/08/2014
	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: 06/10/2014
Date Data Arrived at EDR: 07/02/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 78

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 10/01/2014
Next Scheduled EDR Contact: 01/12/2015
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: 06/10/2014
Date Data Arrived at EDR: 07/02/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 78

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 10/01/2014
Next Scheduled EDR Contact: 01/12/2015
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: 06/10/2014
Date Data Arrived at EDR: 07/02/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 78

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 10/01/2014
Next Scheduled EDR Contact: 01/12/2015
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: 06/10/2014
Date Data Arrived at EDR: 07/02/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 78

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 10/01/2014
Next Scheduled EDR Contact: 01/12/2015
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: 06/10/2014
Date Data Arrived at EDR: 07/02/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 78

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 10/01/2014
Next Scheduled EDR Contact: 01/12/2015
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: 06/23/2014
Date Data Arrived at EDR: 07/15/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 65

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 09/08/2014
Next Scheduled EDR Contact: 12/22/2014
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: 06/23/2014
Date Data Arrived at EDR: 07/15/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 65

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 09/08/2014
Next Scheduled EDR Contact: 12/22/2014
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: 05/28/2014
Date Data Arrived at EDR: 05/30/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 18

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 08/14/2014
Next Scheduled EDR Contact: 12/01/2014
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: 09/30/2013
Date Data Arrived at EDR: 10/01/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 66

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 09/30/2014
Next Scheduled EDR Contact: 01/12/2015
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: 08/05/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 09/26/2014
Number of Days to Update: 51

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/06/2014
Next Scheduled EDR Contact: 11/17/2014
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: 08/05/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 09/26/2014
Number of Days to Update: 51

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/06/2014
Next Scheduled EDR Contact: 11/17/2014
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: 08/18/2014
Date Data Arrived at EDR: 08/18/2014
Date Made Active in Reports: 10/03/2014
Number of Days to Update: 46

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 08/18/2014
Next Scheduled EDR Contact: 12/01/2014
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

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 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 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 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

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: 07/30/2014
Date Data Arrived at EDR: 07/31/2014
Date Made Active in Reports: 08/22/2014
Number of Days to Update: 22

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 09/17/2014
Next Scheduled EDR Contact: 12/29/2014
Data Release Frequency: Quarterly

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 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 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 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

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: 07/30/2014
Date Data Arrived at EDR: 07/31/2014
Date Made Active in Reports: 08/25/2014
Number of Days to Update: 25

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/17/2014
Next Scheduled EDR Contact: 12/29/2014
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 R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 05/20/2014
Date Data Arrived at EDR: 06/10/2014
Date Made Active in Reports: 08/22/2014
Number of Days to Update: 73

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Quarterly

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: 08/04/2014
Date Data Arrived at EDR: 08/05/2014
Date Made Active in Reports: 08/22/2014
Number of Days to Update: 17

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

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: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Quarterly

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: 08/01/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 05/22/2014
Date Data Arrived at EDR: 08/22/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 27

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 05/14/2014
Date Data Arrived at EDR: 05/15/2014
Date Made Active in Reports: 07/15/2014
Number of Days to Update: 61

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/20/2014
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: 07/30/2014
Date Data Arrived at EDR: 08/12/2014
Date Made Active in Reports: 08/22/2014
Number of Days to Update: 10

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 04/22/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Semi-Annually

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: 08/13/2014
Date Data Arrived at EDR: 08/15/2014
Date Made Active in Reports: 08/22/2014
Number of Days to Update: 7

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Quarterly

State and tribal registered storage tank lists

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 07/30/2014
Date Data Arrived at EDR: 07/31/2014
Date Made Active in Reports: 08/20/2014
Number of Days to Update: 20

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 09/19/2014
Next Scheduled EDR Contact: 12/29/2014
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: 10/03/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Quarterly

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: 02/01/2013
Date Data Arrived at EDR: 05/01/2013
Date Made Active in Reports: 01/27/2014
Number of Days to Update: 271

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 08/01/2014
Next Scheduled EDR Contact: 11/10/2014
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: 07/30/2014
Date Data Arrived at EDR: 08/12/2014
Date Made Active in Reports: 08/22/2014
Number of Days to Update: 10

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 04/22/2014
Next Scheduled EDR Contact: 08/11/2014
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: 08/04/2014
Date Data Arrived at EDR: 08/05/2014
Date Made Active in Reports: 08/22/2014
Number of Days to Update: 17

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 11/10/2014
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: 07/25/2014
Date Data Arrived at EDR: 07/28/2014
Date Made Active in Reports: 08/22/2014
Number of Days to Update: 25

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Semi-Annually

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: 08/20/2014
Date Data Arrived at EDR: 08/22/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 27

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

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: 08/13/2014
Date Data Arrived at EDR: 08/15/2014
Date Made Active in Reports: 08/22/2014
Number of Days to Update: 7

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
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: 05/20/2014
Date Data Arrived at EDR: 06/10/2014
Date Made Active in Reports: 08/15/2014
Number of Days to Update: 66

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
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: 08/14/2014
Date Data Arrived at EDR: 08/15/2014
Date Made Active in Reports: 08/22/2014
Number of Days to Update: 7

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Quarterly

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: 10/10/2014
Next Scheduled EDR Contact: 01/26/2015
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

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: 05/30/2014
Date Data Arrived at EDR: 07/01/2014
Date Made Active in Reports: 08/15/2014
Number of Days to Update: 45

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 10/01/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Varies

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: 08/05/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 09/26/2014
Number of Days to Update: 51

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/06/2014
Next Scheduled EDR Contact: 11/17/2014
Data Release Frequency: Quarterly

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: 07/01/2014
Date Data Arrived at EDR: 07/03/2014
Date Made Active in Reports: 07/28/2014
Number of Days to Update: 25

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/23/2014
Next Scheduled EDR Contact: 01/05/2015
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

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: 07/25/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: No Update Planned

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

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 06/16/2014
Date Data Arrived at EDR: 06/17/2014
Date Made Active in Reports: 07/11/2014
Number of Days to Update: 24

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/17/2014
Next Scheduled EDR Contact: 12/29/2014
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 02/18/2014
Date Data Arrived at EDR: 02/20/2014
Date Made Active in Reports: 03/27/2014
Number of Days to Update: 35

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 08/14/2014
Next Scheduled EDR Contact: 12/01/2014
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: 08/01/2014
Next Scheduled EDR Contact: 11/17/2014
Data Release Frequency: Varies

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: 08/07/2014
Next Scheduled EDR Contact: 11/24/2014
Data Release Frequency: No Update Planned

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: 05/28/2014
Date Data Arrived at EDR: 06/20/2014
Date Made Active in Reports: 07/15/2014
Number of Days to Update: 25

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 09/03/2014
Next Scheduled EDR Contact: 12/15/2014
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: 08/05/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 09/26/2014
Number of Days to Update: 51

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/06/2014
Next Scheduled EDR Contact: 11/17/2014
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: 06/30/2014
Date Data Arrived at EDR: 09/02/2014
Date Made Active in Reports: 09/24/2014
Number of Days to Update: 22

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 10/10/2014
Next Scheduled EDR Contact: 01/19/2015
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: 05/28/2014
Date Data Arrived at EDR: 06/20/2014
Date Made Active in Reports: 07/15/2014
Number of Days to Update: 25

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 09/03/2014
Next Scheduled EDR Contact: 12/15/2014
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: 08/28/2014
Next Scheduled EDR Contact: 12/15/2014
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: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
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: 08/19/2014
Date Data Arrived at EDR: 08/20/2014
Date Made Active in Reports: 10/06/2014
Number of Days to Update: 47

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 09/08/2014
Next Scheduled EDR Contact: 12/22/2014
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: 06/09/2014
Date Data Arrived at EDR: 06/11/2014
Date Made Active in Reports: 07/09/2014
Number of Days to Update: 28

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 09/10/2014
Next Scheduled EDR Contact: 12/22/2014
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: 06/30/2014
Date Data Arrived at EDR: 07/01/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 79

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 10/01/2014
Next Scheduled EDR Contact: 01/12/2015
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: 06/26/2014
Date Data Arrived at EDR: 07/28/2014
Date Made Active in Reports: 09/15/2014
Number of Days to Update: 49

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 07/28/2014
Next Scheduled EDR Contact: 11/10/2014
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: 07/30/2014
Date Data Arrived at EDR: 07/31/2014
Date Made Active in Reports: 08/22/2014
Number of Days to Update: 22

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/17/2014
Next Scheduled EDR Contact: 12/29/2014
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: 07/30/2014
Date Data Arrived at EDR: 07/31/2014
Date Made Active in Reports: 08/25/2014
Number of Days to Update: 25

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/17/2014
Next Scheduled EDR Contact: 12/29/2014
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: 06/10/2014
Date Data Arrived at EDR: 07/02/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 78

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 10/01/2014
Next Scheduled EDR Contact: 01/12/2015
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: 08/06/2014
Next Scheduled EDR Contact: 11/17/2014
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: 07/18/2014
Next Scheduled EDR Contact: 10/27/2014
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: 06/06/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 8

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 09/10/2014
Next Scheduled EDR Contact: 12/22/2014
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: 12/31/2013
Date Data Arrived at EDR: 01/24/2014
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 31

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 09/30/2014
Next Scheduled EDR Contact: 01/12/2015
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: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 09/09/2014
Next Scheduled EDR Contact: 12/22/2014
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: 08/20/2014
Next Scheduled EDR Contact: 12/08/2014
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: 01/30/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 07/15/2014
Number of Days to Update: 132

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 09/04/2014
Next Scheduled EDR Contact: 12/15/2014
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: 08/29/2014
Next Scheduled EDR Contact: 12/08/2014
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: 09/26/2014
Next Scheduled EDR Contact: 01/05/2015
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: 08/19/2014
Next Scheduled EDR Contact: 12/08/2014
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: 08/19/2014
Next Scheduled EDR Contact: 12/08/2014
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: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
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: 05/06/2014
Date Data Arrived at EDR: 05/16/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 10/10/2014
Next Scheduled EDR Contact: 01/26/2015
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: 07/18/2014
Next Scheduled EDR Contact: 10/27/2014
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: 09/08/2014
Next Scheduled EDR Contact: 12/22/2014
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: 07/07/2014
Date Data Arrived at EDR: 07/10/2014
Date Made Active in Reports: 07/28/2014
Number of Days to Update: 18

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 10/08/2014
Next Scheduled EDR Contact: 01/19/2015
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: 11/18/2013
Date Data Arrived at EDR: 02/27/2014
Date Made Active in Reports: 03/12/2014
Number of Days to Update: 13

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 09/10/2014
Next Scheduled EDR Contact: 12/22/2014
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: 04/01/2014
Date Data Arrived at EDR: 05/23/2014
Date Made Active in Reports: 07/28/2014
Number of Days to Update: 66

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
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: 08/29/2014
Next Scheduled EDR Contact: 12/08/2014
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

UIC: UIC Listing

A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 01/15/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 09/17/2014
Next Scheduled EDR Contact: 12/29/2014
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 08/18/2014
Date Data Arrived at EDR: 08/18/2014
Date Made Active in Reports: 10/06/2014
Number of Days to Update: 49

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 08/18/2014
Next Scheduled EDR Contact: 12/01/2014
Data Release Frequency: Quarterly

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: 06/30/2014
Date Data Arrived at EDR: 07/01/2014
Date Made Active in Reports: 07/28/2014
Number of Days to Update: 27

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 09/30/2014
Next Scheduled EDR Contact: 01/12/2015
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: 09/22/2014
Next Scheduled EDR Contact: 01/05/2015
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: 06/28/2014
Date Data Arrived at EDR: 07/03/2014
Date Made Active in Reports: 08/21/2014
Number of Days to Update: 49

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 09/08/2014
Next Scheduled EDR Contact: 12/22/2014
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: 09/29/2014
Next Scheduled EDR Contact: 01/12/2015
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: 08/11/2014
Date Data Arrived at EDR: 08/12/2014
Date Made Active in Reports: 09/30/2014
Number of Days to Update: 49

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 08/08/2014
Next Scheduled EDR Contact: 11/10/2014
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: 07/18/2014
Next Scheduled EDR Contact: 10/27/2014
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: 12/31/2012
Date Data Arrived at EDR: 03/25/2014
Date Made Active in Reports: 04/28/2014
Number of Days to Update: 34

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 09/26/2014
Next Scheduled EDR Contact: 01/05/2015
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: 07/18/2014
Next Scheduled EDR Contact: 10/27/2014
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: 07/25/2014
Next Scheduled EDR Contact: 11/03/2014
Data Release Frequency: Varies

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: 09/30/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Quarterly

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

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 06/04/2014
Date Data Arrived at EDR: 06/12/2014
Date Made Active in Reports: 07/28/2014
Number of Days to Update: 46

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 10/06/2014
Next Scheduled EDR Contact: 01/19/2015
Data Release Frequency: Varies

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: 08/15/2014
Next Scheduled EDR Contact: 11/24/2014
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: 07/18/2014
Next Scheduled EDR Contact: 10/27/2014
Data Release Frequency: N/A

PROC: Certified Processors Database

A listing of certified processors.

Date of Government Version: 06/16/2014
Date Data Arrived at EDR: 06/17/2014
Date Made Active in Reports: 07/10/2014
Number of Days to Update: 23

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/17/2014
Next Scheduled EDR Contact: 12/29/2014
Data Release Frequency: Quarterly

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: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 08/15/2014
Next Scheduled EDR Contact: 11/24/2014
Data Release Frequency: Quarterly

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: 03/14/2014
Date Data Arrived at EDR: 06/11/2014
Date Made Active in Reports: 07/28/2014
Number of Days to Update: 47

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 09/10/2014
Next Scheduled EDR Contact: 12/22/2014
Data Release Frequency: Varies

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: 08/01/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

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: 05/23/2014
Date Data Arrived at EDR: 06/13/2014
Date Made Active in Reports: 07/09/2014
Number of Days to Update: 26

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 09/10/2014
Next Scheduled EDR Contact: 12/22/2014
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: 07/18/2014
Next Scheduled EDR Contact: 10/27/2014
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: 07/14/2014
Date Data Arrived at EDR: 07/15/2014
Date Made Active in Reports: 07/28/2014
Number of Days to Update: 13

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 07/15/2014
Next Scheduled EDR Contact: 10/27/2014
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: 08/26/2014
Date Data Arrived at EDR: 08/26/2014
Date Made Active in Reports: 10/06/2014
Number of Days to Update: 41

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/26/2014
Next Scheduled EDR Contact: 12/08/2014
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: 10/23/2013
Date Data Arrived at EDR: 11/06/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 30

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/29/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/23/2013
Date Data Arrived at EDR: 11/06/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 30

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/29/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Annually

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: 06/19/2014
Date Data Arrived at EDR: 06/20/2014
Date Made Active in Reports: 07/28/2014
Number of Days to Update: 38

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 08/14/2014
Next Scheduled EDR Contact: 12/01/2014
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: 08/14/2014
Date Data Arrived at EDR: 08/18/2014
Date Made Active in Reports: 10/06/2014
Number of Days to Update: 49

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 08/14/2014
Next Scheduled EDR Contact: 12/01/2014
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 07/31/2014
Date Data Arrived at EDR: 08/05/2014
Date Made Active in Reports: 09/26/2014
Number of Days to Update: 52

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 07/25/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

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: 08/19/2014
Next Scheduled EDR Contact: 12/08/2014
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 RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
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: 07/25/2014
Date Data Arrived at EDR: 07/28/2014
Date Made Active in Reports: 09/15/2014
Number of Days to Update: 49

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 09/29/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 07/25/2014
Date Data Arrived at EDR: 07/28/2014
Date Made Active in Reports: 08/20/2014
Number of Days to Update: 23

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 09/29/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA Facility List

Cupa Facility List

Date of Government Version: 09/08/2014
Date Data Arrived at EDR: 09/09/2014
Date Made Active in Reports: 09/24/2014
Number of Days to Update: 15

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 09/08/2014
Next Scheduled EDR Contact: 12/22/2014
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: 10/10/2014
Next Scheduled EDR Contact: 01/26/2015
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 07/02/2014
Date Data Arrived at EDR: 07/03/2014
Date Made Active in Reports: 07/30/2014
Number of Days to Update: 27

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 09/29/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 06/11/2014
Date Data Arrived at EDR: 06/13/2014
Date Made Active in Reports: 07/07/2014
Number of Days to Update: 24

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 08/08/2014
Next Scheduled EDR Contact: 11/24/2014
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: 08/11/2014
Date Data Arrived at EDR: 08/14/2014
Date Made Active in Reports: 10/09/2014
Number of Days to Update: 56

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 08/05/2014
Next Scheduled EDR Contact: 11/17/2014
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA Facility List
Cupa Facility list

Date of Government Version: 07/31/2014
Date Data Arrived at EDR: 08/05/2014
Date Made Active in Reports: 09/26/2014
Number of Days to Update: 52

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 07/30/2014
Next Scheduled EDR Contact: 11/17/2014
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 08/25/2014
Date Data Arrived at EDR: 08/26/2014
Date Made Active in Reports: 09/29/2014
Number of Days to Update: 34

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 08/05/2014
Next Scheduled EDR Contact: 11/17/2014
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: 06/30/2014
Date Data Arrived at EDR: 07/15/2014
Date Made Active in Reports: 08/19/2014
Number of Days to Update: 35

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 10/10/2014
Next Scheduled EDR Contact: 01/19/2015
Data Release Frequency: Semi-Annually

HUMBOLDT COUNTY:

CUPA Facility List

CUPA facility list.

Date of Government Version: 09/10/2014
Date Data Arrived at EDR: 09/11/2014
Date Made Active in Reports: 09/25/2014
Number of Days to Update: 14

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 08/20/2014
Next Scheduled EDR Contact: 12/08/2014
Data Release Frequency: Varies

IMPERIAL COUNTY:

CUPA Facility List

Cupa facility list.

Date of Government Version: 07/28/2014
Date Data Arrived at EDR: 07/30/2014
Date Made Active in Reports: 09/15/2014
Number of Days to Update: 47

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 07/25/2014
Next Scheduled EDR Contact: 11/10/2014
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: 08/20/2014
Next Scheduled EDR Contact: 12/08/2014
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: 08/08/2014
Next Scheduled EDR Contact: 11/24/2014
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: 08/21/2014
Date Data Arrived at EDR: 08/26/2014
Date Made Active in Reports: 09/29/2014
Number of Days to Update: 34

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 08/20/2014
Next Scheduled EDR Contact: 12/08/2014
Data Release Frequency: Varies

LAKE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 07/23/2014
Date Data Arrived at EDR: 07/25/2014
Date Made Active in Reports: 08/22/2014
Number of Days to Update: 28

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 07/18/2014
Next Scheduled EDR Contact: 11/03/2014
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: 09/22/2014
Next Scheduled EDR Contact: 01/05/2015
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 03/31/2014
Date Data Arrived at EDR: 06/06/2014
Date Made Active in Reports: 07/17/2014
Number of Days to Update: 41

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 07/21/2014
Next Scheduled EDR Contact: 10/27/2014
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 07/21/2014
Date Data Arrived at EDR: 07/21/2014
Date Made Active in Reports: 08/19/2014
Number of Days to Update: 29

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 07/21/2014
Next Scheduled EDR Contact: 11/03/2014
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: 08/14/2014
Next Scheduled EDR Contact: 11/03/2014
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/07/2014
Date Data Arrived at EDR: 02/25/2014
Date Made Active in Reports: 03/25/2014
Number of Days to Update: 28

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 07/16/2014
Next Scheduled EDR Contact: 11/03/2014
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 07/23/2014
Date Data Arrived at EDR: 07/28/2014
Date Made Active in Reports: 08/20/2014
Number of Days to Update: 23

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 07/18/2014
Next Scheduled EDR Contact: 11/03/2014
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: 07/28/2014
Date Data Arrived at EDR: 07/28/2014
Date Made Active in Reports: 08/20/2014
Number of Days to Update: 23

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 07/25/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 01/13/2014
Date Data Arrived at EDR: 03/27/2014
Date Made Active in Reports: 04/28/2014
Number of Days to Update: 32

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 10/10/2014
Next Scheduled EDR Contact: 01/26/2015
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: 06/09/2014
Date Data Arrived at EDR: 06/11/2014
Date Made Active in Reports: 06/27/2014
Number of Days to Update: 16

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 08/26/2014
Next Scheduled EDR Contact: 12/08/2014
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 07/02/2014
Date Data Arrived at EDR: 07/07/2014
Date Made Active in Reports: 08/18/2014
Number of Days to Update: 42

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 10/03/2014
Next Scheduled EDR Contact: 01/19/2015
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 08/20/2014
Date Data Arrived at EDR: 08/26/2014
Date Made Active in Reports: 09/30/2014
Number of Days to Update: 35

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 08/20/2014
Next Scheduled EDR Contact: 12/08/2014
Data Release Frequency: Varies

MONO COUNTY:

CUPA Facility List
CUPA Facility List

Date of Government Version: 09/02/2014
Date Data Arrived at EDR: 09/05/2014
Date Made Active in Reports: 09/24/2014
Number of Days to Update: 19

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 09/02/2014
Next Scheduled EDR Contact: 12/15/2014
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 06/09/2014
Date Data Arrived at EDR: 06/11/2014
Date Made Active in Reports: 07/09/2014
Number of Days to Update: 28

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 08/26/2014
Next Scheduled EDR Contact: 12/08/2014
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: 08/28/2014
Next Scheduled EDR Contact: 12/15/2014
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: 08/28/2014
Next Scheduled EDR Contact: 12/15/2014
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 09/16/2014
Date Data Arrived at EDR: 09/18/2014
Date Made Active in Reports: 09/25/2014
Number of Days to Update: 7

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 09/16/2014
Next Scheduled EDR Contact: 12/29/2014
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 08/01/2014
Date Data Arrived at EDR: 08/12/2014
Date Made Active in Reports: 10/03/2014
Number of Days to Update: 52

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/07/2014
Next Scheduled EDR Contact: 11/24/2014
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 08/01/2014
Date Data Arrived at EDR: 08/12/2014
Date Made Active in Reports: 09/26/2014
Number of Days to Update: 45

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/07/2014
Next Scheduled EDR Contact: 11/24/2014
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 08/01/2014
Date Data Arrived at EDR: 08/12/2014
Date Made Active in Reports: 08/20/2014
Number of Days to Update: 8

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/07/2014
Next Scheduled EDR Contact: 11/24/2014
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 06/09/2014
Date Data Arrived at EDR: 06/10/2014
Date Made Active in Reports: 07/09/2014
Number of Days to Update: 29

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 09/22/2014
Next Scheduled EDR Contact: 12/22/2014
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: 07/08/2014
Date Data Arrived at EDR: 07/11/2014
Date Made Active in Reports: 07/28/2014
Number of Days to Update: 17

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/22/2014
Next Scheduled EDR Contact: 01/05/2015
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 07/08/2014
Date Data Arrived at EDR: 07/11/2014
Date Made Active in Reports: 08/18/2014
Number of Days to Update: 38

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/22/2014
Next Scheduled EDR Contact: 01/05/2015
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: 02/06/2014
Date Data Arrived at EDR: 04/08/2014
Date Made Active in Reports: 04/29/2014
Number of Days to Update: 21

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/06/2014
Next Scheduled EDR Contact: 01/19/2015
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: 05/05/2014
Date Data Arrived at EDR: 07/17/2014
Date Made Active in Reports: 07/28/2014
Number of Days to Update: 11

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/06/2014
Next Scheduled EDR Contact: 01/19/2015
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: 08/06/2014
Date Data Arrived at EDR: 08/07/2014
Date Made Active in Reports: 09/30/2014
Number of Days to Update: 54

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 08/07/2014
Next Scheduled EDR Contact: 11/24/2014
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: 10/03/2014
Next Scheduled EDR Contact: 12/22/2014
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2013
Date Data Arrived at EDR: 11/19/2013
Date Made Active in Reports: 12/31/2013
Number of Days to Update: 42

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
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: 09/08/2014
Next Scheduled EDR Contact: 12/22/2014
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: 08/07/2014
Next Scheduled EDR Contact: 11/24/2014
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: 08/07/2014
Next Scheduled EDR Contact: 11/27/2014
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: 06/20/2014
Date Data Arrived at EDR: 06/23/2014
Date Made Active in Reports: 07/11/2014
Number of Days to Update: 18

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 09/22/2014
Next Scheduled EDR Contact: 01/05/2015
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 08/22/2014
Date Data Arrived at EDR: 08/26/2014
Date Made Active in Reports: 10/01/2014
Number of Days to Update: 36

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 08/20/2014
Next Scheduled EDR Contact: 12/08/2014
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: 07/07/2014
Date Data Arrived at EDR: 08/12/2014
Date Made Active in Reports: 10/03/2014
Number of Days to Update: 52

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/15/2014
Next Scheduled EDR Contact: 12/29/2014
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 06/16/2014
Date Data Arrived at EDR: 06/19/2014
Date Made Active in Reports: 07/10/2014
Number of Days to Update: 21

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/15/2014
Next Scheduled EDR Contact: 12/29/2014
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
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 10/03/2014
Next Scheduled EDR Contact: 12/08/2014
Data Release Frequency: Varies

SANTA CLARA COUNTY:

Cupa Facility List
Cupa facility list

Date of Government Version: 08/22/2014
Date Data Arrived at EDR: 08/26/2014
Date Made Active in Reports: 10/03/2014
Number of Days to Update: 38

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 08/22/2014
Next Scheduled EDR Contact: 09/15/2014
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
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
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: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 09/02/2014
Next Scheduled EDR Contact: 12/15/2014
Data Release Frequency: Annually

Hazardous Material Facilities

Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 08/14/2014
Date Data Arrived at EDR: 08/18/2014
Date Made Active in Reports: 10/03/2014
Number of Days to Update: 46

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 08/08/2014
Next Scheduled EDR Contact: 11/24/2014
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List

CUPA facility listing.

Date of Government Version: 09/09/2014
Date Data Arrived at EDR: 09/11/2014
Date Made Active in Reports: 09/25/2014
Number of Days to Update: 14

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 09/08/2014
Next Scheduled EDR Contact: 12/08/2014
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List

Cupa Facility List.

Date of Government Version: 06/10/2014
Date Data Arrived at EDR: 06/12/2014
Date Made Active in Reports: 06/20/2014
Number of Days to Update: 8

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 08/26/2014
Next Scheduled EDR Contact: 12/08/2014
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: 06/19/2014
Date Data Arrived at EDR: 06/26/2014
Date Made Active in Reports: 07/25/2014
Number of Days to Update: 29

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 09/15/2014
Next Scheduled EDR Contact: 12/29/2014
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 06/19/2014
Date Data Arrived at EDR: 06/26/2014
Date Made Active in Reports: 07/25/2014
Number of Days to Update: 29

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 09/15/2014
Next Scheduled EDR Contact: 12/29/2014
Data Release Frequency: Quarterly

SONOMA COUNTY:

Cupa Facility List
Cupa Facility list

Date of Government Version: 06/26/2014
Date Data Arrived at EDR: 08/20/2014
Date Made Active in Reports: 10/06/2014
Number of Days to Update: 47

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 09/29/2014
Next Scheduled EDR Contact: 01/12/2015
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: 07/01/2014
Date Data Arrived at EDR: 07/03/2014
Date Made Active in Reports: 07/28/2014
Number of Days to Update: 25

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 09/29/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 06/09/2014
Date Data Arrived at EDR: 06/11/2014
Date Made Active in Reports: 07/17/2014
Number of Days to Update: 36

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 09/08/2014
Next Scheduled EDR Contact: 12/22/2014
Data Release Frequency: Semi-Annually

TUOLUMNE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 08/13/2014
Date Data Arrived at EDR: 08/15/2014
Date Made Active in Reports: 10/03/2014
Number of Days to Update: 49

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 08/08/2014
Next Scheduled EDR Contact: 11/10/2014
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: 07/28/2014
Date Data Arrived at EDR: 08/18/2014
Date Made Active in Reports: 09/26/2014
Number of Days to Update: 39

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 08/14/2014
Next Scheduled EDR Contact: 12/01/2014
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: 10/03/2014
Next Scheduled EDR Contact: 01/12/2015
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: 08/13/2014
Next Scheduled EDR Contact: 12/01/2014
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: 06/26/2014
Date Data Arrived at EDR: 07/31/2014
Date Made Active in Reports: 09/15/2014
Number of Days to Update: 46

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 07/28/2014
Next Scheduled EDR Contact: 11/10/2014
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: 05/27/2014
Date Data Arrived at EDR: 06/17/2014
Date Made Active in Reports: 07/11/2014
Number of Days to Update: 24

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/17/2014
Next Scheduled EDR Contact: 12/29/2014
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 06/30/2014
Date Data Arrived at EDR: 07/07/2014
Date Made Active in Reports: 08/18/2014
Number of Days to Update: 42

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 09/22/2014
Next Scheduled EDR Contact: 01/05/2015
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 08/05/2014
Date Data Arrived at EDR: 08/07/2014
Date Made Active in Reports: 10/06/2014
Number of Days to Update: 60

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 07/31/2014
Next Scheduled EDR Contact: 11/17/2014
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: 08/19/2014
Next Scheduled EDR Contact: 12/01/2014
Data Release Frequency: No Update Planned

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: 10/10/2014
Next Scheduled EDR Contact: 01/26/2015
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: 05/01/2014
Date Data Arrived at EDR: 05/07/2014
Date Made Active in Reports: 06/10/2014
Number of Days to Update: 34

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 08/07/2014
Next Scheduled EDR Contact: 11/17/2014
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 07/21/2014
Date Made Active in Reports: 08/25/2014
Number of Days to Update: 35

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 07/18/2014
Next Scheduled EDR Contact: 11/03/2014
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 07/15/2014
Date Made Active in Reports: 08/13/2014
Number of Days to Update: 29

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 08/26/2014
Next Scheduled EDR Contact: 12/08/2014
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 06/20/2014
Date Made Active in Reports: 08/07/2014
Number of Days to Update: 48

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 09/15/2014
Next Scheduled EDR Contact: 12/29/2014
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.

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, 2005 and 2010 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

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

COPLAND DRIVE
4515 COPLAND DRIVE
VENTURA, CA 93003

TARGET PROPERTY COORDINATES

Latitude (North):	34.265 - 34˚ 15' 54.00''
Longitude (West):	119.2313 - 119˚ 13' 52.68''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	294562.5
UTM Y (Meters):	3793597.0
Elevation:	155 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	34119-C2 SATICOY, CA
Most Recent Revision:	1967

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).

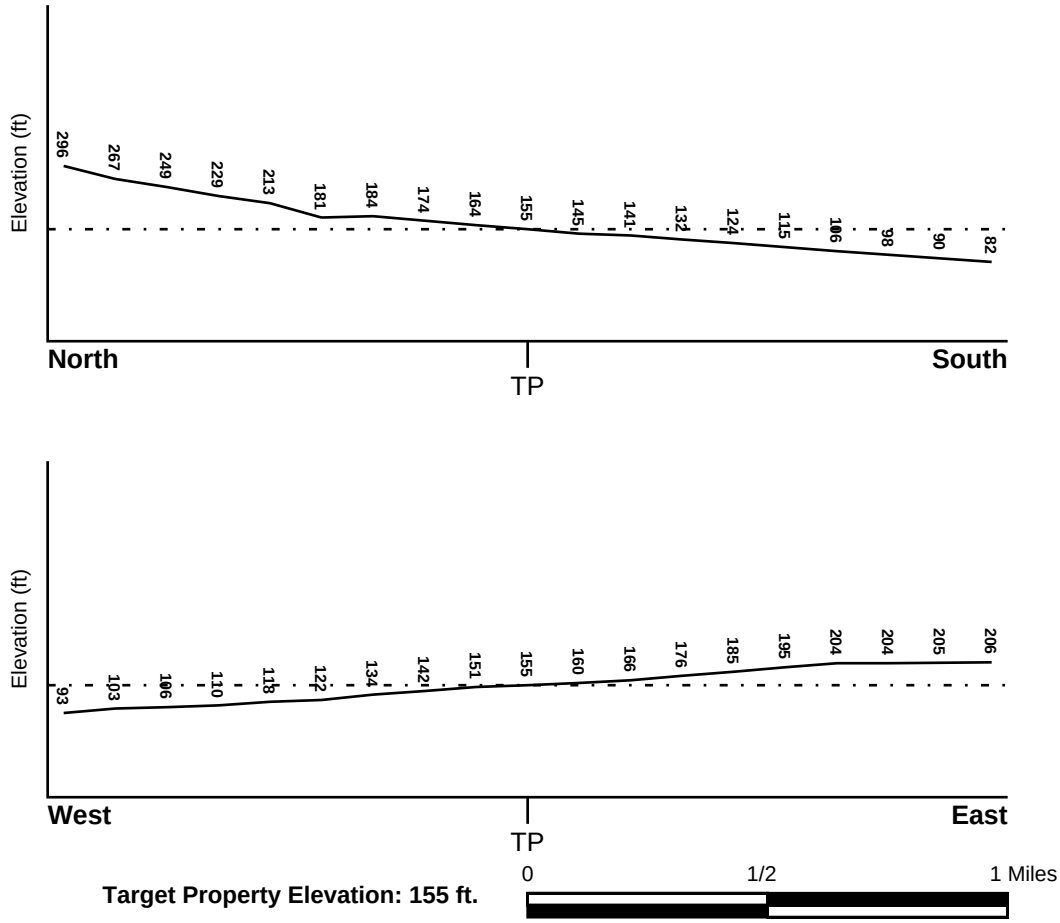
TOPOGRAPHIC INFORMATION

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 SW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Target Property Elevation: 155 ft.

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
VENTURA, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 06111C - FEMA DFIRM Flood data

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
SATICOY	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

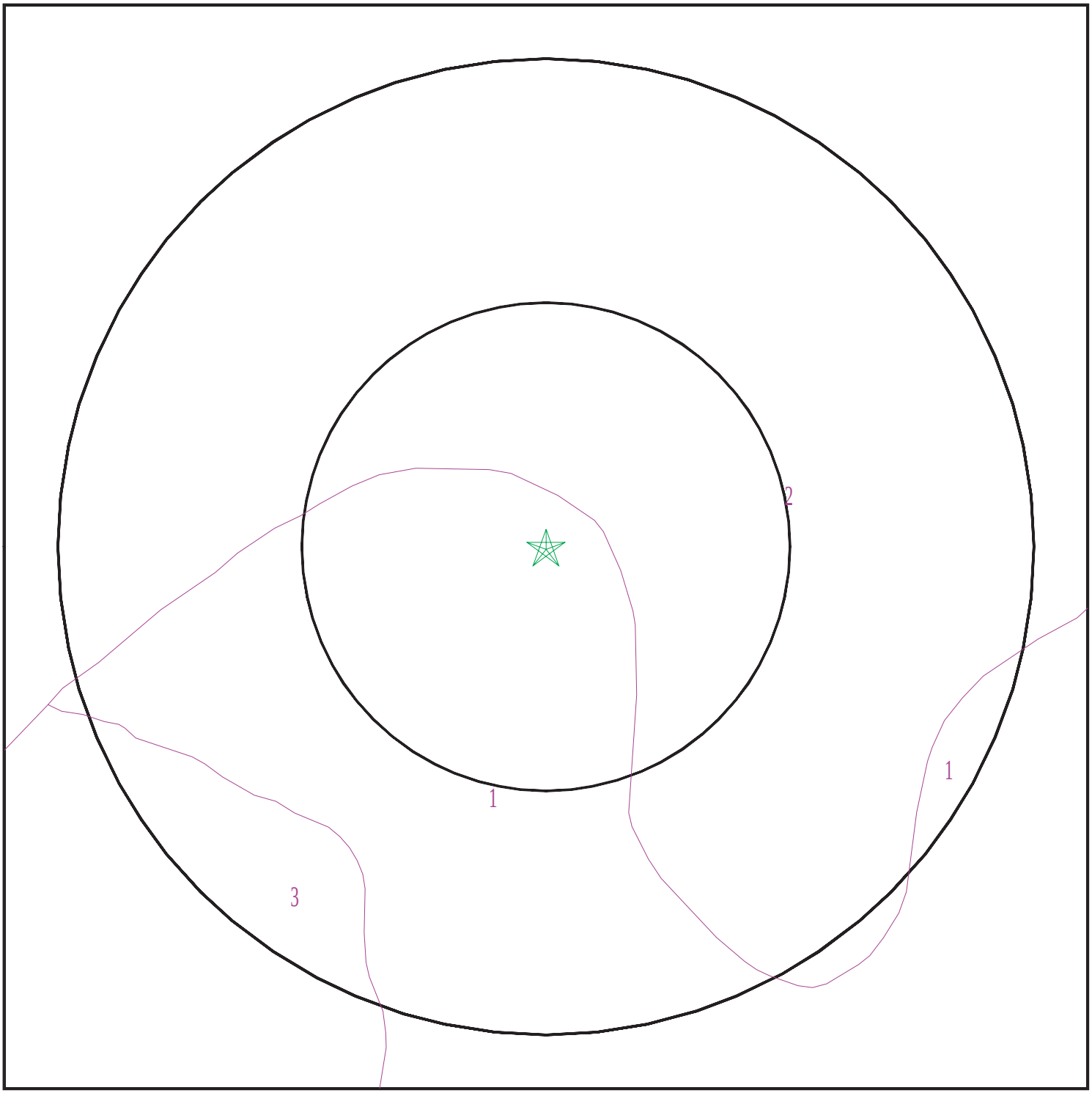
Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q *(decoded above as Era, System & Series)*

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 - 4103880.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME: Copland Drive ADDRESS: 4515 Copland Drive Ventura CA 93003 LAT/LONG: 34.265 / 119.2313	CLIENT: Trak Environmental Group CONTACT: Sharon Newman INQUIRY #: 4103880.2s DATE: October 13, 2014 8:05 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

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: SORRENTO

Soil Surface Texture: silty clay 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: 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	18 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 8.4 Min: 6.1
2	18 inches	59 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 8.4 Min: 6.6

Soil Map ID: 2

Soil Component Name: MOCHO

Soil Surface Texture: 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: 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	16 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14 Min: 4	Max: 8.4 Min: 7.9
2	16 inches	59 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14 Min: 4	Max: 8.4 Min: 7.9

Soil Map ID: 3

Soil Component Name: SORRENTO

Soil Surface Texture: 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: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

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	18 inches	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: 14 Min: 4	Max: 8.4 Min: 6.1
2	18 inches	59 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay. FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 8.4 Min: 6.6

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
B4	USGS40000142721	1/2 - 1 Mile East
C6	USGS40000142693	1/2 - 1 Mile SW
D9	USGS40000142688	1/2 - 1 Mile SSW

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

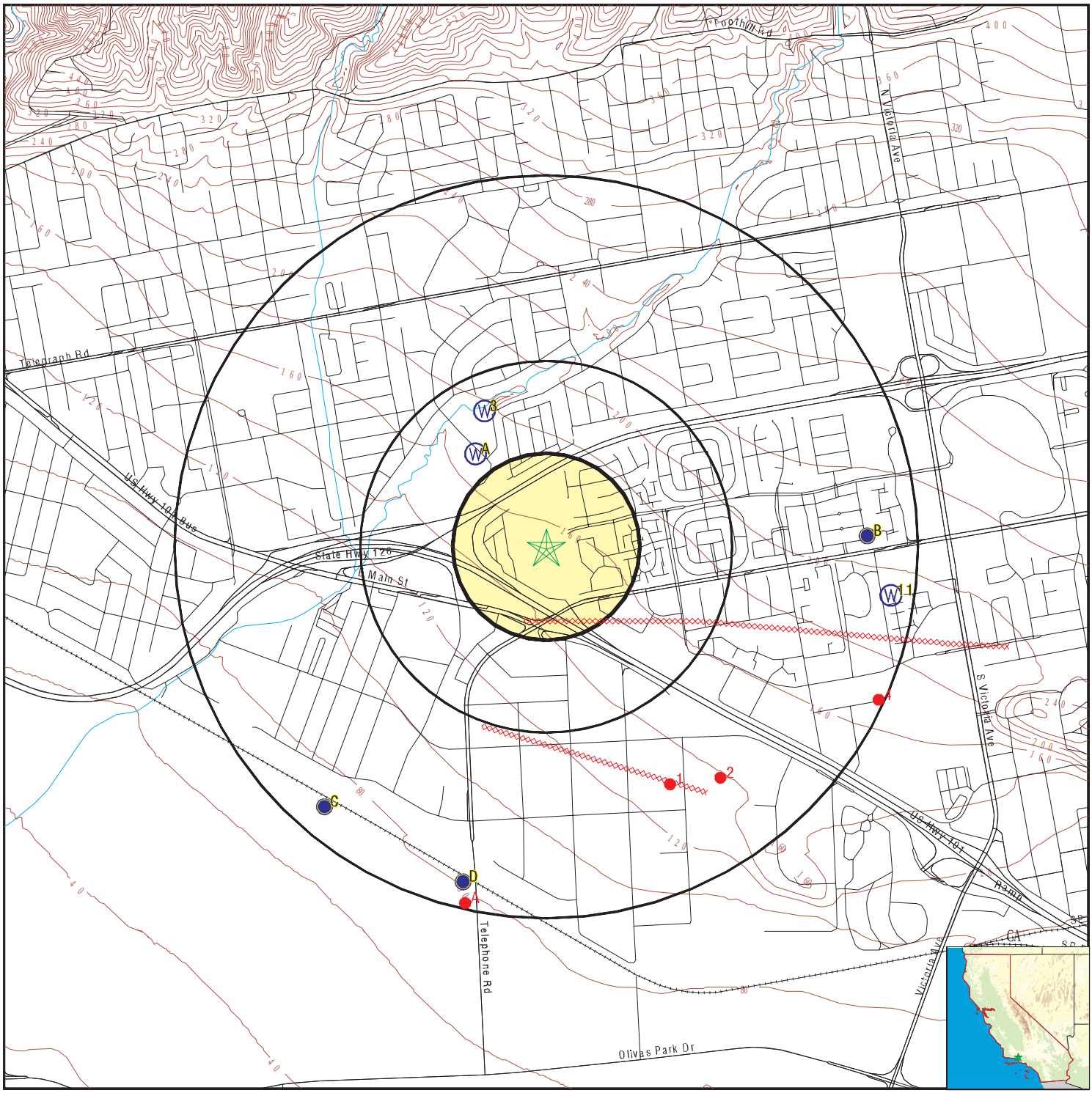
MAP ID	WELL ID	LOCATION FROM TP
A1	CADW50000005332	1/4 - 1/2 Mile NW
A2	CADW50000005333	1/4 - 1/2 Mile NW
3	CADW50000005354	1/4 - 1/2 Mile NNW
B5	CADW50000005303	1/2 - 1 Mile East
C7	CADW50000005254	1/2 - 1 Mile SW
C8	CADW50000005252	1/2 - 1 Mile SW
D10	CADW50000005245	1/2 - 1 Mile SSW
11	CADW50000005286	1/2 - 1 Mile East

OTHER STATE DATABASE INFORMATION

STATE OIL/GAS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	CAOG9A000034914	1/2 - 1 Mile SSE
2	CAOG9A000034916	1/2 - 1 Mile SE
A3	CAOG9A000034885	1/2 - 1 Mile SSW
4	CAOG9A000034928	1/2 - 1 Mile ESE
A5	CAOG9A000034884	1/2 - 1 Mile SSW

PHYSICAL SETTING SOURCE MAP - 4103880.2s



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

0 1/4 1/2 1 Miles

Groundwater Flow Direction
Indeterminate Groundwater Flow at Location
Groundwater Flow Varies at Location
Closest Hydrogeological Data
Oil, gas or related wells

N

SITE NAME: Copland Drive	CLIENT: Trak Environmental Group
ADDRESS: 4515 Copland Drive Ventura CA 93003	CONTACT: Sharon Newman
LAT/LONG: 34.265 / 119.2313	INQUIRY #: 4103880.2s
	DATE: October 13, 2014 8:05 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation	Database	EDR ID Number
A1 **NW** **1/4 - 1/2 Mile** **Higher**	**CA WELLS**	**CADW50000005332**

Latitude :	34.268626		
Longitude :	119.23462		
Site code:	342703N1192342W001	Casgem sta:	02N22W07M001S
Local well:	02N22W07M01S	Casgem s 1:	Observation
County id:	56		
Basin cd:	4-4.03	Basin desc:	Mound
Org unit n:	Southern Region Office	Site id:	CADW50000005332

A2 **NW** **1/4 - 1/2 Mile** **Higher**	**CA WELLS**	**CADW50000005333**

Latitude :	34.268626		
Longitude :	119.23462		
Site code:	342703N1192342W002	Casgem sta:	02N22W07M002S
Local well:	02N22W07M02S	Casgem s 1:	Observation
County id:	56		
Basin cd:	4-4.03	Basin desc:	Mound
Org unit n:	Southern Region Office	Site id:	CADW50000005333

---

3 **NNW** **1/4 - 1/2 Mile** **Higher**	**CA WELLS**	**CADW50000005354**

Latitude :	34.2703		
Longitude :	119.2342		
Site code:	342703N1192342W003	Casgem sta:	02N22W07M003S
Local well:	02N22W07M03S	Casgem s 1:	Observation
County id:	56		
Basin cd:	4-4.03	Basin desc:	Mound
Org unit n:	Southern Region Office	Site id:	CADW50000005354

B4 **East** **1/2 - 1 Mile** **Higher**	**FED USGS**	**USGS40000142721**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-341556119125501		
Monloc name:	002N022W08N001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070103	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.265559
Longitude:	-119.2162202	Sourcemap scale:	24000

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	Not Reported
Vert measure units:	Not Reported	Vertacc measure val:	Not Reported
Vert accmeasure units:	Not Reported		
Vertcollection method:	Not Reported		
Vert coord refsys:	Not Reported	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	756
Welldepth units:	ft	Wellholedepth:	756
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

B5
East
1/2 - 1 Mile
Higher

CA WELLS **CADW50000005303**

Latitude :	34.2653		
Longitude :	119.2162		
Site code:	342653N1192162W001	Casgem sta:	02N22W08N001S
Local well:	Not Reported	Casgem s 1:	Unknown
County id:	56		
Basin cd:	4-4.03	Basin desc:	Mound
Org unit n:	Southern Region Office	Site id:	CADW50000005303

C6
SW
1/2 - 1 Mile
Lower

FED USGS **USGS40000142693**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-341518119142701		
Monloc name:	002N023W13K001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070101	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.255004
Longitude:	-119.2417766	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	Not Reported
Vert measure units:	Not Reported	Vertacc measure val:	Not Reported
Vert accmeasure units:	Not Reported		
Vertcollection method:	Not Reported		
Vert coord refsys:	Not Reported	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	1230
Welldepth units:	ft	Wellholedepth:	1230
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

C7
SW
1/2 - 1 Mile
Lower

CA WELLS **CADW50000005254**

Latitude :	34.255156		
Longitude :	119.242188		
Site code:	342552N1192422W001	Casgem sta:	02N23W13K003S
Local well:	02N23W13K03S	Casgem s 1:	Irrigation
County id:	56		
Basin cd:	4-4.03	Basin desc:	Mound
Org unit n:	Southern Region Office	Site id:	CADW50000005254

C8
SW
1/2 - 1 Mile
Lower

CA WELLS **CADW50000005252**

Latitude :	34.2544		
Longitude :	119.2412		
Site code:	342544N1192412W001	Casgem sta:	02N23W13K004S
Local well:	Not Reported	Casgem s 1:	Unknown
County id:	56		
Basin cd:	4-4.03	Basin desc:	Mound
Org unit n:	Southern Region Office	Site id:	CADW50000005252

D9
SSW
1/2 - 1 Mile
Lower

FED USGS **USGS40000142688**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-341507119140301		
Monloc name:	002N022W18N001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070103	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.2519486
Longitude:	-119.2351097	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	80.9
Vert measure units:	feet	Vertacc measure val:	.1
Vert accmeasure units:	feet		
Vertcollection method:	Level or other surveying method		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	1200
Welldepth units:	ft	Wellholedepth:	1200
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

D10
SSW
1/2 - 1 Mile
Lower

CA WELLS **CADW50000005245**

Latitude :	34.2519		
Longitude :	119.2353		
Site code:	342519N1192353W001	Casgem sta:	02N22W18N001S
Local well:	Not Reported	Casgem s 1:	Unknown
County id:	56		
Basin cd:	4-4.03	Basin desc:	Mound
Org unit n:	Southern Region Office	Site id:	CADW50000005245

11
East
1/2 - 1 Mile
Higher

CA WELLS **CADW50000005286**

Latitude :	34.2631		
Longitude :	119.2151		
Site code:	342631N1192151W001	Casgem sta:	02N22W08N003S
Local well:	Not Reported	Casgem s 1:	Unknown
County id:	56		
Basin cd:	4-4.03	Basin desc:	Mound
Org unit n:	Southern Region Office	Site id:	CADW50000005286

Map ID Direction Distance	Database	EDR ID Number

1
SSE
1/2 - 1 Mile

OIL_GAS **CAOG9A000034914**

Districtnu:	2	Apinumber:	11120425
Blmwell:	N	Redrillcan:	No
Dryhole:	Y	Wellstatus:	P
Operatorna:	Wainoco Oil & Gas Co.		
Countyname:	Ventura	Fieldname:	Any Field
Areaname:	Any Area		
Section:	18		
Township:	02N	Range:	22W
Basemeridi:	SB	Elevation:	Not Reported
Locationde:	Not Reported		
Glat:	34.255729		
Glong:	-119.225486		
Gissourcec:	hud		
Comments:	Not Reported		
Leasename:	McGrath	Wellnumber:	1
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	30-DEC-99
Welldeptha:	Not Reported	Redrillfoo:	Not Reported
Abandonedd:	/ /	Completion:	/ /
Gissymbol:	Not Reported	Site id:	CAOG9A000034914

2
SE
1/2 - 1 Mile

OIL_GAS **CAOG9A000034916**

Districtnu:	2	Apinumber:	11105785
Blmwell:	N	Redrillcan:	No
Dryhole:	Y	Wellstatus:	P
Operatorna:	Chevron U.S.A. Inc.		
Countyname:	Ventura	Fieldname:	Any Field
Areaname:	Any Area		
Section:	18		
Township:	02N	Range:	22W
Basemeridi:	SB	Elevation:	Not Reported
Locationde:	Not Reported		
Glat:	34.255982		
Glong:	-119.223113		
Gissourcec:	hud		
Comments:	Not Reported		
Leasename:	McGrath	Wellnumber:	1
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	30-DEC-99
Welldeptha:	Not Reported	Redrillfoo:	Not Reported
Abandonedd:	/ /	Completion:	/ /
Gissymbol:	Not Reported	Site id:	CAOG9A000034916

A3
SSW
1/2 - 1 Mile

OIL_GAS **CAOG9A000034885**

Districtnu:	2	Apinumber:	11120479
Blmwell:	N	Redrillcan:	No
Dryhole:	Y	Wellstatus:	P
Operatorna:	Conoco Inc.		
Countyname:	Ventura	Fieldname:	Any Field
Areaname:	Any Area		
Section:	18		
Township:	02N	Range:	22W
Basemeridi:	SB	Elevation:	Not Reported
Locationde:	Not Reported		
Glat:	34.251116		
Glong:	-119.234881		
Gissourcec:	hud		
Comments:	Not Reported		
Leasename:	Jones Estate	Wellnumber:	1
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	30-DEC-99
Welldeptha:	Not Reported	Redrillfoo:	Not Reported
Abandonedd:	/ /	Completion:	/ /
Gissymbol:	Not Reported	Site id:	CAOG9A000034885

4
ESE **OIL_GAS** **CAOG9A000034928**
1/2 - 1 Mile

Districtnu:	2	Apinumber:	11105781
Blmwell:	N	Redrillcan:	No
Dryhole:	Y	Wellstatus:	P
Operatorna:	Chevron U.S.A. Inc.		
Countyname:	Ventura	Fieldname:	Any Field
Areaname:	Any Area		
Section:	17		
Township:	02N	Range:	22W
Basemeridi:	SB	Elevation:	Not Reported
Locationde:	Not Reported		
Glat:	34.259028		
Glong:	-119.215671		
Gissourcec:	hud		
Comments:	Not Reported		
Leasename:	Argabrite	Wellnumber:	1
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	02-NOV-25
Welldeptha:	Not Reported	Redrillfoo:	Not Reported
Abandonedd:	/ /	Completion:	/ /
Gissymbol:	Not Reported	Site id:	CAOG9A000034928

A5
SSW **OIL_GAS** **CAOG9A000034884**
1/2 - 1 Mile

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Districtnu:	2	Apinumber:	11120571
Blmwell:	N	Redrillcan:	No
Dryhole:	Y	Wellstatus:	P
Operatorna:	Hilliard Oil & Gas, Inc.		
Countyname:	Ventura	Fieldname:	Any Field
Areaname:	Any Area		
Section:	18		
Township:	02N	Range:	22W
Basemeridi:	SB	Elevation:	Not Reported
Locationde:	Not Reported		
Glat:	34.251058		
Glong:	-119.235351		
Gissourcec:	hud		
Comments:	Not Reported		
Leasename:	Jones Estate	Wellnumber:	2
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	30-DEC-99
Welldeptha:	Not Reported	Redrillfoo:	Not Reported
Abandonedd:	/ /	Completion:	/ /
Gissymbol:	Not Reported	Site id:	CAOG9A000034884

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
93003	159	7

Federal EPA Radon Zone for VENTURA County: 1

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.

Federal Area Radon Information for Zip Code: 93003

Number of sites tested: 13

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.023 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, 2005 and 2010 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 Public Health
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.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

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

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COMPLETE EDR RADIUS MAP REPORT
Included in CD-ROM in Report Pocket along with:

Complete Phase I Report

Appendix 4.9 Preliminary Hydrology and Hydraulic Report prepared by Jensen Design & Survey, Inc. dated October 8, 2012

PRELIMINARY HYDROLOGY AND HYDRAULIC REPORT

Tentative Tract 5626
The Grove

City of Ventura

PREPARED BY:

Jensen Design & Survey, Inc
1672 Donlon Street
Ventura, CA 93003
(805) 654-6977

_____.

Frederick T. Giroux, P.E.
License No. C057289 Exp. 12/31/2013

October 8, 2012

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INTRODUCTION

Tentative Tract 5626 is a proposed 26 acre master planned community. The project is bounded on the north by Highway 126, on the west by Highway 101 and on the South by Telephone Road (Location Map – Appendix A). To the east are residential developments. The site is currently being used for agricultural purposes.

This preliminary study was prepared to identify storm drain runoff impacts due to the proposed development. Methods for treating runoff, as well as mitigating the increase in runoff are also identified. Runoff calculations were performed by using the Rational Method as prescribed in the Ventura County Watershed Protection District Hydrology Manual; herein referred to as the Hydrology Manual.

DESIGN METHODOLOGY

The Rational Method as described in the Hydrology Manual was used to calculate the pre- and post- developed peak runoff amounts. Times of concentration were calculated for the existing and developed conditions by using the Ventura County Time of Concentration Calculator.

The computer program Hydraflow Hydrographs by Intelisolve, herein known as hydroflow, was used to assist in the preliminary design of the proposed detention area. This program uses inflow hydrographs and pond models to determine the peak outflow rates and volumes. The basin has been sized to accommodate the excess runoff for the 10-, 50- and 100- year storm events, due to development of the site.

All proposed on-site storm drain systems were sized for the 10 year storm event as is required by the City of Ventura.

EXISTING CONDITION

The site is approximately 26 acres of agricultural land. Runoff from the site is primarily sheet flow towards the southwest. Runoff from this site is then directed towards Telephone Road Drain. Telephone Road Drain runs parallel to the project's westerly boundary with Highway 101. Refer to Figure 1 of Appendix B for drainage patterns. Offsite runoff from the mobile home park enters the street and it is then directed towards Telephone Road Drain.

The existing site is represented by drainage area A (Figure 1 – Appendix B). Existing peak runoff calculations for the 10, 50 and 100 year storm events were calculated by using the T_C Calculator. Table 1 summarizes the peak runoff for this site. Refer to Appendix B for detail calculations.

Area (ac)	**Q_{10} (cfs)**	**Q_{50} (cfs)**	**Q_{100} (cfs)**
26	24.3	44.5	56.7

Table 1 – Existing Peak Runoff

DEVELOPED CONDITIONS

Proposed development of Tentative Tract 5626 will disturb an approximate area of 26 acres. Runoff from the developed site will be mainly street flow from the north to the south. Runoff for the majority of the developed site will be directed to a system of on-site catch basins – refer to Figure 2 of Appendix C for location of these catch basins. Runoff entering these catch basins will discharge into an on-site storm drain line and eventually into a proposed detention area.

Some of the runoff from the site will be directed towards proposed bio-swales located along the easterly boundary of the proposed development. Runoff collected by these bio-swales will discharge into propose inlet structures and allow to enter the on-site storm drain system previously mentioned.

All inlet structures will be sized to capture the flow for the 10 year storm. Runoff exceeding this storm event will be allowed to sheet flow towards the south of the site, where it will be collected by sump type catch basins. Runoff entering the on-site storm drain system will be directed to a designated detention area. Refer to Figure 2 of Appendix C for location of catch basins and detention area.

Offsite runoff from approximately 0.6 acres will be allowed to flow directly into the propose detention basin. This runoff corresponds to the area of the proposed park. Offsite runoff from the existing development west of the site, will be diverted towards the Telephone Road Drain.

The developed site has been divided into several drainage areas (Figure 2 – Appendix C). Table 2 summarizes the peak runoff amounts for the developed site. Refer to Appendix C for detail peak runoff calculations.

	Area (ac)	**Q_{10} (cfs)**	**Q_{50} (cfs)**	**Q_{100} (cfs)**
On-site	26	47.3	68.1	80.1
Off-Site	0.6	1.1	1.6	1.8

Table 2 – Developed Peak Runoff

All inlets located within the bio-swales are 12x12 dome inlets and were preliminary sized to handle the treatment flows only. The proposed catch basins were sized to handle the 10 year storm. Refer to Appendix D for preliminary sizing of catch basins and inlet structures.

The 100 year storm event values were checked to ensure that all pads can be protected from this event. Street capacity calculations (Appendix E) show that the 100 year storm can be contained within the street. Location of these sections can be found in Figure 2 of Appendix C.

DETENTION CONCEPT

To mitigate the increase in runoff produced by the development of this site, a detention area has been identified within the proposed park. This detention basin was preliminary sized to provide “detention only”, as treatment for the entire site is proposed by means of pervious pavement, grass strip filters and bio-swales as described in the next section of this report.

The computer program Hydraflow Hydrograph was used to model the proposed detention basin. The basin will be designed as an “Offline” detention basin. This means that all flows less than or equal to the allowable flows will be allowed to pass directly to the storm drain system. Flows exceeding the allowable values will be routed into the basin.

Runoff from the site will be directed to a diversion structure located within the park area, refer to Figure 2 of Appendix C for location. This structure has been preliminary designed to direct flows in two directions. Storm flows that are less than the allowable flows (based on pre-developed conditions) will be allowed to flow through the diversion structure into a 24” storm drain line that will discharge directly into Telephone Road Drain.

Storm runoff exceeding the allowable flows will be directed into the proposed detention basin. This detention area will provide the necessary detention for all storm events. Attenuated flows from the detention area will be released into Telephone Road Drain. The total runoff being released from the main on-site storm drain system and the detention area will not exceed the pre-developed runoff amounts for each storm event.

Preliminary sizing of the diversion structure can be found in Appendix I. Preliminary sizing calculations for the proposed detention basin can be found in Appendix F. Table 3 summarizes the allowable and developed flows for each storm event.

Figure 2 of Appendix C shows the proposed footprint area of detention area. Configuration of this detention area will be finalized during final design. The proposed detention area has a total storage volume of approximately 66,400 cubic feet and a maximum ponding elevation of 145 feet. The required storage

volumes for each storm event are specified in Table 3 below – refer to Appendix F for preliminary sizing of Detention Basin.

	10-Year Storm	**50-Year Storm**	**100-Year Storm**
Allowable Runoff On and Off Site (cfs)	24.9	45.5	58.1
Developed Runoff On and Off Site (cfs)	48.4	69.7	81.9
Minimum Runoff to be detained (cfs)	23.5	24.2	23.8
Actual Runoff being detained (cfs)	23.5	37.5	43.3
Required Storage Volume (cf)	39,227	54,700	63,525

Table 3 – Detention Basin Summary

STORMWATER TREATMENT MEASURES

The Tentative Tract Map (TTM 5626) was accepted as complete by the City of Ventura on September 2, 2011, therefore mitigation measures pursuant to MS4 permit No. 09-0057 apply to this project

To comply with the NPDES requirements for Stormwater treatment, some of the site's runoff will be treated by proposed bio-swales filters. These filters will treat the Stormwater Quality Design Flow (SQDF) which is equivalent to 10% of the developed 50 year peak flow. Refer to Figure 3 of Appendix G for location of these bio-swales and corresponding treatment flows.

Treatment for the majority of the proposed streets and alleys will be provided by means of pervious pavements. These treatment facilities will be designed to treat the Stormwater Quality Design Volume (SQDV). Refer to Figure 3 of Appendix G for location of the pervious pavement.

Additional treatment for runoff generated for proposed structures will be provided by means of grass strip filters. Figure 3 of Appendix G shows preliminary location of these filters. Final sizing and location will be determined during final design.

All of these treatment measures will be designed based on the methodology described in the Ventura County Technical Guidance Manual. Detail Calculations and description of these treatment measures can be found in Appendix G. Figure 3 of Appendix G shows the preliminary location of the proposed treatment facilities.

100 YEAR FLOOD PLAIN ANALYSIS

The site is located within Flood Zone X, per FIRM Panel 06111C0765E (Appendix H). Zone Flood X is an area of minimal flooding and has no special requirements for any of the proposed structures.

CONCLUSION

The preliminary drainage system for this project has been designed to meet the requirements of the City of Ventura, using the methods proscribed in the County of Ventura Hydrology Manual. All structures should be protected from the 100 year storm. On-site bio-swales and pervious pavement will provide the necessary storm water treatment.

The detention basin will prevent runoff from the site from exceeding the undeveloped runoff amounts.

APPENDIX A

LOCATION MAP

Prepared by: Jensen Design & Survey Inc.

Parcel boundaries on this exhibit are a graphical representation only. They should not be used in place of record boundary information and/or field survey data and do not accurately define property boundaries.

Location Map

1 inch = 500 feet

APPENDIX B

EXISTING CONDITIONS CALCULATIONS AND EXHIBIT

VENTURA COUNTY WATERSHED PROTECTION DISTRICT
TIME OF CONCENTRATION
TC Program Version: 2.6.2008.11
Project: The Grove (BRO33714)
Date: 8/18/2010 3:36:32 PM
Engineer: Frederick T. Giroux
Consultant: Jensen Design & Survey, Inc

S U M M A R Y O F C O M P U T A T I O N S

Watershed Name: Existing Drainage Area

Name	Zone	Storm	Soil	Area (acres)	TC (min)
SubArea	K	10	4.00	25.8 / 26	24.646 / 25
SubArea	K	25	4.00	25.8 / 26	19.930 / 20
SubArea	K	50	4.00	25.8 / 26	17.274 / 17
SubArea	K	100	4.00	25.8 / 26	13.638 / 14

q10 = 0.94 cfs/ac
q50 = 1.71 cfs/ac
q100 = 2.18 cfs/ac

```
------------------------------------
-----------------------------------
Watershed Name: Existing Drainage
Area
------------------------------------
-----------------------------------
Sub-Area Name: SubArea
Computing Tc for all rainfall
frequencies for sub-area SubArea...
------------------------------------
-----------------------------------
Tc for frequency = 10.00: 24.646
Minutes
DATA FOR SUB AREA 1
------------------------------------
-----------------------------------
SUB AREA TIME OF CONCENTRATION:
24.646 min. = 25 min.
------------------------------------
-----------------------------------
SUB AREA INPUT DATA
------------------------------------
-----------------------------------
Sub Area Name: SubArea
Total Area (ac): 25.8
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Undeveloped
Soil Type: 4.00
Percent Impervious: 2
SUB AREA OUTPUT
------------------------------------
-----------------------------------
Intensity (in/hr): 1.584
C Total: 0.590
Sum Q Segments (cfs): 24.12
Q Total (cfs): 24.12
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec):
1,478.78
Time of Concentration (min): 24.646
------------------------------------
-----------------------------------
DATA FOR FLOW PATH 1
------------------------------------
-----------------------------------
Flow Path Name: a1
FLOW PATH TRAVEL TIME (min): 20.9706
Flow Type: Overland
Length (ft): 530.5
Top Elevation (ft): 177
Bottom Elevation (ft): 165
Contributing Area (acres): 5.05
Percent of Sub-Area (%): 19.6
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0226
Effective Slope: 0.0226
Q for Flow Path (cfs): 4.72
Avg Velocity (ft/s): 0.42
Passed Scour Check: YES
Scour Velocity (ft/sec): 3.15
DATA FOR FLOW PATH 2
------------------------------------
-----------------------------------
Flow Path Name: a2
FLOW PATH TRAVEL TIME (min): 1.8523
Flow Type: Natural Channel
Length (ft): 580.8
Top Elevation (ft): 165
Bottom Elevation (ft): 152
Contributing Area (acres): 6.99
Percent of Sub-Area (%): 27.1
Overland Type: Valley
Map Slope: 0.0224
Effective Slope: 0.0224
Q for Flow Path (cfs): 6.54
Q Top (cfs): 4.72
Q Bottom (cfs): 11.26
Velocity Top (ft/s): 3.11
Velocity Bottom (ft/s): 3.85
Avg Velocity (ft/s): 3.48
Wave Velocity (ft/s): 5.23
DATA FOR FLOW PATH 3
------------------------------------
-----------------------------------
Flow Path Name: a3
FLOW PATH TRAVEL TIME (min): 1.8236
Flow Type: Natural Channel
Length (ft): 594.35
Top Elevation (ft): 152
Bottom Elevation (ft): 142.5
Contributing Area (acres): 13.76
Percent of Sub-Area (%): 53.3
Overland Type: Valley
Map Slope: 0.0160
Effective Slope: 0.0160
Q for Flow Path (cfs): 12.87
Q Top (cfs): 11.26
Q Bottom (cfs): 24.12
Velocity Top (ft/s): 3.26
Velocity Bottom (ft/s): 3.99
Avg Velocity (ft/s): 3.62
Wave Velocity (ft/s): 5.43
```

```
Tc for frequency = 25.00: 19.930
Minutes
DATA FOR SUB AREA 1
-------------------------------------
-----------------------------------
SUB AREA TIME OF CONCENTRATION:
19.930 min. = 20 min.
-------------------------------------
-----------------------------------
SUB AREA INPUT DATA
-------------------------------------
-----------------------------------
Sub Area Name: SubArea
Total Area (ac): 25.8
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Undeveloped
Soil Type: 4.00
Percent Impervious: 2
SUB AREA OUTPUT
-------------------------------------
-----------------------------------
Intensity (in/hr): 1.959
C Total: 0.647
Sum Q Segments (cfs): 32.69
Q Total (cfs): 32.69
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec):
1,195.82
Time of Concentration (min): 19.930
-------------------------------------
-----------------------------------
DATA FOR FLOW PATH 1
-------------------------------------
-----------------------------------
Flow Path Name: a1
FLOW PATH TRAVEL TIME (min): 16.5335
Flow Type: Overland
Length (ft): 530.5
Top Elevation (ft): 177
Bottom Elevation (ft): 165
Contributing Area (acres): 5.05
Percent of Sub-Area (%): 19.6
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0226
Effective Slope: 0.0226
Q for Flow Path (cfs): 6.40
Avg Velocity (ft/s): 0.53
Passed Scour Check: YES
Scour Velocity (ft/sec): 3.39
DATA FOR FLOW PATH 2
-------------------------------------
-----------------------------------
Flow Path Name: a2
FLOW PATH TRAVEL TIME (min): 1.7167
Flow Type: Natural Channel
Length (ft): 580.8
Top Elevation (ft): 165
Bottom Elevation (ft): 152
Contributing Area (acres): 6.99
Percent of Sub-Area (%): 27.1
Overland Type: Valley
Map Slope: 0.0224
Effective Slope: 0.0224
Q for Flow Path (cfs): 8.86
Q Top (cfs): 6.40
Q Bottom (cfs): 15.26
Velocity Top (ft/s): 3.35
Velocity Bottom (ft/s): 4.17
Avg Velocity (ft/s): 3.76
Wave Velocity (ft/s): 5.64
DATA FOR FLOW PATH 3
-------------------------------------
-----------------------------------
Flow Path Name: a3
FLOW PATH TRAVEL TIME (min): 1.6801
Flow Type: Natural Channel
Length (ft): 594.35
Top Elevation (ft): 152
Bottom Elevation (ft): 142.5
Contributing Area (acres): 13.76
Percent of Sub-Area (%): 53.3
Overland Type: Valley
Map Slope: 0.0160
Effective Slope: 0.0160
Q for Flow Path (cfs): 17.44
Q Top (cfs): 15.26
Q Bottom (cfs): 32.69
Velocity Top (ft/s): 3.52
Velocity Bottom (ft/s): 4.34
Avg Velocity (ft/s): 3.93
Wave Velocity (ft/s): 5.90
```

Tc for frequency = 50.00: 17.274 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 17.274 min. = 17 min.

SUB AREA INPUT DATA

Sub Area Name: SubArea
Total Area (ac): 25.8
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Undeveloped
Soil Type: 4.00
Percent Impervious: 2
SUB AREA OUTPUT

Intensity (in/hr): 2.471
C Total: 0.695
Sum Q Segments (cfs): 44.27
Q Total (cfs): 44.27
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 1,036.44
Time of Concentration (min): 17.274

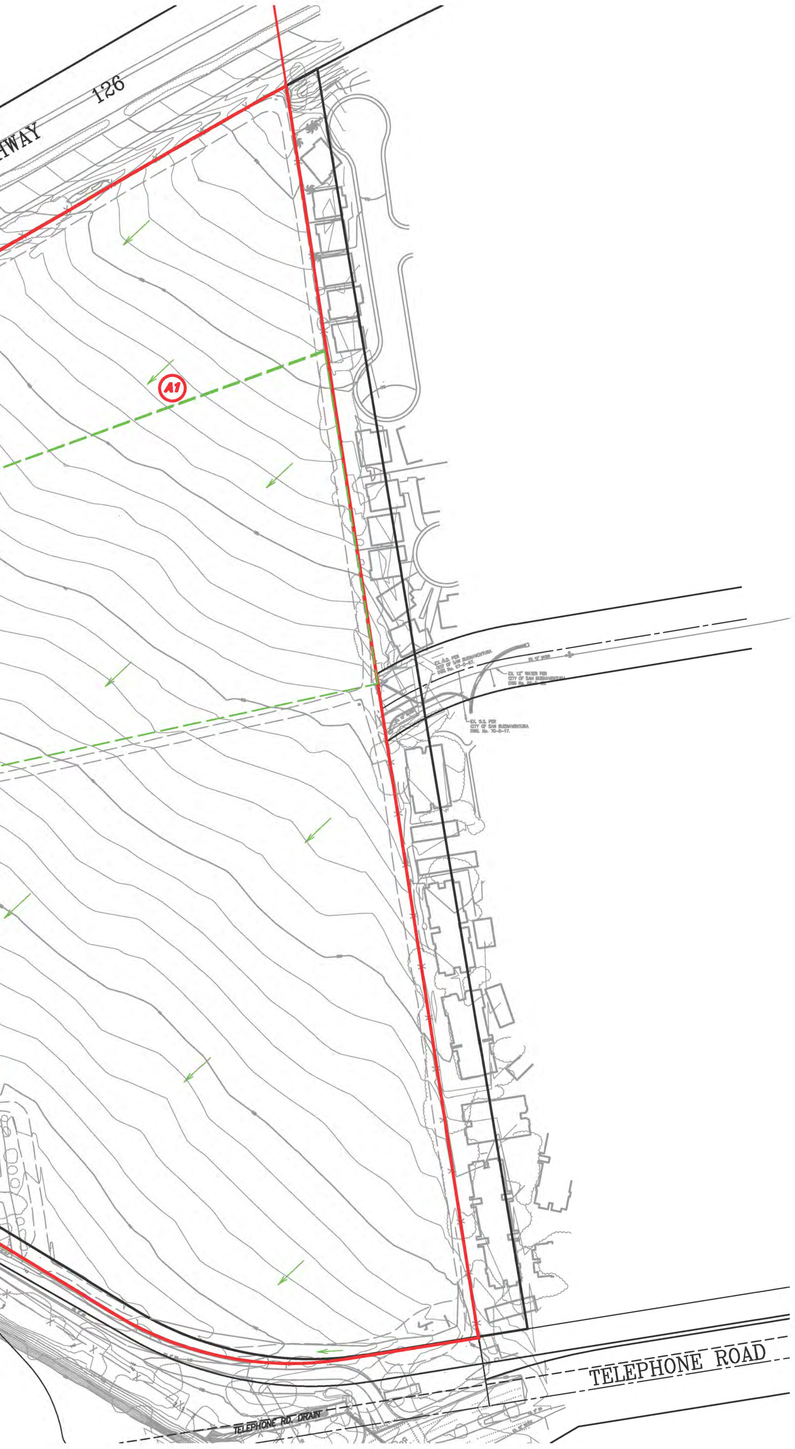
DATA FOR FLOW PATH 1

Flow Path Name: a1
FLOW PATH TRAVEL TIME (min): 14.1409
Flow Type: Overland
Length (ft): 530.5
Top Elevation (ft): 177
Bottom Elevation (ft): 165
Contributing Area (acres): 5.05
Percent of Sub-Area (%): 19.6
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0226
Effective Slope: 0.0226
Q for Flow Path (cfs): 8.67
Avg Velocity (ft/s): 0.63
Passed Scour Check: YES
Scour Velocity (ft/sec): 1.05
DATA FOR FLOW PATH 2

Flow Path Name: a2
FLOW PATH TRAVEL TIME (min): 1.5877
Flow Type: Natural Channel
Length (ft): 580.8
Top Elevation (ft): 165
Bottom Elevation (ft): 152
Contributing Area (acres): 6.99
Percent of Sub-Area (%): 27.1
Overland Type: Valley
Map Slope: 0.0224
Effective Slope: 0.0224
Q for Flow Path (cfs): 11.99
Q Top (cfs): 8.67
Q Bottom (cfs): 20.66
Velocity Top (ft/s): 3.61
Velocity Bottom (ft/s): 4.52
Avg Velocity (ft/s): 4.06
Wave Velocity (ft/s): 6.10
DATA FOR FLOW PATH 3

Flow Path Name: a3
FLOW PATH TRAVEL TIME (min): 1.5453
Flow Type: Natural Channel
Length (ft): 594.35
Top Elevation (ft): 152
Bottom Elevation (ft): 142.5
Contributing Area (acres): 13.76
Percent of Sub-Area (%): 53.3
Overland Type: Valley
Map Slope: 0.0160
Effective Slope: 0.0160
Q for Flow Path (cfs): 23.61
Q Top (cfs): 20.66
Q Bottom (cfs): 44.27
Velocity Top (ft/s): 3.82
Velocity Bottom (ft/s): 4.73
Avg Velocity (ft/s): 4.27
Wave Velocity (ft/s): 6.41

```
Tc for frequency = 100.00: 13.638
Minutes
DATA FOR SUB AREA 1
-------------------------------------
-----------------------------------
SUB AREA TIME OF CONCENTRATION:
13.638 min. = 14 min.
-------------------------------------
-----------------------------------
SUB AREA INPUT DATA
-------------------------------------
-----------------------------------
Sub Area Name: SubArea
Total Area (ac): 25.8
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 4.00
Percent Impervious: 2
SUB AREA OUTPUT
-------------------------------------
-----------------------------------
Intensity (in/hr): 2.987
C Total: 0.731
Sum Q Segments (cfs): 56.30
Q Total (cfs): 56.30
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec):
818.26
Time of Concentration (min): 13.638
-------------------------------------
-----------------------------------
DATA FOR FLOW PATH 1
-------------------------------------
-----------------------------------
Flow Path Name: a1
FLOW PATH TRAVEL TIME (min): 10.7034
Flow Type: Overland
Length (ft): 530.5
Top Elevation (ft): 177
Bottom Elevation (ft): 165
Contributing Area (acres): 5.05
Percent of Sub-Area (%): 19.6
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0226
Effective Slope: 0.0226
Q for Flow Path (cfs): 11.02
Avg Velocity (ft/s): 0.83
Passed Scour Check: YES
Scour Velocity (ft/sec): 3.81
DATA FOR FLOW PATH 2
-------------------------------------
-----------------------------------
Flow Path Name: a2
FLOW PATH TRAVEL TIME (min): 1.4900
Flow Type: Natural Channel
Length (ft): 580.8
Top Elevation (ft): 165
Bottom Elevation (ft): 152
Contributing Area (acres): 6.99
Percent of Sub-Area (%): 27.1
Overland Type: Valley
Map Slope: 0.0224
Effective Slope: 0.0224
Q for Flow Path (cfs): 15.25
Q Top (cfs): 11.02
Q Bottom (cfs): 26.28
Velocity Top (ft/s): 3.83
Velocity Bottom (ft/s): 4.83
Avg Velocity (ft/s): 4.33
Wave Velocity (ft/s): 6.50
DATA FOR FLOW PATH 3
-------------------------------------
-----------------------------------
Flow Path Name: a3
FLOW PATH TRAVEL TIME (min): 1.4442
Flow Type: Natural Channel
Length (ft): 594.35
Top Elevation (ft): 152
Bottom Elevation (ft): 142.5
Contributing Area (acres): 13.76
Percent of Sub-Area (%): 53.3
Overland Type: Valley
Map Slope: 0.0160
Effective Slope: 0.0160
Q for Flow Path (cfs): 30.03
Q Top (cfs): 26.28
Q Bottom (cfs): 56.30
Velocity Top (ft/s): 4.08
Velocity Bottom (ft/s): 5.06
Avg Velocity (ft/s): 4.57
Wave Velocity (ft/s): 6.86
```



Drainage Area A

Existing Conditions

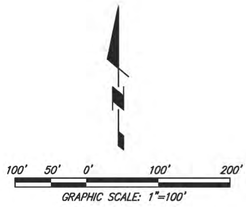
Drainage Area	Area (ac)	Q10 (cfs)	Q50 (cfs)	Q100 (cfs)
A1	5.05	4.72	8.67	11.02
A2	6.99	6.54	11.90	15.25
A3	13.76	12.87	23.61	30.03
Total for Drainage Area A	25.80	24.13	44.18	56.30

Summary for Drainage Area A:

	10-Year Storm		50-Year Storm		100-Year Storm	
Area (ac)	Q (cfs)	Tc (min)	Q (cfs)	Tc (min)	Q (cfs)	Tc (min)
25.80	24.13	25	44.18	17	56.30	14

Unit Runoff

q10	0.94 cfs/ac
q50	1.71 cfs/ac
q100	2.18 cfs/ac



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A1

EXISTING CONDITIONS

JENSEN DESIGN & SURVEY, INC
www.jdscivil.com
1672 DONLON STREET
VENTURA, CALIF. 93003
PHONE 805/654-6977
FAX 805/654-6979

SCALE: 1"=100'
J.N.: BR03 3714
DATE: AUG. 17, 2010
DWG. NAME: 3417 EX Conditions (Preliminary).dwg

HYD

TE

COUNTY OF V

APPENDIX C

DEVELOPED CONDITIONS CALCULATIONS AND EXHIBIT

VENTURA COUNTY WATERSHED PROTECTION DISTRICT
TIME OF CONCENTRATION
TC Program Version: 2.6.2008.11
Project: The Grove (BOR33714)
Date: 8/17/2010 3:36:32 PM
Engineer: Frederick T. Giroux
Consultant: Jensen Design & Survey, Inc

S U M M A R Y O F C O M P U T A T I O N S

Watershed Name: Developed Drainage

Name	Zone	Storm	Soil	Area (acres)	TC (min)
SubArea	K	10	4.00	12.5 / 13	15.363 / 15
SubArea	K	25	4.00	12.5 / 13	13.408 / 13
SubArea	K	50	4.00	12.5 / 13	12.200 / 12
SubArea	K	100	4.00	12.5 / 13	10.672 / 11

```
-------------------------------------
-----------------------------------
Watershed Name: Developed Drainage
-------------------------------------
-----------------------------------
Sub-Area Name: SubArea
Computing Tc for all rainfall
frequencies for sub-area SubArea...
-------------------------------------
-----------------------------------
Tc for frequency = 10.00: 15.363
Minutes
DATA FOR SUB AREA 1
-------------------------------------
-----------------------------------
SUB AREA TIME OF CONCENTRATION:
15.363 min. = 15 min.
-------------------------------------
-----------------------------------
SUB AREA INPUT DATA
-------------------------------------
-----------------------------------
Sub Area Name: SubArea
Total Area (ac): 12.53
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Residential
Soil Type: 4.00
Percent Impervious: 80
SUB AREA OUTPUT
-------------------------------------
-----------------------------------
Intensity (in/hr): 2.044
C Total: 0.890
Sum Q Segments (cfs): 22.80
Q Total (cfs): 22.80
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec):
921.77
Time of Concentration (min): 15.363
-------------------------------------
-----------------------------------
DATA FOR FLOW PATH 1
-------------------------------------
-----------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 7.7051
Flow Type: Overland
Length (ft): 200
Top Elevation (ft): 179
Bottom Elevation (ft): 173.25
Contributing Area (acres): 0.3
Percent of Sub-Area (%): 2.4
Overland Type: Valley
Development Type: Residential
Map Slope: 0.0288
Effective Slope: 0.0288
Q for Flow Path (cfs): 0.55
Avg Velocity (ft/s): 0.43
Passed Scour Check: N/A
DATA FOR FLOW PATH 2
-------------------------------------
-----------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 7.6577
Flow Type: Street
Length (ft): 1970.3
Top Elevation (ft): 173.25
Bottom Elevation (ft): 145.5
Contributing Area (acres): 12.23
Percent of Sub-Area (%): 97.6
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0141
Q for Flow Path (cfs): 22.25
Q Top (cfs): 0.55
Q Bottom (cfs): 22.80
Velocity Top (ft/s): 1.61
Velocity Bottom (ft/s): 4.11
Avg Velocity (ft/s): 2.86
Wave Velocity (ft/s): 4.29
```

Tc for frequency = 25.00: 13.408 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 13.408 min. = 13 min.

SUB AREA INPUT DATA

Sub Area Name: SubArea
Total Area (ac): 12.53
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Residential
Soil Type: 4.00
Percent Impervious: 80
SUB AREA OUTPUT

Intensity (in/hr): 2.430
C Total: 0.897
Sum Q Segments (cfs): 27.31
Q Total (cfs): 27.31
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 804.47
Time of Concentration (min): 13.408

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 6.0901
Flow Type: Overland
Length (ft): 200
Top Elevation (ft): 179
Bottom Elevation (ft): 173.25
Contributing Area (acres): 0.3
Percent of Sub-Area (%): 2.4
Overland Type: Valley
Development Type: Residential
Map Slope: 0.0288
Effective Slope: 0.0288
Q for Flow Path (cfs): 0.65
Avg Velocity (ft/s): 0.55
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 7.3178
Flow Type: Street
Length (ft): 1970.3
Top Elevation (ft): 173.25
Bottom Elevation (ft): 145.5
Contributing Area (acres): 12.23
Percent of Sub-Area (%): 97.6
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0141
Q for Flow Path (cfs): 26.66
Q Top (cfs): 0.65
Q Bottom (cfs): 27.31
Velocity Top (ft/s): 1.68
Velocity Bottom (ft/s): 4.30
Avg Velocity (ft/s): 2.99
Wave Velocity (ft/s): 4.49

Tc for frequency = 50.00: 12.200 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 12.200 min. = 12 min.

SUB AREA INPUT DATA

Sub Area Name: SubArea
Total Area (ac): 12.53
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Residential
Soil Type: 4.00
Percent Impervious: 80
SUB AREA OUTPUT

Intensity (in/hr): 2.902
C Total: 0.904
Sum Q Segments (cfs): 32.87
Q Total (cfs): 32.87
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 732.02
Time of Concentration (min): 12.200

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 5.2159
Flow Type: Overland
Length (ft): 200
Top Elevation (ft): 179
Bottom Elevation (ft): 173.25
Contributing Area (acres): 0.3
Percent of Sub-Area (%): 2.4
Overland Type: Valley
Development Type: Residential
Map Slope: 0.0288
Effective Slope: 0.0288
Q for Flow Path (cfs): 0.79
Avg Velocity (ft/s): 0.64
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 6.9845
Flow Type: Street
Length (ft): 1970.3
Top Elevation (ft): 173.25
Bottom Elevation (ft): 145.5
Contributing Area (acres): 12.23
Percent of Sub-Area (%): 97.6
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0141
Q for Flow Path (cfs): 32.09
Q Top (cfs): 0.79
Q Bottom (cfs): 32.87
Velocity Top (ft/s): 1.76
Velocity Bottom (ft/s): 4.51
Avg Velocity (ft/s): 3.13
Wave Velocity (ft/s): 4.70

Tc for frequency = 100.00: 10.672 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 10.672 min. = 11 min.

SUB AREA INPUT DATA

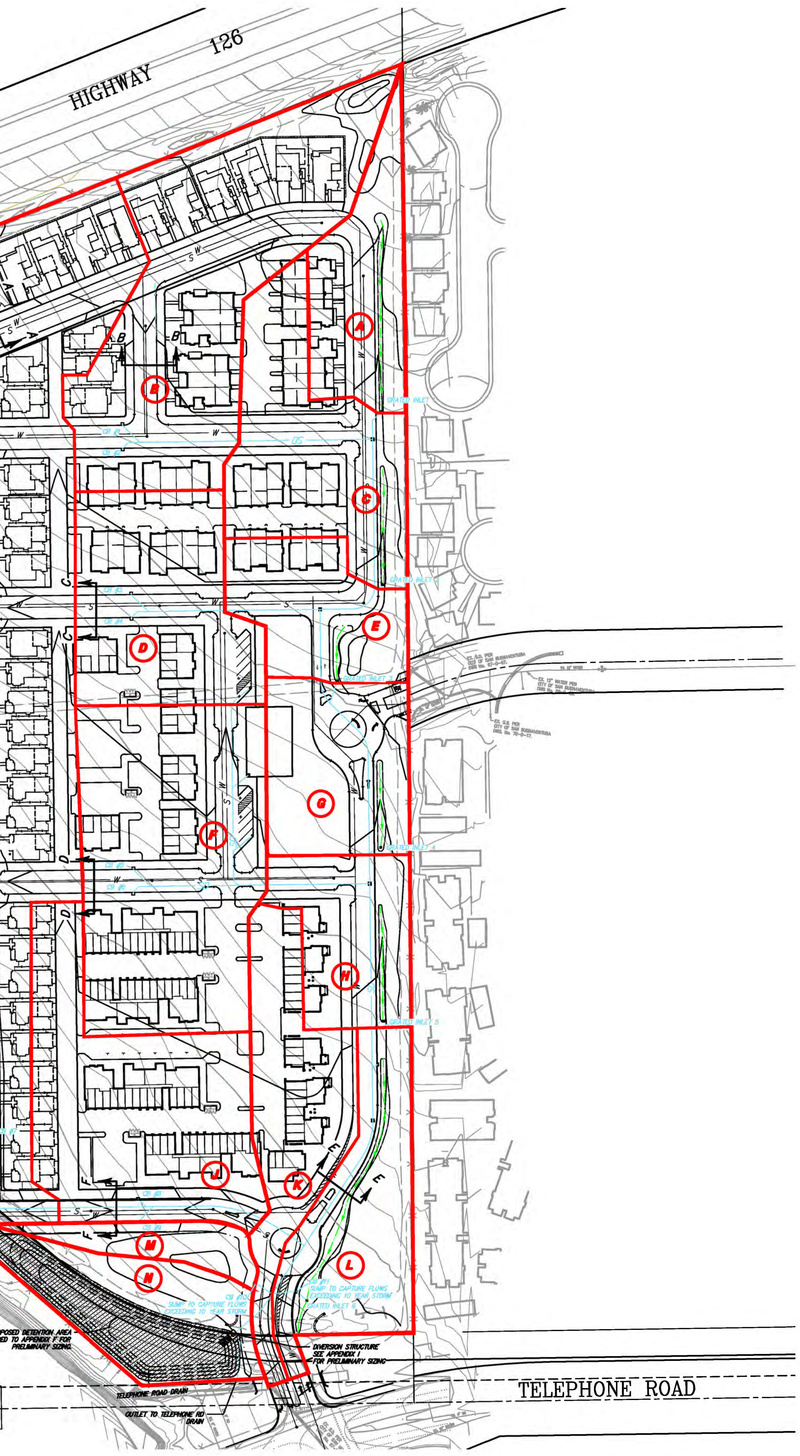
Sub Area Name: SubArea
Total Area (ac): 12.53
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Residential
Soil Type: 4.00
Percent Impervious: 80
SUB AREA OUTPUT

Intensity (in/hr): 3.387
C Total: 0.909
Sum Q Segments (cfs): 38.59
Q Total (cfs): 38.59
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 640.33
Time of Concentration (min): 10.672

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.9638
Flow Type: Overland
Length (ft): 200
Top Elevation (ft): 179
Bottom Elevation (ft): 173.25
Contributing Area (acres): 0.3
Percent of Sub-Area (%): 2.4
Overland Type: Valley
Development Type: Residential
Map Slope: 0.0288
Effective Slope: 0.0288
Q for Flow Path (cfs): 0.92
Avg Velocity (ft/s): 0.84
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 6.7083
Flow Type: Street
Length (ft): 1970.3
Top Elevation (ft): 173.25
Bottom Elevation (ft): 145.5
Contributing Area (acres): 12.23
Percent of Sub-Area (%): 97.6
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0141
Q for Flow Path (cfs): 37.67
Q Top (cfs): 0.92
Q Bottom (cfs): 38.59
Velocity Top (ft/s): 1.84
Velocity Bottom (ft/s): 4.69
Avg Velocity (ft/s): 3.26
Wave Velocity (ft/s): 4.90



Unit Runoff

q10	1.82 cfs/a
q50	2.62 cfs/a
q100	3.08 cfs/a

Site Runoff Summa

	10-Year Storm		50-Year
Area (ac)	Q (cfs)	Tc (min)	Q (cfs)
26.60	48.4	15	69.7

	Drainage Area	Area (ac)	Q10 (cfs)
	A	1.00	1.82
	B	2.90	5.28
	C	1.60	2.91
	D	1.60	2.91
	E	0.90	1.64
	F	2.60	4.73
	G	1.10	2.00
	H	0.90	1.64
	I	7.80	14.20
	J	2.20	4.00
	K	1.20	2.18
	L	1.30	2.37
Park	M	0.40	0.73
	N	1.10	2.00
	Total	26.6	48.4

	Area (ac)	Q10 (cfs)
Total Developed (On & Off Site)	26.60	48.41
Total Existing (On & Off Site)	26.60	24.88
Runoff to be detained	---	23.53

		Drainage Area	Area (ac)
Developed Runoff	Runoff entering Diversion Structure	A-M	25.50
	Runoff directed to detention Area (not through diversion structure)	N	1.10
	Total Allowable Runoff on-site & Off-site	A-N	26.60
	Min. Runoff to be detained		---

100' 50' 0' 100' 200'

GRAPHIC SCALE: 1"=100'

DEVELOPED CONDITIONS

JENSEN DESIGN & SURVEY, INC
www.jdscivil.com
1672 DONLON STREET
VENTURA, CALIF. 93003
PHONE 805/654-6977
FAX 805/654-6979

SCALE: 1"=100'
J.N.: BR03 3714
DATE: AUG. 17, 2010
DWG. NAME: 3417 DEV Conditions (Preliminary).dwg

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COUNTY OF

APPENDIX D

CATCH BASIN SIZING

Catch Basin Preliminary Sizing

Intercept Condition:

Q=0.7W(h^1.5)

h = depth of flow in street + catch basin h(2")
W = Width of catch basin opening

SUMP Condition:

Q=3.087W(H^1.5)

h = height of opening
W = Width of catch basin opening

	Runoff Summary						CB Summary		
	CB No.	Drainage Area Contributing	Area (ac)	Q10 (cfs)	Q50 (cfs)	Q100 (cfs)	h (in)	W Calc (ft)	Recommended CB W (ft)
sump	1	B1	2.2	4.00	5.76	6.78	7	2.91	3.5
sump	2	B2	0.7	1.27	1.83	2.16	7	0.93	3.5
sump	3	D1	0.8	1.46	2.10	2.46	7	1.06	3.5
sump	4	D2	0.8	1.46	2.10	2.46	7	1.06	3.5
sump	5	F1	1.3	2.37	3.41	4.00	7	1.72	3.5
sump	6	F2	1.3	2.37	3.41	4.00	7	1.72	3.5
sump	7	I	7.8	14.20	20.44	24.02	7	10.32	14
sump	8	J1	1.6	2.91	4.19	4.93	7	2.12	10
sump	9	J2	0.6	1.09	1.57	1.85	7	0.79	7
sump	10	K	1.2	2.18	3.14	3.70	7	1.59	10
sump	11	L	1.3	2.37	3.41	4.00	7	1.72	10

CB - Runoff Summary:

Catch basins 8, 9, 10 and 11 will be sized to captured the runoff exceeding the 10 year storm event from the site.

Catch basins 8 and 9 will capture the runoff exceeding the 10 year storm event from Area I and the 100 year storm runoff from Area J:

10 Year Runoff from Area I	14.20	cfs	being captured by CB No. 7
100 Year Runoff from Area I	24.02	cfs	
Max Capacity for CB No. 7	19.25	cfs	
100 Year runoff from Area I not captured by CB No. 7 (to be captured by CB 8,9)	4.77	cfs	
10 Year runoff being directed towards CB 8, 9 (from Area J)	4.00	cfs	
100 Year runoff being directed to CB No. 8,9 - from area I (not captured by CB No7) and Area J	11.55	cfs	
Estimated Runoff into CB 8 (100 yr storm)	7.70	cfs	
Estimated Runoff into CB 9 (100 yr storm)	3.85	cfs	
Max Capacity for CB 8	13.75	cfs	
Max Capacity for CB 9	9.63	cfs	
10 Year runoff beind directed towards CB 10, 11 (From areas A-H)	22.93	cfs	
100 Year runoff beind directed towards CB 10, 11 (From areas A-H)	38.81	cfs	
100 Year runoff from Areas A-H being directed towards CB 10, 11	15.88	cfs	

Total 100 Year runoff being directed towards CB 10, 11 from Areas A-H and K,L	23.58	cfs
Estimated Runoff into CB 10	11.79	cfs
Estimated Runoff into CB 11	11.79	cfs
Max Capacity of CB 10	13.75	cfs
Max Capacity of CB 11	13.75	cfs

Inlet Grate Capacity
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
Q (cfs)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Head (ft)
m
DB1212
DB1818
DB2424
DB3636

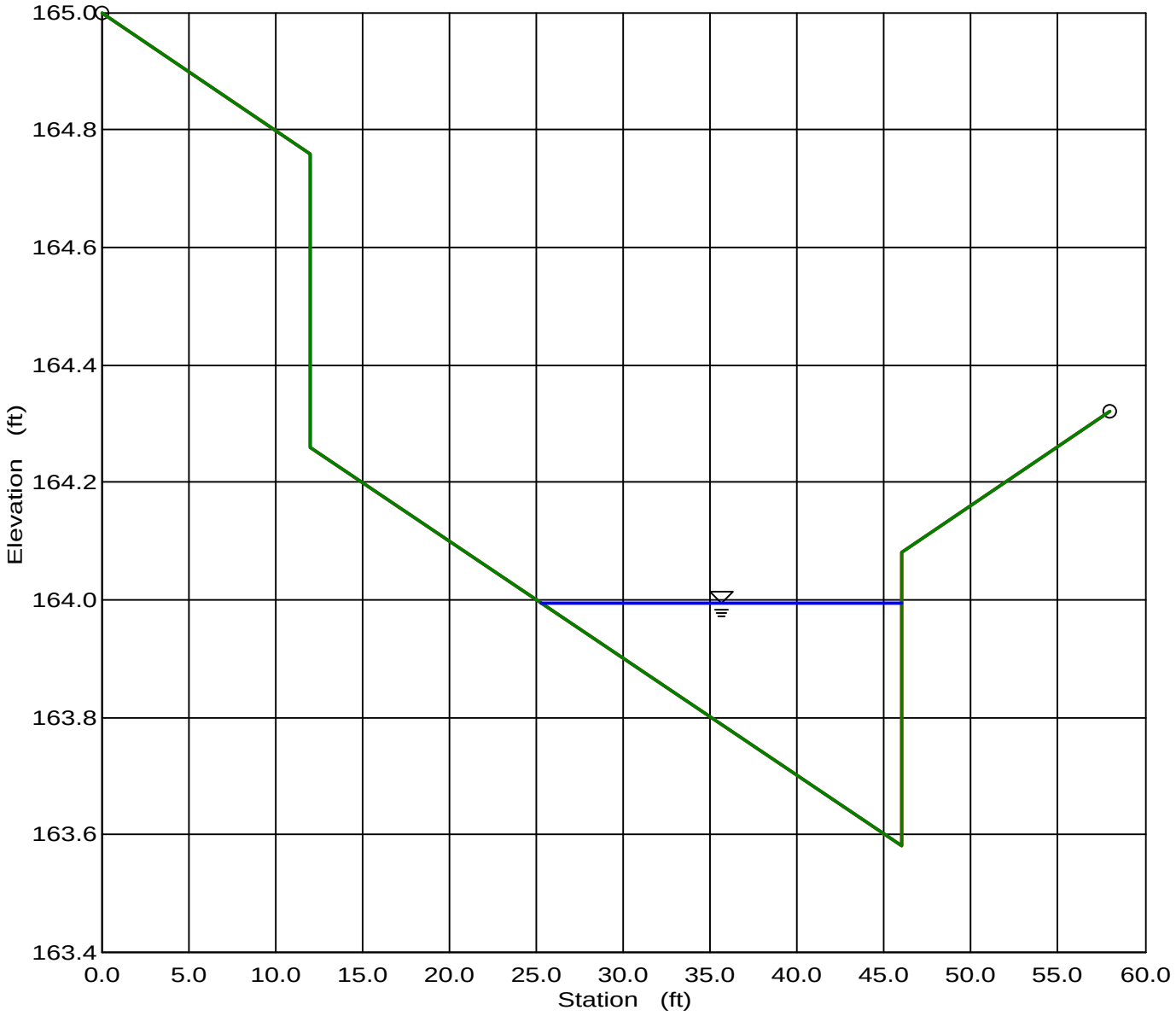
APPENDIX E

STREET CAPACITY CALCULATIONS

Section A-A (Area I Q100)
Cross Section for Irregular Channel

Project Description	
Project File	c:\haestad\fmw\3714 pre.fm2
Worksheet	Section A-A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

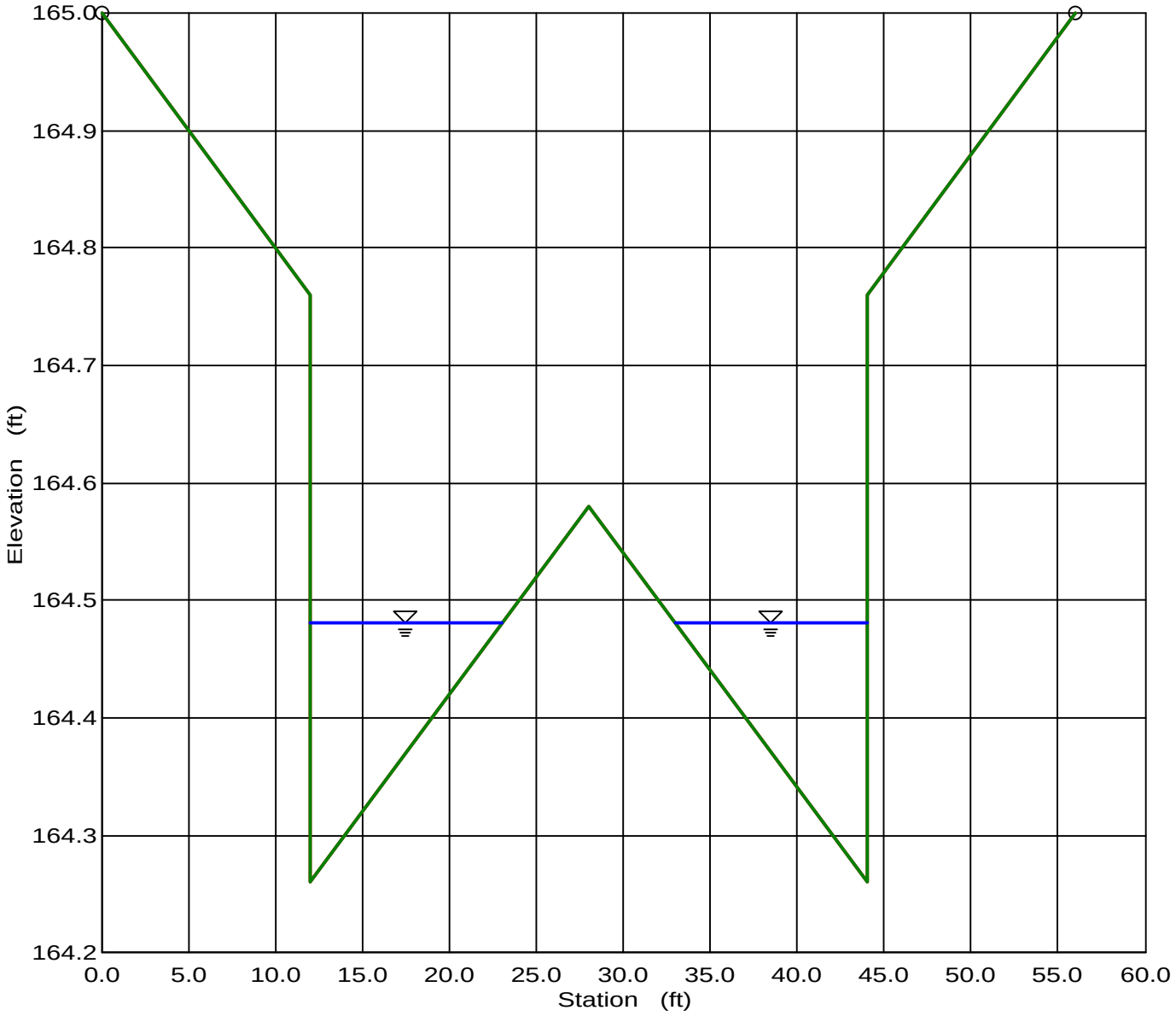
Section Data		
Wtd. Mannings Coefficient	0.013	
Channel Slope	0.020000	ft/ft
Water Surface Elevation	163.99	ft
Discharge	24.02	cfs



Section B-B (Area B Q100)
Cross Section for Irregular Channel

Project Description	
Project File	c:\haestad\fmw\3714 pre.fm2
Worksheet	Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

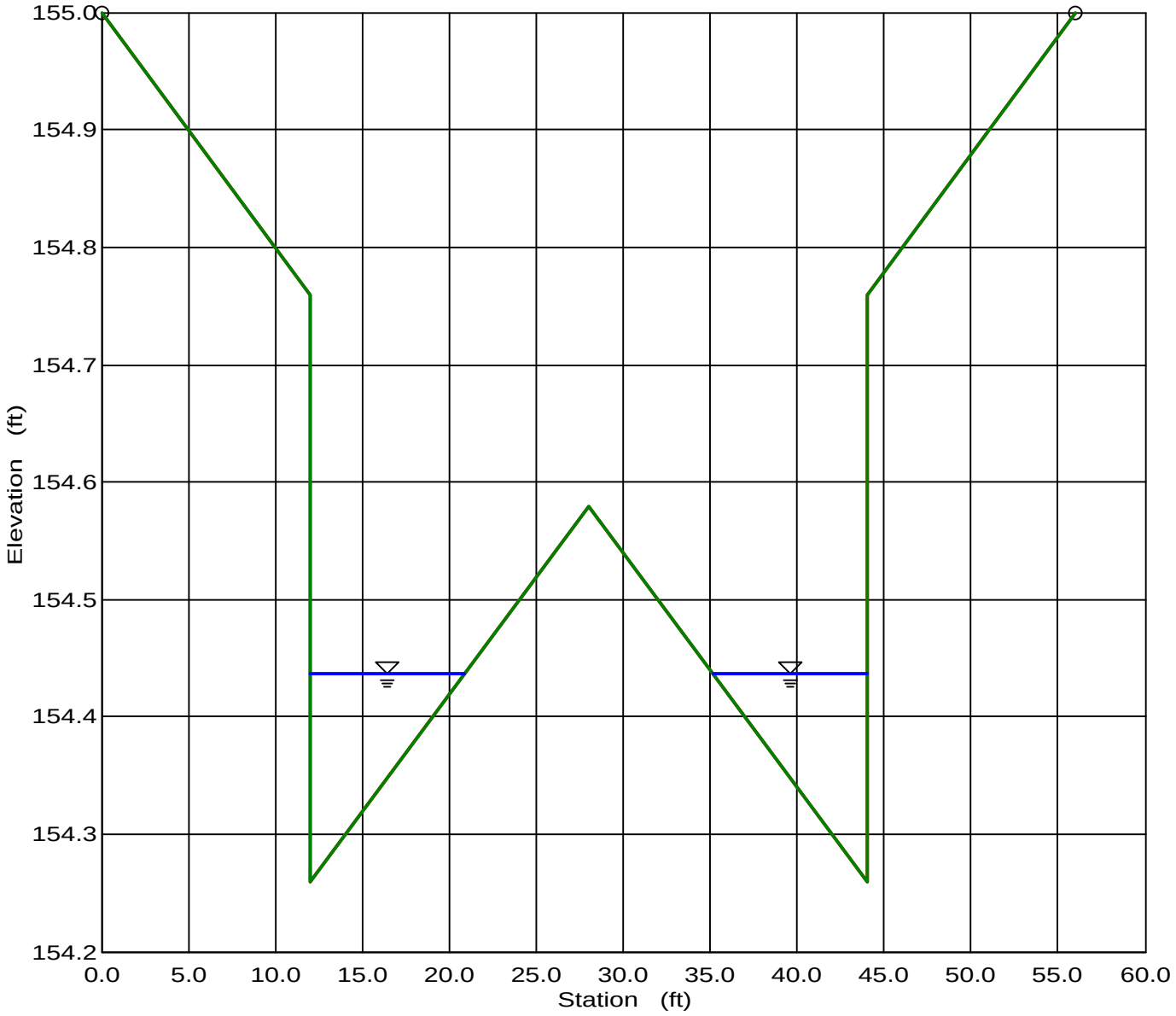
Section Data		
Wtd. Mannings Coefficient	0.013	
Channel Slope	0.020000	ft/ft
Water Surface Elevation	164.48	ft
Discharge	8.93	cfs



Section C-C (Area D Q100)
Cross Section for Irregular Channel

Project Description	
Project File	c:\haestad\fmw\3714 pre.fm2
Worksheet	Section C-C
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

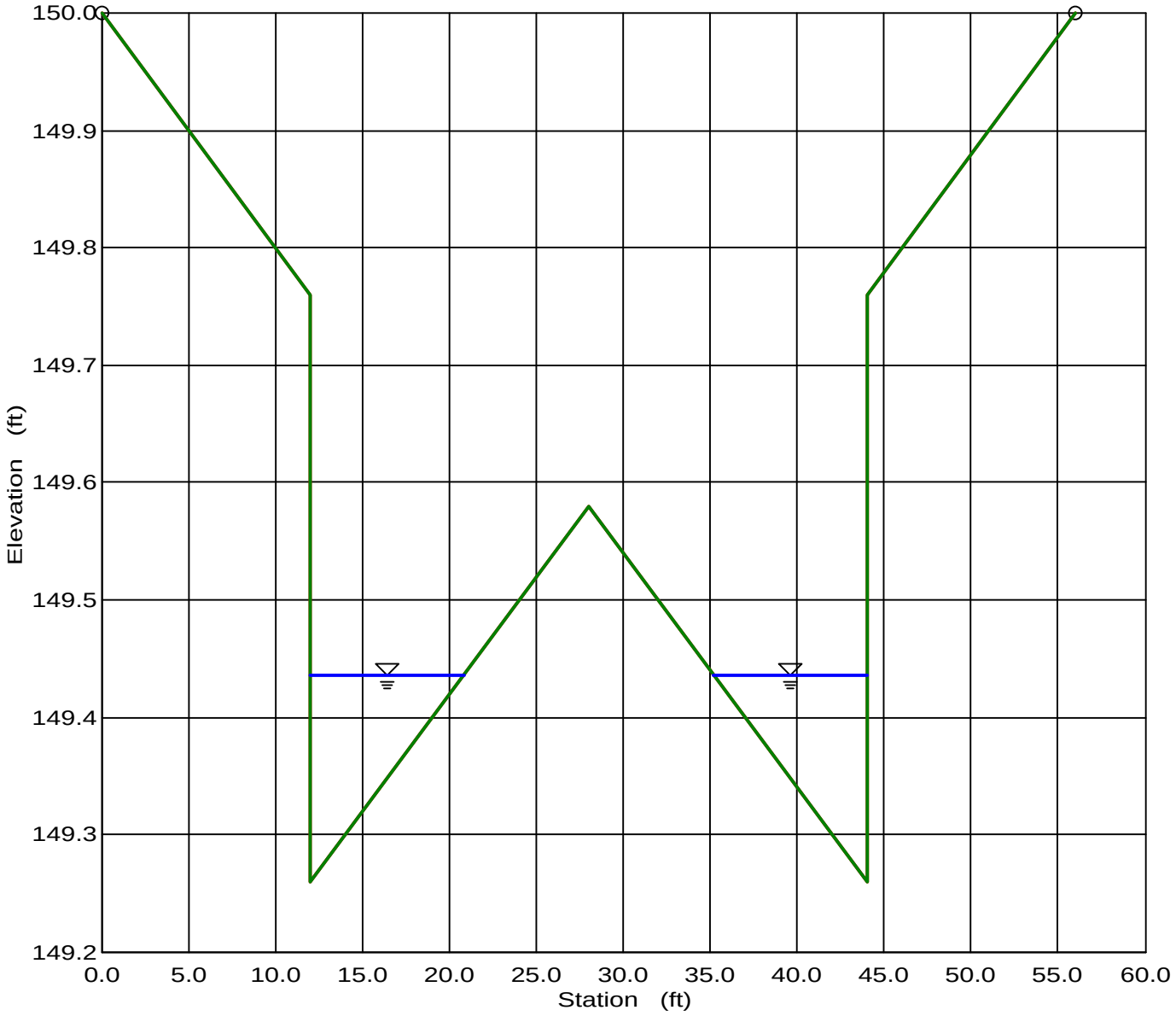
Section Data		
Wtd. Mannings Coefficient	0.013	
Channel Slope	0.020000	ft/ft
Water Surface Elevation	154.44	ft
Discharge	4.93	cfs



Section D-D (Area F Q100)
Cross Section for Irregular Channel

Project Description	
Project File	c:\haestad\fmw\3714 pre.fm2
Worksheet	Section D-D
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

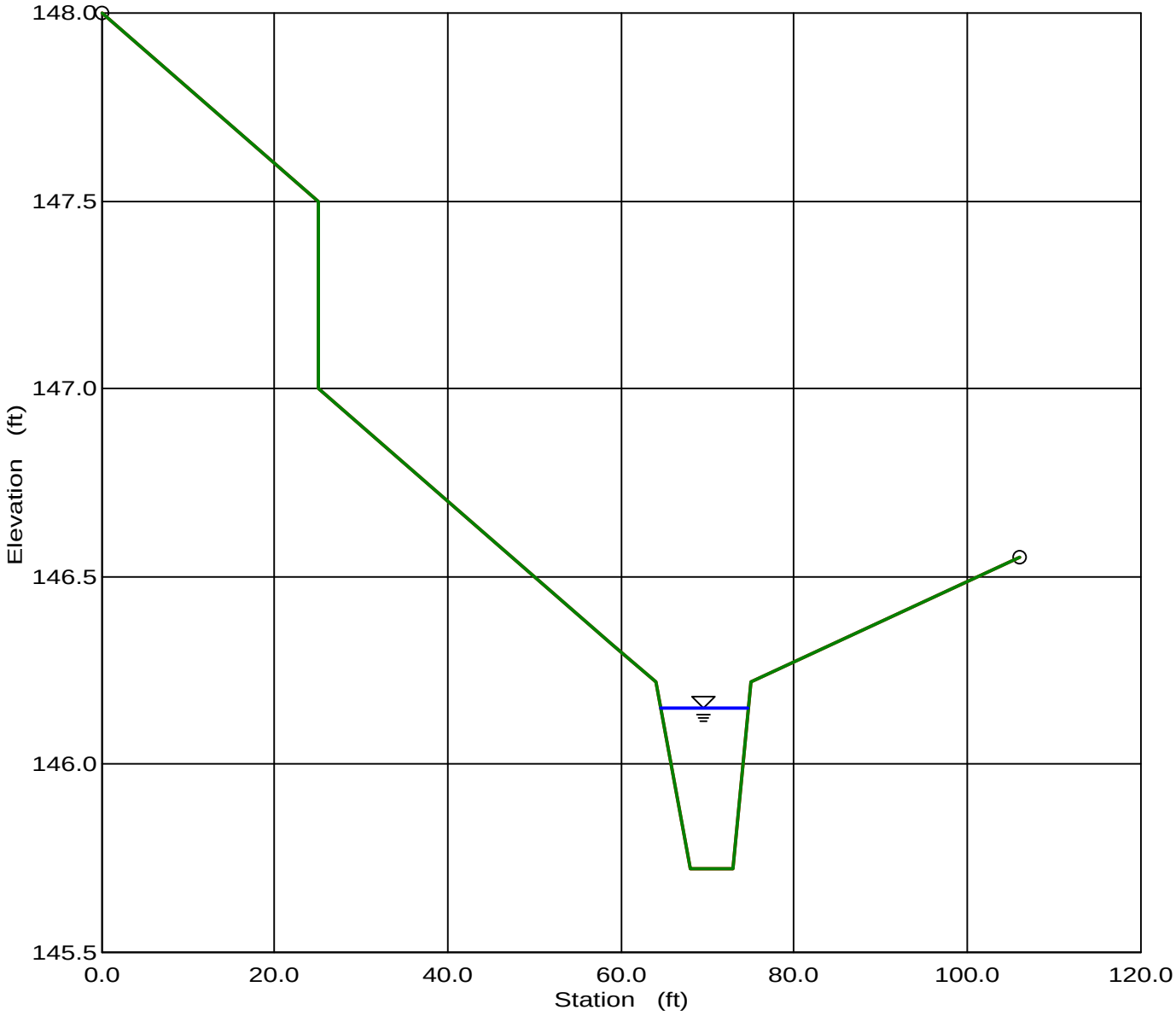
Section Data		
Wtd. Mannings Coefficient	0.013	
Channel Slope	0.020000	ft/ft
Water Surface Elevation	149.44	ft
Discharge	4.93	cfs



Section E-E (Areas A,E,E,G,H,K,L Q100)
Cross Section for Irregular Channel

Project Description	
Project File	c:\haestad\fmw\3714 pre.fm2
Worksheet	Section E-E
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

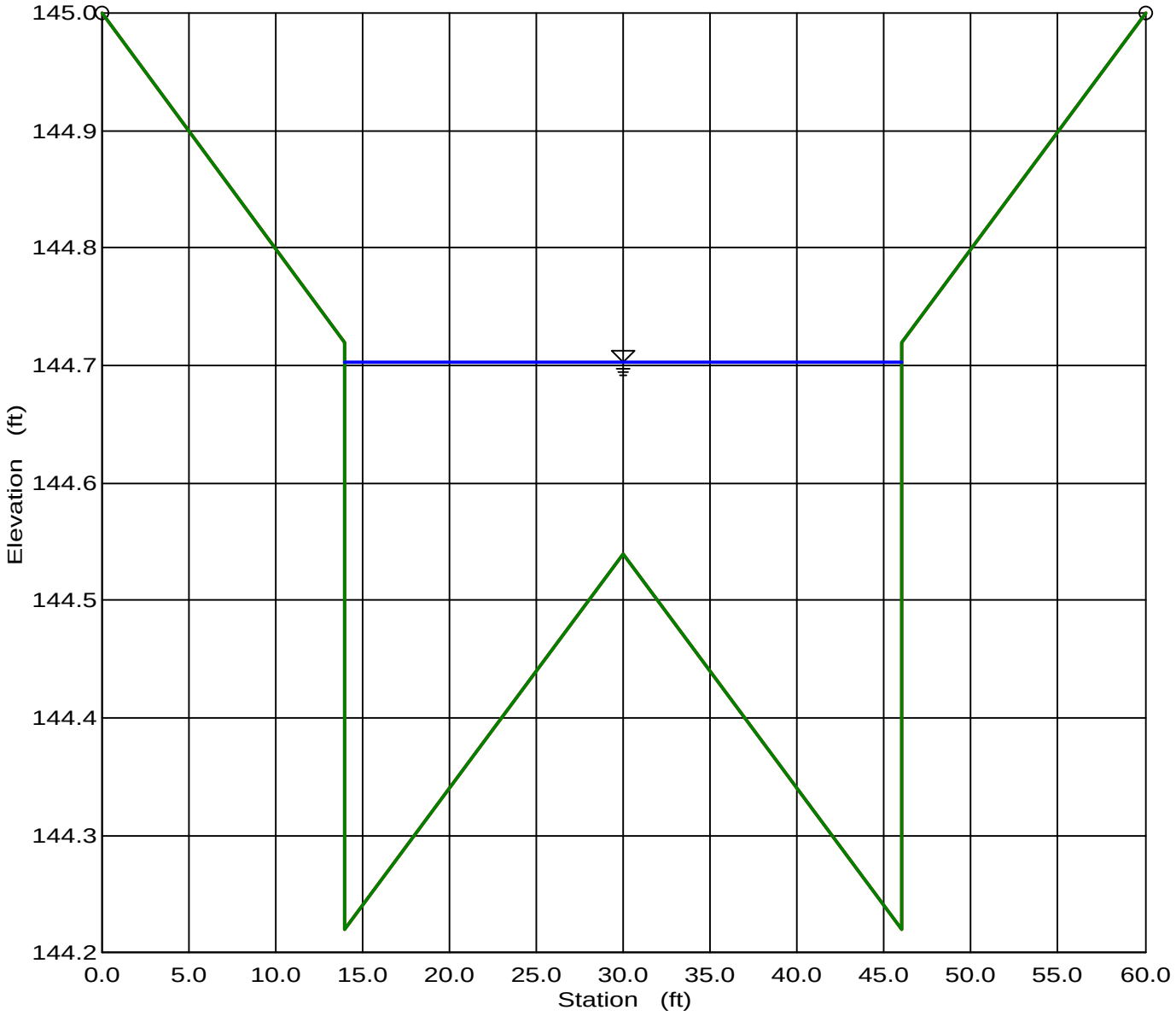
Section Data		
Wtd. Mannings Coefficient	0.013	
Channel Slope	0.020000	ft/ft
Water Surface Elevation	146.15	ft
Discharge	24.64	cfs



Section F-F (Areas A-L Q100)
Cross Section for Irregular Channel

Project Description	
Project File	c:\haestad\fmw\3714 pre.fm2
Worksheet	Section F-F
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

Section Data		
Wtd. Mannings Coefficient	0.013	
Channel Slope	0.020000	ft/ft
Water Surface Elevation	144.70	ft
Discharge	77.28	cfs



APPENDIX F

DETENTION BASIN SIZING

Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Wednesday, Dec 7, 2011

Pond No. 1 - Above Ground Detention

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 140.80 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	140.80	50	0	0
0.20	141.00	6,722	490	490
1.20	142.00	12,602	9,508	9,998
2.20	143.00	16,684	14,594	24,592
3.20	144.00	20,811	18,708	43,300
4.20	145.00	25,543	23,134	66,434

Culvert / Orifice Structures

		[A]	[B]	[C]	[PrfRsr]
Rise (in)	=	0.00	0.00	0.00	0.00
Span (in)	=	0.00	0.00	0.00	0.00
No. Barrels	=	0	0	0	0
Invert El. (ft)	=	0.00	0.00	0.00	0.00
Length (ft)	=	0.00	0.00	0.00	0.00
Slope (%)	=	0.00	0.00	0.00	n/a
N-Value	=	.013	.013	.013	n/a
Orifice Coeff.	=	0.60	0.60	0.60	0.60
Multi-Stage	=	n/a	No	No	No

Weir Structures

		[A]	[B]	[C]	[D]
Crest Len (ft)	=	0.00	0.00	0.00	0.00
Crest El. (ft)	=	0.00	0.00	0.00	0.00
Weir Coeff.	=	3.33	3.33	3.33	3.33
Weir Type	=	---	---	---	---
Multi-Stage	=	No	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	140.80	---	---	---	---	---	---	---	---	---	---	0.000
0.20	490	141.00	---	---	---	---	---	---	---	---	---	---	0.000
1.20	9,998	142.00	---	---	---	---	---	---	---	---	---	---	0.000
2.20	24,592	143.00	---	---	---	---	---	---	---	---	---	---	0.000
3.20	43,300	144.00	---	---	---	---	---	---	---	---	---	---	0.000
4.20	66,434	145.00	---	---	---	---	---	---	---	---	---	---	0.000

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Manual	0.000	1	n/a	0	------	------	------	Q100 Existing (on & off site)
2	Manual	0.000	1	n/a	0	------	------	------	Q100 Developed (on & offsite)
3	Manual	0.000	1	n/a	0	------	------	------	Q100 Dev into diversion structure(Are
4	Diversion1	0.000	1	n/a	0	3	------	------	Q100 not being detained
5	Diversion2	0.000	1	n/a	0	3	------	------	Q100 into det area from div structure
6	Manual	0.000	1	n/a	0	------	------	------	Q100 Existing (on & off site)
7	Combine	0.000	1	n/a	0	5, 6	------	------	Q100 total into detention area
8	Reservoir	0.000	1	n/a	0	7	140.80	0.000	Q100 Detention
10	Manual	0.000	1	n/a	0	------	------	------	Q50 Existing (on & off site)
11	Manual	0.000	1	n/a	0	------	------	------	Q50 Developed (on & off site)
12	Manual	0.000	1	n/a	0	------	------	------	Q50 Dev into diversion structure (Are
13	Diversion1	0.000	1	n/a	0	12	------	------	Q50 not being detained
14	Diversion2	0.000	1	n/a	0	12	------	------	Q50 into diversion structure
15	Manual	0.000	1	n/a	0	------	------	------	Q50 from park into basin(Area N)
16	Combine	0.000	1	n/a	0	14, 15	------	------	Q50 into detention area
17	Reservoir	0.000	1	n/a	0	16	140.80	0.000	Q50 Detention
19	Manual	24.88	1	1155	298,140	------	------	------	Q10 Existing (on & off site)
20	Manual	48.41	1	1154	446,053	------	------	------	Q10 Developed (on & off site)
21	Manual	46.41	1	1154	427,736	------	------	------	Q10 Dev into diversion structure (Are
22	Diversion1	24.88	1	1149	411,089	21	------	------	Q10 not being detained
23	Diversion2	21.53	1	1154	16,648	21	------	------	Q10 into detention area from Div Stru
24	Manual	2.000	1	1155	23,961	------	------	------	Q10 into detention from Park
25	Combine	23.53	1	1155	40,609	23, 24	------	------	Q10 total into detention area
26	Reservoir	0.000	1	n/a	0	25	143.78	39,227	Q10 Detention

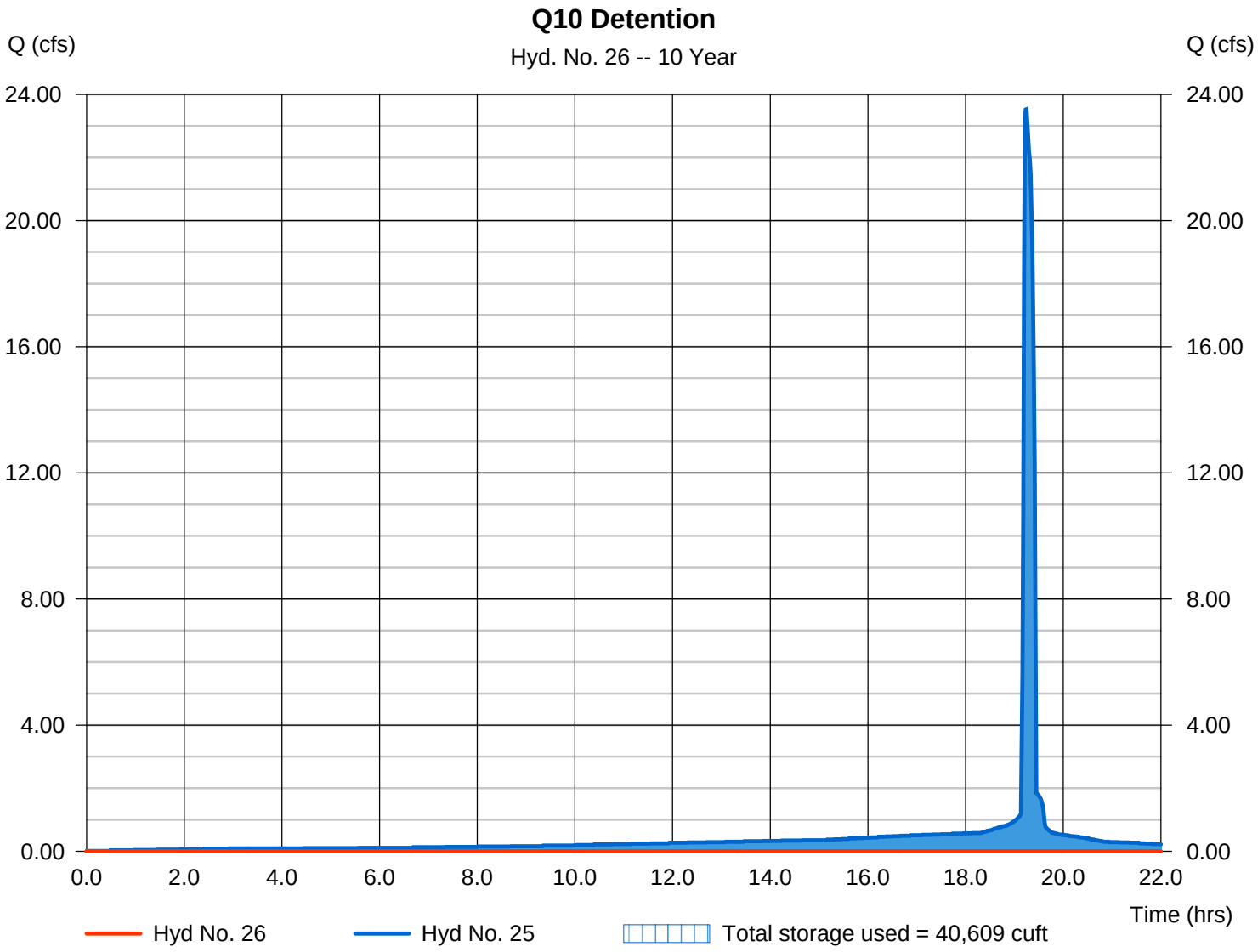
Hydrograph Report

Hyd. No. 26

Q10 Detention

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	10 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	25 - Q10 total into detention area	Max. Elevation	=	143.86 ft
Reservoir name	=	Above Ground Detention	Max. Storage	=	40,609 cuft

Storage Indication method used.



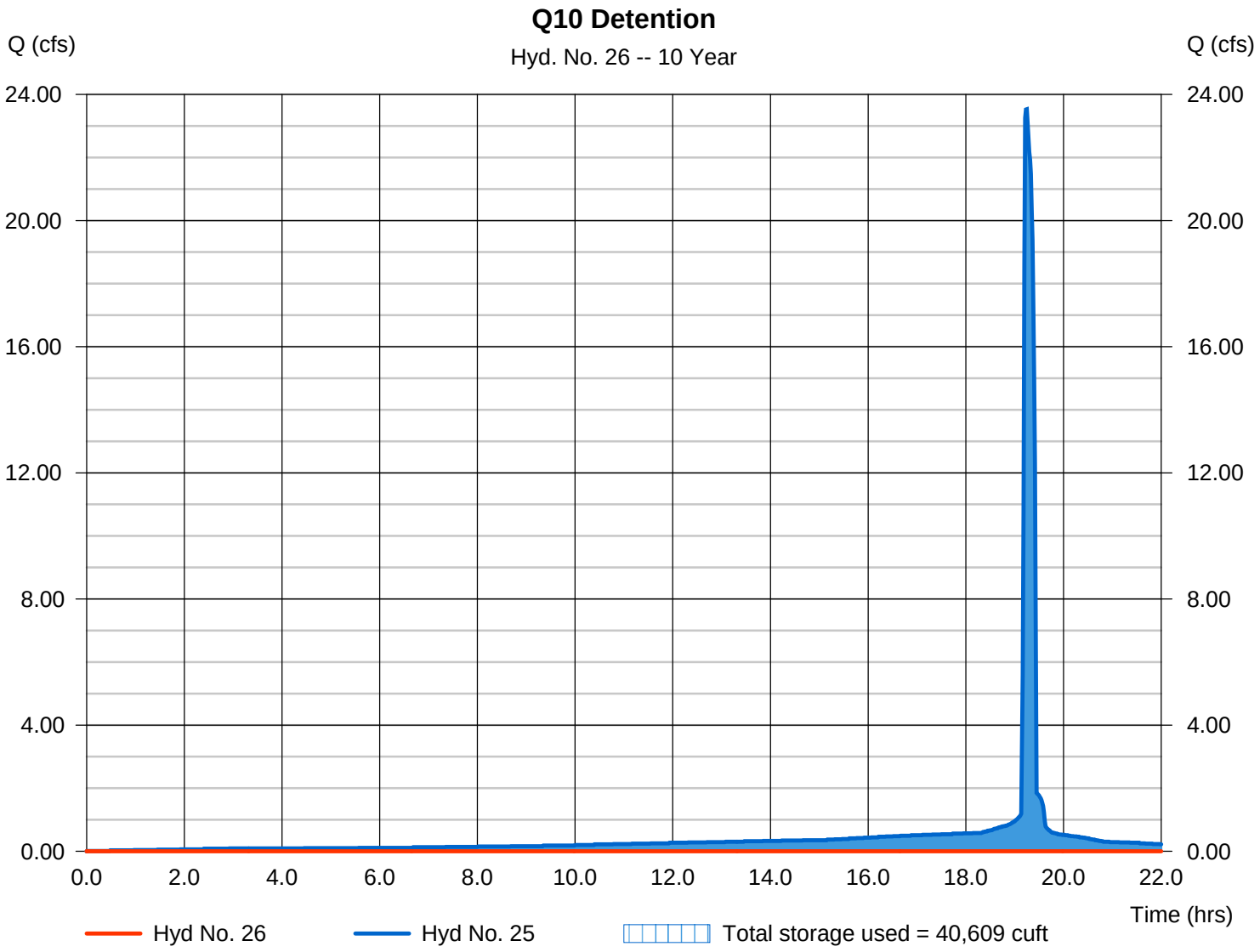
Hydrograph Report

Hyd. No. 26

Q10 Detention

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	10 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	25 - Q10 total into detention area	Max. Elevation	=	143.86 ft
Reservoir name	=	Above Ground Detention	Max. Storage	=	40,609 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Manual	0.000	1	n/a	0	------	------	------	Q100 Existing (on & off site)
2	Manual	0.000	1	n/a	0	------	------	------	Q100 Developed (on & offsite)
3	Manual	0.000	1	n/a	0	------	------	------	Q100 Dev into diversion structure(Are
4	Diversion1	0.000	1	n/a	0	3	------	------	Q100 not being detained
5	Diversion2	0.000	1	n/a	0	3	------	------	Q100 into det area from div structure
6	Manual	0.000	1	n/a	0	------	------	------	Q100 Existing (on & off site)
7	Combine	0.000	1	n/a	0	5, 6	------	------	Q100 total into detention area
8	Reservoir	0.000	1	n/a	0	7	140.80	0.000	Q100 Detention
10	Manual	45.45	1	1153	514,061	------	------	------	Q50 Existing (on & off site)
11	Manual	69.69	1	1153	669,496	------	------	------	Q50 Developed (on & off site)
12	Manual	66.81	1	1153	641,928	------	------	------	Q50 Dev into diversion structure (Are
13	Diversion1	32.20	1	1145	619,799	12	------	------	Q50 not being detained
14	Diversion2	34.61	1	1153	22,130	12	------	------	Q50 into diversion structure
15	Manual	2.880	1	1153	32,579	------	------	------	Q50 from park into basin(Area N)
16	Combine	37.49	1	1153	54,709	14, 15	------	------	Q50 into detention area
17	Reservoir	0.000	1	n/a	0	16	144.49	54,709	Q50 Detention
19	Manual	0.000	1	n/a	0	------	------	------	Q10 Existing (on & off site)
20	Manual	0.000	1	n/a	0	------	------	------	Q10 Developed (on & off site)
21	Manual	0.000	1	n/a	0	------	------	------	Q10 Dev into diversion structure (Are
22	Diversion1	0.000	1	n/a	0	21	------	------	Q10 not being detained
23	Diversion2	0.000	1	n/a	0	21	------	------	Q10 into detention area from Div Stru
24	Manual	0.000	1	n/a	0	------	------	------	Q10 into detention from Park
25	Combine	0.000	1	n/a	0	23, 24	------	------	Q10 total into detention area
26	Reservoir	0.000	1	n/a	0	25	140.80	0.000	Q10 Detention

Hydrograph Report

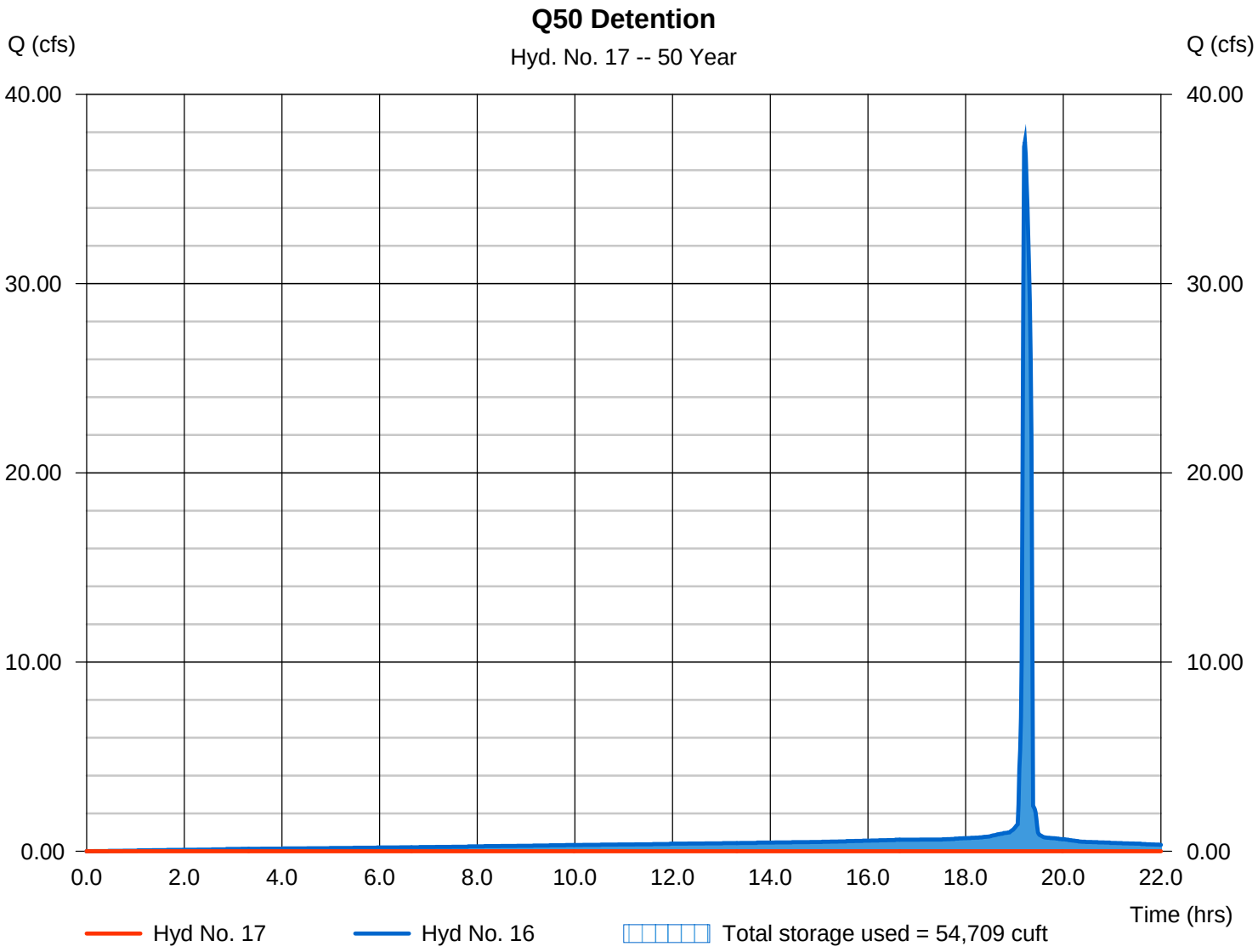
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Wednesday, Dec 7, 2011

Hyd. No. 17

Q50 Detention

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	50 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	16 - Q50 into detention area	Max. Elevation	=	144.49 ft
Reservoir name	=	Above Ground Detention	Max. Storage	=	54,709 cuft

Storage Indication method used.



Hydrograph Report

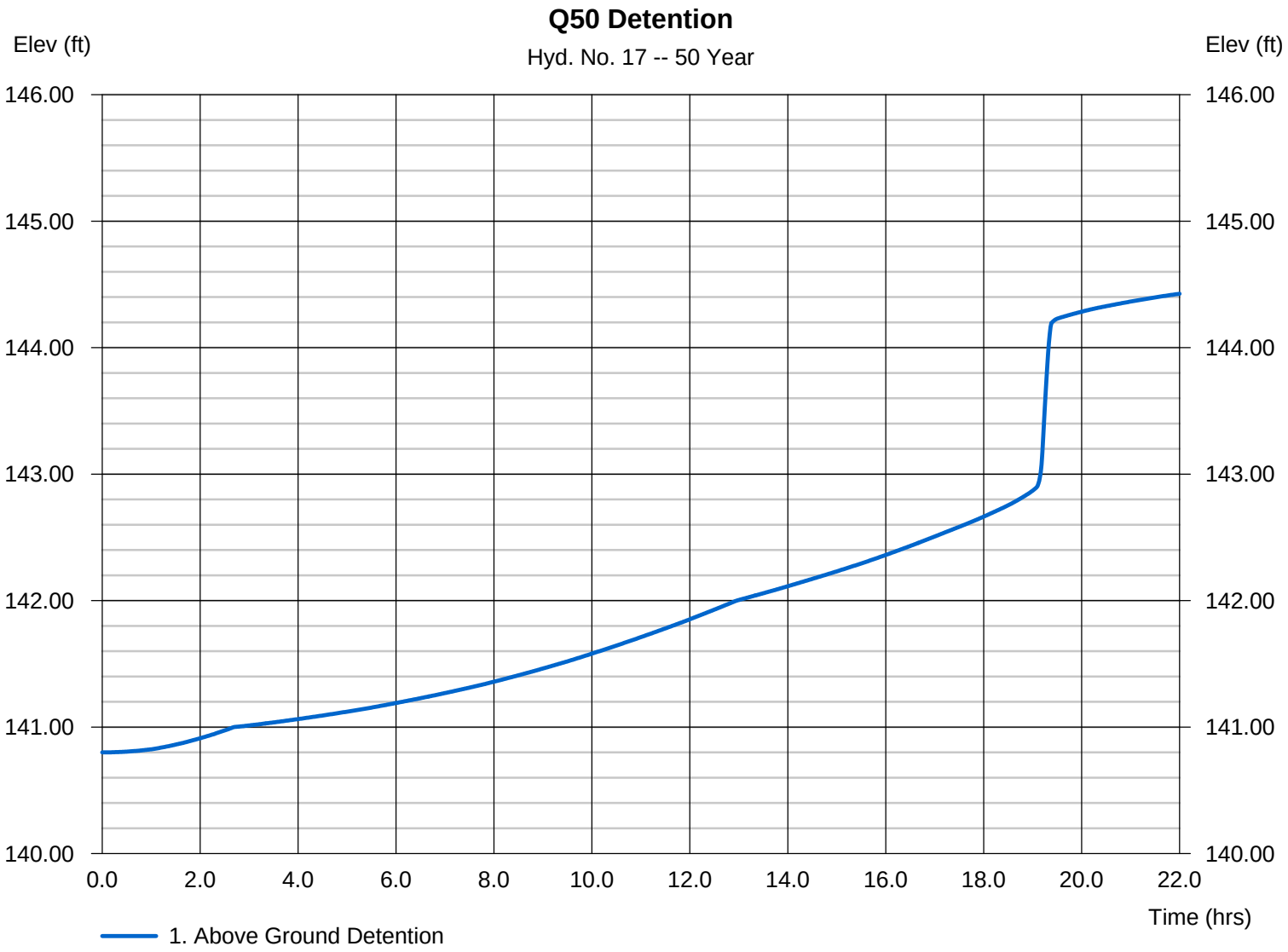
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Wednesday, Dec 7, 2011

Hyd. No. 17

Q50 Detention

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	50 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	16 - Q50 into detention area	Max. Elevation	=	144.49 ft
Reservoir name	=	Above Ground Detention	Max. Storage	=	54,709 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Manual	58.05	1	1154	698,242	------	------	------	Q100 Existing (on & off site)
2	Manual	81.93	1	1153	874,590	------	------	------	Q100 Developed (on & offsite)
3	Manual	78.54	1	1153	838,455	------	------	------	Q100 Dev into diversion structure(Are
4	Diversion1	38.60	1	1148	815,637	3	------	------	Q100 not being detained
5	Diversion2	39.94	1	1153	22,817	3	------	------	Q100 into det area from div structure
6	Manual	3.390	1	1154	40,708	------	------	------	Q100 Existing (on & off site)
7	Combine	43.27	1	1153	63,525	5, 6	------	------	Q100 total into detention area
8	Reservoir	0.000	1	n/a	0	7	144.87	63,524	Q100 Detention
10	Manual	0.000	1	n/a	0	------	------	------	Q50 Existing (on & off site)
11	Manual	0.000	1	n/a	0	------	------	------	Q50 Developed (on & off site)
12	Manual	0.000	1	n/a	0	------	------	------	Q50 Dev into diversion structure (Are
13	Diversion1	0.000	1	n/a	0	12	------	------	Q50 not being detained
14	Diversion2	0.000	1	n/a	0	12	------	------	Q50 into diversion structure
15	Manual	0.000	1	n/a	0	------	------	------	Q50 from park into basin(Area N)
16	Combine	0.000	1	n/a	0	14, 15	------	------	Q50 into detention area
17	Reservoir	0.000	1	n/a	0	16	140.80	0.000	Q50 Detention
19	Manual	0.000	1	n/a	0	------	------	------	Q10 Existing (on & off site)
20	Manual	0.000	1	n/a	0	------	------	------	Q10 Developed (on & off site)
21	Manual	0.000	1	n/a	0	------	------	------	Q10 Dev into diversion structure (Are
22	Diversion1	0.000	1	n/a	0	21	------	------	Q10 not being detained
23	Diversion2	0.000	1	n/a	0	21	------	------	Q10 into detention area from Div Stru
24	Manual	0.000	1	n/a	0	------	------	------	Q10 into detention from Park
25	Combine	0.000	1	n/a	0	23, 24	------	------	Q10 total into detention area
26	Reservoir	0.000	1	n/a	0	25	140.80	0.000	Q10 Detention

Hydrograph Report

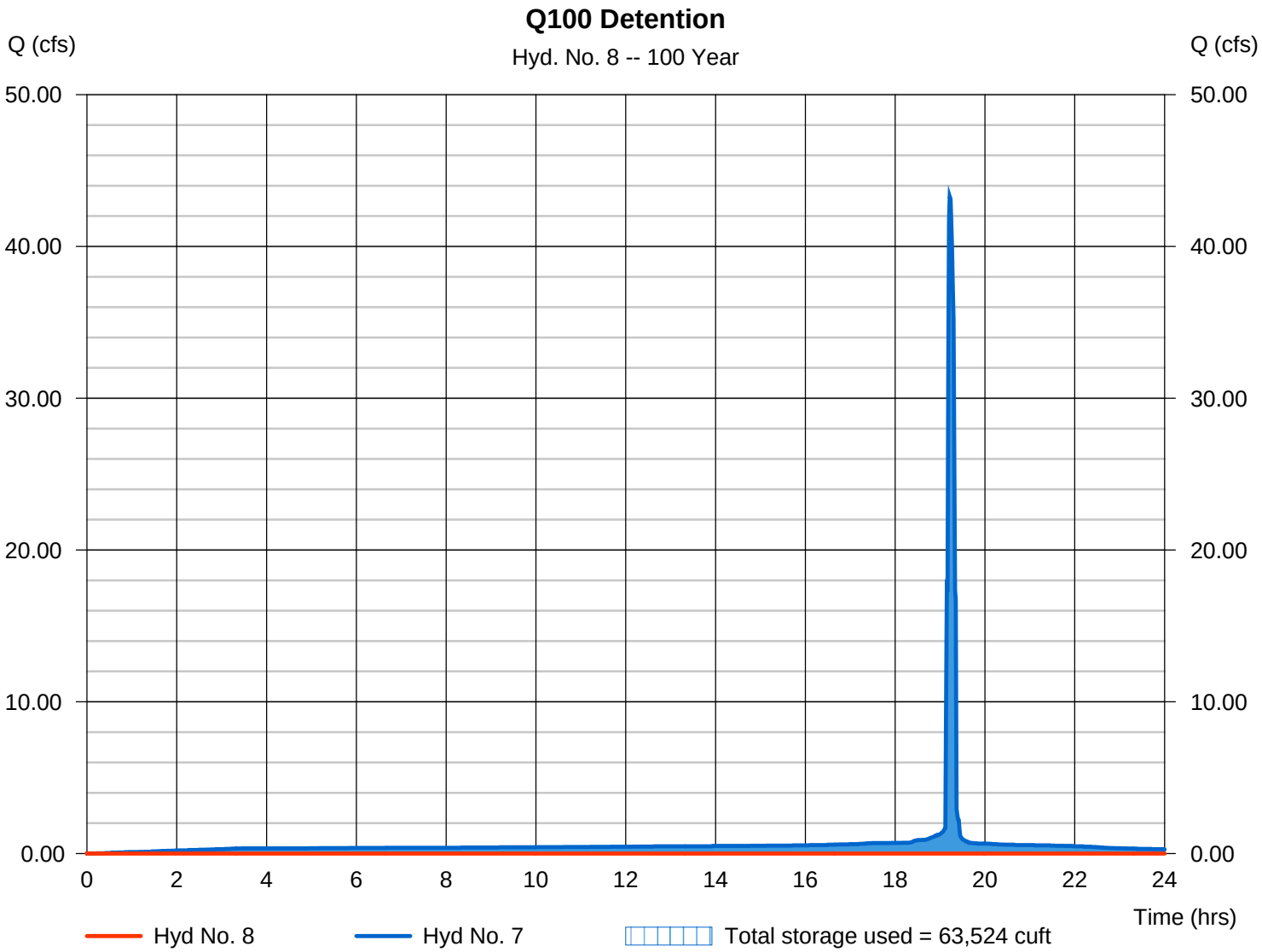
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Wednesday, Dec 7, 2011

Hyd. No. 8

Q100 Detention

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	100 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	7 - Q100 total into detention area	Max. Elevation	=	144.87 ft
Reservoir name	=	Above Ground Detention	Max. Storage	=	63,524 cuft

Storage Indication method used.



Hydrograph Report

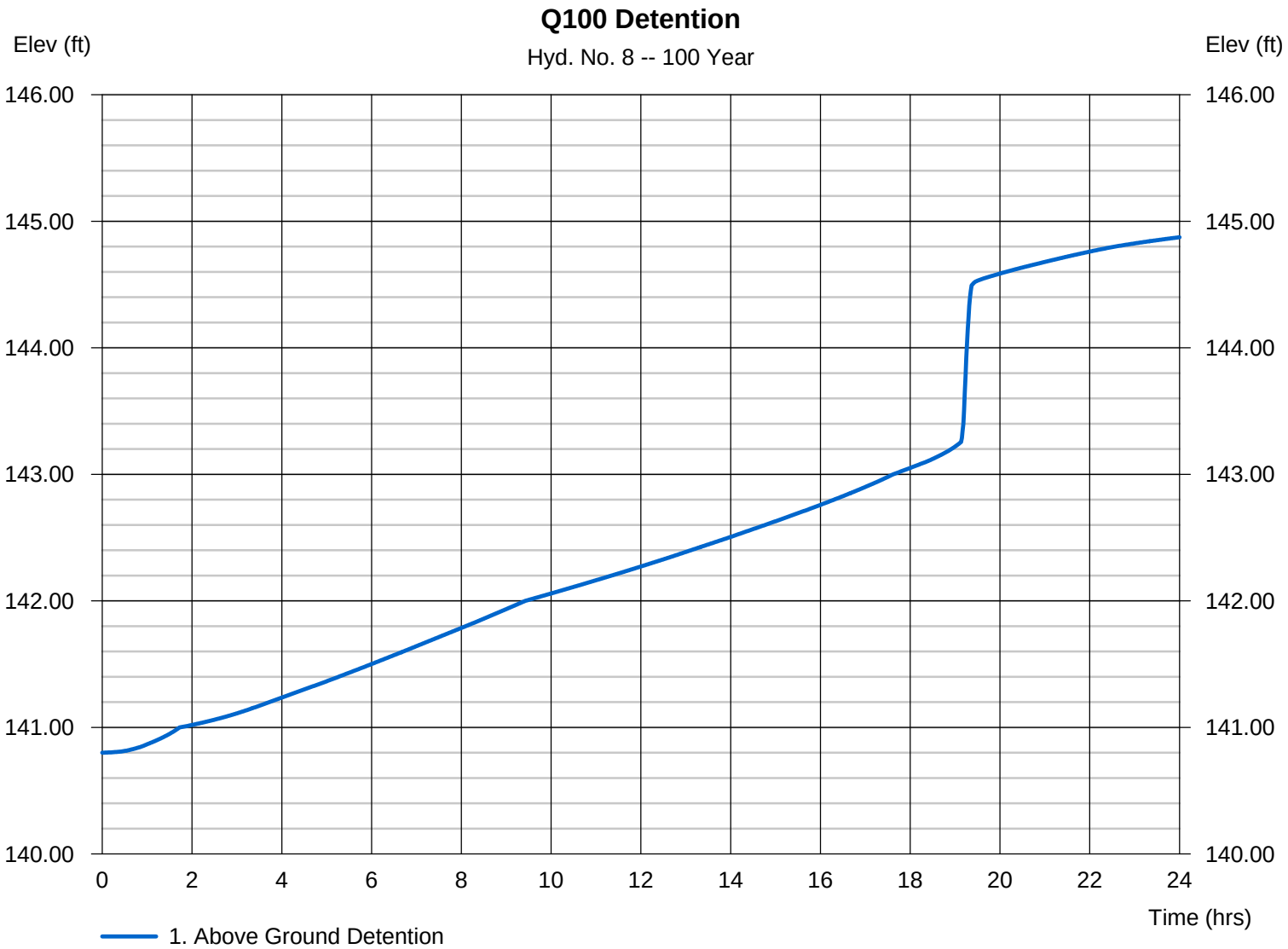
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Wednesday, Dec 7, 2011

Hyd. No. 8

Q100 Detention

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	100 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	7 - Q100 total into detention area	Max. Elevation	=	144.87 ft
Reservoir name	=	Above Ground Detention	Max. Storage	=	63,524 cuft

Storage Indication method used.



APPENDIX G

TREATMENT FACILITIES AND DESCRIPTION

Pervious Pavement Preliminary Sizing

Pavement Geometry:
Width: 6 ft

		Runoff Summary				Volume	
Drainage Area	Area (ac)	Q10 (cfs)	Q50 (cfs)	Q100 (cfs)	Low Flows (cfs)	SQDV* (cf)	Available Length (ft)
B	2.9	5.28	7.60	8.93	0.76	7895.3	475
D	1.6	2.91	4.19	4.93	0.42	4356.0	280
F	2.6	4.73	6.81	8.01	0.68	7078.5	400
I	7.8	14.20	20.44	24.02	2.04	21235.6	1340
J	2.2	4.00	5.76	6.78	0.58	5989.5	350
K	1.2	2.18	3.14	3.70	0.31	3267.0	180
						49821.9	

* SQDV -- Stormwater Quality Design Volume neede to treat the first 3/4" of runoff

Porous Pavement Height	4	in
Porous Pavement Porosity	15	%
Actual Pavement Height available for Treatment	0.6	in
Pavement Base Heigth	5	ft
Pavement Base Porosity	40	%
Actual Base Height Available for Treatment	2	ft
Pervious Pavment Area Available (minus slope effect)	18150	sf
Acutal Area Available due to Street slopes	9982.5	sf
Total Available Volume for Treatment	49912.5	cf

Bio-Swale Preliminary Sizing

Designed per Ventura County Technical Guidance Manual Treatment Control Measure T-2

Swale Geometry:
Side Slopes: 3:1
Bottom Width = 3'

Velocity and Depth were calculated by using Flow Master
L = (7 min)(Flow Velocity)*60

Runoff Summary						Swales Summary		
Drainage Area	Area (ac)	Q10 (cfs)	Q50 (cfs)	Q100 (cfs)	Qtreatment (cfs)	Velocity (ft/sec)	Depth (in)	L (ft)
A	1.00	1.82	2.62	3.08	0.26	0.4	3.5	168
C	1.60	2.91	4.19	4.93	0.42	0.28	1.9	117.6
E	0.90	1.64	2.36	2.77	0.24	0.19	1	79.8
G	1.10	2.00	2.88	3.39	0.29	0.31	2.3	130.2
H	0.90	1.64	2.36	2.77	0.24	0.19	1	79.8
L	1.30	2.37	3.41	4.00	0.34	0.33	2.6	138.6

Grass Swale Filter (GSWF)

Description

Grass Swale Filters (GSWF) are densely vegetated (turf grass) drainageways with gentle sideslopes and gradual slopes in the direction of flow that collect and slowly convey runoff flow to downstream points of discharge. Berms or check dams may be installed perpendicular to flow to provide grade control in steeper slopped areas. Underdrains may be installed at sites with very gradual slopes to avoid standing water. A GSWF is sized to treat the SQDF from the tributary area. Grass Swale Filters are similar to Grass-lined Channels described in Fact Sheet G-5.2 in Section 3, with the only differences being design criteria for hydraulic design parameters (e.g. flow depth, friction factor, and contact time.) Grass Swale Filters require shallower flow depths and longer contact times to provide treatment. Applications of GSWFs are illustrated in Figure 5-3.

General Application

Grass Swale Filters are appropriate for use in residential, commercial, industrial and institutional settings and are typically incorporated into the landscape design of the site. They are often used in conjunction with Turf Buffers or GSTFs to provide effluent collection and conveyance as well as treatment. The contributing flow that can be accommodated by the GSWF will be limited according to the design criteria in this fact sheet. Tributary areas are typically less than 5 acres. Several Grass Swale Filters may be used on a single site, each sized according to the tributary area from which it receives flow. To limit the size of units when space is limited, runoff flow from pervious and off-site areas should not be routed to Grass Swale Filters. Irrigation and regular mowing are required to maintain the turf grass cover.

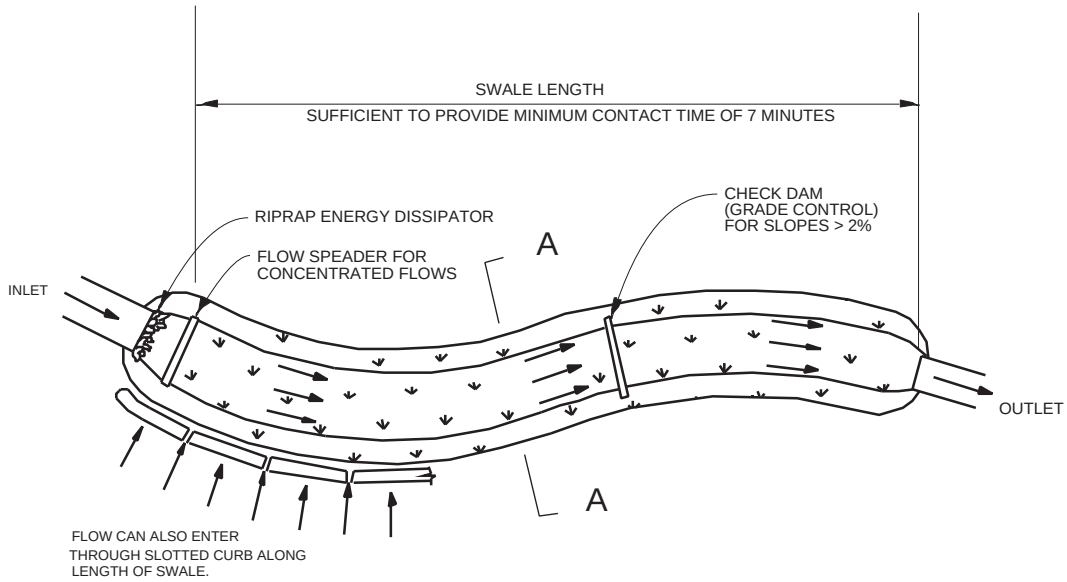
Advantages/Disadvantages

General

Like Grass Strip Filters, Grass Swale Filters are relatively easy to design, install and maintain. Vegetated areas that would normally be included in the site layout, if designed for appropriate flow patterns, may be used as Grass Swale Filters. Landscape architects can easily alter planting schemes to include appropriate turf species to meet design requirements for swales. Finally, maintaining a GSWF often requires little more than normal landscape maintenance activities such as irrigation and mowing. Compared with some other means for improving stormwater runoff quality, grass filters provide a relatively unobtrusive, attractive, long-term and inexpensive stormwater quality management technique. In addition to pollutant removal, GSWFs provide opportunity for infiltration of runoff and reduce peak flows.

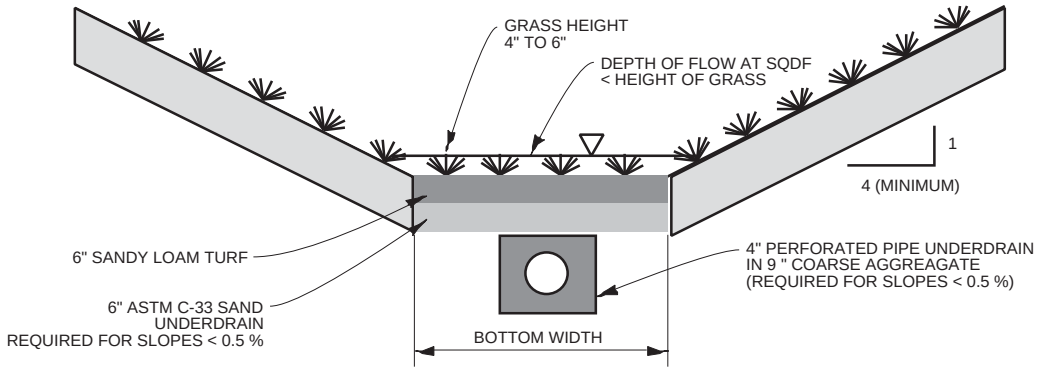
Site Suitability

Grass Swale Filters are not practical for sites with slopes greater than about 4 percent. Underdrains are recommended for design slopes less than 0.5 percent when soils types C or D (see Appendix E) are present.



TRAPEZOIDAL GRASS SWALE PLAN

NOT TO SCALE



TRAPEZOIDAL GRASS SWALE SECTION

NOT TO SCALE

ADAPTED FROM URBAN STORM DRAIN CRITERIA MANUAL
VOL. 3 - BEST MANAGEMENT PRACTICES,
URBAN DRAINAGE AND FLOOD CONTROL DISTRICT,11/99

Figure 5-3 GRASS SWALE FILTER

Pollutant Removal

Relative pollutant removal effectiveness of a GSWF is presented in Table 5-1. Removal effectiveness of GSWF for sediment and particulate forms of metals, nutrients and other pollutants is considered moderate to low. Grass Swale Filters are the least effective of the approved treatment control measures. Consequently, they should generally be used in conjunction with one of the other approved treatment control measures.

Design Criteria and Procedure

Principal design criteria for GSWFs are listed in Table 5-4.

Table 5-4. Grass Swale Filter Design Criteria

Design Parameter	Unit	Design Criteria
Design Flow (SQDF)	cfs	0.1 x $Q_{P,\ 50yr}$
Swale geometry	–	Trapezoidal or triangular
Maximum channel side slope	H:V	4 :1
Minimum slope in flow direction	%	0.2 (provide underdrains for slopes < 0.5)
Maximum slope in flow direction	%	2.0 (provide grade-control checks for slopes >2.0)
Maximum flow velocity	ft/sec	1.0 (based on Manning n = 0.20)
Maximum depth of flow at SQDF	inches	3 to 5 (1 inch below top of grass)
Minimum contact time	minutes	7 (provide sufficient length to yield min contact time)
Minimum length	ft	sufficient length to provide minimum contact time
Vegetation	–	Turf grass or approved equal
Grass height	Inches	4 to 6 (mow to maintain height)

Design procedure and application of design criteria are outlined in the following steps:

1.	Design Flow	Determine Stormwater Quality Design Flow (SQDF) for impervious area to be mitigated. $Q_{P,\ SQDF} = 0.1 \times Q_{P,\ 50yr}$ (see Fact Sheet, Section 5)
2.	Swale Geometry	Use tapezoidal or triangular cross section.
3.	Maximum Side Slope	Side slopes shall not be steeper than 4:1 (5:1 or flatter preferred).
4.	Minimum Slope	Slope of the swale in the direction of flow shall not be less than 0.2 percent. Swales with slopes less than 0.5 percent should be provided with underdrains (see Figure 5-3).
5.	Maximum Slope	Slope of the swale in the direction of flow shall not be greater than 2 percent. Provide grade control checks for slopes greater than 2.0 percent (see Figure 5-3).
6.	Flow Velocity	Maximum flow velocity at design flow should not exceed 1.0 ft/sec. based on a Mannings n = 0.20.
7.	Flow Depth	Maximum depth of flow at design flow should not exceed 3 to 5 inches based on a Mannings n = 0.20
8.	Swale Length	Provide length in the flow direction sufficient to yield a minimum contact time of 7 minutes at SQDF. L = (7 min) x (flow velocity, ft/sec) x 60 sec/min
9.	Vegetation	Provide irrigated perennial turf grass to yield full, dense cover. (See Appendix F for suitable grasses) Note: Some local agencies have restrictions on use of irrigated turf grass; consult with local agency regarding selection of appropriate vegetation. Mow to maintain height of 4 to 6 inches.
10.	Drainage and Flood Control	Provide sufficient flow depth for flood event flows to avoid flooding of critical areas or structures

Design Example

A completed design form follows as a design example. Blank design forms are provided in Appendix G.

Design Procedure Form for T-2: Grass Swale Filter (GSWF)

Designer:_____

Company:_____

Date:_____

Project:_____

Location:_____

1. Design Flow	$Q_{P,\ SQDF}$ = 1.0 cfs
2. Swale Geometry a. Swale Bottom Width (b) b. Side slope (Z)	 b = 10.0 ft. Z = 4:1
3. Depth of flow at SQDF (d) (2 ft max, Manning n= 0.20)	d = 4.2 inches
4. Design Slope a. s = 4 percent maximum b. No. of grade controls required	 s = 0.5 % _____ (number)
5. Design flow velocity (Manning n= 0.20)	V = 0.25 ft/sec
6. Design Length L = (7 min) x (flow velocity, ft/sec) x 60	 L = 103 feet
6. Vegetation (describe)	Tall Fescue
7. Outflow Collection (Check type used or describe "Other")	_X_ Grated Inlet ____ Infiltration Trench ____ Underdrain Used ____ Other _____

Notes _____

Construction Considerations

Scheduling

Grass Swale Filters should be established and operational by October 1, unless another schedule has been justified in the Landscape Plan and approved by the local agency. To meet the October 1 deadline, the following schedule must be met:

- Seeding should be conducted during the dry season, no later than September 1 to ensure sufficient vegetation by October 1. Irrigation may be required.
- Within 30 days of seeding, or by September 30, whichever is earlier, the site shall be inspected to determine adequacy of vegetation growth, and to determine if erosion or damage has occurred. Areas of damage shall be repaired, seeded, and mulched immediately.
- If vegetation growth is insufficient, or excessive damage or erosion has occurred, the site should be further stabilized with other appropriate erosion control measures such as matting, mulching, etc. If the site can not be adequately stabilized prior to October 1, temporary measures must be installed to divert storm flows around the swale until adequate vegetation and stabilization occurs.

During Construction

All construction activity BMPs must remain in place to prevent high sediment loads into the GSWF, if active construction is being conducted upstream of the GSWF. If necessary additional BMPs must be installed.

Post Construction

After all construction activities are complete, temporary BMPs to protect the integrity of the GSWF shall be installed, if necessary, until:

- the drainage area for the GSWF is adequately stabilized,
- vegetation in the GSWF is adequately established, and
- the GSWF maintenance plan is fully implemented.

Maintenance Requirements

To provide optimum treatment, Grass Swale Filters need to be regularly maintained to ensure a dense vegetation growth, and to prevent erosion of the underlying soils.

Maintenance Agreement

Treatment controls are to be maintained by the owner/operator. Maintenance agreement between the owner/operator of the Grass Swale Filters and the local agency may be required. (See Appendix C for example maintenance agreement.)

Maintenance Plan

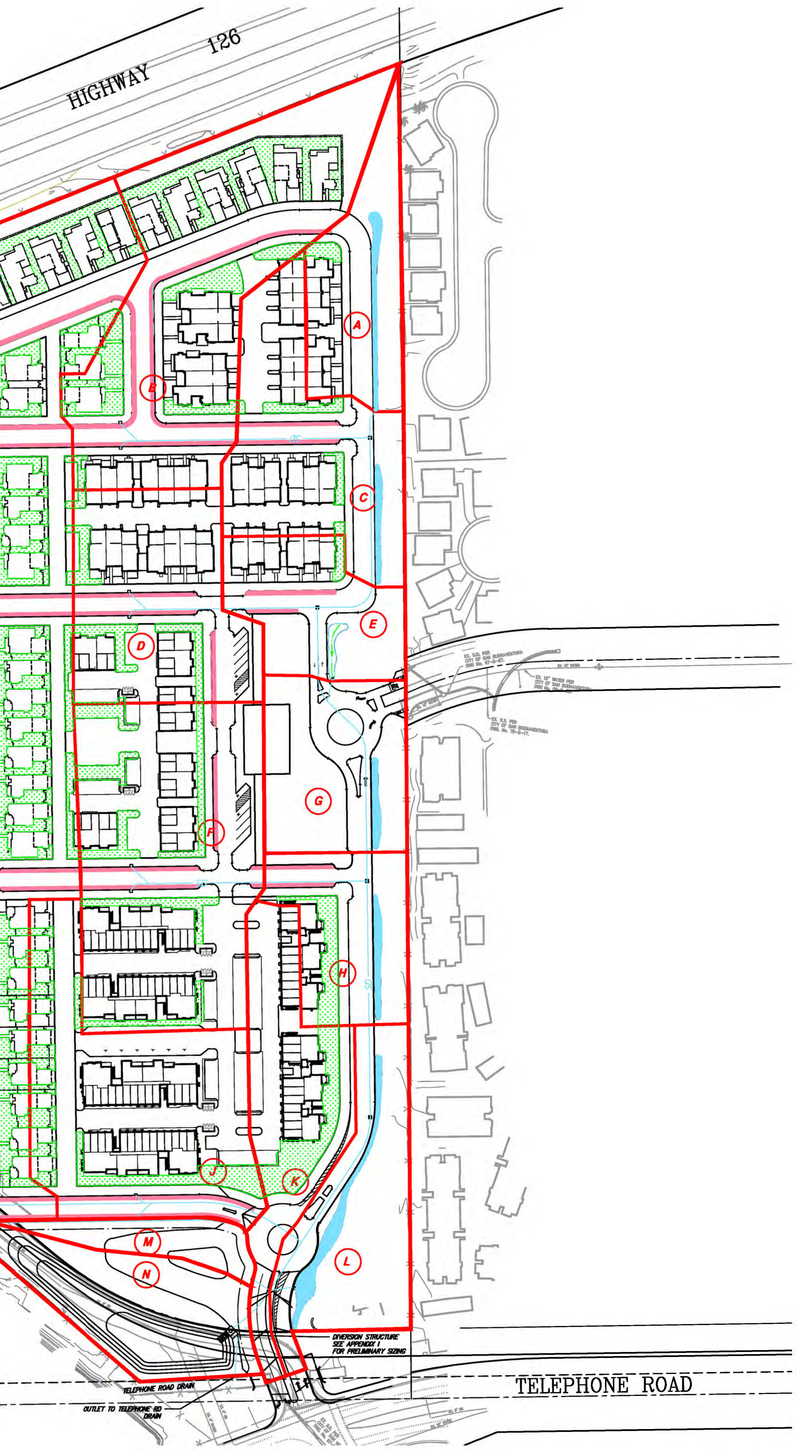
A post-construction Maintenance Plan shall be prepared and made available at the local agency's request. The Maintenance Plan should address at least the following items (see Appendix D for more detailed suggested Maintenance Plan content and format:

- Operation plan and schedule, including site map;
- Maintenance and cleaning activities and schedule;
- Equipment and resource requirements necessary to operate and maintain facility;
- Responsible party for operation and maintenance activities.

Maintenance Activities

At a minimum the following activities must occur to properly maintain a GSWF:

- Mow regularly to maintain vegetation height between 4 and approximately 6 inches, and to promote thick, dense vegetative growth. Clippings are to be removed immediately after mowing.
- Regularly maintain the GSWF to remove all litter, branches, rocks, or other debris. Damaged areas of the filter strip should be repaired immediately by reseeding and applying mulch.
- Remove all accumulated sediment that may obstruct flow through the GSWF. Replace the grass areas damaged in the process.
- Regularly maintain inlet flow spreader (if applicable).
- Irrigate GSWF during dry season (April through October) when necessary to maintain the vegetation.
- After installing, inspect GSWF after seeding and after major storms. Repair all damage immediately.
- Once the GSWF is established, inspect at least three times per year. Repair all damage immediately.



Bio-Swale Preliminary Sizing

Designed per Ventura County Technical Guidance Manual Treatment Control Me

Swale Geometry:
Side Slopes: 3:1
Bottom Width = 3'

Velocity and Depth were calculated by using Flow Master
L = (7 min)(Flow Velocity)*60

Runoff Summary						Swales S	
Drainage Area	Area (ac)	Q10 (cfs)	Q50 (cfs)	Q100 (cfs)	Qtreatment (cfs)	Velocity (ft/sec)	Depth (in)
A	1.00	1.82	2.62	3.08	0.26	0.4	3.5
C	1.60	2.91	4.19	4.93	0.42	0.28	1.9
E	0.90	1.64	2.36	2.77	0.24	0.19	1
G	1.10	2.00	2.88	3.39	0.29	0.31	2.3
H	0.90	1.64	2.36	2.77	0.24	0.19	1
L	1.30	2.37	3.41	4.00	0.34	0.33	2.6

Pervious Pavement/Infiltration Trench Preliminary Sizing

Trench/Pavement Geometry:
Width: 6 ft
Depth 3 ft

Runoff Summary						Swales Sum	
Drainage Area	Area (ac)	Q10 (cfs)	Q50 (cfs)	Q100 (cfs)	Low Flows (cfs)	SQDV* (cf)	Available Length (ft)
B	2.9	5.28	7.60	8.93	0.76	7895.3	475
D	1.6	2.91	4.19	4.93	0.42	4356.0	280
F	2.6	4.73	6.81	8.01	0.68	7078.5	400
I	7.8	14.20	20.44	24.02	2.04	21235.6	1340
J	2.2	4.00	5.76	6.78	0.58	5989.5	350
K	1.2	2.18	3.14	3.70	0.31	3267.0	180
						49821.9	

* SQDV -- Stormwater Quality Design Volume neede to treat the first 3/4" of runoff

100' 50' 0' 100' 200'
GRAPHIC SCALE: 1"=100'

DEVELOPED CONDITIONS-TREATMENT AREAS

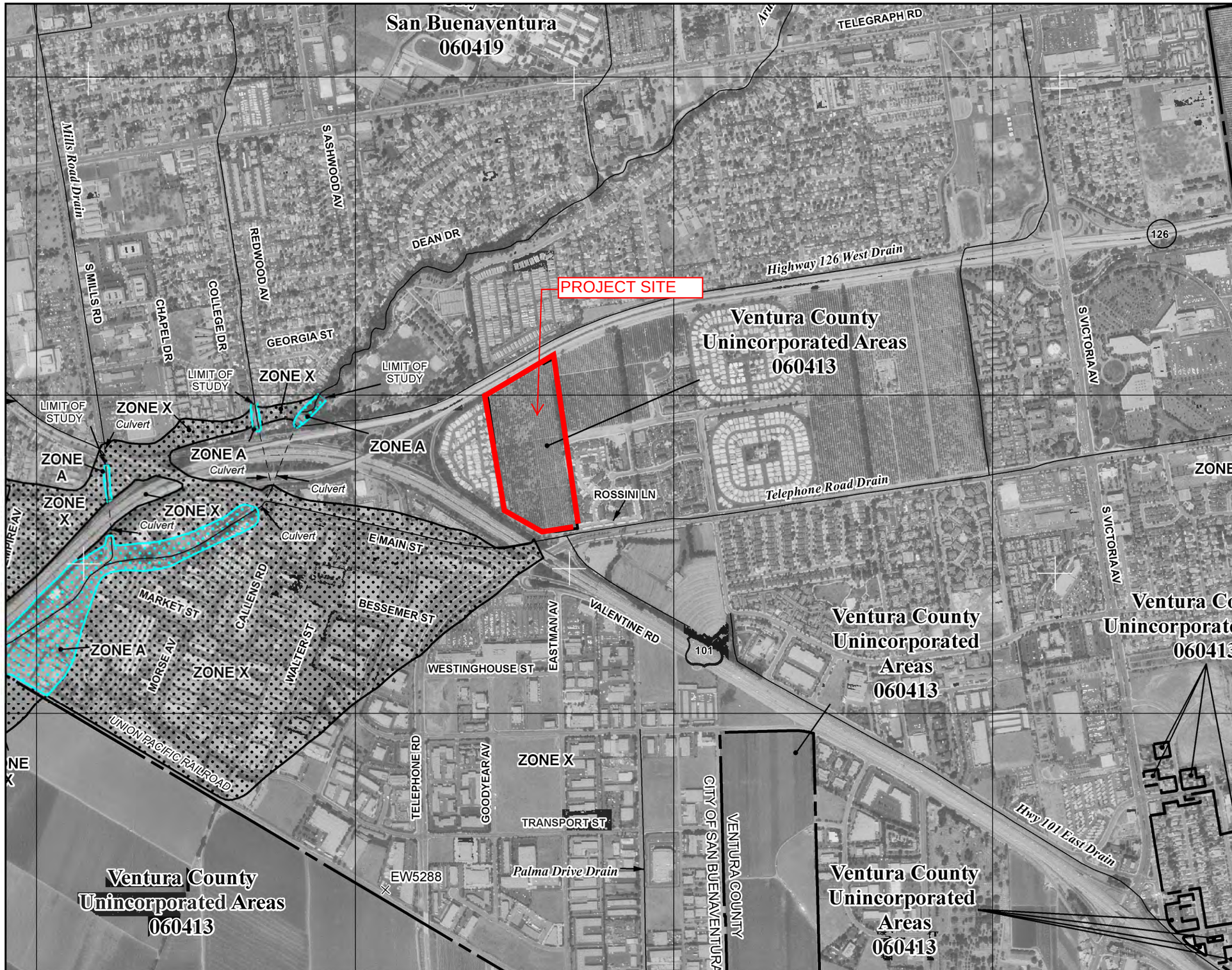
JENSEN DESIGN & SURVEY, INC.
www.jdscivil.com
1672 DONLON STREET
VENTURA, CALIF. 93003
PHONE 805/654-6977
FAX 805/654-6979

SCALE: 1"=100'
J.N.: BR03 3714
DATE: AUG. 17, 2010
DWG. NAME: 3714 Treatment Facility Exhibit.dwg

HYD
TE
COUNTY OF V

APPENDIX H

FLOOD INSURANCE RATE MAP



MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

METER

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0765E

FIRM

FLOOD INSURANCE RATE MAP

VENTURA COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 765 OF 1275
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
SAN BUENAVENTURA, CITY OF	060419	0765	E
VENTURA COUNTY	060413	0765	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06111C0765E

EFFECTIVE DATE
JANUARY 20, 2010

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

APPENDIX I

DIVERSION STRUCTURE

Detention Summary

		Q10 (cfs)	Q50 (cfs)	Q100 (cfs)
1	Total developed runoff	48.41	69.69	81.93
1	Runoff directed to Diversion Structure (Areas A-M)	46.41	66.81	78.54
2	Runoff from the Park directed to Detention Basin (Areas N)	2.00	2.88	3.39
3	Allowable Runoff (Pre-developed Conditions)	24.88	45.55	58.05
6	Actual Runoff leaving site without being detained (see Diversion structure analysis in appendix I- through orifice 1)	24.93	32.19	38.64
7	Actual Runoff directed to underground basin from diversion structure (see Diversion structure analysis in appendix I - through orifice 2)	21.04	34.62	39.90
8	Runoff being directed to underground detention area from Park Area N)	2.00	2.88	3.39
9	Total Runoff directed to detention area from diversion structure and Areas B15-B16	23.04	37.51	43.29

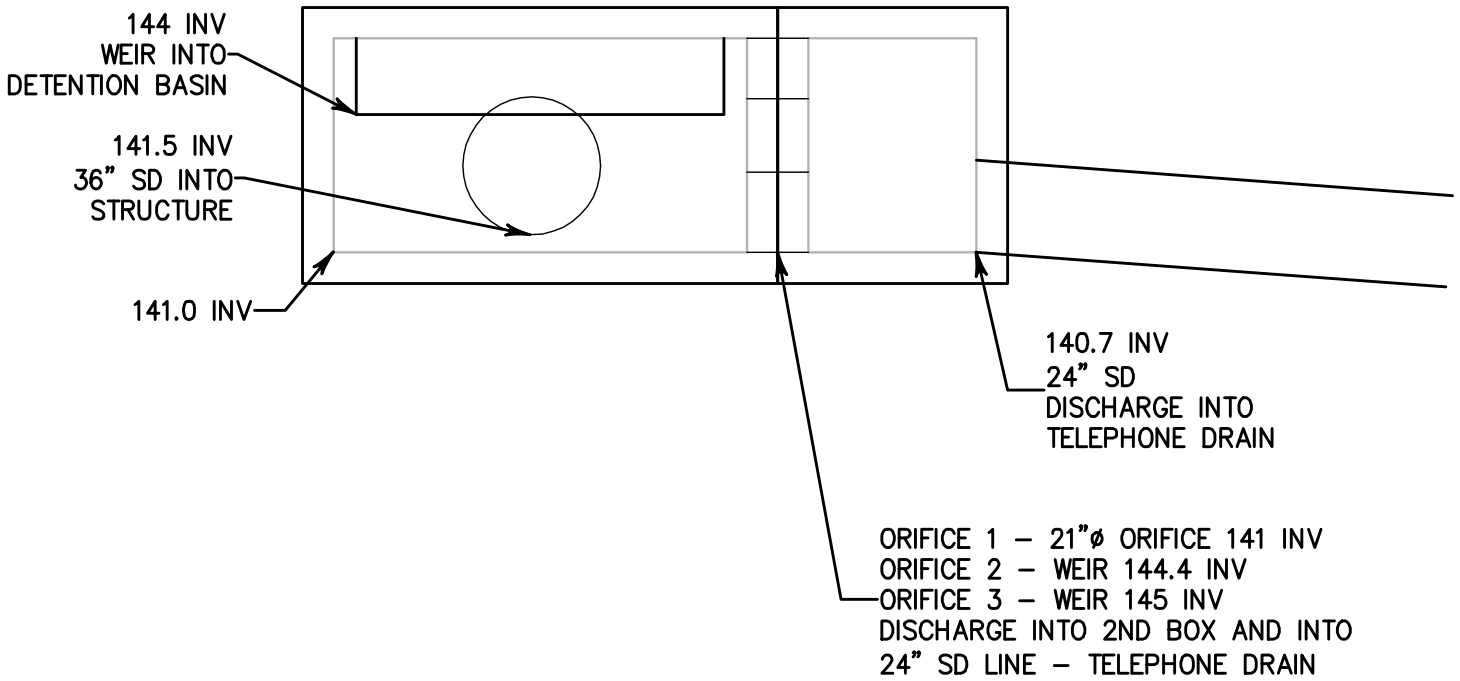
Orifice Equation Q=CA(2gh)^0.5

Orifice Coefficient C 0.61
Gravity g 32.2 ft/sec^2

Rectangular Weir Equation Q=CLH^1.5

C 0.63
L = Weir Length
H = Head

			Orifice No. 1 (Flow not being detained)	Orifice No. 2 (Flow not being detained)	Orifice No. 3 (Flow not being detained)	Weir (Flow directed to Detention Basin)	
	Elevation (ft)	Q Dev (cfs)	21" (141inv)	Weir (L=7', Inv=145)	Weir (L=1', Inv=144.4)	Weir (L=8', Inv=144)	Total Runoff not detained (cfs)
Bottom of Box	141.00	---					
10-yr Allowable	143.62	24.9	19.1	---	---	---	19.1
50-Yr Allowable	144.99	45.5	23.5	---	1.3	20.7	24.9
10-Yr Developed	145.00	46.4	23.5	---	1.4	21.0	24.9
100-Yr Allowable	145.25	58.0	24.3	2.3	2.2	29.2	28.8
50-Yr Developed	145.40	66.8	24.7	4.7	2.8	34.6	32.2
100-Yr Developed	145.64	78.5	25.4	9.4	3.9	39.9	38.6



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The Grove TT 5626

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Appendix 4.11 **1) Update to the Noise Study for The Grove Residential Project prepared by Rincon Consultants dated February 29, 2012; 2) 2011 Update to the Traffic Noise Study prepared by Rincon Consultants dated March 15, 2011**

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February 29, 2012

Kioren Moss
Moss & Associates
3319 Telegraph Road, Suite 210
Ventura, California 93003

Subject: Update to the Noise Study for The Grove Residential Project
City of San Buenaventura, California

This letter is an update to the noise study prepared for The Grove Residential Project in March 2011. The purpose of the update is to provide an assessment of whether or not changes to the proposed mix and distribution of onsite land uses would affect the conclusions with respect to the project's noise impacts.

The site plan analyzed in the March 2011 study assumed a land use of 60 single family dwellings, 60 apartments, 100 condominiums, 20 live/work units, and 8,000 square feet (sf) of office/mixed use space. The new site plan includes 60 single family dwellings, 50 condominiums, 142 apartments, and up to 4,000 sf of office/mixed use space. The new land use scenario is similar, but re-distributed slightly.

As indicated in the February 22, 2012 traffic impact evaluation prepared by Austin-Foust Associates, Inc., the uses included in the currently proposed site plan would generate an estimated 1,955 daily vehicle trips, or about 98 fewer trips than would be generated by uses included in the previous site plan. Because of this 5% reduction in overall vehicle trips, the increase in traffic noise associated with the current site plan would be incrementally less than indicated in the March 2011 noise study.

The newly proposed site plan (dated January 10, 2012) alters the relative distances between noise sources on SR 126 and the first row of residences south of the freeway. Consequentially, the height of the wall needed to reduce the ground level exterior sound levels for interior yards is less than that previously proposed for a sound wall located closer to the freeway. Rincon re-analyzed the noise reduction effects of the new sound wall using the TNM® based on the existing peak hour traffic volumes analyzed used in the March 2011 study. Future CNEL was estimated based on the location of the currently proposed lot configurations based on the calculated CNELs from the Rincon March 2011 study. Table 1 contains the results of the analysis.

Table 1. Estimated Future (2025) Site Noise Exposure, CNEL (dBA)

Location	Future Exterior CNEL *	Barrier Height	Barrier Reduction	Mitigated CNEL
Apartment facing Telephone Road	67	None practicable	0.0	67
Lot 1 (southernmost lot)	71	8' west property line	5.9	65
Lot 11 (middle at west property line)	64	8' west property line	4.6	59
Lot 20	67	8' west property line	6.2	61
Lot 22 (NW corner)	72	8' west property line	8.0	64
Lot 23 second floor	77	None practicable	0.0	77
Lot 25	74	10' north property line	9.1	65
Lot 31	74	10' north property line	9.2	65
Lot 31 second floor	76	None practicable	0.0	76
Lot 32	73	10' north property line	9.9	63
Lot 33	67	10' north property line	1.7	65
Lot 58 (adjacent Copeland Dr.)	70	7' south side of lot	5.6	65

** CNEL rounded to nearest whole number.*

As previously discussed in prior reports, acceptable noise levels are found within the middle of the site, but those residences proposed to be located nearest the freeways would be subject to disturbing noise levels. The sound barrier along the north property line previously proposed at 12 feet in height can be reduced to 10 feet in height. This height would achieve the needed future noise reduction because of the difference in location of the barrier relative to an exterior observer within the backyards of the northern units in this current site plan design. Use of the Barrier Design feature in the TNM® also indicated that the barriers extending southward at the edges of Lots 23 and 32 do not have a measurable effect on sound level reduction and therefore are not needed for sound control. The sound barrier does not provide noise attenuation for second floor interior areas.

The proposed 8-foot high sound wall along the western property line and extending east to west at Lot 22 is adequate to meet noise reduction needs. Lot 33 is potentially exposed to high sound levels by the "gap" formed by proposed Public Park A1, however the analysis indicates that the sound walls and the shielding effects of the proposed structures would achieve the 65 CNEL exterior criteria for that lot, as shown in Table 1 above.

The 8-foot high sound wall along the west property line would meet the noise reduction needs of Lot 1 at the southwest corner of the site as currently designed. The "garden wall" for Lot 58 however should be seven feet in height to provide the backyard with sufficient noise reduction to meet the future 65 CNEL exterior criteria. The southernmost apartment building is exposed to high sound levels from Highway 101 on its westernmost side. No practical method is available to shield exterior balconies that face to the south.

The high sound levels associated with existing and future traffic noise from US Highway 101 and State Route 126 require mitigation and the following are recommended to reduce exterior and interior noise levels.

- A sound barrier (solid concrete wall, masonry wall on berm, or other similar construction) should be constructed as illustrated on the January 10, 2012 Concept

Site Plan on the north side of Lots 23 - 32 with a height above the existing ground level of at least 10 feet.

- The sound wall to be built on the west property line adjacent to Lots 1 – 22 as illustrated on the Concept Site Plan shall be at a height above the existing ground level of at least 8 feet.

- A garden wall sound barrier 7 feet in height is recommended for Lot 58 located at the southern end of the site.

- All unshielded units and the second floor of units facing SR126, US101, and Telephone Road should be constructed to include sufficient noise attenuation to reduce interior levels to a CNEL of 45 dBA. This would require, at a minimum, the use of double-paned windows on all windows that are exposed to freeway noise. Such windows should have a minimum STC of 35. Solid-core doors should be used for those doorways facing the freeway or Telephone Road and they should be insulated in conformance with California Title 24 requirements. The exterior wall facing material should be stucco, or other surface with an STC rating of at least 45.

- All units should contain forced air ventilation. All duct work for ventilation should include noise louvers at the exterior outlet and/or duct outlets should be directed either opposite to or perpendicular to the nearest road.

If you have any questions regarding these studies, or if we can provide you with other environmental consulting services, please feel free to contact us.

Sincerely,

RINCON CONSULTANTS, INC.

Joe Power, AICP
Senior Principal

Duane Vander Pluym, D.Env.
Vice-President

2011 UPDATE TO THE TRAFFIC NOISE STUDY

The Grove Residential Development

City of San Buenaventura, Ventura County, California

March 15, 2011

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March 15, 2011
Job No. 10-66250

Kioren Moss
Moss & Associates
3319 Telegraph Road, Suite 210
Ventura California 93003

Subject: Update to the Noise Study for The Grove Residential Project
City of San Buenaventura, California

Dear Mr. Moss:

Rincon Consultants is pleased to submit the enclosed Update to the Traffic Noise Study for the planned residential development located south of State Highway 126 and north of U.S. Highway 101 in the City of San Buenaventura, California. The purpose of the updated noise analysis is to address the changes to the proposed project, including the new locations of residences on the project site as well as the project-generated traffic associated with the new mix of land uses on the project site.

As identified in the original noise study prepared for the project (Rincon Consultants, September 8, 2005), exterior noise levels at the project site are largely created by traffic on the mainline freeways and by heavy traffic volumes on Telephone Road. Acceptable noise levels are found within the middle of the site, but those residences proposed to be located nearest the freeways will require sound mitigation in the form of sound walls to reduce sound levels in useable yard space for the single family residential and townhomes and structural requirements to reduce interior noise to an acceptable level. As with the previously analyzed project, project-generated traffic would not cause any audible increase in roadway noise. As such, project generated traffic would not adversely affect sensitive uses in the project area.

If you have any questions regarding these studies, or if we can provide you with other environmental consulting services, please feel free to contact us.

Sincerely,

RINCON CONSULTANTS, INC.

Sean Wazlaw
Project Manager

Joe Power, AICP
Principal

INTRODUCTION

This report updates a September 2005 noise study previously prepared by Rincon Consultants, which examined the noise impacts of a similar project at the same location. The current study updates the information contained in that September 2005 report, based on the revised project design. For the purpose noise impact analysis, the key differences in the revised project design (also called the "2011 Project") compared to the originally studied project (also called the "2005 Project") are described below:

- The 2005 Project consisted of 208 residential units and did not include any non-residential uses, while the 2011 Project consists of 220 homes, 20 live/work units, and 8,000 square feet of office space.

- The 2011 Project includes a larger park area in the southeastern portion of the site, which creates a greater setback from Telephone Road for the residences located in the southeastern portion of the site.

In all other key aspects, the two versions of the project are substantially similar.

A revised traffic study was prepared for the proposed 2011 Project by Austin-Foust Associates, Inc. in March 2011. The revised traffic study analyzed impacts of the project for existing conditions and year 2012 conditions, the anticipated year of project completion. The previously prepared traffic study (Austin-Foust, 2005) included an analysis of traffic impacts for future year 2025 traffic conditions. This report analyzes existing and future (2025) noise levels associated with the two freeways on the proposed residential use of the site, and also examines the potential impact of site traffic on adjacent land uses. The noise study also provides recommendations regarding noise attenuation measures that may be necessary to reduce noise levels to meet City criteria.

SUMMARY OF FINDINGS

The updated analysis of noise impacts indicates that existing in noise levels in the project vicinity are generally the same as they were in 2005. As with the 2005 Project, the proposed units in the 2011 Project nearest to the freeways and Telephone Road would be exposed to exterior traffic noise levels that exceed the City's general noise suitability criteria of 65 dBA CNEL based on site noise measurements on the noise model results. A sound barrier wall 12 feet in height is recommended at the north property line, while barriers varying from eight to nine feet in height are recommended at different locations along the south side of the site. Dual- or triple-paned windows with a minimum Sound Transmission Class (STC) of 35, the use of solid core doors and proper insulation, and walls with an STC rating of at least 45 will be necessary to reduce interior noise levels to the California multi-family residential standard of 45 dBA for those units nearest to the freeways and Telephone Road. Noise generated by project-generated traffic would not adversely affect existing residential uses in the project area.

STUDY METHODS and PROCEDURES

Field Measurements. Field measurements were conducted using a Larson-Davis Model 720 (ANSI Type 2) integrating sound level meter and statistical data logger. Instantaneous sound levels were measured, integrated, and recorded by the sound level meter in 0.1-second intervals. The sound level data collected included date, time, duration of measurement (in seconds), Leq, SEL, statistical sound levels (L90, L50, L33 and L10), Lmax, Lmin, and peak (A-weighted). Noise pass-by events exceeding 70 dBA and time history (current sound power level every 10 seconds) were also logged by the sound level meter. The sound level meter logs the data, which is then transferred to a computer. The set-up consisted of mounting the sound level meter on a tripod with the microphone top at 4.5 feet above the ground surface level as measured with a tape measure. Calibration of the sound level meter prior to measurements was performed using a Larson-Davis Acoustic Calibrator CAL150 using a sound power level of 94 dBA at a frequency of 1,000 Hz. Calibration level was also checked at the end of the measurement period to ensure accurate results.

Field measurements were conducted at three onsite locations to verify ambient noise conditions. The onsite noise measurement locations were on the southwest portion of the site, in the northern portion of the site near SH126 and roughly in the center of the site. Onsite noise measurements consisted of one 20-minute noise measurement at each location.

Traffic Sound Level Modeling. Freeway traffic was modeled using the Federal Highway Administration Traffic Noise Model® (TNM, ver 2.5) based on data provided by Austin-Foust (March 2005; August 2011) and Caltrans in its 2004 and 2009 traffic volumes (Caltrans; 2005, July 2005, and August 2005; December 2010). Please note that the latest truck volume data estimated by Caltrans for SH126 at this location was 4.9% truck volume based on a Year 2009 count, while their previous count in 2009 was about 6% truck volume. Based on anecdotal observations, the 4.9% truck volume number is low. Rincon had previously conducted brief counts of the freeway volume to determine both the apparent truck volume and lane preferences during our analysis of SH126 traffic noise for the Thille Community (Rincon Consultants, 2004). These counts showed a medium- and heavy-duty truck volume of about 7% with a definite lane preference (80%) for trucks in the outside (slow) lanes of the freeway. A slight preference was also noted for automobile travel in the same lanes. Field counts conducted while monitoring at Station 2 for the 2005 noise study indicated truck traffic on the eastbound lanes of over 9%. A truck factor of 7% (3% heavy-duty truck) was also used for SH126 to model traffic sound levels, consistent with the prior study conducted for the City of San Buenaventura. Truck traffic data from Caltrans (December 2010) was used to determine truck volumes on US101 of 3.7% medium-duty truck and 2.5% heavy-duty truck.

Because the TNM® is sensitive to the actual location of the traffic, an outside lane preference of 80% truck and 60% auto was used for SH126. In addition, Caltrans traffic data indicated that rather than a typical 50/50 split between east and west bound travel, the split was 54/46 for east/west traffic. Lane preference was also modeled for US101 with heavy-duty trucks located primarily (70%) on the outside lane and middle lane (30%), and medium duty trucks located in primarily in the two outside lanes also.

The TNM® model does not currently calculate CNEL correctly; therefore, this calculation required that three different traffic volumes be run: peak hour volume, average daily traffic volume, and average nighttime volume for both existing and future (Year 2025 conditions) for a total of six scenarios. Peak hour volumes were based on the peak hour divided by the average annual daily traffic as reported by Caltrans (2009 traffic volumes) for the freeways, and assumed to be 10% for Telephone Road based on the intersection turning volumes provided by Austin-Foust (2011). The proportionate volumes for daytime and nighttime vehicular travel was assumed to be 85% of the vehicle volume during the 15 daytime hours and 15% during the 9 nighttime hours based on prior studies and standard guidelines (Caltrans, 1998b). Future volumes and project traffic distribution were taken from the previous traffic study prepared by Austin-Foust (August 2005).

The TNM® uses algorithms based on speed to calculate the average sound level produced by the three vehicle types of concern (autos, medium-duty trucks, and heavy-duty trucks). A speed check was conducted by driving the freeways in both directions and noting the speeds of the various vehicle types and their chosen lane of travel. Based on this speed check, the following average speeds were generally used in the analysis: 70 mph for autos, 65 mph for medium-duty trucks, and 60 mph for heavy-duty trucks. For the future year analysis, peak hour congestion is anticipated to slow speeds on US101 south of Telephone Road and average speeds were reduced by 5 mph for the peak hour condition. The results of the modeling indicate that of the three vehicle types, automobiles are the primary generator of traffic noise, followed by the heavy-duty trucks.

As part of the previously prepared noise study, the locations of road lanes, existing barriers, and houses were digitized into the TNM® model from both an aerial photograph of the site and digital data (AutoCAD drawing) of the site base map provided by Moss & Associates. The 2011 Project includes a larger park area in the southeastern portion of the site, which creates a greater setback from Telephone Road for the residences located in the southeastern portion of the site. As such, the locations of the residences in the southeastern portion of the site were adjusted accordingly in the TNM® model. Otherwise, previous locations of residences and the corresponding labels were not modified. Topographical elevations were also taken from the digital data; however, sufficient modeling of the roadway sources required an extension of the freeway lanes based on the aerial photographs and an estimation of the freeway elevations that were not on the maps based on the USGS topographic map for the Saticoy Quadrangle. It was also assumed that the ground elevation of the future residences would be at the current ground level. In addition, the height of the freeway over-crossings was determined using an Opti-Logic 600LH laser rangefinder/hypsometer, which uses a pulsed laser rangefinder and vertical angle sensor to determine height. Its range resolution is one foot and height accuracy is ±1.5 feet. Appendix A contains the results of the noise model, Appendix B contains the traffic data for the six scenarios modeled, and Appendix C contains the basic input data files required for all six scenarios for the TNM® model.

The noise model was checked for calibration based on the field noise measurements conducted at the site. The existing peak hour condition was compared to the peak hour noise measurements with good agreement (approximately 1 dBA difference) obtained for the three measurement sites. The model under-estimated noise levels at the measurement site along the western property edge, but this may have been due to other sources present at the time of the

ambient noise measurement. Given the generally good agreement of the model to field conditions, adjustments were deemed unnecessary.

The field measurements and the TNM® model are subject to various errors. Field measurements are essentially a "snapshot" in time and are indicative of the environmental conditions and travel patterns that existed on the days of the measurements, and these can vary substantially from day to day and season to season. The noise model is subject to the limitations of the data readily available, including the accuracy of elevations taken from the digital and paper maps as compared to actual field conditions, and the inaccuracies created by digitizing from paper sources. Therefore, the accuracy of the sound levels reported in this study is considered to be in the ±2 dB range.

NOISE ANALYSIS

Existing Conditions. Field measurements were conducted March 8, the results of which are presented in Table 1. These measurements verify that noise levels on the project site are similar to the noise measurement results contained in the 2005 noise study.

Table 1
Field Measurement Data (dBA)

Location	Leq	Lmax	Lmin	Peak	L(10)	L(33)	L(50)	L(90)
Southwestern Portion of Site, near Copland Drive	67.8	73.3	60	86.5	98.1	69.8	68.4	67.5
Northwestern Portion of Site	64.0	76.6	58.6	97.6	102.6	65.7	64.4	63.7
Center of Site	61.1	67.5	58	87.3	102.6	62.4	61.5	61.1

Traffic noise was generally the main noise source for measurements conducted offsite along access roads to the site. Traffic noise levels at the site were calculated by the methodology described above (Table 2). Noise levels at the periphery of the site nearest the freeways are greater than that considered normally acceptable for residential use, with sound levels near 70 dBA CNEL along SH126 and 69 dBA CNEL for those units nearest to US101. Given standard construction materials, it is probable that interior noise levels for those units in each complex with windows facing the freeway would have unacceptably high sound levels (exceed 45 dBA CNEL for interior uses). Sound levels in the center of the site are less than the City's criteria and so are at an acceptable level. Development of the proposed residential structures will further reduce projected sound levels for those proposed residences located in the interior of the site.

Future Conditions. The effect of future sound levels due to traffic growth on the freeway and local road system was also analyzed based on the traffic volumes for year 2025 provided by Austin-Foust (2005). Table 3 indicates that the increase in future traffic noise levels is projected to be 1 dBA or less, and would not be generally perceivable to the general populace.

Table 2
Calculated Existing Site Noise Exposure (dBA)

Location	Night Leq	Daytime Leq	Peak Hour Leq	Existing CNEL	Recommended Barrier Height	Barrier Reduction	Mitigated CNEL
Townhouse NE	62.1	67.4	69.8	70.5	12.0	7.3	63.2
Townhouse NW	61.7	67.1	69.5	70.2	12.0	6.7	63.5
Townhouse second floor	64.4	69.8	72.2	72.9	12.0	5.9	67.0
House 1 (along SH 126)	62.4	67.7	70.2	70.9	12.0	6.9	64.0
House 2 (along SH 126)	61.9	67.3	69.8	70.4	12.0	5.1	65.3
House 3 (along SH 126)	58.2	63.5	66.0	66.7	12.0	1.4	65.3
SH126 House 2nd floor	66.0	71.4	73.8	74.5	12.0	5.8	68.7
House 4 (middle site at west property line)	55.1	60.2	62.5	63.4	none	0.1	63.3
House 5 (along US101)	61.7	66.8	68.2	70.0	9.0	5.6	64.4
House 6 (along US101)	62.1	67.2	68.5	70.4	8.0	7.9	62.5
House 7 (along US101)	61.1	66.1	67.9	69.4	8.0	2.9	66.5
Hwy 101 House 2nd floor	64.4	69.4	70.9	72.7	none	0.1	72.6
Apartment SW*	60.5	65.5	67.1	68.8	8.0	1.1	67.7
Apartment SE*	56.7	61.7	63.9	65.0	8.0	0.2	64.8
Apartment 2nd floor*	62.5	67.5	69.1	70.8	none	0.2	70.6

**Indicates receptor locations that have changed since the previously prepared noise analysis for the 2005 Project.*

Table 3
Calculated Future (2025) Site Noise Exposure, CNEL (dBA)

Location	Night Leq	Daytime Leq	Peak Hour Leq	Future CNEL	Recommended Barrier Height	Barrier Reduction	Mitigated CNEL
Townhouse NE	62.7	67.9	70.4	71.1	12.0	7.3	63.8
Townhouse NW	62.3	67.6	70.1	70.8	12.0	6.7	64.1
Townhouse second floor	65.0	70.3	72.8	73.5	12.0	5.9	67.6
House 1 (along SH 126)	63.0	68.3	70.7	71.4	12.0	6.9	64.5
House 2 (along SH 126)	62.5	67.8	70.3	71.0	12.0	5.1	65.9
House 3 (along SH 126)	58.8	64.1	66.4	67.2	12.0	1.4	65.2
SH126 House 2nd floor	66.6	71.9	74.4	75.1	12.0	5.8	68.6
House 4 (middle site at west property line)	55.9	61.0	62.5	64.2	none	0.1	63.4
House 5 (along US101)	62.6	67.7	68.8	70.9	9.0	5.6	66.7
House 6 (along US101)	63.0	68.0	69.1	71.2	8.0	7.9	64.3
House 7 (along US101)	62.0	67.0	68.0	70.2	8.0	2.9	66.9
Hwy 101 House 2nd floor	65.3	70.3	71.3	73.5	none	0.1	72.9
Apartment SW*	61.4	66.4	67.7	69.6	8.0	1.1	67.0
Apartment SE*	57.6	62.7	63.7	65.9	8.0	0.2	65.8
Apartment 2nd floor*	63.4	68.5	69.7	71.7	none	0.2	71.7

**Indicates receptor locations that have changed since the previously prepared noise analysis for the 2005 Project.*

Site Mitigation. The recommended dimension and locations of the sound barrier walls identified in the noise analysis conducted for the 2005 Project would also be recommended for the redesigned project, with the exception of one modification to the recommended sound barrier wall in the southeastern portion of the site. The previously recommended height of the barrier wall located at the southeastern property boundary (between the proposed access road

and the east property line) was 6 feet. Based on the updated noise analysis, the recommended height of the barrier wall at the southern property line is now 8 feet. Below is a summary of the sound barriers walls recommended for the proposed project.

An existing berm and wall system is located east of the site between SH126 and the linear park and current residential community. A potential mitigation sound barrier would connect to this wall and extend along the north property line to the west side of the site, thereby reducing noise impacts for those residences located nearest to SH126. The noise modeling included the use of perturbable barrier heights for individual barrier segments to determine the appropriate height for this wall. In this instance, a 6-foot high solid barrier would produce only a 2-3 dB reduction for the proposed residences, with a 9-foot wall providing 4.5-5 dB reduction. This latter reduction would reduce the freeway sound level to about the City criteria of 65 dBA CNEL for existing conditions, but a 12-foot wall is necessary to meet this criteria for future conditions as indicated in Table 3 (see Townhouses and Houses 1-3). This barrier would not be sufficient to reduce noise levels at second floor locations to below the 65 dBA CNEL.

Similarly, a barrier along the east side of Copeland Circle at the southwest corner of the property was considered to provide noise reduction for the single family houses located at the southern end of the site (represented as Houses 5-7) and for the park area located in this area. A 9-foot high wall would be needed to reduce traffic noise levels for most of these residences exterior ground floor space and for the park; however, the residence in the southeast corner (represented as House 7) would be exposed to traffic noise from Telephone Road via the access road and levels would continue to exceed exterior standards.

As an alternative, a garden wall at the property line of these four single-family residences would be more effective at reducing levels interior to the wall, with an 8-foot high masonry wall on the south and east side providing suitable sound attenuation. A 6-foot wall on the west side of these four residences is also recommended. This garden wall would reduce the sound levels at House 7 by 2 dB more than the 9-foot wall further away, but the garden wall would not provide any attenuation for the park, which would experience sound levels of about 70 dBA CNEL.

To reduce noise levels for the residences in the southwest corner of the property, a 9-foot sound wall is needed along both Copeland Court and extending for approximately 155 feet along the property line between the existing mobile home park and the proposed single family residences. Model results indicate that this wall would not be expected to significantly affect the mobile home residences as a result of reflection; nonetheless, it is recommended that the wall be surface treated to reduce reflective energy.

An 8-foot solid barrier wall located at the southeastern property boundary (between the proposed access road and the east property line) would provide 2-3 dB of attenuation for the ground floor of the nearest apartment building by reducing traffic noise associated with Telephone Road. While this is insufficient to reduce exterior noise levels to below the City outdoor criteria of 65 dBA CNEL (see Apartment SW in Tables 2 and 3 above), additional mitigation is not available because of the apartment building's exposure to the elevated US101 freeway.

Project Effects Along Access Roads. The proposed project would generate approximately 2,053 average daily trips, with the vast majority of these accessing the site via the main entrance at Copeland Court and Telephone Road (Austin-Foust, 2011). The majority of traffic has been routed in the traffic analysis to the freeway system, with most of the remainder routed along Telephone Road. Relatively few trips are anticipated to occur along Thille Street, the secondary connector to the site. Analysis of the effects of project traffic on local roadways was based on a spreadsheet model that incorporates the TNM algorithms (See Appendix D for model output). The residential project would increase noise levels along Thille Street, Portola Road, and Telephone Road by less than 1.0 dBA. Further, no significant traffic noise effects along Thille Street or Portola Road to existing residences are anticipated due to cumulative (Year 2025) traffic levels based on the volumes provided by Austin-Foust (2005; 2011). However, residences located along Telephone Road east of the site under the cumulative scenario will continue to be exposed to substantial noise levels, with cumulative growth adding approximately 1.5 dBA for a total CNEL along the sidewalk of 75.7 dBA. The Grove Residential project would not make a considerable contribution to this cumulative level.

FINDINGS AND RECOMMENDATIONS

Noise from local freeway traffic would be disturbing to the future occupants of the proposed project and the following are recommended to reduce exterior and interior noise levels.

- A sound barrier (solid concrete wall, masonry wall on berm, or other similar construction) should be constructed along the north property boundary with a height above the existing ground level of at least 12 feet.

- A garden wall sound barrier 8 feet in height on the south and east sides and 6 feet high is recommended for the four single family residences located at the southern end of the site.

- A sound wall barrier 9 feet in height is recommended for the southwest corner of the single family residence lots.

- A sound barrier (solid masonry wall) 6-feet in height is recommended for the southeast corner of the site, between the access road and the east property line.

- The units facing SH126, US101, and Telephone Road should be constructed to include sufficient noise attenuation to reduce interior levels to a CNEL of 45 dBA. This would require, at a minimum, the use of double-paned windows on all windows that are exposed to freeway noise. Such windows should have a minimum STC of 35. Solid-core doors should be used for those doorways facing the freeway or Telephone Road and they should be insulated in conformance with California Title 24 requirements. The exterior wall facing material should be stucco, or other surface with an STC rating of at least 45.

- All units should contain forced air ventilation. All duct work for ventilation should include noise louvers at the exterior outlet and/or duct outlets should be directed either opposite to or perpendicular to the nearest road.

The effectiveness of sound barriers is dependent on the type of material used (which determines "transmission loss" or the decrease in sound level through the barrier), the height of the barrier, and the length of the barrier. The manner in which the walls are constructed is also important. A variety of materials are available for a barrier wall provided that the transmission loss is at least 10 dB more than the desired noise reduction. The most commonly used materials are concrete block, poured in place or modular concrete walls, and earthen berms. These materials typically have transmission losses greater than 34 dB. Wood is occasionally used, but its base transmission loss is only between 18 and 24 dB, it is subject to having exposed gaps where wood pieces adjoin through which sound can transmit, and it is less durable. Therefore, solid concrete, block masonry and similar products are the most typical used and are effective for noise control provided that they are constructed properly. This includes the use of acoustical foam or other filler within vertical cracks (gaps) required for seismic safety purposes.

This analysis is based on the existing topography of the site and conceptual site plans prepared for the site and provided to Rincon Consultants. Changes in the location of buildings, pad elevations, or the location of the sound barriers proposed in this report can have a substantial effect on the height of the sound wall(s) necessary to achieve the sound level reductions calculated by the noise model. Changes in grade of only a few feet can have a profound effect because of the elevated noise source and high volumes of traffic.

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Appendix A

TNM® Model Results

Rincon Consultants
DVP

16 March 2011
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: The Grove
RUN: Existing Peak Hour
BARRIER DESIGN: Mitigation

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	No Barrier LAeq1h Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Townhouse NE	4	1	0.0	69.8	66	69.8	10	Snd Lvl	62.5	7.3	8	-0.7
Townhouse NW	5	1	0.0	69.5	66	69.5	10	Snd Lvl	62.8	6.7	8	-1.3
House 1	6	1	0.0	70.2	66	70.2	10	Snd Lvl	63.3	6.9	8	-1.1
House 2	7	1	0.0	69.8	66	69.8	10	Snd Lvl	64.7	5.1	8	-2.9
House 3	8	1	0.0	66.0	66	66.0	10	Snd Lvl	64.6	1.4	8	-6.6
House 4	9	1	0.0	62.5	66	62.5	10	---	62.4	0.1	8	-7.9
House 5	10	1	0.0	68.2	66	68.2	10	Snd Lvl	62.6	5.6	8	-2.4
House 6	11	1	0.0	68.5	66	68.5	10	Snd Lvl	60.6	7.9	8	-0.1
House 7	12	1	0.0	67.9	66	67.9	10	Snd Lvl	65.0	2.9	8	-5.1
Apt SW	13	1	0.0	67.1	66	67.1	10	Snd Lvl	66.0	1.1	8	-6.9
Apt SE	14	1	0.0	63.9	66	63.9	10	---	63.7	0.2	8	-7.8
Measure 1	16	1	58.3	57.6	66	-0.7	10	---	57.1	0.5	8	-7.5
Measure 2	17	1	77.0	77.2	66	0.2	10	Snd Lvl	77.2	0.0	8	-8.0
Measure 3	18	1	68.7	65.7	66	-3.0	10	---	62.1	3.6	8	-4.4
Measure 4	19	1	68.4	69.2	66	0.8	10	Snd Lvl	69.2	0.0	8	-8.0
Townhouse 2nd floor	22	1	0.0	72.2	66	72.2	10	Snd Lvl	66.3	5.9	8	-2.1
House 2nd floor SR126	23	1	0.0	73.8	66	73.8	10	Snd Lvl	68.0	5.8	8	-2.2
House 2nd floor Hwy101	24	1	0.0	70.9	66	70.9	10	Snd Lvl	70.8	0.1	8	-7.9
Apt 2nd floor	25	1	0.0	69.1	66	69.1	10	Snd Lvl	68.9	0.2	8	-7.8

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	19	0.0	3.2	7.9

All Impacted	15	0.0	3.8	7.9
All that meet NR Goal	0	0.0	0.0	0.0

Rincon Consultants
DVP

16 March 2011
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: The Grove
RUN: Existing Daily
BARRIER DESIGN: INPUT HEIGHTS

ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	No Barrier LAeq1h Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Townhouse NE	4	1	0.0	67.4	66	67.4	10	Snd Lvl	67.4	0.0	8	-8.0
Townhouse NW	5	1	0.0	67.1	66	67.1	10	Snd Lvl	67.1	0.0	8	-8.0
House 1	6	1	0.0	67.7	66	67.7	10	Snd Lvl	67.7	0.0	8	-8.0
House 2	7	1	0.0	67.3	66	67.3	10	Snd Lvl	67.3	0.0	8	-8.0
House 3	8	1	0.0	63.5	66	63.5	10	----	63.5	0.0	8	-8.0
House 4	9	1	0.0	60.2	66	60.2	10	----	60.2	0.0	8	-8.0
House 5	10	1	0.0	66.8	66	66.8	10	Snd Lvl	66.8	0.0	8	-8.0
House 6	11	1	0.0	67.2	66	67.2	10	Snd Lvl	67.2	0.0	8	-8.0
House 7	12	1	0.0	66.1	66	66.1	10	Snd Lvl	66.1	0.0	8	-8.0
Apt SW	13	1	0.0	65.5	66	65.5	10	----	65.5	0.0	8	-8.0
Apt SE	14	1	0.0	61.7	66	61.7	10	----	61.7	0.0	8	-8.0
Measure 1	16	1	58.3	54.9	66	-3.4	10	----	54.9	0.0	8	-8.0
Measure 2	17	1	77.0	74.8	66	-2.2	10	Snd Lvl	74.8	0.0	8	-8.0
Measure 3	18	1	68.7	63.4	66	-5.3	10	----	63.4	0.0	8	-8.0
Measure 4	19	1	68.4	67.6	66	-0.8	10	Snd Lvl	67.6	0.0	8	-8.0
Townhouse 2nd floor	22	1	0.0	69.8	66	69.8	10	Snd Lvl	69.8	0.0	8	-8.0
House 2nd floor SR126	23	1	0.0	71.4	66	71.4	10	Snd Lvl	71.4	0.0	8	-8.0
House 2nd floor Hwy101	24	1	0.0	69.4	66	69.4	10	Snd Lvl	69.4	0.0	8	-8.0
APt 2nd floor	25	1	0.0	67.5	66	67.5	10	Snd Lvl	67.5	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	19	0.0	0.0	0.0

All impacted	13	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Rincon Consultants
DVP

16 March 2011
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: The Grove
RUN: Existing Night
BARRIER DESIGN: INPUT HEIGHTS

ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	No Barrier LAeq1h Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Townhouse NE	4	1	0.0	62.1	66	62.1	10	----	62.1	0.0	8	-8.0
Townhouse NW	5	1	0.0	61.7	66	61.7	10	----	61.7	0.0	8	-8.0
House 1	6	1	0.0	62.4	66	62.4	10	----	62.4	0.0	8	-8.0
House 2	7	1	0.0	61.9	66	61.9	10	----	61.9	0.0	8	-8.0
House 3	8	1	0.0	58.2	66	58.2	10	----	58.2	0.0	8	-8.0
House 4	9	1	0.0	55.1	66	55.1	10	----	55.1	0.0	8	-8.0
House 5	10	1	0.0	61.7	66	61.7	10	----	61.7	0.0	8	-8.0
House 6	11	1	0.0	62.1	66	62.1	10	----	62.1	0.0	8	-8.0
House 7	12	1	0.0	61.1	66	61.1	10	----	61.1	0.0	8	-8.0
Apt SW	13	1	0.0	60.5	66	60.5	10	----	60.5	0.0	8	-8.0
Apt SE	14	1	0.0	56.7	66	56.7	10	----	56.7	0.0	8	-8.0
Measure 1	16	1	58.3	49.8	66	-8.5	10	----	49.8	0.0	8	-8.0
Measure 2	17	1	77.0	69.4	66	-7.6	10	Snd Lvl	69.4	0.0	8	-8.0
Measure 3	18	1	68.7	58.3	66	-10.4	10	----	58.3	0.0	8	-8.0
Measure 4	19	1	68.4	62.5	66	-5.9	10	----	62.5	0.0	8	-8.0
Townhouse 2nd floor	22	1	0.0	64.4	66	64.4	10	----	64.4	0.0	8	-8.0
House 2nd floor SR126	23	1	0.0	66.0	66	66.0	10	Snd Lvl	66.0	0.0	8	-8.0
House 2nd floor Hwy101	24	1	0.0	64.4	66	64.4	10	----	64.4	0.0	8	-8.0
APt 2nd floor	25	1	0.0	62.5	66	62.5	10	----	62.5	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	19	0.0	0.0	0.0

All Impacted	2	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Rincon Consultants
DVP

15 March 2011
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: The Grove
RUN: 2025 Peak Hour
BARRIER DESIGN: INPUT HEIGHTS

ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	No Barrier LAeq1h Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Townhouse NE	4	1	0.0	70.4	66	70.4	10	Snd Lvl	70.4	0.0	8	-8.0
Townhouse NW	5	1	0.0	70.1	66	70.1	10	Snd Lvl	70.1	0.0	8	-8.0
House 1	6	1	0.0	70.7	66	70.7	10	Snd Lvl	70.7	0.0	8	-8.0
House 2	7	1	0.0	70.3	66	70.3	10	Snd Lvl	70.3	0.0	8	-8.0
House 3	8	1	0.0	66.4	66	66.4	10	Snd Lvl	66.4	0.0	8	-8.0
House 4	9	1	0.0	62.5	66	62.5	10	----	62.5	0.0	8	-8.0
House 5	10	1	0.0	68.8	66	68.8	10	Snd Lvl	68.8	0.0	8	-8.0
House 6	11	1	0.0	69.1	66	69.1	10	Snd Lvl	69.1	0.0	8	-8.0
House 7	12	1	0.0	68.0	66	68.0	10	Snd Lvl	68.0	0.0	8	-8.0
Apt SW	13	1	0.0	67.7	66	67.7	10	Snd Lvl	67.7	0.0	8	-8.0
Apt SE	14	1	0.0	63.7	66	63.7	10	----	63.7	0.0	8	-8.0
Measure 1	16	1	58.3	57.4	66	-0.9	10	----	57.4	0.0	8	-8.0
Measure 2	17	1	77.0	77.8	66	0.8	10	Snd Lvl	77.8	0.0	8	-8.0
Measure 3	18	1	68.7	65.4	66	-3.3	10	----	65.4	0.0	8	-8.0
Measure 4	19	1	68.4	69.9	66	1.5	10	Snd Lvl	69.9	0.0	8	-8.0
Townhouse 2nd floor	22	1	0.0	72.8	66	72.8	10	Snd Lvl	72.8	0.0	8	-8.0
House 2nd floor SR126	23	1	0.0	74.4	66	74.4	10	Snd Lvl	74.4	0.0	8	-8.0
House 2nd floor Hwy101	24	1	0.0	71.3	66	71.3	10	Snd Lvl	71.3	0.0	8	-8.0
APt 2nd floor	25	1	0.0	69.7	66	69.7	10	Snd Lvl	69.7	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	19	0.0	0.0	0.0

All Impacted	15	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Rincon Consultants
DVP

15 March 2011
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: The Grove
RUN: 2025 Daily
BARRIER DESIGN: INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Townhouse NE	4	1	0.0	67.9	66	67.9	10	Snd Lvl	67.9	0.0	8	-8.0
Townhouse NW	5	1	0.0	67.6	66	67.6	10	Snd Lvl	67.6	0.0	8	-8.0
House 1	6	1	0.0	68.3	66	68.3	10	Snd Lvl	68.3	0.0	8	-8.0
House 2	7	1	0.0	67.8	66	67.8	10	Snd Lvl	67.8	0.0	8	-8.0
House 3	8	1	0.0	64.1	66	64.1	10	----	64.1	0.0	8	-8.0
House 4	9	1	0.0	61.0	66	61.0	10	----	61.0	0.0	8	-8.0
House 5	10	1	0.0	67.7	66	67.7	10	Snd Lvl	67.7	0.0	8	-8.0
House 6	11	1	0.0	68.0	66	68.0	10	Snd Lvl	68.0	0.0	8	-8.0
House 7	12	1	0.0	67.0	66	67.0	10	Snd Lvl	67.0	0.0	8	-8.0
Apt SW	13	1	0.0	66.4	66	66.4	10	Snd Lvl	66.4	0.0	8	-8.0
Apt SE	14	1	0.0	62.7	66	62.7	10	----	62.7	0.0	8	-8.0
Measure 1	16	1	58.3	55.7	66	-2.6	10	----	55.7	0.0	8	-8.0
Measure 2	17	1	77.0	75.3	66	-1.7	10	Snd Lvl	75.3	0.0	8	-8.0
Measure 3	18	1	68.7	64.3	66	-4.4	10	----	64.3	0.0	8	-8.0
Measure 4	19	1	68.4	68.5	66	0.1	10	Snd Lvl	68.5	0.0	8	-8.0
Townhouse 2nd floor	22	1	0.0	70.3	66	70.3	10	Snd Lvl	70.3	0.0	8	-8.0
House 2nd floor SR126	23	1	0.0	71.9	66	71.9	10	Snd Lvl	71.9	0.0	8	-8.0
House 2nd floor Hwy101	24	1	0.0	70.3	66	70.3	10	Snd Lvl	70.3	0.0	8	-8.0
APt 2nd floor	25	1	0.0	68.5	66	68.5	10	Snd Lvl	68.5	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	19	0.0	0.0	0.0

All Impacted	14	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Rincon Consultants
DVP

16 March 2011
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: The Grove
RUN: 2025 Night
BARRIER DESIGN: INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Townhouse NE	4	1	0.0	62.7	66	62.7	10	----	62.7	0.0	8	-8.0
Townhouse NW	5	1	0.0	62.3	66	62.3	10	----	62.3	0.0	8	-8.0
House 1	6	1	0.0	63.0	66	63.0	10	----	63.0	0.0	8	-8.0
House 2	7	1	0.0	62.5	66	62.5	10	----	62.5	0.0	8	-8.0
House 3	8	1	0.0	58.8	66	58.8	10	----	58.8	0.0	8	-8.0
House 4	9	1	0.0	55.9	66	55.9	10	----	55.9	0.0	8	-8.0
House 5	10	1	0.0	62.6	66	62.6	10	----	62.6	0.0	8	-8.0
House 6	11	1	0.0	63.0	66	63.0	10	----	63.0	0.0	8	-8.0
House 7	12	1	0.0	62.0	66	62.0	10	----	62.0	0.0	8	-8.0
Apt SW	13	1	0.0	61.4	66	61.4	10	----	61.4	0.0	8	-8.0
Apt SE	14	1	0.0	57.6	66	57.6	10	----	57.6	0.0	8	-8.0
Measure 1	16	1	58.3	50.6	66	-7.7	10	----	50.6	0.0	8	-8.0
Measure 2	17	1	77.0	69.9	66	-7.1	10	Snd Lvl	69.9	0.0	8	-8.0
Measure 3	18	1	68.7	59.2	66	-9.5	10	----	59.2	0.0	8	-8.0
Measure 4	19	1	68.4	63.5	66	-4.9	10	----	63.5	0.0	8	-8.0
Townhouse 2nd floor	22	1	0.0	65.0	66	65.0	10	----	65.0	0.0	8	-8.0
House 2nd floor SR126	23	1	0.0	66.6	66	66.6	10	Snd Lvl	66.6	0.0	8	-8.0
House 2nd floor Hwy101	24	1	0.0	65.3	66	65.3	10	----	65.3	0.0	8	-8.0
APt 2nd floor	25	1	0.0	63.4	66	63.4	10	----	63.4	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	19	0.0	0.0	0.0

All Impacted	2	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Appendix B

Traffic Data Input to TNM® Model

Rincon Consultants 16 March 2011
DVP TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: The Grove
RUN: Existing Peak Hour

Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
SR126 WB Ln 1	point226	226	813	70	17	65	13	60	0	0	0	0
	point225	225	770	70	17	65	12	60	0	0	0	0
	point58	58	770	70	17	65	12	60	0	0	0	0
	point59	59	770	70	17	65	12	60	0	0	0	0
	point60	60	770	70	17	65	12	60	0	0	0	0
	point61	61	770	70	17	65	12	60	0	0	0	0
	point62	62	770	70	17	65	12	60	0	0	0	0
	point153	153	770	70	17	65	12	60	0	0	0	0
	point154	154	770	70	17	65	12	60	0	0	0	0
	point63	63	770	70	17	65	12	60	0	0	0	0
	point64	64										
SR126 WB Ln 2	point231	231	1219	70	70	65	52	60	0	0	0	0
	point230	230	1155	70	66	65	50	60	0	0	0	0
	point229	229	1155	70	66	65	50	60	0	0	0	0
	point65	65	1155	70	66	65	50	60	0	0	0	0
	point66	66	1155	70	66	65	50	60	0	0	0	0
	point67	67	1155	70	66	65	50	60	0	0	0	0
	point68	68	1155	70	66	65	50	60	0	0	0	0
	point69	69	1155	70	66	65	50	60	0	0	0	0
	point70	70	1155	70	66	65	50	60	0	0	0	0
	point71	71	1155	70	66	65	50	60	0	0	0	0
	point72	72	1155	70	66	65	50	60	0	0	0	0

	point73	73										
SR126 EB Ln 1	point74	74	904	70	19	65	15	60	0	0	0	0
	point75	75	904	70	19	65	15	60	0	0	0	0
	point76	76	904	70	19	65	15	60	0	0	0	0
	point77	77	904	70	19	65	15	60	0	0	0	0
	point78	78	904	70	19	65	15	60	0	0	0	0
	point79	79	904	70	19	65	15	60	0	0	0	0
	point80	80	904	70	19	65	15	60	0	0	0	0
	point81	81	904	70	19	65	15	60	0	0	0	0
	point221	221	904	70	19	65	15	60	0	0	0	0
	point222	222	904	70	19	65	15	60	0	0	0	0
	point223	223	904	70	19	65	15	60	0	0	0	0
	point224	224										
SR 126 Ramp	point99	99	203	50	8	50	5	50	0	0	0	0
	point100	100	165	50	7	50	4	50	0	0	0	0
	point101	101	165	50	7	50	4	50	0	0	0	0
	point102	102	165	50	7	50	4	50	0	0	0	0
	point103	103	165	50	7	50	4	50	0	0	0	0
	point104	104	165	50	7	50	4	50	0	0	0	0
	point105	105	165	50	7	50	4	50	0	0	0	0
	point106	106	165	50	7	50	4	50	0	0	0	0
	point107	107	165	50	7	50	4	50	0	0	0	0
	point108	108	165	50	7	50	4	50	0	0	0	0
	point109	109										
101SB Ln 3	point110	110	1057	65	65	65	62	60	0	0	0	0
	point111	111	1105	65	68	65	64	60	0	0	0	0
	point112	112	1105	65	68	65	64	60	0	0	0	0
	point113	113	1105	65	68	65	64	60	0	0	0	0
	point114	114	1105	65	68	65	64	60	0	0	0	0
	point115	115	1105	65	68	65	64	60	0	0	0	0
	point116	116	1105	65	68	65	64	60	0	0	0	0
	point118	118	1105	65	68	65	64	60	0	0	0	0
	point119	119	1105	65	68	65	64	60	0	0	0	0
	point120	120	1105	65	68	65	64	60	0	0	0	0

	point121	121	1105	65	68	65	64	60	0	0	0	0
	point122	122	1441	65	89	65	84	60	0	0	0	0
	point123	123	1441	65	89	65	84	60	0	0	0	0
	point124	124										
Telephone WB Ln 3	point128	128	467	50	5	50	6	50	0	0	0	0
	point129	129	400	50	4	50	5	50	0	0	0	0
	point130	130	400	50	4	50	5	50	0	0	0	0
	point131	131	400	50	4	50	5	50	0	0	0	0
	point31	31	400	50	4	50	5	50	0	0	0	0
	point32	32	400	50	4	50	5	50	0	0	0	0
	point33	33										
Telephone WB Ln 1	point140	140	467	50	5	50	6	50	0	0	0	0
	point141	141	400	50	4	50	5	50	0	0	0	0
	point142	142	400	50	4	50	5	50	0	0	0	0
	point143	143	400	50	4	50	5	50	0	0	0	0
	point20	20	400	50	4	50	5	50	0	0	0	0
	point21	21	400	50	4	50	5	50	0	0	0	0
	point22	22										
Telephone WB Ln 2	point146	146	467	50	5	50	18	50	0	0	0	0
	point147	147	400	50	4	50	15	50	0	0	0	0
	point148	148	400	50	4	50	15	50	0	0	0	0
	point149	149	400	50	4	50	15	50	0	0	0	0
	point26	26	400	50	4	50	15	50	0	0	0	0
	point27	27	400	50	4	50	15	50	0	0	0	0
	point28	28										
Telephone EB Ln 1	point36	36	467	35	5	35	6	35	0	0	0	0
	point37	37										
Telephone EB Ln 2	point41	41	467	35	5	35	18	35	0	0	0	0
	point42	42										
Telephone EB Ln 3	point45	45	467	35	5	35	6	35	0	0	0	0
	point46	46										
101NB Ln 3	point87	87	1405	65	87	65	82	60	0	0	0	0
	point50	50	1105	65	68	65	64	60	0	0	0	0
	point57	57	1105	65	68	65	64	60	0	0	0	0

	point56	56	1105	65	68	65	64	60	0	0	0	0
	point152	152	1105	65	68	65	64	60	0	0	0	0
	point91	91	1105	65	68	65	64	60	0	0	0	0
	point92	92	1105	65	68	65	64	60	0	0	0	0
	point93	93	1105	65	68	65	64	60	0	0	0	0
	point94	94	1105	65	68	65	64	60	0	0	0	0
	point95	95	1105	65	68	65	64	60	0	0	0	0
	point96	96	1105	65	68	65	64	60	0	0	0	0
	point97	97	1105	65	68	65	64	60	0	0	0	0
	point98	98										
101SB Ln 2	point155	155	1090	65	59	65	26	60	0	0	0	0
	point156	156	1139	65	61	65	28	60	0	0	0	0
	point157	157	1139	65	61	65	28	60	0	0	0	0
	point158	158	1139	65	61	65	28	60	0	0	0	0
	point159	159	1139	65	61	65	28	60	0	0	0	0
	point160	160	1139	65	61	65	28	60	0	0	0	0
	point161	161	1139	65	61	65	28	60	0	0	0	0
	point162	162	1139	65	61	65	28	60	0	0	0	0
	point163	163	1139	65	61	65	28	60	0	0	0	0
	point164	164	1139	65	61	65	28	60	0	0	0	0
	point165	165	1486	65	80	65	36	60	0	0	0	0
	point166	166	1486	65	80	65	36	60	0	0	0	0
	point167	167										
101SB Ln 1	point168	168	1156	65	7	65	0	0	0	0	0	0
	point169	169	1208	65	7	65	0	0	0	0	0	0
	point170	170	1208	65	7	65	0	0	0	0	0	0
	point171	171	1208	65	7	65	0	0	0	0	0	0
	point172	172	1208	65	7	65	0	0	0	0	0	0
	point173	173	1208	65	7	65	0	0	0	0	0	0
	point174	174	1208	65	7	65	0	0	0	0	0	0
	point175	175	1208	65	7	65	0	0	0	0	0	0
	point176	176	1208	65	7	65	0	0	0	0	0	0
	point177	177	1208	65	7	65	0	0	0	0	0	0
	point178	178	1576	65	9	65	0	0	0	0	0	0

	point179	179	1576	65	9	65	0	0	0	0	0	0
	point180	180										
101NB Ln 2	point181	181	1449	65	78	65	35	60	0	0	0	0
	point182	182	1139	65	61	65	28	60	0	0	0	0
	point183	183	1139	65	61	65	28	60	0	0	0	0
	point184	184	1139	65	61	65	28	60	0	0	0	0
	point185	185	1139	65	61	65	28	60	0	0	0	0
	point186	186	1139	65	61	65	28	60	0	0	0	0
	point187	187	1139	65	61	65	28	60	0	0	0	0
	point188	188	1139	65	61	65	28	60	0	0	0	0
	point189	189	1139	65	61	65	28	60	0	0	0	0
	point190	190	1139	65	61	65	28	60	0	0	0	0
	point191	191	1139	65	61	65	28	60	0	0	0	0
	point192	192	1139	65	61	65	28	60	0	0	0	0
	point193	193										
101NB Ln 1	point194	194	1536	65	9	65						
	point195	195	1208	65	7	65						
	point196	196	1208	65	7	65						
	point197	197	1208	65	7	65						
	point198	198	1208	65	7	65						
	point199	199	1208	65	7	65						
	point200	200	1208	65	7	65						
	point201	201	1208	65	7	65						
	point202	202	1208	65	7	0						
	point203	203	1208	65	7	65						
	point204	204	1208	65	7	65						
	point205	205	1208	65	7	65						
	point206	206										
NB Ramp 2 Lft	point209	209	629	55	6	55	13	55	0	0	0	0
	point210	210	563	40	6	40	12	40	0	0	0	0
	point211	211	563	20	6	20	12	20	0	0	0	0
	point52	52	563	10	6	10	12	10	0	0	0	0
	point53	53										
NB Ramp Rt	point213	213	91	55	1	55	2	55	0	0	0	0

	point214	214	310	40	3	40	6	40	0	0	0	0
	point215	215	310	20	3	20	6	20	0	0	0	0
	point54	54	310	10	3	10	6	10	0	0	0	0
	point55	55										
SR126 EB Ln 2	point82	82	1431	70	82	65	62	60	0	0	0	0
	point83	83	1356	70	78	65	58	60	0	0	0	0
	point84	84	1356	70	78	65	58	60	0	0	0	0
	point85	85	1356	70	78	65	58	60	0	0	0	0
	point1	1	1356	70	78	65	58	60	0	0	0	0
	point2	2	1356	70	78	65	58	60	0	0	0	0
	point3	3	1356	70	78	65	58	60	0	0	0	0
	point4	4	1356	70	78	65	58	60	0	0	0	0
	point5	5	1356	70	78	65	58	60	0	0	0	0
	point6	6	1356	70	78	65	58	60	0	0	0	0
	point7	7	1356	70	78	65	58	60	0	0	0	0
	point8	8	1356	70	78	65	58	60	0	0	0	0
	point9	9	1356	70	78	65	58	60	0	0	0	0
	point10	10	1356	70	78	65	58	60	0	0	0	0
	point11	11	1356	70	78	65	58	60	0	0	0	0
	point13	13	1356	70	78	65	58	60	0	0	0	0
	point14	14	1356	70	78	65	58	60	0	0	0	0
	point15	15	1356	70	78	65	58	60	0	0	0	0
	point16	16	1356	70	78	65	58	60	0	0	0	0
	point17	17	1356	70	78	65	58	60	0	0	0	0
	point18	18	1356	70	78	65	58	60	0	0	0	0
	point19	19	1356	70	78	65	58	60	0	0	0	0
	point217	217	1356	70	78	65	58	60	0	0	0	0
	point218	218	1356	70	78	65	58	60	0	0	0	0
	point219	219	1356	70	78	65	58	60	0	0	0	0
	point220	220										
Telephone WB Ln 1-2	point23	23	467	35	5	35	6	35	0	0	0	0
	point24	24	400	35	4	35	5	35	0	0	0	0
	point25	25										
Telephone WB Ln 2-2	point29	29	467	35	5	35	18	35	0	0	0	0

	point30	30										
Telephone WB Ln 3-2	point34	34	467	35	5	35	6	35	0	0	0	0
	point35	35										
Telephone EB Ln 1-2	point236	236	467	50	5	50	6	50				
	point39	39	400	50	4	50	5	50				
	point137	137	400	50	4	50	5	50				
	point138	138	400	50	4	50	5	50				
	point139	139										
Telephone EB Ln 2-2	point43	43	467	50	5	50	18	50	0	0	0	0
	point125	125	400	50	4	50	15	50	0	0	0	0
	point126	126	400	50	4	50	15	50	0	0	0	0
	point127	127										
Telephone EB Ln 3-2	point47	47	467	50	5	50	6	50	0	0	0	0
	point48	48	400	50	4	50	5	50	0	0	0	0
	point134	134	400	50	4	50	5	50	0	0	0	0
	point135	135	400	50	4	50	5	50	0	0	0	0
	point136	136										

Rincon Consultants 16 March 2011
DVP TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: The Grove
RUN: Existing Daily

Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
SR126 WB Ln 1	point226	226	461	70	10	65	7	60	0	0	0	0
	point225	225	436	70	9	65	7	60	0	0	0	0
	point58	58	436	70	9	65	7	60	0	0	0	0
	point59	59	436	70	9	65	7	60	0	0	0	0
	point60	60	436	70	9	65	7	60	0	0	0	0
	point61	61	436	70	9	65	7	60	0	0	0	0
	point62	62	436	70	9	65	7	60	0	0	0	0
	point153	153	436	70	9	65	7	60	0	0	0	0
	point154	154	436	70	9	65	7	60	0	0	0	0
	point63	63	436	70	9	65	7	60	0	0	0	0
	point64	64										
SR126 WB Ln 2	point231	231	691	70	40	65	30	60	0	0	0	0
	point230	230	655	70	38	65	28	60	0	0	0	0
	point229	229	655	70	38	65	28	60	0	0	0	0
	point65	65	655	70	38	65	28	60	0	0	0	0
	point66	66	655	70	38	65	28	60	0	0	0	0
	point67	67	655	70	38	65	28	60	0	0	0	0
	point68	68	655	70	38	65	28	60	0	0	0	0
	point69	69	655	70	38	65	28	60	0	0	0	0
	point70	70	655	70	38	65	28	60	0	0	0	0
	point71	71	655	70	38	65	28	60	0	0	0	0
	point72	72	655	70	38	65	28	60	0	0	0	0

	point73	73										
SR126 EB Ln 1	point74	74	541	70	12	65	9	60	0	0	0	0
	point75	75	512	70	11	65	8	60	0	0	0	0
	point76	76	512	70	11	65	8	60	0	0	0	0
	point77	77	512	70	11	65	8	60	0	0	0	0
	point78	78	512	70	11	65	8	60	0	0	0	0
	point79	79	512	70	11	65	8	60	0	0	0	0
	point80	80	512	70	11	65	8	60	0	0	0	0
	point81	81	512	70	11	65	8	60	0	0	0	0
	point221	221	512	70	11	65	8	60	0	0	0	0
	point222	222	512	70	11	65	8	60	0	0	0	0
	point223	223	512	70	11	65	8	60	0	0	0	0
	point224	224										
SR 126 Ramp	point99	99	134	50	5	50	4	50	0	0	0	0
	point100	100	110	50	4	50	3	50	0	0	0	0
	point101	101	110	50	4	50	3	50	0	0	0	0
	point102	102	110	50	4	50	3	50	0	0	0	0
	point103	103	110	50	4	50	3	50	0	0	0	0
	point104	104	110	50	4	50	3	50	0	0	0	0
	point105	105	110	50	4	50	3	50	0	0	0	0
	point106	106	110	50	4	50	3	50	0	0	0	0
	point107	107	110	50	4	50	3	50	0	0	0	0
	point108	108	110	50	4	50	3	50	0	0	0	0
	point109	109										
101SB Ln 3	point110	110	701	70	43	65	41	60	0	0	0	0
	point111	111	733	70	45	65	43	60	0	0	0	0
	point112	112	733	70	45	65	43	60	0	0	0	0
	point113	113	733	70	45	65	43	60	0	0	0	0
	point114	114	733	70	45	65	43	60	0	0	0	0
	point115	115	733	70	45	65	43	60	0	0	0	0
	point116	116	733	70	45	65	43	60	0	0	0	0
	point118	118	733	70	45	65	43	60	0	0	0	0
	point119	119	733	70	45	65	43	60	0	0	0	0
	point120	120	733	70	45	65	43	60	0	0	0	0

	point121	121	733	70	45	65	43	60	0	0	0	0
	point122	122	956	70	59	65	56	60	0	0	0	0
	point123	123	956	70	59	65	56	60	0	0	0	0
	point124	124										
Telephone WB Ln 3	point128	128	248	50	3	50	3	50	0	0	0	0
	point129	129	212	50	2	50	3	50	0	0	0	0
	point130	130	212	50	2	50	3	50	0	0	0	0
	point131	131	212	50	2	50	3	50	0	0	0	0
	point31	31	212	50	2	50	3	50	0	0	0	0
	point32	32	212	50	2	50	3	50	0	0	0	0
	point33	33										
Telephone WB Ln 1	point140	140	248	50	3	50	3	50	0	0	0	0
	point141	141	212	50	2	50	3	50	0	0	0	0
	point142	142	212	50	2	50	3	50	0	0	0	0
	point143	143	212	50	2	50	3	50	0	0	0	0
	point20	20	212	50	2	50	3	50	0	0	0	0
	point21	21	212	50	2	50	3	50	0	0	0	0
	point22	22										
Telephone WB Ln 2	point146	146	248	50	3	50	9	50	0	0	0	0
	point147	147	212	50	2	50	8	50	0	0	0	0
	point148	148	212	50	2	50	8	50	0	0	0	0
	point149	149	212	50	2	50	8	50	0	0	0	0
	point26	26	212	50	2	50	8	50	0	0	0	0
	point27	27	212	50	2	50	8	50	0	0	0	0
	point28	28										
Telephone EB Ln 1	point36	36	248	35	3	35	3	35	0	0	0	0
	point37	37										
Telephone EB Ln 2	point41	41	248	35	3	35	9	35	0	0	0	0
	point42	42										
Telephone EB Ln 3	point45	45	248	35	3	35	3	35	0	0	0	0
	point46	46										
101NB Ln 3	point87	87	932	70	57	65	54	60	0	0	0	0
	point50	50	733	70	45	65	43	60	0	0	0	0
	point57	57	733	70	45	65	43	60	0	0	0	0

	point56	56	733	70	45	65	43	60	0	0	0	0
	point152	152	733	70	45	65	43	60	0	0	0	0
	point91	91	733	70	45	65	43	60	0	0	0	0
	point92	92	733	70	45	65	43	60	0	0	0	0
	point93	93	733	70	45	65	43	60	0	0	0	0
	point94	94	733	70	45	65	43	60	0	0	0	0
	point95	95	733	70	45	65	43	60	0	0	0	0
	point96	96	733	70	45	65	43	60	0	0	0	0
	point97	97	733	70	45	65	43	60	0	0	0	0
	point98	98										
101SB Ln 2	point155	155	723	70	39	65	18	60	0	0	0	0
	point156	156	756	70	41	65	18	60	0	0	0	0
	point157	157	756	70	41	65	18	60	0	0	0	0
	point158	158	756	70	41	65	18	60	0	0	0	0
	point159	159	756	70	41	65	18	60	0	0	0	0
	point160	160	756	70	41	65	18	60	0	0	0	0
	point161	161	756	70	41	65	18	60	0	0	0	0
	point162	162	756	70	41	65	18	60	0	0	0	0
	point163	163	756	70	41	65	18	60	0	0	0	0
	point164	164	756	70	41	65	18	60	0	0	0	0
	point165	165	988	70	53	65	24	60	0	0	0	0
	point166	166	988	70	53	65	24	60	0	0	0	0
	point167	167										
101SB Ln 1	point168	168	767	70	4	65	0	0	0	0	0	0
	point169	169	802	70	5	65	0	0	0	0	0	0
	point170	170	802	70	5	65	0	0	0	0	0	0
	point171	171	802	70	5	65	0	0	0	0	0	0
	point172	172	802	70	5	65	0	0	0	0	0	0
	point173	173	802	70	5	65	0	0	0	0	0	0
	point174	174	802	70	5	65	0	0	0	0	0	0
	point175	175	802	70	5	65	0	0	0	0	0	0
	point176	176	802	70	5	65	0	0	0	0	0	0
	point177	177	802	70	5	65	0	0	0	0	0	0
	point178	178	1046	70	6	65	0	0	0	0	0	0

	point179	179	1046	70	6	65	0	0	0	0	0	0
	point180	180										
101NB Ln 2	point181	181	961	70	52	65	23	60	0	0	0	0
	point182	182	756	70	41	65	18	60	0	0	0	0
	point183	183	756	70	41	65	18	60	0	0	0	0
	point184	184	756	70	41	65	18	60	0	0	0	0
	point185	185	756	70	41	65	18	60	0	0	0	0
	point186	186	756	70	41	65	18	60	0	0	0	0
	point187	187	756	70	41	65	18	60	0	0	0	0
	point188	188	756	70	41	65	18	60	0	0	0	0
	point189	189	756	70	41	65	18	60	0	0	0	0
	point190	190	756	70	41	65	18	60	0	0	0	0
	point191	191	756	70	41	65	18	60	0	0	0	0
	point192	192	756	70	41	65	18	60	0	0	0	0
	point193	193										
101NB Ln 1	point194	194	1019	70	6	65						
	point195	195	802	70	5	65						
	point196	196	802	70	5	65						
	point197	197	802	70	5	65						
	point198	198	802	70	5	65						
	point199	199	802	70	5	65						
	point200	200	802	70	5	65						
	point201	201	802	70	5	65						
	point202	202	802	70	5	65						
	point203	203	802	70	5	65						
	point204	204	802	70	5	65						
	point205	205	802	70	5	65						
	point206	206										
NB Ramp 2 Lft	point209	209	417	55	4	55	9	55	0	0	0	0
	point210	210	373	40	4	40	8	40	0	0	0	0
	point211	211	373	20	4	20	8	20	0	0	0	0
	point52	52	373	10	4	10	8	10	0	0	0	0
	point53	53										
NB Ramp Rt	point213	213	60	55	1	55	1	55	0	0	0	0

	point214	214	206	40	2	40	4	40	0	0	0	0
	point215	215	206	20	2	20	4	20	0	0	0	0
	point54	54	206	10	2	10	4	10	0	0	0	0
	point55	55										
SR126 EB Ln 2	point82	82	811	70	47	65	35	60	0	0	0	0
	point83	83	768	70	44	65	33	60	0	0	0	0
	point84	84	768	70	44	65	33	60	0	0	0	0
	point85	85	768	70	44	65	33	60	0	0	0	0
	point1	1	768	70	44	65	33	60	0	0	0	0
	point2	2	768	70	44	65	33	60	0	0	0	0
	point3	3	768	70	44	65	33	60	0	0	0	0
	point4	4	768	70	44	65	33	60	0	0	0	0
	point5	5	768	70	44	65	33	60	0	0	0	0
	point6	6	768	70	44	65	33	60	0	0	0	0
	point7	7	768	70	44	65	33	60	0	0	0	0
	point8	8	768	70	44	65	33	60	0	0	0	0
	point9	9	768	70	44	65	33	60	0	0	0	0
	point10	10	768	70	44	65	33	60	0	0	0	0
	point11	11	768	70	44	65	33	60	0	0	0	0
	point13	13	768	70	44	65	33	60	0	0	0	0
	point14	14	768	70	44	65	33	60	0	0	0	0
	point15	15	768	70	44	65	33	60	0	0	0	0
	point16	16	768	70	44	65	33	60	0	0	0	0
	point17	17	768	70	44	65	33	60	0	0	0	0
	point18	18	768	70	44	65	33	60	0	0	0	0
	point19	19	768	70	44	65	33	60	0	0	0	0
	point217	217	768	70	44	65	33	60	0	0	0	0
	point218	218	768	70	44	65	33	60	0	0	0	0
	point219	219	768	70	44	65	33	60	0	0	0	0
	point220	220										
Telephone WB Ln 1-2	point23	23	248	35	3	35	3	35	0	0	0	0
	point24	24	212	35	2	35	3	35	0	0	0	0
	point25	25										
Telephone WB Ln 2-2	point29	29	348	35	3	35	9	35	0	0	0	0

	point30	30										
Telephone WB Ln 3-2	point34	34	248	35	3	35	3	35	0	0	0	0
	point35	35										
Telephone EB Ln 1-2	point236	236	248	50	3	50	3	50				
	point39	39	212	50	2	50	3	50				
	point137	137	212	50	2	50	3	50				
	point138	138	212	50	2	50	3	50				
	point139	139										
Telephone EB Ln 2-2	point43	43	248	50	3	50	9	50	0	0	0	0
	point125	125	212	50	2	50	8	50	0	0	0	0
	point126	126	212	50	2	50	8	50	0	0	0	0
	point127	127										
Telephone EB Ln 3-2	point47	47	248	50	3	50	3	50	0	0	0	0
	point48	48	212	50	2	50	3	50	0	0	0	0
	point134	134	212	50	2	50	3	50	0	0	0	0
	point135	135	212	50	2	50	3	50	0	0	0	0
	point136	136										

Rincon Consultants 16 March 2011
DVP TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: The Grove
RUN: Existing Night

Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
SR126 WB Ln 1	point226	226	135	70	4	65	3	60	0	0	0	0
	point225	225	128	70	3	65	4	60	0	0	0	0
	point58	58	128	70	3	65	4	60	0	0	0	0
	point59	59	128	70	3	65	4	60	0	0	0	0
	point60	60	128	70	3	65	4	60	0	0	0	0
	point61	61	128	70	3	65	4	60	0	0	0	0
	point62	62	128	70	3	65	4	60	0	0	0	0
	point153	153	128	70	3	65	4	60	0	0	0	0
	point154	154	128	70	3	65	4	60	0	0	0	0
	point63	63	128	70	3	65	4	60	0	0	0	0
	point64	64										
SR126 WB Ln 2	point231	231	203	70	12	65	7	60	0	0	0	0
	point230	230	193	70	11	65	6	60	0	0	0	0
	point229	229	193	70	11	65	6	60	0	0	0	0
	point65	65	193	70	11	65	6	60	0	0	0	0
	point66	66	193	70	11	65	6	60	0	0	0	0
	point67	67	193	70	11	65	6	60	0	0	0	0
	point68	68	193	70	11	65	6	60	0	0	0	0
	point69	69	193	70	11	65	6	60	0	0	0	0
	point70	70	193	70	11	65	6	60	0	0	0	0
	point71	71	193	70	11	65	6	60	0	0	0	0
	point72	72	193	70	11	65	6	60	0	0	0	0

	point73	73										
SR126 EB Ln 1	point74	74	159	70	3	65	5	60	0	0	0	0
	point75	75	151	70	3	65	5	60	0	0	0	0
	point76	76	151	70	3	65	5	60	0	0	0	0
	point77	77	151	70	3	65	5	60	0	0	0	0
	point78	78	151	70	3	65	5	60	0	0	0	0
	point79	79	151	70	3	65	5	60	0	0	0	0
	point80	80	151	70	3	65	5	60	0	0	0	0
	point81	81	151	70	3	65	5	60	0	0	0	0
	point221	221	151	70	3	65	5	60	0	0	0	0
	point222	222	151	70	3	65	5	60	0	0	0	0
	point223	223	151	70	3	65	5	60	0	0	0	0
	point224	224										
SR 126 Ramp	point99	99	42	50	2	50	1	50	0	0	0	0
	point100	100	34	50	1	50	1	50	0	0	0	0
	point101	101	34	50	1	50	1	50	0	0	0	0
	point102	102	34	50	1	50	1	50	0	0	0	0
	point103	103	34	50	1	50	1	50	0	0	0	0
	point104	104	34	50	1	50	1	50	0	0	0	0
	point105	105	34	50	1	50	1	50	0	0	0	0
	point106	106	34	50	1	50	1	50	0	0	0	0
	point107	107	34	50	1	50	1	50	0	0	0	0
	point108	108	34	50	1	50	1	50	0	0	0	0
	point109	109										
101SB Ln 3	point110	110	220	70	14	65	13	60	0	0	0	0
	point111	111	230	70	14	65	13	60	0	0	0	0
	point112	112	230	70	14	65	13	60	0	0	0	0
	point113	113	230	70	14	65	13	60	0	0	0	0
	point114	114	230	70	14	65	13	60	0	0	0	0
	point115	115	230	70	14	65	13	60	0	0	0	0
	point116	116	230	70	14	65	13	60	0	0	0	0
	point118	118	230	70	14	65	13	60	0	0	0	0
	point119	119	230	70	14	65	13	60	0	0	0	0
	point120	120	230	70	14	65	13	60	0	0	0	0

	point121	121	230	70	14	65	13	60	0	0	0	0
	point122	122	300	70	19	65	18	60	0	0	0	0
	point123	123	300	70	19	65	18	60	0	0	0	0
	point124	124										
Telephone WB Ln 3	point128	128	78	50	1	50	1	50	0	0	0	0
	point129	129	67	50	1	50	1	50	0	0	0	0
	point130	130	67	50	1	50	1	50	0	0	0	0
	point131	131	67	50	1	50	1	50	0	0	0	0
	point31	31	67	50	1	50	1	50	0	0	0	0
	point32	32	67	50	1	50	1	50	0	0	0	0
	point33	33										
Telephone WB Ln 1	point140	140	78	50	1	50	1	50	0	0	0	0
	point141	141	67	50	1	50	1	50	0	0	0	0
	point142	142	67	50	1	50	1	50	0	0	0	0
	point143	143	67	50	1	50	1	50	0	0	0	0
	point20	20	67	50	1	50	1	50	0	0	0	0
	point21	21	67	50	1	50	1	50	0	0	0	0
	point22	22										
Telephone WB Ln 2	point146	146	78	50	1	50	3	50	0	0	0	0
	point147	147	67	50	1	50	3	50	0	0	0	0
	point148	148	67	50	1	50	3	50	0	0	0	0
	point149	149	67	50	1	50	3	50	0	0	0	0
	point26	26	67	50	1	50	3	50	0	0	0	0
	point27	27	67	50	1	50	3	50	0	0	0	0
	point28	28										
Telephone EB Ln 1	point36	36	78	35	1	35	1	35	0	0	0	0
	point37	37										
Telephone EB Ln 2	point41	41	78	35	1	35	3	35	0	0	0	0
	point42	42										
Telephone EB Ln 3	point45	45	78	35	1	35	1	35	0	0	0	0
	point46	46										
101NB Ln 3	point87	87	293	70	18	65	17	60	0	0	0	0
	point50	50	230	70	14	65	13	60	0	0	0	0
	point57	57	230	70	14	65	13	60	0	0	0	0

	point56	56	230	70	14	65	13	60	0	0	0	0
	point152	152	230	70	14	65	13	60	0	0	0	0
	point91	91	230	70	14	65	13	60	0	0	0	0
	point92	92	230	70	14	65	13	60	0	0	0	0
	point93	93	230	70	14	65	13	60	0	0	0	0
	point94	94	230	70	14	65	13	60	0	0	0	0
	point95	95	230	70	14	65	13	60	0	0	0	0
	point96	96	230	70	14	65	13	60	0	0	0	0
	point97	97	230	70	14	65	13	60	0	0	0	0
	point98	98										
101SB Ln 2	point155	155	227	70	12	65	6	60	0	0	0	0
	point156	156	237	70	13	65	6	60	0	0	0	0
	point157	157	237	70	13	65	6	60	0	0	0	0
	point158	158	237	70	13	65	6	60	0	0	0	0
	point159	159	237	70	13	65	6	60	0	0	0	0
	point160	160	237	70	13	65	6	60	0	0	0	0
	point161	161	237	70	13	65	6	60	0	0	0	0
	point162	162	237	70	13	65	6	60	0	0	0	0
	point163	163	237	70	13	65	6	60	0	0	0	0
	point164	164	237	70	13	65	6	60	0	0	0	0
	point165	165	310	70	17	65	8	60	0	0	0	0
	point166	166	310	70	17	65	8	60	0	0	0	0
	point167	167										
101SB Ln 1	point168	168	241	70	1	65	0	0	0	0	0	0
	point169	169	252	70	1	65	0	0	0	0	0	0
	point170	170	252	70	1	65	0	0	0	0	0	0
	point171	171	0	70	1	65	0	0	0	0	0	0
	point172	172	252	70	1	65	0	0	0	0	0	0
	point173	173	252	70	1	65	0	0	0	0	0	0
	point174	174	252	70	1	65	0	0	0	0	0	0
	point175	175	252	70	1	65	0	0	0	0	0	0
	point176	176	252	70	1	65	0	0	0	0	0	0
	point177	177	252	70	1	65	0	0	0	0	0	0
	point178	178	328	70	2	65	0	0	0	0	0	0

	point179	179	328	70	2	65	0	0	0	0	0	0
	point180	180										
101NB Ln 2	point181	181	302	70	16	65	7	60	0	0	0	0
	point182	182	237	70	13	65	6	60	0	0	0	0
	point183	183	237	70	13	65	6	60	0	0	0	0
	point184	184	237	70	13	65	6	60	0	0	0	0
	point185	185	237	70	13	65	6	60	0	0	0	0
	point186	186	237	70	13	65	6	60	0	0	0	0
	point187	187	237	70	13	65	6	60	0	0	0	0
	point188	188	237	70	13	65	6	60	0	0	0	0
	point189	189	237	70	13	65	6	60	0	0	0	0
	point190	190	237	70	13	65	6	60	0	0	0	0
	point191	191	237	70	13	65	6	60	0	0	0	0
	point192	192	237	70	13	65	6	60	0	0	0	0
	point193	193										
101NB Ln 1	point194	194	320	70	2	65						
	point195	195	252	70	1	65						
	point196	196	252	70	1	65						
	point197	197	252	70	1	65						
	point198	198	252	70	1	65						
	point199	199	252	70	1	65						
	point200	200	252	70	1	65						
	point201	201	252	70	1	65						
	point202	202	252	70	1	65						
	point203	203	252	70	1	65						
	point204	204	252	70	1	65						
	point205	205	252	70	1	65						
	point206	206										
NB Ramp 2 Lft	point209	209	105	55	1	55	2	55	0	0	0	0
	point210	210	94	40	1	40	2	40	0	0	0	0
	point211	211	94	20	1	20	2	20	0	0	0	0
	point52	52	94	10	1	10	2	10	0	0	0	0
	point53	53										
NB Ramp Rt	point213	213	15	55	1	55	1	55	0	0	0	0

	point214	214	52	40	1	40	1	40	0	0	0	0
	point215	215	52	20	1	20	1	20	0	0	0	0
	point54	54	52	10	1	10	1	10	0	0	0	0
	point55	55										
SR126 EB Ln 2	point82	82	239	70	14	65	8	60	0	0	0	0
	point83	83	226	70	13	65	7	60	0	0	0	0
	point84	84	226	70	13	65	7	60	0	0	0	0
	point85	85	226	70	13	65	7	60	0	0	0	0
	point1	1	226	70	13	65	7	60	0	0	0	0
	point2	2	226	70	13	65	7	60	0	0	0	0
	point3	3	226	70	13	65	7	60	0	0	0	0
	point4	4	226	70	13	65	7	60	0	0	0	0
	point5	5	226	70	13	65	7	60	0	0	0	0
	point6	6	226	70	13	65	7	60	0	0	0	0
	point7	7	226	70	13	65	7	60	0	0	0	0
	point8	8	226	70	13	65	7	60	0	0	0	0
	point9	9	226	70	13	65	7	60	0	0	0	0
	point10	10	226	70	13	65	7	60	0	0	0	0
	point11	11	226	70	13	65	7	60	0	0	0	0
	point13	13	226	70	13	65	7	60	0	0	0	0
	point14	14	226	70	13	65	7	60	0	0	0	0
	point15	15	226	70	13	65	7	60	0	0	0	0
	point16	16	226	70	13	65	7	60	0	0	0	0
	point17	17	226	70	13	65	7	60	0	0	0	0
	point18	18	226	70	13	65	7	60	0	0	0	0
	point19	19	226	70	13	65	7	60	0	0	0	0
	point217	217	226	70	13	65	7	60	0	0	0	0
	point218	218	226	70	13	65	7	60	0	0	0	0
	point219	219	226	70	13	65	7	60	0	0	0	0
	point220	220										
Telephone WB Ln 1-2	point23	23	78	35	1	35	1	35	0	0	0	0
	point24	24	67	35	1	35	1	35	0	0	0	0
	point25	25										
Telephone WB Ln 2-2	point29	29	78	35	1	35	3	35	0	0	0	0

	point30	30										
Telephone WB Ln 3-2	point34	34	78	35	1	35	1	35	0	0	0	0
	point35	35										
Telephone EB Ln 1-2	point236	236	78	50	1	50	1	50				
	point39	39	67	50	1	50	1	50				
	point137	137	67	50	1	50	1	50				
	point138	138	67	50	1	50	1	50				
	point139	139										
Telephone EB Ln 2-2	point43	43	78	50	1	50	3	50	0	0	0	0
	point125	125	67	50	1	50	3	50	0	0	0	0
	point126	126	67	50	1	50	3	50	0	0	0	0
	point127	127										
Telephone EB Ln 3-2	point47	47	78	50	1	50	1	50	0	0	0	0
	point48	48	67	50	1	50	1	50	0	0	0	0
	point134	134	67	50	1	50	1	50	0	0	0	0
	point135	135	67	50	1	50	1	50	0	0	0	0
	point136	136										

Rincon Consultants 8 September 2005
DVP TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: The Grove
RUN: 2025 Peak Hour

Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
SR126 WB Ln 1	point226	226	873	70	19	65	14	60	0	0	0	0
	point225	225	873	70	19	65	14	60	0	0	0	0
	point58	58	873	70	19	65	14	60	0	0	0	0
	point59	59	873	70	19	65	14	60	0	0	0	0
	point60	60	873	70	19	65	14	60	0	0	0	0
	point61	61	873	70	19	65	14	60	0	0	0	0
	point62	62	873	70	19	65	14	60	0	0	0	0
	point153	153	873	70	19	65	14	60	0	0	0	0
	point154	154	873	70	19	65	14	60	0	0	0	0
	point63	63	873	70	19	65	14	60	0	0	0	0
	point64	64										
SR126 WB Ln 2	point231	231	1309	70	75	65	56	60	0	0	0	0
	point230	230	1309	70	75	65	56	60	0	0	0	0
	point229	229	1309	70	75	65	56	60	0	0	0	0
	point65	65	1309	70	75	65	56	60	0	0	0	0
	point66	66	1309	70	75	65	56	60	0	0	0	0
	point67	67	1309	70	75	65	56	60	0	0	0	0
	point68	68	1309	70	75	65	56	60	0	0	0	0
	point69	69	1309	70	75	65	56	60	0	0	0	0
	point70	70	1309	70	75	65	56	60	0	0	0	0
	point71	71	1309	70	75	65	56	60	0	0	0	0
	point72	72	1309	70	75	65	56	60	0	0	0	0

	point73	73										
SR126 EB Ln 1	point74	74	1024	70	22	65	17	60	0	0	0	0
	point75	75	1024	70	22	65	17	60	0	0	0	0
	point76	76	1024	70	22	65	17	60	0	0	0	0
	point77	77	1024	70	22	65	17	60	0	0	0	0
	point78	78	1024	70	22	65	17	60	0	0	0	0
	point79	79	1024	70	22	65	17	60	0	0	0	0
	point80	80	1024	70	22	65	17	60	0	0	0	0
	point81	81	1024	70	22	65	17	60	0	0	0	0
	point221	221	1024	70	22	65	17	60	0	0	0	0
	point222	222	1024	70	22	65	17	60	0	0	0	0
	point223	223	1024	70	22	65	17	60	0	0	0	0
	point224	224										
SR 126 Ramp	point99	99	206	50	8	50	6	50	0	0	0	0
	point100	100	206	50	8	50	6	50	0	0	0	0
	point101	101	206	50	8	50	6	50	0	0	0	0
	point102	102	206	50	8	50	6	50	0	0	0	0
	point103	103	206	50	8	50	6	50	0	0	0	0
	point104	104	206	50	8	50	6	50	0	0	0	0
	point105	105	206	50	8	50	6	50	0	0	0	0
	point106	106	206	50	8	50	6	50	0	0	0	0
	point107	107	206	50	8	50	6	50	0	0	0	0
	point108	108	206	50	8	50	6	50	0	0	0	0
	point109	109										
101SB Ln 3	point110	110	1357	65	84	65	79	60	0	0	0	0
	point111	111	1357	65	84	65	79	60	0	0	0	0
	point112	112	1357	65	84	65	79	60	0	0	0	0
	point113	113	1357	65	84	65	79	60	0	0	0	0
	point114	114	1357	65	84	65	79	60	0	0	0	0
	point115	115	1357	65	84	65	79	60	0	0	0	0
	point116	116	1357	65	84	65	79	60	0	0	0	0
	point118	118	1357	65	84	65	79	60	0	0	0	0
	point119	119	1357	65	84	65	79	60	0	0	0	0
	point120	120	1357	65	84	65	79	60	0	0	0	0

	point121	121	1357	65	84	65	79	60	0	0	0	0
	point122	122	1789	60	110	55	104	55	0	0	0	0
	point123	123	1789	60	110	55	104	55	0	0	0	0
	point124	124										
Telephone WB Ln 3	point128	128	560	50	6	50	7	50	0	0	0	0
	point129	129	560	50	6	50	7	50	0	0	0	0
	point130	130	560	50	6	50	7	50	0	0	0	0
	point131	131	560	50	6	50	7	50	0	0	0	0
	point31	31	560	50	6	50	7	50	0	0	0	0
	point32	32	560	50	6	50	7	50	0	0	0	0
	point33	33										
Telephone WB Ln 1	point140	140	560	50	6	50	7	50	0	0	0	0
	point141	141	560	50	6	50	7	50	0	0	0	0
	point142	142	560	50	6	50	7	50	0	0	0	0
	point143	143	560	50	6	50	7	50	0	0	0	0
	point20	20	560	50	6	50	7	50	0	0	0	0
	point21	21	560	50	6	50	7	50	0	0	0	0
	point22	22										
Telephone WB Ln 2	point146	146	560	50	6	50	21	50	0	0	0	0
	point147	147	560	50	6	50	21	50	0	0	0	0
	point148	148	560	50	6	50	21	50	0	0	0	0
	point149	149	560	50	6	50	21	50	0	0	0	0
	point26	26	560	50	6	50	21	50	0	0	0	0
	point27	27	560	50	6	50	21	50	0	0	0	0
	point28	28										
Telephone EB Ln 1	point36	36	560	35	6	35	7	35	0	0	0	0
	point37	37										
Telephone EB Ln 2	point41	41	560	35	6	35	21	35	0	0	0	0
	point42	42										
Telephone EB Ln 3	point45	45	560	35	6	35	7	35	0	0	0	0
	point46	46										
101NB Ln 3	point87	87	1789	60	110	55	104	55	0	0	0	0
	point50	50	1357	65	84	65	79	60	0	0	0	0
	point57	57	1357	65	84	65	79	60	0	0	0	0

	point56	56	1357	65	84	65	79	60	0	0	0	0
	point152	152	1357	65	84	65	79	60	0	0	0	0
	point91	91	1357	65	84	65	79	60	0	0	0	0
	point92	92	1357	65	84	65	79	60	0	0	0	0
	point93	93	1357	65	84	65	79	60	0	0	0	0
	point94	94	1357	65	84	65	79	60	0	0	0	0
	point95	95	1357	65	84	65	79	60	0	0	0	0
	point96	96	1357	65	84	65	79	60	0	0	0	0
	point97	97	1357	65	84	65	79	60	0	0	0	0
	point98	98										
101SB Ln 2	point155	155	1399	65	75	65	34	60	0	0	0	0
	point156	156	1399	65	75	65	34	60	0	0	0	0
	point157	157	1399	65	75	65	34	60	0	0	0	0
	point158	158	1399	65	75	65	34	60	0	0	0	0
	point159	159	1399	65	75	65	34	60	0	0	0	0
	point160	160	1399	65	75	65	34	60	0	0	0	0
	point161	161	1399	65	75	65	34	60	0	0	0	0
	point162	162	1399	65	75	65	34	60	0	0	0	0
	point163	163	1399	65	75	65	34	60	0	0	0	0
	point164	164	1399	65	75	65	34	60	0	0	0	0
	point165	165	1845	60	99	55	45	55	0	0	0	0
	point166	166	1845	60	99	55	45	55	0	0	0	0
	point167	167										
101SB Ln 1	point168	168	1484	65	8	65	0	0	0	0	0	0
	point169	169	1484	65	8	65	0	0	0	0	0	0
	point170	170	1484	65	8	65	0	0	0	0	0	0
	point171	171	1484	65	8	65	0	0	0	0	0	0
	point172	172	1484	65	8	65	0	0	0	0	0	0
	point173	173	1484	65	8	65	0	0	0	0	0	0
	point174	174	1484	65	8	65	0	0	0	0	0	0
	point175	175	1484	65	8	65	0	0	0	0	0	0
	point176	176	1484	65	8	65	0	0	0	0	0	0
	point177	177	1484	65	8	65	0	0	0	0	0	0
	point178	178	1957	60	11	55	0	0	0	0	0	0

	point179	179	1957	60	11	55	0	0	0	0	0	0
	point180	180										
101NB Ln 2	point181	181	1845	60	99	55	45	55	0	0	0	0
	point182	182	1399	65	75	65	34	60	0	0	0	0
	point183	183	1399	65	75	65	34	60	0	0	0	0
	point184	184	1399	65	75	65	34	60	0	0	0	0
	point185	185	1399	65	75	65	34	60	0	0	0	0
	point186	186	1399	65	75	65	34	60	0	0	0	0
	point187	187	1399	65	75	65	34	60	0	0	0	0
	point188	188	1399	65	75	65	34	60	0	0	0	0
	point189	189	1399	65	75	65	34	60	0	0	0	0
	point190	190	1399	65	75	65	34	60	0	0	0	0
	point191	191	1399	65	75	65	34	60	0	0	0	0
	point192	192	1399	65	75	65	34	60	0	0	0	0
	point193	193										
101NB Ln 1	point194	194	1957	60	11	55						
	point195	195	1484	65	8	65						
	point196	196	1484	65	8	65						
	point197	197	1484	65	8	65						
	point198	198	1484	65	8	65						
	point199	199	1484	65	8	65						
	point200	200	1484	65	8	65						
	point201	201	1484	65	8	65						
	point202	202	1484	65	8	65						
	point203	203	1484	65	8	65						
	point204	204	1484	65	8	65						
	point205	205	1484	65	8	65						
	point206	206										
NB Ramp 2 Lft	point209	209	679	55	7	55	14	55	0	0	0	0
	point210	210	679	40	7	40	14	40	0	0	0	0
	point211	211	679	20	7	20	14	20	0	0	0	0
	point52	52	679	10	7	10	14	10	0	0	0	0
	point53	53										
NB Ramp Rt	point213	213	272	55	3	55	6	55	0	0	0	0

	point214	214	272	40	3	40	6	40	0	0	0	0
	point215	215	272	20	3	20	6	20	0	0	0	0
	point54	54	272	10	3	10	6	10	0	0	0	0
	point55	55										
SR126 EB Ln 2	point82	82	1537	70	88	65	66	60	0	0	0	0
	point83	83	1537	70	88	65	66	60	0	0	0	0
	point84	84	1537	70	88	65	66	60	0	0	0	0
	point85	85	1537	70	88	65	66	60	0	0	0	0
	point1	1	1537	70	88	65	66	60	0	0	0	0
	point2	2	1537	70	88	65	66	60	0	0	0	0
	point3	3	1537	70	88	65	66	60	0	0	0	0
	point4	4	1537	70	88	65	66	60	0	0	0	0
	point5	5	1537	70	88	65	66	60	0	0	0	0
	point6	6	1537	70	88	65	66	60	0	0	0	0
	point7	7	1537	70	88	65	66	60	0	0	0	0
	point8	8	1537	70	88	65	66	60	0	0	0	0
	point9	9	1537	70	88	65	66	60	0	0	0	0
	point10	10	1537	70	88	65	66	60	0	0	0	0
	point11	11	1537	70	88	65	66	60	0	0	0	0
	point13	13	1537	70	88	65	66	60	0	0	0	0
	point14	14	1537	70	88	65	66	60	0	0	0	0
	point15	15	1537	70	88	65	66	60	0	0	0	0
	point16	16	1537	70	88	65	66	60	0	0	0	0
	point17	17	1537	70	88	65	66	60	0	0	0	0
	point18	18	1537	70	88	65	66	60	0	0	0	0
	point19	19	1537	70	88	65	66	60	0	0	0	0
	point217	217	1537	70	88	65	66	60	0	0	0	0
	point218	218	1537	70	88	65	66	60	0	0	0	0
	point219	219	1537	70	88	65	66	60	0	0	0	0
	point220	220										
Telephone WB Ln 1-2	point23	23	560	35	6	35	7	35	0	0	0	0
	point24	24	560	35	6	35	7	35	0	0	0	0
	point25	25										
Telephone WB Ln 2-2	point29	29	560	35	6	35	21	35	0	0	0	0

	point30	30										
Telephone WB Ln 3-2	point34	34	560	35	6	35	7	35	0	0	0	0
	point35	35										
Telephone EB Ln 1-2	point236	236	560	50	6	50	7	50				
	point39	39	560	50	6	50	7	50				
	point137	137	560	50	6	50	7	50				
	point138	138	560	50	6	50	7	50				
	point139	139										
Telephone EB Ln 2-2	point43	43	560	50	6	50	21	50	0	0	0	0
	point125	125	560	50	6	50	21	50	0	0	0	0
	point126	126	560	50	6	50	21	50	0	0	0	0
	point127	127										
Telephone EB Ln 3-2	point47	47	560	50	6	50	7	50	0	0	0	0
	point48	48	560	50	6	50	7	50	0	0	0	0
	point134	134	560	50	6	50	7	50	0	0	0	0
	point135	135	560	50	6	50	7	50	0	0	0	0
	point136	136										

Rincon Consultants 8 September 2005
DVP TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: The Grove
RUN: 2025 Daily

Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
SR126 WB Ln 1	point226	226	495	70	11	65	8	60	0	0	0	0
	point225	225	495	70	11	65	8	60	0	0	0	0
	point58	58	495	70	11	65	8	60	0	0	0	0
	point59	59	495	70	11	65	8	60	0	0	0	0
	point60	60	495	70	11	65	8	60	0	0	0	0
	point61	61	495	70	11	65	8	60	0	0	0	0
	point62	62	495	70	11	65	8	60	0	0	0	0
	point153	153	495	70	11	65	8	60	0	0	0	0
	point154	154	495	70	11	65	8	60	0	0	0	0
	point63	63	495	70	11	65	8	60	0	0	0	0
	point64	64										
SR126 WB Ln 2	point231	231	742	70	43	65	32	60	0	0	0	0
	point230	230	742	70	43	65	32	60	0	0	0	0
	point229	229	742	70	43	65	32	60	0	0	0	0
	point65	65	742	70	43	65	32	60	0	0	0	0
	point66	66	742	70	43	65	32	60	0	0	0	0
	point67	67	742	70	43	65	32	60	0	0	0	0
	point68	68	742	70	43	65	32	60	0	0	0	0
	point69	69	742	70	43	65	32	60	0	0	0	0
	point70	70	742	70	43	65	32	60	0	0	0	0
	point71	71	742	70	43	65	32	60	0	0	0	0
	point72	72	742	70	43	65	32	60	0	0	0	0

	point73	73										
SR126 EB Ln 1	point74	74	581	70	12	65	9	60	0	0	0	0
	point75	75	581	70	12	65	9	60	0	0	0	0
	point76	76	581	70	12	65	9	60	0	0	0	0
	point77	77	581	70	12	65	9	60	0	0	0	0
	point78	78	581	70	12	65	9	60	0	0	0	0
	point79	79	581	70	12	65	9	60	0	0	0	0
	point80	80	581	70	12	65	9	60	0	0	0	0
	point81	81	581	70	12	65	9	60	0	0	0	0
	point221	221	581	70	12	65	9	60	0	0	0	0
	point222	222	581	70	12	65	9	60	0	0	0	0
	point223	223	581	70	12	65	9	60	0	0	0	0
	point224	224										
SR 126 Ramp	point99	99	137	50	5	50	4	50	0	0	0	0
	point100	100	137	50	5	50	4	50	0	0	0	0
	point101	101	137	50	5	50	4	50	0	0	0	0
	point102	102	137	50	5	50	4	50	0	0	0	0
	point103	103	137	50	5	50	4	50	0	0	0	0
	point104	104	137	50	5	50	4	50	0	0	0	0
	point105	105	137	50	5	50	4	50	0	0	0	0
	point106	106	137	50	5	50	4	50	0	0	0	0
	point107	107	137	50	5	50	4	50	0	0	0	0
	point108	108	137	50	5	50	4	50	0	0	0	0
	point109	109										
101SB Ln 3	point110	110	900	70	55	65	52	60	0	0	0	0
	point111	111	900	70	55	65	52	60	0	0	0	0
	point112	112	900	70	55	65	52	60	0	0	0	0
	point113	113	900	70	55	65	52	60	0	0	0	0
	point114	114	900	70	55	65	52	60	0	0	0	0
	point115	115	900	70	55	65	52	60	0	0	0	0
	point116	116	900	70	55	65	52	60	0	0	0	0
	point118	118	900	70	55	65	52	60	0	0	0	0
	point119	119	900	70	55	65	52	60	0	0	0	0
	point120	120	900	70	55	65	52	60	0	0	0	0

	point121	121	900	70	55	65	52	60	0	0	0	0
	point122	122	1187	70	73	65	69	60	0	0	0	0
	point123	123	1187	70	73	65	69	60	0	0	0	0
	point124	124										
Telephone WB Ln 3	point128	128	297	50	3	50	4	50	0	0	0	0
	point129	129	297	50	3	50	4	50	0	0	0	0
	point130	130	297	50	3	50	4	50	0	0	0	0
	point131	131	297	50	3	50	4	50	0	0	0	0
	point31	31	297	50	3	50	4	50	0	0	0	0
	point32	32	297	50	3	50	4	50	0	0	0	0
	point33	33										
Telephone WB Ln 1	point140	140	297	50	3	50	4	50	0	0	0	0
	point141	141	297	50	3	50	4	50	0	0	0	0
	point142	142	297	50	3	50	4	50	0	0	0	0
	point143	143	297	50	3	50	4	50	0	0	0	0
	point20	20	297	50	3	50	4	50	0	0	0	0
	point21	21	297	50	3	50	4	50	0	0	0	0
	point22	22										
Telephone WB Ln 2	point146	146	297	50	3	50	11	50	0	0	0	0
	point147	147	297	50	3	50	11	50	0	0	0	0
	point148	148	297	50	3	50	11	50	0	0	0	0
	point149	149	297	50	3	50	11	50	0	0	0	0
	point26	26	297	50	3	50	11	50	0	0	0	0
	point27	27	297	50	3	50	11	50	0	0	0	0
	point28	28										
Telephone EB Ln 1	point36	36	297	35	3	35	4	35	0	0	0	0
	point37	37										
Telephone EB Ln 2	point41	41	297	35	3	35	11	35	0	0	0	0
	point42	42										
Telephone EB Ln 3	point45	45	297	35	3	35	4	35	0	0	0	0
	point46	46										
101NB Ln 3	point87	87	1187	70	73	65	69	60	0	0	0	0
	point50	50	900	70	55	65	52	60	0	0	0	0
	point57	57	900	70	55	65	52	60	0	0	0	0

	point56	56	900	70	55	65	52	60	0	0	0	0
	point152	152	900	70	55	65	52	60	0	0	0	0
	point91	91	900	70	55	65	52	60	0	0	0	0
	point92	92	900	70	55	65	52	60	0	0	0	0
	point93	93	900	70	55	65	52	60	0	0	0	0
	point94	94	900	70	55	65	52	60	0	0	0	0
	point95	95	900	70	55	65	52	60	0	0	0	0
	point96	96	900	70	55	65	52	60	0	0	0	0
	point97	97	900	70	55	65	52	60	0	0	0	0
	point98	98										
101SB Ln 2	point155	155	928	70	50	65	22	60	0	0	0	0
	point156	156	928	70	50	65	22	60	0	0	0	0
	point157	157	928	70	50	65	22	60	0	0	0	0
	point158	158	928	70	50	65	22	60	0	0	0	0
	point159	159	928	70	50	65	22	60	0	0	0	0
	point160	160	928	70	50	65	22	60	0	0	0	0
	point161	161	928	70	50	65	22	60	0	0	0	0
	point162	162	928	70	50	65	22	60	0	0	0	0
	point163	163	928	70	50	65	22	60	0	0	0	0
	point164	164	928	70	50	65	22	60	0	0	0	0
	point165	165	1224	70	66	65	30	60	0	0	0	0
	point166	166	1224	70	66	65	30	60	0	0	0	0
	point167	167										
101SB Ln 1	point168	168	985	70	6	65	0	0	0	0	0	0
	point169	169	985	70	6	65	0	0	0	0	0	0
	point170	170	985	70	6	65	0	0	0	0	0	0
	point171	171	985	70	6	65	0	0	0	0	0	0
	point172	172	985	70	6	65	0	0	0	0	0	0
	point173	173	985	70	6	65	0	0	0	0	0	0
	point174	174	985	70	6	65	0	0	0	0	0	0
	point175	175	985	70	6	65	0	0	0	0	0	0
	point176	176	985	70	6	65	0	0	0	0	0	0
	point177	177	985	70	6	65	0	0	0	0	0	0
	point178	178	1298	70	7	65	0	0	0	0	0	0

	point179	179	1298	70	7	65	0	0	0	0	0	0
	point180	180										
101NB Ln 2	point181	181	1224	70	66	65	30	60	0	0	0	0
	point182	182	928	70	50	65	22	60	0	0	0	0
	point183	183	928	70	50	65	22	60	0	0	0	0
	point184	184	928	70	50	65	22	60	0	0	0	0
	point185	185	928	70	50	65	22	60	0	0	0	0
	point186	186	928	70	50	65	22	60	0	0	0	0
	point187	187	928	70	50	65	22	60	0	0	0	0
	point188	188	928	70	50	65	22	60	0	0	0	0
	point189	189	928	70	50	65	22	60	0	0	0	0
	point190	190	928	70	50	65	22	60	0	0	0	0
	point191	191	928	70	50	65	22	60	0	0	0	0
	point192	192	928	70	50	65	22	60	0	0	0	0
	point193	193										
101NB Ln 1	point194	194	1298	70	7	65						
	point195	195	985	70	6	65						
	point196	196	985	70	6	65						
	point197	197	985	70	6	65						
	point198	198	985	70	6	65						
	point199	199	985	70	6	65						
	point200	200	985	70	6	65						
	point201	201	985	70	6	65						
	point202	202	985	70	6	65						
	point203	203	985	70	6	65						
	point204	204	985	70	6	65						
	point205	205	985	70	6	65						
	point206	206										
NB Ramp 2 Lft	point209	209	450	55	5	55	9	55	0	0	0	0
	point210	210	450	40	5	40	9	40	0	0	0	0
	point211	211	450	20	5	20	9	20	0	0	0	0
	point52	52	450	10	5	10	9	10	0	0	0	0
	point53	53										
NB Ramp Rt	point213	213	180	55	2	55	4	55	0	0	0	0

	point214	214	180	40	2	40	4	40	0	0	0	0
	point215	215	180	20	2	20	4	20	0	0	0	0
	point54	54	180	10	2	10	4	10	0	0	0	0
	point55	55										
SR126 EB Ln 2	point82	82	871	70	50	65	37	60	0	0	0	0
	point83	83	871	70	50	65	37	60	0	0	0	0
	point84	84	871	70	50	65	37	60	0	0	0	0
	point85	85	871	70	50	65	37	60	0	0	0	0
	point1	1	871	70	50	65	37	60	0	0	0	0
	point2	2	871	70	50	65	37	60	0	0	0	0
	point3	3	871	70	50	65	37	60	0	0	0	0
	point4	4	871	70	50	65	37	60	0	0	0	0
	point5	5	871	70	50	65	37	60	0	0	0	0
	point6	6	871	70	50	65	37	60	0	0	0	0
	point7	7	871	70	50	65	37	60	0	0	0	0
	point8	8	871	70	50	65	37	60	0	0	0	0
	point9	9	871	70	50	65	37	60	0	0	0	0
	point10	10	871	70	50	65	37	60	0	0	0	0
	point11	11	871	70	50	65	37	60	0	0	0	0
	point13	13	871	70	50	65	37	60	0	0	0	0
	point14	14	871	70	50	65	37	60	0	0	0	0
	point15	15	871	70	50	65	37	60	0	0	0	0
	point16	16	871	70	50	65	37	60	0	0	0	0
	point17	17	871	70	50	65	37	60	0	0	0	0
	point18	18	871	70	50	65	37	60	0	0	0	0
	point19	19	871	70	50	65	37	60	0	0	0	0
	point217	217	871	70	50	65	37	60	0	0	0	0
	point218	218	871	70	50	65	37	60	0	0	0	0
	point219	219	871	70	50	65	37	60	0	0	0	0
	point220	220										
Telephone WB Ln 1-2	point23	23	297	35	3	35	4	35	0	0	0	0
	point24	24	297	35	3	35	4	35	0	0	0	0
	point25	25										
Telephone WB Ln 2-2	point29	29	297	35	3	35	11	35	0	0	0	0

	point30	30										
Telephone WB Ln 3-2	point34	34	297	35	3	35	4	35	0	0	0	0
	point35	35										
Telephone EB Ln 1-2	point236	236	297	50	3	50	4	50				
	point39	39	297	50	3	50	4	50				
	point137	137	297	50	3	50	4	50				
	point138	138	297	50	3	50	4	50				
	point139	139										
Telephone EB Ln 2-2	point43	43	297	50	3	50	11	50	0	0	0	0
	point125	125	297	50	3	50	11	50	0	0	0	0
	point126	126	297	50	3	50	11	50	0	0	0	0
	point127	127										
Telephone EB Ln 3-2	point47	47	297	50	3	50	4	50	0	0	0	0
	point48	48	297	50	3	50	4	50	0	0	0	0
	point134	134	297	50	3	50	4	50	0	0	0	0
	point135	135	297	50	3	50	4	50	0	0	0	0
	point136	136										

Rincon Consultants 8 September 2005
DVP TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: The Grove
RUN: 2025 Night

Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
SR126 WB Ln 1	point226	226	145	70	3	65	5	60	0	0	0	0
	point225	225	145	70	3	65	5	60	0	0	0	0
	point58	58	145	70	3	65	5	60	0	0	0	0
	point59	59	145	70	3	65	5	60	0	0	0	0
	point60	60	145	70	3	65	5	60	0	0	0	0
	point61	61	145	70	3	65	5	60	0	0	0	0
	point62	62	145	70	3	65	5	60	0	0	0	0
	point153	153	145	70	3	65	5	60	0	0	0	0
	point154	154	145	70	3	65	5	60	0	0	0	0
	point63	63	145	70	3	65	5	60	0	0	0	0
	point64	64										
SR126 WB Ln 2	point231	231	218	70	13	65	7	60	0	0	0	0
	point230	230	218	70	13	65	7	60	0	0	0	0
	point229	229	218	70	13	65	7	60	0	0	0	0
	point65	65	218	70	13	65	7	60	0	0	0	0
	point66	66	218	70	13	65	7	60	0	0	0	0
	point67	67	218	70	13	65	7	60	0	0	0	0
	point68	68	218	70	13	65	7	60	0	0	0	0
	point69	69	218	70	13	65	7	60	0	0	0	0
	point70	70	218	70	13	65	7	60	0	0	0	0
	point71	71	218	70	13	65	7	60	0	0	0	0
	point72	72	218	70	13	65	7	60	0	0	0	0

	point73	73										
SR126 EB Ln 1	point74	74	171	70	4	65	6	60	0	0	0	0
	point75	75	171	70	4	65	6	60	0	0	0	0
	point76	76	171	70	4	65	6	60	0	0	0	0
	point77	77	171	70	4	65	6	60	0	0	0	0
	point78	78	171	70	4	65	6	60	0	0	0	0
	point79	79	171	70	4	65	6	60	0	0	0	0
	point80	80	171	70	4	65	6	60	0	0	0	0
	point81	81	171	70	4	65	6	60	0	0	0	0
	point221	221	171	70	4	65	6	60	0	0	0	0
	point222	222	171	70	4	65	6	60	0	0	0	0
	point223	223	171	70	4	65	6	60	0	0	0	0
	point224	224										
SR 126 Ramp	point99	99	43	50	2	50	1	50	0	0	0	0
	point100	100	43	50	2	50	1	50	0	0	0	0
	point101	101	43	50	2	50	1	50	0	0	0	0
	point102	102	43	50	2	50	1	50	0	0	0	0
	point103	103	43	50	2	50	1	50	0	0	0	0
	point104	104	43	50	2	50	1	50	0	0	0	0
	point105	105	43	50	2	50	1	50	0	0	0	0
	point106	106	43	50	2	50	1	50	0	0	0	0
	point107	107	43	50	2	50	1	50	0	0	0	0
	point108	108	43	50	2	50	1	50	0	0	0	0
	point109	109										
101SB Ln 3	point110	110	283	70	17	65	16	60	0	0	0	0
	point111	111	283	70	17	65	16	60	0	0	0	0
	point112	112	283	70	17	65	16	60	0	0	0	0
	point113	113	283	70	17	65	16	60	0	0	0	0
	point114	114	283	70	17	65	16	60	0	0	0	0
	point115	115	283	70	17	65	16	60	0	0	0	0
	point116	116	283	70	17	65	16	60	0	0	0	0
	point118	118	283	70	17	65	16	60	0	0	0	0
	point119	119	283	70	17	65	16	60	0	0	0	0
	point120	120	283	70	17	65	16	60	0	0	0	0

	point121	121	283	70	17	65	16	60	0	0	0	0
	point122	122	373	70	23	65	22	60	0	0	0	0
	point123	123	373	70	23	65	22	60	0	0	0	0
	point124	124										
Telephone WB Ln 3	point128	128	93	50	1	50	1	50	0	0	0	0
	point129	129	93	50	1	50	1	50	0	0	0	0
	point130	130	93	50	1	50	1	50	0	0	0	0
	point131	131	93	50	1	50	1	50	0	0	0	0
	point31	31	93	50	1	50	1	50	0	0	0	0
	point32	32	93	50	1	50	1	50	0	0	0	0
	point33	33										
Telephone WB Ln 1	point140	140	93	50	1	50	1	50	0	0	0	0
	point141	141	93	50	1	50	1	50	0	0	0	0
	point142	142	93	50	1	50	1	50	0	0	0	0
	point143	143	93	50	1	50	1	50	0	0	0	0
	point20	20	93	50	1	50	1	50	0	0	0	0
	point21	21	93	50	1	50	1	50	0	0	0	0
	point22	22										
Telephone WB Ln 2	point146	146	93	50	1	50	4	50	0	0	0	0
	point147	147	93	50	1	50	4	50	0	0	0	0
	point148	148	93	50	1	50	4	50	0	0	0	0
	point149	149	93	50	1	50	4	50	0	0	0	0
	point26	26	93	50	1	50	4	50	0	0	0	0
	point27	27	93	50	1	50	4	50	0	0	0	0
	point28	28										
Telephone EB Ln 1	point36	36	93	35	1	35	1	35	0	0	0	0
	point37	37										
Telephone EB Ln 2	point41	41	33	35	1	35	4	35	0	0	0	0
	point42	42										
Telephone EB Ln 3	point45	45	93	35	1	35	1	35	0	0	0	0
	point46	46										
101NB Ln 3	point87	87	373	70	23	65	22	60	0	0	0	0
	point50	50	283	70	17	65	16	60	0	0	0	0
	point57	57	283	70	17	65	16	60	0	0	0	0

	point56	56	283	70	17	65	16	60	0	0	0	0
	point152	152	283	70	17	65	16	60	0	0	0	0
	point91	91	283	70	17	65	16	60	0	0	0	0
	point92	92	283	70	17	65	16	60	0	0	0	0
	point93	93	283	70	17	65	16	60	0	0	0	0
	point94	94	283	70	17	65	16	60	0	0	0	0
	point95	95	283	70	17	65	16	60	0	0	0	0
	point96	96	283	70	17	65	16	60	0	0	0	0
	point97	97	283	70	17	65	16	60	0	0	0	0
	point98	98										
101SB Ln 2	point155	155	291	70	16	65	7	60	0	0	0	0
	point156	156	291	70	16	65	7	60	0	0	0	0
	point157	157	291	70	16	65	7	60	0	0	0	0
	point158	158	291	70	16	65	7	60	0	0	0	0
	point159	159	291	70	16	65	7	60	0	0	0	0
	point160	160	291	70	16	65	7	60	0	0	0	0
	point161	161	291	70	16	65	7	60	0	0	0	0
	point162	162	291	70	16	65	7	60	0	0	0	0
	point163	163	291	70	16	65	7	60	0	0	0	0
	point164	164	291	70	16	65	7	60	0	0	0	0
	point165	165	384	70	21	65	9	60	0	0	0	0
	point166	166	384	70	21	65	9	60	0	0	0	0
	point167	167										
101SB Ln 1	point168	168	309	70	2	65	0	0	0	0	0	0
	point169	169	309	70	2	65	0	0	0	0	0	0
	point170	170	309	70	2	65	0	0	0	0	0	0
	point171	171	309	70	2	65	0	0	0	0	0	0
	point172	172	309	70	2	65	0	0	0	0	0	0
	point173	173	309	70	2	65	0	0	0	0	0	0
	point174	174	309	70	2	65	0	0	0	0	0	0
	point175	175	309	70	2	65	0	0	0	0	0	0
	point176	176	309	70	2	65	0	0	0	0	0	0
	point177	177	309	70	2	65	0	0	0	0	0	0
	point178	178	408	70	2	65	0	0	0	0	0	0

	point179	179	408	70	2	65	0	0	0	0	0	0
	point180	180										
101NB Ln 2	point181	181	384	70	21	65	9	60	0	0	0	0
	point182	182	291	70	16	65	7	60	0	0	0	0
	point183	183	291	70	16	65	7	60	0	0	0	0
	point184	184	291	70	16	65	7	60	0	0	0	0
	point185	185	291	70	16	65	7	60	0	0	0	0
	point186	186	291	70	16	65	7	60	0	0	0	0
	point187	187	291	70	16	65	7	60	0	0	0	0
	point188	188	291	70	16	65	7	60	0	0	0	0
	point189	189	291	70	16	65	7	60	0	0	0	0
	point190	190	291	70	16	65	7	60	0	0	0	0
	point191	191	291	70	16	65	7	60	0	0	0	0
	point192	192	291	70	16	65	7	60	0	0	0	0
	point193	193										
101NB Ln 1	point194	194	408	70	2	65						
	point195	195	309	70	2	65						
	point196	196	309	70	2	65						
	point197	197	309	70	2	65						
	point198	198	309	70	2	65						
	point199	199	309	70	2	65						
	point200	200	309	70	2	65						
	point201	201	309	70	2	65						
	point202	202	309	70	2	65						
	point203	203	309	70	2	65						
	point204	204	309	70	2	65						
	point205	205	309	70	2	65						
	point206	206										
NB Ramp 2 Lft	point209	209	113	55	1	55	2	55	0	0	0	0
	point210	210	113	40	1	40	2	40	0	0	0	0
	point211	211	113	20	1	20	2	20	0	0	0	0
	point52	52	113	10	1	10	2	10	0	0	0	0
	point53	53										
NB Ramp Rt	point213	213	44	55	1	55	1	55	0	0	0	0

	point214	214	44	40	1	40	1	40	0	0	0	0
	point215	215	44	20	1	20	1	20	0	0	0	0
	point54	54	44	10	1	10	1	10	0	0	0	0
	point55	55										
SR126 EB Ln 2	point82	82	256	70	15	65	8	60	0	0	0	0
	point83	83	256	70	15	65	8	60	0	0	0	0
	point84	84	256	70	15	65	8	60	0	0	0	0
	point85	85	256	70	15	65	8	60	0	0	0	0
	point1	1	256	70	15	65	8	60	0	0	0	0
	point2	2	256	70	15	65	8	60	0	0	0	0
	point3	3	256	70	15	65	8	60	0	0	0	0
	point4	4	256	70	15	65	8	60	0	0	0	0
	point5	5	256	70	15	65	8	60	0	0	0	0
	point6	6	256	70	15	65	8	60	0	0	0	0
	point7	7	256	70	15	65	8	60	0	0	0	0
	point8	8	256	70	15	65	8	60	0	0	0	0
	point9	9	256	70	15	65	8	60	0	0	0	0
	point10	10	256	70	15	65	8	60	0	0	0	0
	point11	11	256	70	15	65	8	60	0	0	0	0
	point13	13	256	70	15	65	8	60	0	0	0	0
	point14	14	256	70	15	65	8	60	0	0	0	0
	point15	15	256	70	15	65	8	60	0	0	0	0
	point16	16	256	70	15	65	8	60	0	0	0	0
	point17	17	256	70	15	65	8	60	0	0	0	0
	point18	18	256	70	15	65	8	60	0	0	0	0
	point19	19	256	70	15	65	8	60	0	0	0	0
	point217	217	256	70	15	65	8	60	0	0	0	0
	point218	218	256	70	15	65	8	60	0	0	0	0
	point219	219	256	70	15	65	8	60	0	0	0	0
	point220	220										
Telephone WB Ln 1-2	point23	23	93	35	1	35	1	35	0	0	0	0
	point24	24	93	35	1	35	1	35	0	0	0	0
	point25	25										
Telephone WB Ln 2-2	point29	29	93	35	1	35	4	35	0	0	0	0

	point30	30										
Telephone WB Ln 3-2	point34	34	93	35	1	35	1	35	0	0	0	0
	point35	35										
Telephone EB Ln 1-2	point236	236	93	50	1	50	1	50				
	point39	39	93	50	1	50	1	50				
	point137	137	93	50	1	50	1	50				
	point138	138	93	50	1	50	1	50				
	point139	139										
Telephone EB Ln 2-2	point43	43	93	50	1	50	4	50	0	0	0	0
	point125	125	93	50	1	50	4	50	0	0	0	0
	point126	126	93	50	1	50	4	50	0	0	0	0
	point127	127										
Telephone EB Ln 3-2	point47	47	93	50	1	50	1	50	0	0	0	0
	point48	48	93	50	1	50	1	50	0	0	0	0
	point134	134	93	50	1	50	1	50	0	0	0	0
	point135	135	93	50	1	50	1	50	0	0	0	0
	point136	136										

Appendix C

TNM® Model Geometric Inputs

Rincon Consultants
DVP

16 March 2011
TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: The Grove
RUN: Existing Peak Hour

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway		Points									
Name	Width	Name	No.	Coordinates (pavement)			Flow Control			Segment	
				X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
SR126 WB Ln 1	12.0	point226	226	1,628,781.6	282,031.8	188.50				Average	
		point225	225	1,628,628.1	281,959.6	185.00				Average	
		point58	58	1,628,439.2	281,863.4	181.00				Average	
		point59	59	1,628,109.6	281,678.5	173.00				Average	
		point60	60	1,627,825.0	281,507.5	166.00				Average	
		point61	61	1,627,562.4	281,364.9	160.00				Average	
		point62	62	1,627,394.9	281,271.0	155.00				Average	
		point153	153	1,627,247.5	281,205.1	149.00				Average	
		point154	154	1,627,078.2	281,152.8	143.00				Average	
		point63	63	1,626,890.9	281,092.8	140.00				Average	
		point64	64	1,626,513.6	281,030.8	140.00					
SR126 WB Ln 2	12.0	point231	231	1,628,771.4	282,050.5	188.50				Average	
		point230	230	1,628,698.1	282,017.1	187.00				Average	
		point229	229	1,628,544.2	281,941.8	184.00				Average	
		point65	65	1,628,421.1	281,877.5	181.00				Average	
		point66	66	1,628,248.1	281,780.8	177.50				Average	
		point67	67	1,628,104.5	281,693.1	173.00				Average	
		point68	68	1,627,817.6	281,529.2	166.00				Average	
		point69	69	1,627,671.2	281,454.4	162.00				Average	
		point70	70	1,627,391.4	281,297.0	155.00				Average	
		point71	71	1,627,232.0	281,232.6	149.00				Average	
		point72	72	1,626,882.2	281,125.5	140.00				Average	
		point73	73	1,626,502.2	281,055.2	140.00					
SR126 EB Ln 1	12.0	point74	74	1,626,482.2	280,705.2	170.00				Average	
		point75	75	1,626,610.9	280,774.4	168.00				Average	

		point76	76	1,627,001.2	280,995.1	161.00				Average	
		point77	77	1,627,308.0	281,173.4	156.00				Average	
		point78	78	1,627,445.4	281,249.4	155.00				Average	
		point79	79	1,627,848.5	281,476.9	166.00				Average	
		point80	80	1,628,143.4	281,640.1	173.00				Average	
		point81	81	1,628,470.5	281,828.8	181.00				Average	
		point221	221	1,628,568.8	281,878.8	184.00				Average	
		point222	222	1,628,682.2	281,933.1	186.50				Average	
		point223	223	1,628,758.2	281,968.5	188.50				Average	
		point224	224	1,628,796.2	281,985.1	189.50					
SR 126 Ramp	12.0	point99	99	1,627,550.4	280,246.7	150.00				Average	
		point100	100	1,627,401.9	280,399.0	149.00				Average	
		point101	101	1,627,291.9	280,520.7	148.00				Average	
		point102	102	1,627,214.9	280,673.9	147.00				Average	
		point103	103	1,627,204.1	280,740.3	147.00				Average	
		point104	104	1,627,204.8	280,850.7	147.00				Average	
		point105	105	1,627,227.6	280,943.9	147.50				Average	
		point106	106	1,627,266.4	281,033.4	148.00				Average	
		point107	107	1,627,322.0	281,111.2	149.00				Average	
		point108	108	1,627,416.4	281,201.3	150.00				Average	
		point109	109	1,627,453.4	281,224.6	150.00					
101SB Ln 3	12.0	point110	110	1,626,458.6	280,638.2	145.00				Average	
		point111	111	1,626,587.1	280,597.8	145.00				Average	
		point112	112	1,626,694.1	280,567.0	145.50				Average	
		point113	113	1,626,871.9	280,499.4	146.00				Average	
		point114	114	1,627,028.8	280,428.3	146.00				Average	
		point115	115	1,627,185.2	280,348.2	147.50				Average	
		point116	116	1,627,386.1	280,236.2	149.00				Average	
		point118	118	1,627,791.6	279,980.0	159.00				Average	
		point119	119	1,628,002.5	279,848.6	160.00				Average	
		point120	120	1,628,194.1	279,737.4	164.00				Average	
		point121	121	1,628,277.2	279,692.1	163.00				Average	Y
		point122	122	1,628,365.5	279,642.3	163.00				Average	
		point123	123	1,628,540.2	279,540.8	158.00				Average	
		point124	124	1,628,766.4	279,406.0	150.00					
Telephone WB Ln 3	12.0	point128	128	1,629,463.5	280,032.4	156.00				Average	
		point129	129	1,629,059.8	279,977.5	153.00				Average	
		point130	130	1,628,918.2	279,954.8	152.00				Average	

		point131	131	1,628,842.8	279,941.2	151.00				Average	
		point31	31	1,628,756.2	279,920.1	150.00				Average	
		point32	32	1,628,692.4	279,896.5	149.00				Average	
		point33	33	1,628,611.8	279,859.9	147.00					
Telephone WB Ln 1	12.0	point140	140	1,629,462.9	280,013.7	156.00				Average	
		point141	141	1,629,064.5	279,957.1	153.00				Average	
		point142	142	1,628,924.1	279,937.0	152.00				Average	
		point143	143	1,628,849.5	279,920.0	151.00				Average	
		point20	20	1,628,760.6	279,896.5	150.00				Average	
		point21	21	1,628,704.1	279,878.5	149.00				Average	
		point22	22	1,628,622.9	279,841.9	147.00					
Telephone WB Ln 2	12.0	point146	146	1,629,460.5	280,023.1	156.00				Average	
		point147	147	1,629,063.2	279,967.7	153.00				Average	
		point148	148	1,628,923.0	279,946.5	152.00				Average	
		point149	149	1,628,847.6	279,931.1	151.00				Average	
		point26	26	1,628,759.4	279,907.6	150.00				Average	
		point27	27	1,628,701.6	279,887.8	149.00				Average	
		point28	28	1,628,616.0	279,851.2	147.00					
Telephone EB Ln 1	12.0	point36	36	1,628,345.4	279,677.9	144.00				Average	
		point37	37	1,628,536.0	279,782.9	146.00					
Telephone EB Ln 2	12.0	point41	41	1,628,358.1	279,671.1	144.00				Average	
		point42	42	1,628,540.4	279,773.6	147.00					
Telephone EB Ln 3	12.0	point45	45	1,628,372.1	279,664.2	144.00				Average	
		point46	46	1,628,546.6	279,763.7	147.00					
101NB Ln 3	12.0	point87	87	1,628,901.1	279,434.9	150.00				Average	
		point50	50	1,628,474.4	279,689.4	164.00				Average	Y
		point57	57	1,628,362.8	279,752.8	165.00				Average	
		point56	56	1,628,182.6	279,857.3	165.00				Average	
		point152	152	1,627,845.6	280,052.5	160.00				Average	
		point91	91	1,627,554.4	280,237.2	150.00				Average	
		point92	92	1,627,393.1	280,336.5	149.00				Average	
		point93	93	1,627,288.0	280,405.8	148.00				Average	
		point94	94	1,627,160.9	280,471.1	147.00				Average	
		point95	95	1,627,018.0	280,537.8	146.00				Average	
		point96	96	1,626,834.0	280,613.6	146.00				Average	
		point97	97	1,626,605.1	280,683.3	145.00				Average	
		point98	98	1,626,517.9	280,697.7	145.00					
101SB Ln 2	12.0	point155	155	1,626,463.6	280,649.6	145.00				Average	

		point156	156	1,626,587.8	280,609.8	145.00				Average	
		point157	157	1,626,696.6	280,578.0	145.50				Average	
		point158	158	1,626,874.2	280,511.8	146.00				Average	
		point159	159	1,627,030.9	280,438.6	146.00				Average	
		point160	160	1,627,189.5	280,360.3	147.50				Average	
		point161	161	1,627,385.9	280,251.2	149.00				Average	
		point162	162	1,627,796.8	279,991.9	159.00				Average	
		point163	163	1,628,002.9	279,860.8	160.00				Average	
		point164	164	1,628,286.0	279,696.7	163.00				Average	Y
		point165	165	1,628,376.2	279,647.5	163.00				Average	
		point166	166	1,628,542.8	279,551.0	158.00				Average	
		point167	167	1,628,769.9	279,416.3	150.00					
101SB Ln 1	12.0	point168	168	1,626,466.2	280,660.1	145.00				Average	
		point169	169	1,626,588.4	280,620.7	145.00				Average	
		point170	170	1,626,695.4	280,589.7	145.50				Average	
		point171	171	1,626,876.9	280,523.6	146.00				Average	
		point172	172	1,627,033.6	280,449.8	146.00				Average	
		point173	173	1,627,194.5	280,373.1	147.50				Average	
		point174	174	1,627,392.2	280,261.9	149.00				Average	
		point175	175	1,627,801.8	280,003.9	159.00				Average	
		point176	176	1,628,002.5	279,872.1	160.00				Average	
		point177	177	1,628,298.0	279,701.6	163.00				Average	Y
		point178	178	1,628,389.0	279,652.4	163.00				Average	
		point179	179	1,628,544.0	279,561.3	158.00				Average	
		point180	180	1,628,772.6	279,427.5	150.00					
101NB Ln 2	12.0	point181	181	1,628,888.8	279,430.3	150.00				Average	
		point182	182	1,628,466.9	279,683.3	164.00				Average	Y
		point183	183	1,628,356.9	279,745.2	165.00				Average	
		point184	184	1,628,179.5	279,848.6	165.00				Average	
		point185	185	1,627,844.1	280,042.3	160.00				Average	
		point186	186	1,627,552.1	280,227.6	150.00				Average	
		point187	187	1,627,389.8	280,327.2	149.00				Average	
		point188	188	1,627,283.0	280,394.6	148.00				Average	
		point189	189	1,627,159.9	280,458.8	147.00				Average	
		point190	190	1,627,015.2	280,528.0	146.00				Average	
		point191	191	1,626,833.5	280,603.1	146.00				Average	
		point192	192	1,626,604.1	280,671.4	145.00				Average	
		point193	193	1,626,503.9	280,690.8	145.00					

101NB Ln 1	12.0	point194	194	1,628,876.4	279,424.3	150.00				Average	
		point195	195	1,628,457.9	279,675.8	164.00				Average	Y
		point196	196	1,628,349.6	279,737.4	165.00				Average	
		point197	197	1,628,175.5	279,838.2	165.00				Average	
		point198	198	1,627,838.8	280,033.6	160.00				Average	
		point199	199	1,627,548.1	280,218.4	150.00				Average	
		point200	200	1,627,385.6	280,317.2	149.00				Average	
		point201	201	1,627,278.1	280,384.0	148.00				Average	
		point202	202	1,627,155.6	280,448.6	147.00				Average	
		point203	203	1,627,013.1	280,518.8	146.00				Average	
		point204	204	1,626,832.6	280,590.8	146.00				Average	
		point205	205	1,626,603.8	280,659.1	145.00				Average	
		point206	206	1,626,497.6	280,681.3	145.00					
NB Ramp 2 Lft	12.0	point209	209	1,628,883.9	279,447.9	150.00				Average	
		point210	210	1,628,734.0	279,557.1	149.00				Average	
		point211	211	1,628,681.9	279,630.5	148.00				Average	
		point52	52	1,628,654.6	279,683.3	147.00				Average	
		point53	53	1,628,614.4	279,767.1	147.00					
NB Ramp Rt	12.0	point213	213	1,628,911.6	279,433.3	150.00				Average	
		point214	214	1,628,743.8	279,573.4	149.00				Average	
		point215	215	1,628,694.9	279,646.8	148.00				Average	
		point54	54	1,628,672.6	279,691.4	147.00				Average	
		point55	55	1,628,631.1	279,776.4	147.00					
SR126 EB Ln 2	12.0	point82	82	1,626,466.9	280,674.8	170.00				Average	
		point83	83	1,626,619.8	280,756.8	168.00				Average	
		point84	84	1,627,010.4	280,986.4	161.00				Average	
		point85	85	1,627,448.0	281,222.5	155.00				Average	
		point1	1	1,627,757.8	281,393.8	163.00				Average	
		point2	2	1,627,791.8	281,415.6	164.00				Average	
		point3	3	1,627,833.9	281,440.7	165.00				Average	
		point4	4	1,627,870.0	281,461.1	166.00				Average	
		point5	5	1,627,914.1	281,486.9	167.00				Average	
		point6	6	1,627,952.2	281,508.7	168.00				Average	
		point7	7	1,627,995.8	281,533.2	169.00				Average	
		point8	8	1,628,032.4	281,554.2	170.00				Average	
		point9	9	1,628,074.5	281,580.8	171.00				Average	
		point10	10	1,628,110.6	281,602.5	172.00				Average	
		point11	11	1,628,145.9	281,622.2	173.00				Average	

		point13	13	1,628,183.9	281,647.2	174.00				Average	
		point14	14	1,628,225.4	281,671.7	175.00				Average	
		point15	15	1,628,266.9	281,696.2	176.00				Average	
		point16	16	1,628,306.9	281,719.9	177.00				Average	
		point17	17	1,628,349.8	281,743.8	178.00				Average	
		point18	18	1,628,398.0	281,770.9	179.00				Average	
		point19	19	1,628,483.4	281,817.3	181.00				Average	
		point217	217	1,628,575.6	281,866.5	184.00				Average	
		point218	218	1,628,689.2	281,921.0	186.50				Average	
		point219	219	1,628,764.9	281,956.1	188.50				Average	
		point220	220	1,628,802.2	281,973.5	189.50					
Telephone WB Ln 1-2	12.0	point23	23	1,628,577.6	279,820.2	146.00	Signal	0.00	50	Average	
		point24	24	1,628,510.0	279,781.1	146.00				Average	
		point25	25	1,628,336.9	279,683.1	144.00					
Telephone WB Ln 2-2	12.0	point29	29	1,628,571.4	279,827.6	146.00	Signal	0.00	50	Average	
		point30	30	1,628,324.0	279,690.5	144.00					
Telephone WB Ln 3-2	12.0	point34	34	1,628,563.9	279,835.1	146.00	Signal	0.00	50	Average	
		point35	35	1,628,312.4	279,698.0	144.00					
Telephone EB Ln 1-2	12.0	point236	236	1,628,612.1	279,816.5	147.00	Signal	0.00	50	Average	
		point39	39	1,628,686.8	279,845.0	148.00				Average	
		point137	137	1,628,765.8	279,872.5	150.00				Average	
		point138	138	1,628,844.0	279,892.2	151.00				Average	
		point139	139	1,629,466.5	279,990.1	156.00					
Telephone EB Ln 2-2	12.0	point43	43	1,628,616.0	279,804.0	148.00	Signal	0.00	50	Average	
		point125	125	1,628,768.0	279,859.9	150.00				Average	
		point126	126	1,628,845.1	279,877.8	151.00				Average	
		point127	127	1,629,473.1	279,976.3	156.00					
Telephone EB Ln 3-2	12.0	point47	47	1,628,624.5	279,794.5	147.00	Signal	0.00	50	Average	
		point48	48	1,628,733.9	279,836.3	148.50				Average	
		point134	134	1,628,789.8	279,851.0	150.00				Average	
		point135	135	1,628,846.4	279,863.9	151.00				Average	
		point136	136	1,629,474.8	279,961.8	156.00					

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INPUT: RECEIVERS
PROJECT/CONTRACT: The Grove
RUN: Existing Peak Hour

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria: Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Townhouse NE	4	1	1,628,350.2	281,577.0	174.00	4.92	0.00	66	10.0	8.0	Y
Townhouse NW	5	1	1,628,152.8	281,455.0	169.00	4.92	0.00	66	10.0	8.0	Y
House 1	6	1	1,628,032.2	281,407.2	166.00	4.92	0.00	66	10.0	8.0	Y
House 2	7	1	1,627,856.8	281,306.7	162.00	4.92	0.00	66	10.0	8.0	Y
House 3	8	1	1,627,785.1	281,173.1	158.00	4.92	0.00	66	10.0	8.0	Y
House 4	9	1	1,627,865.0	280,667.9	150.00	4.92	0.00	66	10.0	8.0	Y
House 5	10	1	1,627,947.2	280,181.1	143.00	4.92	0.00	66	10.0	8.0	Y
House 6	11	1	1,628,131.5	280,065.2	143.00	4.92	0.00	66	10.0	8.0	Y
House 7	12	1	1,628,244.5	280,084.2	145.00	4.92	0.00	66	10.0	8.0	Y
Apt SW	13	1	1,628,526.5	280,013.0	147.00	4.92	0.00	66	10.0	8.0	Y
Apt SE	14	1	1,628,526.5	280,200.7	151.00	4.92	0.00	66	10.0	8.0	Y
Measure 1	16	1	1,628,554.8	280,892.5	162.00	4.92	58.30	66	10.0	8.0	Y
Measure 2	17	1	1,627,967.9	281,462.2	166.00	4.92	77.00	66	10.0	8.0	Y
Measure 3	18	1	1,627,921.9	280,279.0	143.00	4.92	68.70	66	10.0	8.0	Y
Measure 4	19	1	1,628,538.1	279,942.6	148.00	4.92	68.40	66	10.0	8.0	Y
Townhouse 2nd floor	22	1	1,628,268.4	281,520.9	172.00	13.00	0.00	66	10.0	8.0	Y
House 2nd floor SR126	23	1	1,627,944.8	281,360.5	164.00	13.00	0.00	66	10.0	8.0	Y
House 2nd floor Hwy101	24	1	1,628,174.6	280,074.3	143.00	13.00	0.00	66	10.0	8.0	Y
Apt 2nd floor	25	1	1,628,538.2	280,018.7	148.00	13.00	0.00	66	10.0	8.0	Y
Offsite Telephone	27	1	1,629,071.1	279,994.8	153.00	4.92	0.00	66	10.0	8.0	Y
Mobile Home 1	29	1	1,627,887.9	280,245.9	145.00	4.92	0.00	66	10.0	8.0	Y
Mobile Home 2	30	1	1,627,655.2	280,355.2	145.00	4.92	0.00	66	10.0	8.0	Y

Mobile Home 3	31	1	1,627,854.5	280,385.2	145.00	4.92	0.00	66	10.0	8.0	Y

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INPUT: BUILDING ROWS
PROJECT/CONTRACT: The Grove
RUN: Existing Peak Hour

Building Row			Points			
Name	Average Height	Building Percent	No.	Coordinates (ground) X	Y	Z
	ft	%		ft	ft	ft
Mobile Homes	10.00	80	6	1,627,763.1	281,169.2	157.00
			7	1,627,924.6	280,218.8	142.60

Appendix D

TNM Look-up Table Model Results

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

ThilleEx

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	564.5
Average automobile speed (mph):	30.0
Medium truck volume (v/h):	11.8
Average medium truck speed (mph):	25.0
Heavy truck volume (v/h):	11.8
Average heavy truck speed (mph):	25.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Residence

Distance from center of 12-ft wide, single lane roadway (ft):	50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	61.7

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

ThilleE+P

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	582.7
Average automobile speed (mph):	30.0
Medium truck volume (v/h):	12.1
Average medium truck speed (mph):	25.0
Heavy truck volume (v/h):	12.1
Average heavy truck speed (mph):	25.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Residence

Distance from center of 12-ft wide, single lane roadway (ft):	50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	61.8

**** CASE INFORMATION ****

**** Results calculated with TNM Version 2.5 ****

ExPortola

**** TRAFFIC VOLUME/SPEED INFORMATION ****

Automobile volume (v/h):	144.0
Average automobile speed (mph):	35.0
Medium truck volume (v/h):	3.0
Average medium truck speed (mph):	25.0
Heavy truck volume (v/h):	3.0
Average heavy truck speed (mph):	25.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

**** TERRAIN SURFACE INFORMATION ****

Terrain surface:	hard

**** RECEIVER INFORMATION ****

DESCRIPTION OF RECEIVER # 1

Residence

Distance from center of 12-ft wide, single lane roadway (ft):	50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	57.1

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

E+PPortola

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	166.1
Average automobile speed (mph):	35.0
Medium truck volume (v/h):	3.5
Average medium truck speed (mph):	25.0
Heavy truck volume (v/h):	3.5
Average heavy truck speed (mph):	25.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Residence

Distance from center of 12-ft wide, single lane roadway (ft):	50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	57.7

**** CASE INFORMATION ****

**** Results calculated with TNM Version 2.5 ****

ExTelephone

**** TRAFFIC VOLUME/SPEED INFORMATION ****

Automobile volume (v/h):	2273.0
Average automobile speed (mph):	40.0
Medium truck volume (v/h):	47.5
Average medium truck speed (mph):	35.0
Heavy truck volume (v/h):	47.5
Average heavy truck speed (mph):	35.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

**** TERRAIN SURFACE INFORMATION ****

Terrain surface:	hard

**** RECEIVER INFORMATION ****

DESCRIPTION OF RECEIVER # 1

Residence

Distance from center of 12-ft wide, single lane roadway (ft):	50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	70.6

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

E+PTelephone

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	2342.4
Average automobile speed (mph):	40.0
Medium truck volume (v/h):	48.8
Average medium truck speed (mph):	35.0
Heavy truck volume (v/h):	48.8
Average heavy truck speed (mph):	35.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Residence

Distance from center of 12-ft wide, single lane roadway (ft):	50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	70.7

Appendix 4.15 **1) Traffic Study for The Grove Project dated October 30, 2015 prepared by Stantec; 2) an update to the Traffic Study prepared by Austin-Foust Associates, Inc. dated February 22, 2012; 3) a Memorandum from Stantec dated June 30, 2014 with attached "Land Use and Trip Generation Summary" and "2014 Traffic Count Data"; 4) The Grove Traffic Study prepared by Austin-Foust Associates, Inc. dated March 4, 2011**

Traffic Study for The Grove Project

City of Ventura

Prepared for:
Moss & Associates

Prepared by:
Stantec Consulting Services Inc.

October 30, 2015

2073009620

Sign-off Sheet

This document entitled Traffic Study for The Grove Project was prepared by Stantec Consulting Services Inc. ("Stantec") for the account of Moss & Associates (the "Client"). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

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Project Manager Review by _____
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Stantec

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APPENDIX C – INTERSECTION DELAY WORKSHEETS

1.0 INTRODUCTION

Stantec Consulting Services Inc. (Stantec) has performed a traffic impact analysis for a proposed residential project, known as The Grove, in the City of Ventura. The purpose of the study is to determine the amount of traffic generated by the proposed project and to analyze the impacts of the project on the surrounding roadway system for incorporation into an Environmental Impact Report (EIR) for the City's review and approval. This report summarizes the traffic impact analysis prepared for the environmental review process.

1.1 SCOPE

The traffic study provides existing and long-range (Year 2025) impact analyses of the proposed project. The long-range analysis examines the project in a General Plan buildout context. The analysis will address project impacts compared with the no-project scenarios.

1.2 STUDY AREA

The project site is located on the north side of Telephone Road east of the US-101 freeway and south of SR-126 as shown in Figure 1. The site currently encompasses 25.65 acres for agricultural uses. The site is adjacent to an 84-unit mobile home park on the west. Sole access for the existing land uses is provided by Copland Drive. Copland Drive is a local two-lane street that terminates at the mobile home park entrance to the north. The southern terminus of Copland Drive is the US-101 northbound off-ramp and Telephone Road signalized intersection. US-101 is a multi-lane freeway which serves as a major arterial and is the principal inter-city route through the City. Telephone Road is an east-west arterial street which provides a primary connection to US-101 from the eastern portion of the City.

The proposed project will develop the agricultural land into 58 single family dwellings and 192 condominium units. Proposed access to the site utilizes the existing signalized entrance on Telephone Road at Copland Drive/US-101 northbound off-ramp. A second access point will be provided by a new connection to Thille Street. Figure 2 illustrates the proposed site plan. Thille Street currently terminates just east of the proposed project site. Thille Street is a two-lane residential street with storage lanes provided for turning vehicles. Heading east on Thille Street, a raised landscaped median is constructed along with markings designating on-street parking and bicycle lanes.

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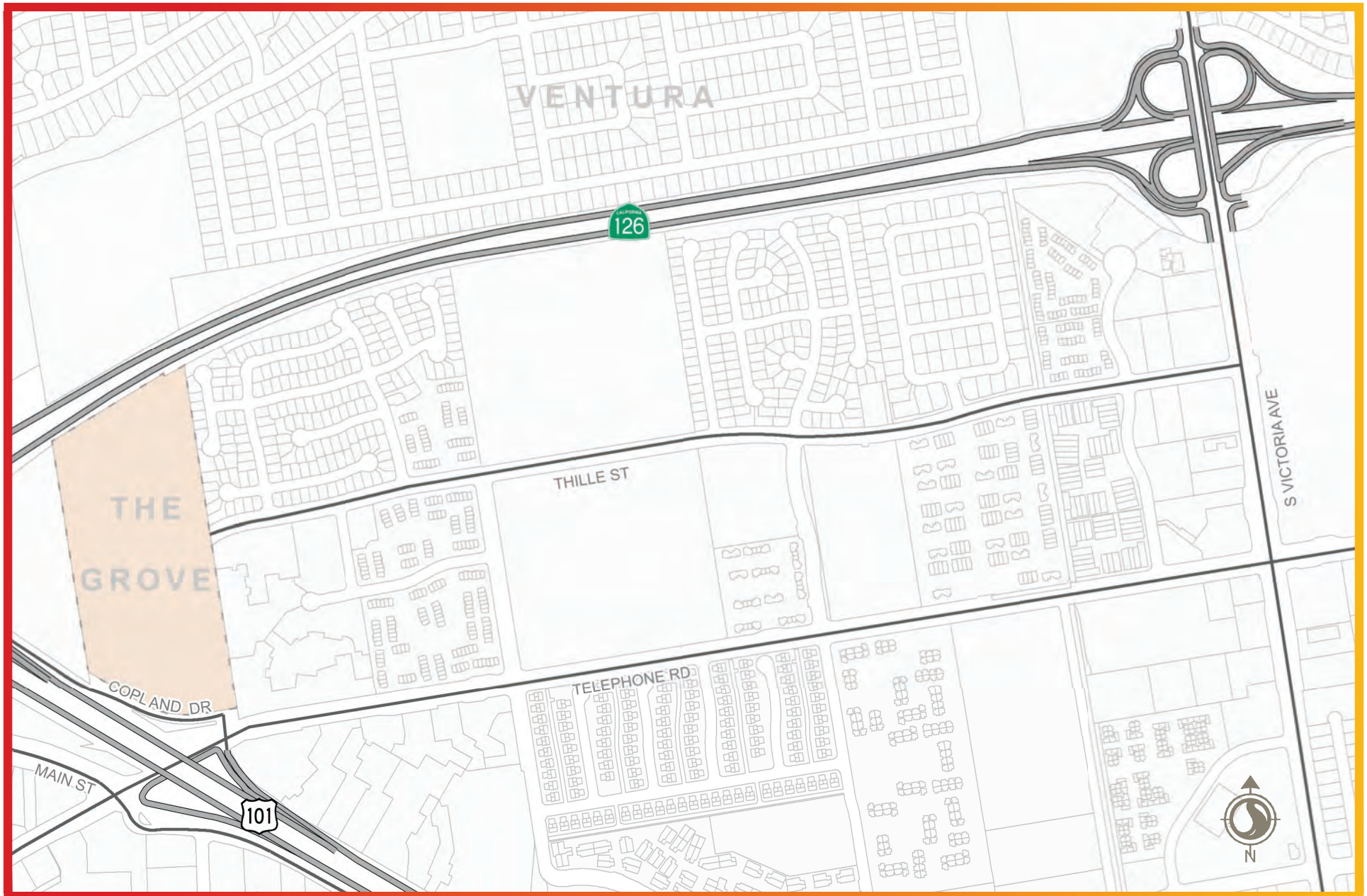

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Project Location

Figure 1

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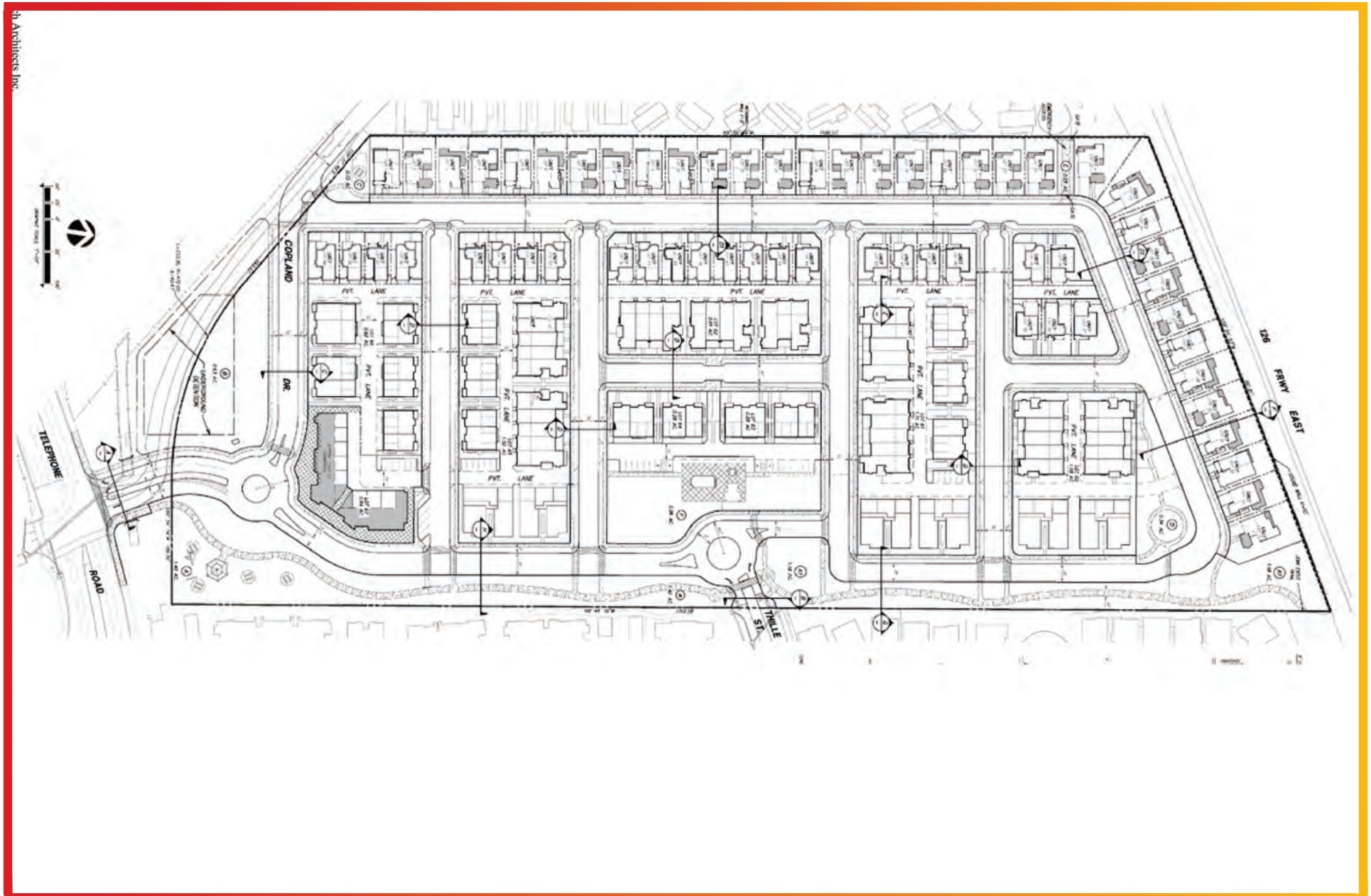

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Proposed Site Plan

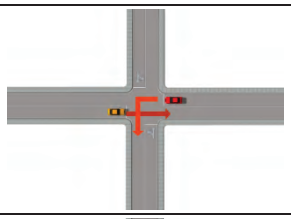
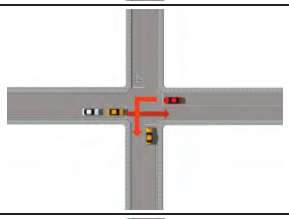
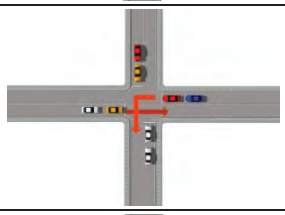
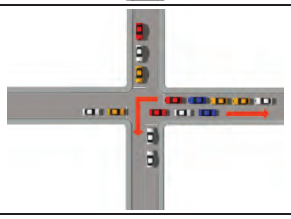
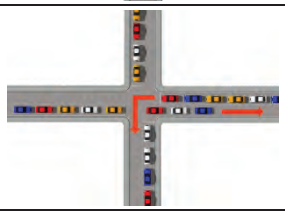
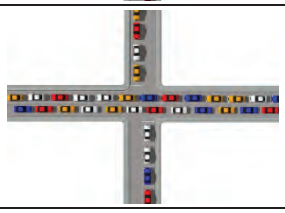
Figure 2

1.3 PERFORMANCE CRITERIA

Procedures and criteria based on the intersection capacity utilization (ICU) methodology are used by the City of Ventura. The City of Ventura uses Level of Service (LOS) D as the desirable standard (ICU is equal to .90 or less) for a majority of the intersections. Freeway ramp intersections are allowed to reach LOS E (ICU is equal to 1.00 or less). The threshold of significance for project impacts is an increase of more than .01 in the ICU value as a result of the project when the with-project conditions ICU value is more than .90 (or more than 1.00 for freeway access intersections). Table 1 illustrates the intersection LOS ranges for ICU values.

The study intersections were also analyzed using the Highway Capacity Manual (HCM) delay methodology. Synchro software was used to report the intersection delay and LOS. In determining the operational characteristics of the study intersections with existing or future traffic volumes, LOS A through F are applied, with LOS A indicating very good operation and LOS F indicating poor operation. The City of Ventura considers LOS E acceptable at freeway interchange intersections. At all other principal intersections within the City, LOS D is the peak hour design objective. Within surrounding City and County agencies, thresholds of significant impact to intersections are often set. Many agencies declare an adverse impact if the average delay in the no-project condition is at LOS E or F and increases by five or more seconds as a result of the project. Previously referenced Table 1 illustrates the intersection LOS ranges for HCM average intersection delay. Two of the study intersections are under Caltrans jurisdiction. Caltrans endeavors to maintain a target LOS at the transition between LOS C and D. If an existing State facility is operating at less than the target LOS, the existing measure of effectiveness should be maintained.

Table 1 Intersection Level of Service Ranges (ICU and HCM Delay)

Level of Service (LOS)		Intersection Capacity Utilization (ICU)	Highway Capacity Manual (HCM) Average Delay
			Signalized Intersection
A		0.00 – 0.60	0.00 – 10.0 seconds
B		0.61 – 0.70	10.1 – 20.0 seconds
C		0.71 – 0.80	20.1 – 35.0 seconds
D		0.81 – 0.90	35.1 – 55.0 seconds
E		0.91 – 1.00	55.1 – 80.0 seconds
F		Above 1.00	Above 80.0 seconds

Source: Highway Capacity Manual 2010, Transportation Research Board, National Research Council

2.0 EXISTING TRAFFIC CONDITIONS

Three signalized intersections and three roadway segments surrounding the project site were selected and approved by the City to be included in the traffic analysis. Existing peak hour intersection turning movement count volumes (including pedestrian and bicycle counts) and average daily traffic (ADT) volumes for these locations were collected in September 2015. Appendix A contains the volume data acquired. The locations and collected vehicular volumes at each study intersection are illustrated in Figure 3. The pedestrian and bicycle counts are shown in Figure 4. Existing transit routes were surveyed in the project area and are mapped in Figure 5.

The results of the existing analysis for the study intersections are summarized in Table 2 (ICU worksheets are included in Appendix B and delay calculation worksheets are included in Appendix C). This table reports the average delay experienced by the entire intersection. The ICU values are also provided in the Table. As illustrated, the study intersections currently operate at an acceptable LOS D or better during the AM and PM peak hours.

Table 2 Existing (Year 2015) Level of Service Conditions

	Existing			
	AM Peak Hour		PM Peak Hour	
Intersection	**ICU**	**Delay**	**ICU**	**Delay**
1. Main/US-101 SB/ Valentine &	.55/A	33.1 sec/C	.66/B	35.8 sec/D
2. Copland/US-101 NB & Telephone	.48/A	24.7 sec/C	.42/A	14.1 sec/B
3. Victoria & Thille St	.49/A	25.0 sec/C	.54/A	27.0 sec/C

sec = seconds/vehicle

Level of Service Ranges:		ICU	Delay
	A	.00 - .60	0.00 - 10.0 sec/veh
	B	.61 - .70	10.1 – 20.0 sec/veh
	C	.71 - .80	20.1 – 35.0 sec/veh
	D	.81 - .90	35.1 – 55.0 sec/veh
	E	.91 - 1.00	55.1 – 80.0 sec/veh
	F	Above 1.00	Above 80.0 sec/veh

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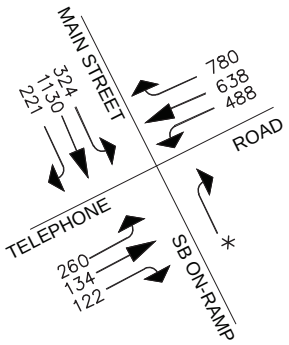
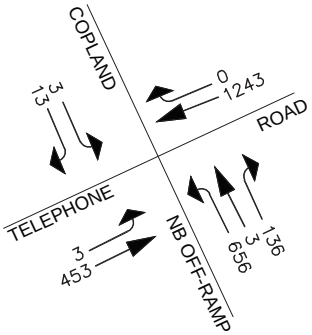
AM Peak Hour

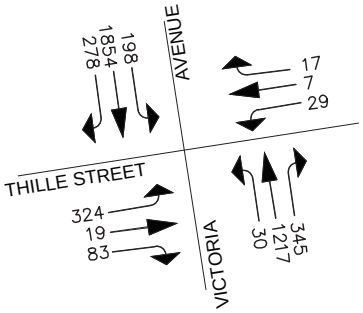
1. Main Street/101 SB Ramps & Telephone Road



2. Copland Drive/101 NB Ramps & Telephone Road

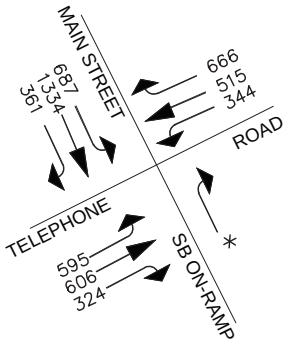


3. Victoria Avenue & Thille Street/Johnson Drive

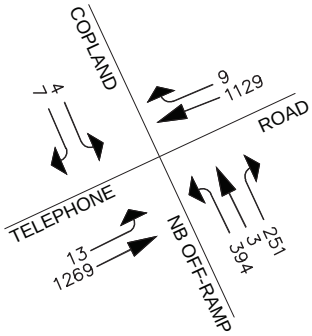


PM Peak Hour

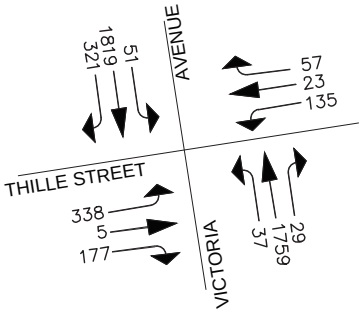
1. Main Street/101 SB Ramps & Telephone Road



2. Copland Drive/101 NB Ramps & Telephone Road



3. Victoria Avenue & Thille Street/Johnson Drive



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Existing (Year 2015) Peak Hour Vehicular Volumes

Figure 3

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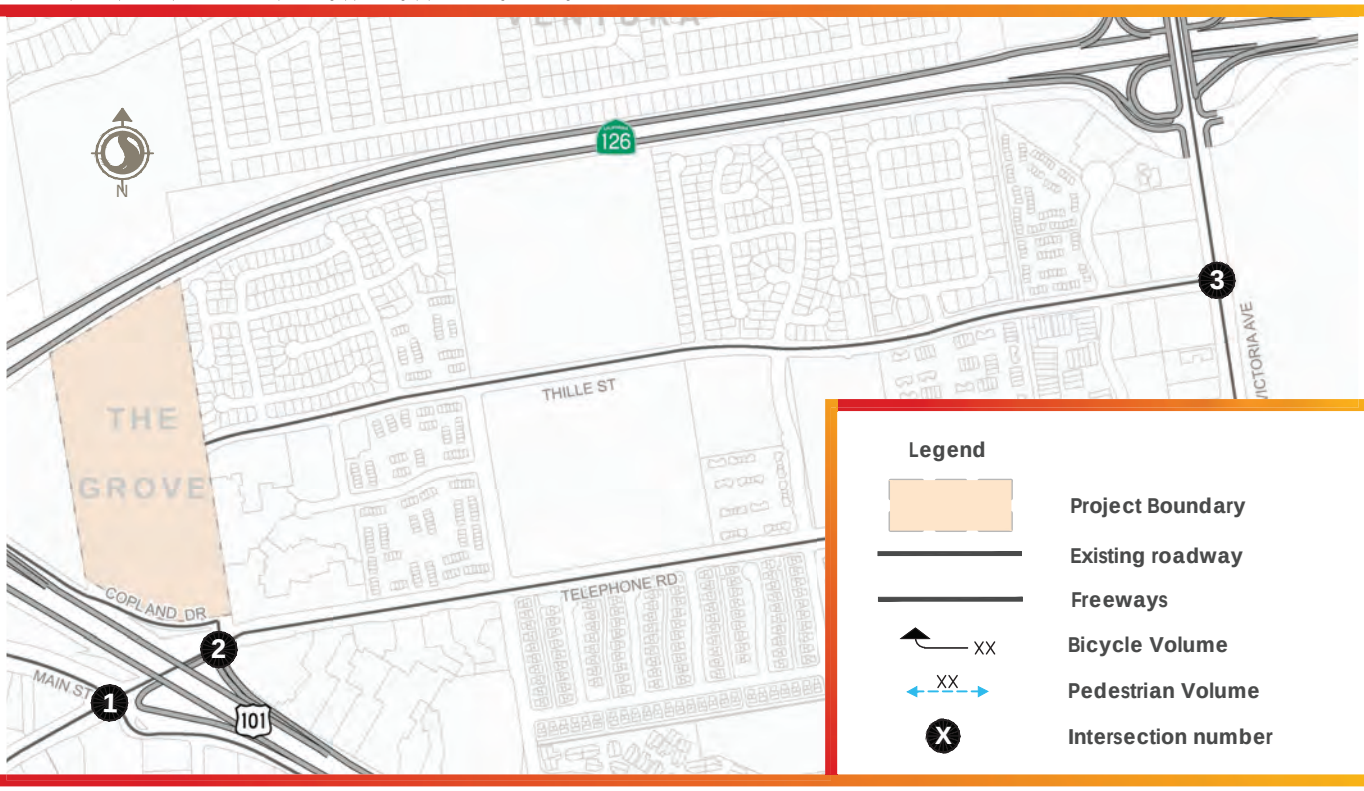
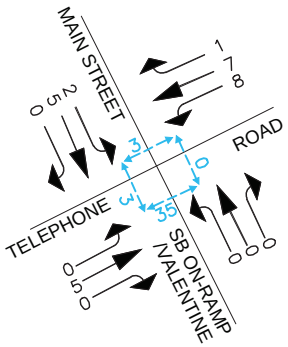
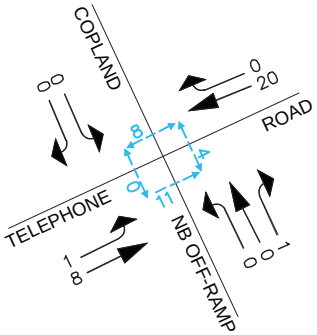


AM Peak Hour

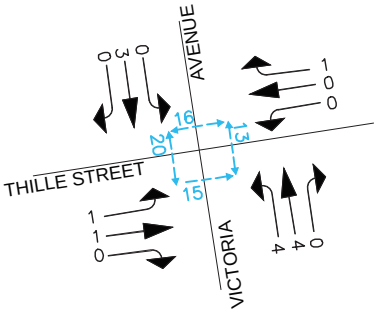
1. Main Street/Valentine Road & Telephone Road



2. Copland Drive/101 NB Ramps & Telephone Road

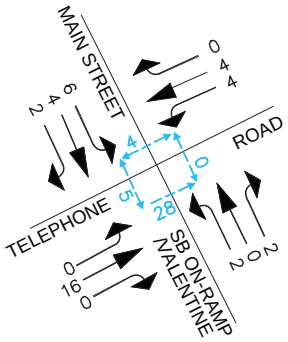


3. Victoria Avenue & Thille Street/Johnson Drive

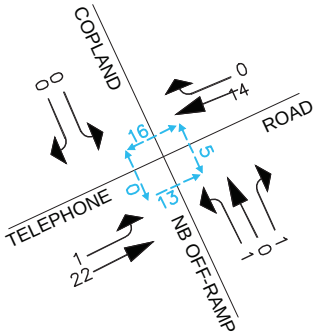


PM Peak Hour

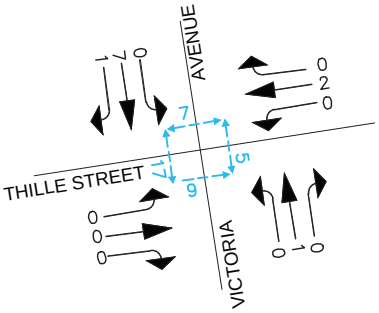
1. Main Street/Valentine Road & Telephone Road



2. Copland Drive/101 NB Ramps & Telephone Road



3. Victoria Avenue & Thille Street/Johnson Drive



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Existing (Year 2015) Peak Hour Pedestrian & Bicycle Volumes

Figure 4

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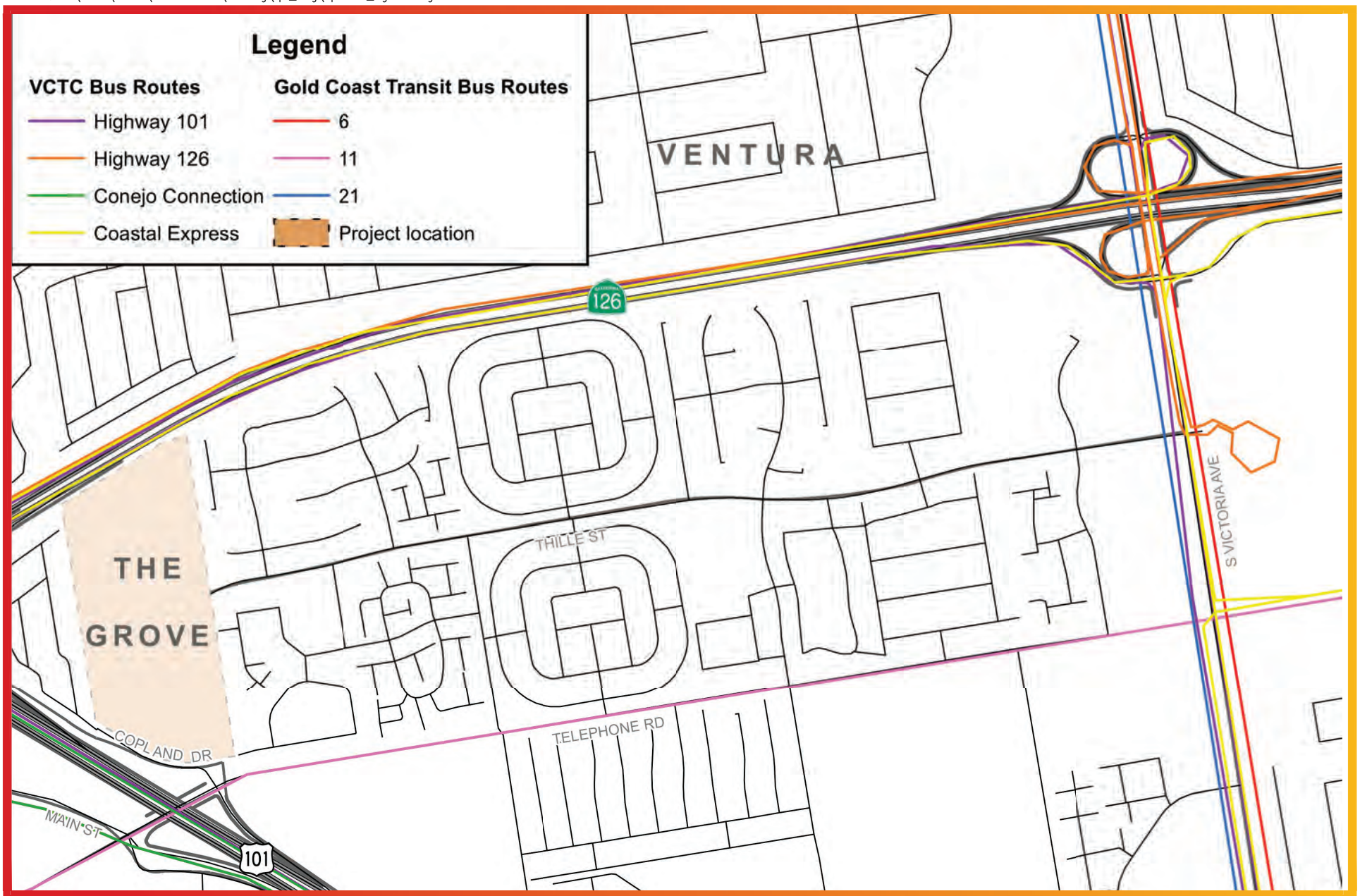

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Existing Bus Transit Routes

Figure 5

3.0 TRIP GENERATION AND DISTRIBUTION

The number of new trips that is expected to be generated by the project was estimated based on trip generation rates published in the Institute of Transportation Engineers (ITE) "Trip Generation Manual, 9th Edition". Trip generation factors for the 58 single family dwellings were based on values for Single Family Detached (ITE Category 210). Trip generation factors for the 192 condominium dwellings were based on values for Condos (ITE Category 230). The existing peak hour agriculture trips are negligible and did not have any effect on this study. Table 3 shows the trip rates for the land use types and trips generated as a result of the project.

Table 3 Land Use and Trip Generation for The Grove Project

		AM Peak Hour			PM Peak Hour			
Land Use Type	**Units**	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**ADT**
Trip Rates								
1. Single Family Detached	DU	0.19	0.56	0.75	0.65	0.36	1.01	9.57
2. Condos	DU	0.07	0.37	0.44	0.36	0.18	0.54	5.86
Proposed Project Trips								
1. Single Family Detached	58 DU	11	32	43	38	21	59	555
2. Condos	192 DU	13	71	84	69	35	104	1,125
TOTAL		24	103	127	107	56	163	1,680

A total of 1,680 trips per day will be distributed to the surrounding roadway network. Of these trips, 127 will occur during the AM peak hour, and 163 will occur during the PM peak hour.

Trip distribution percentages outlined in the project's 2011 traffic study were used in the current analysis. The distribution of project trips was determined and approved by the City. Figure 6 shows the general distribution. Approximately 55 percent of project traffic is oriented toward US-101, 10 percent is oriented toward SR-126, and 35 percent is oriented toward the local arterials. The project-generated peak hour trips for the proposed project are illustrated in Figure 7.

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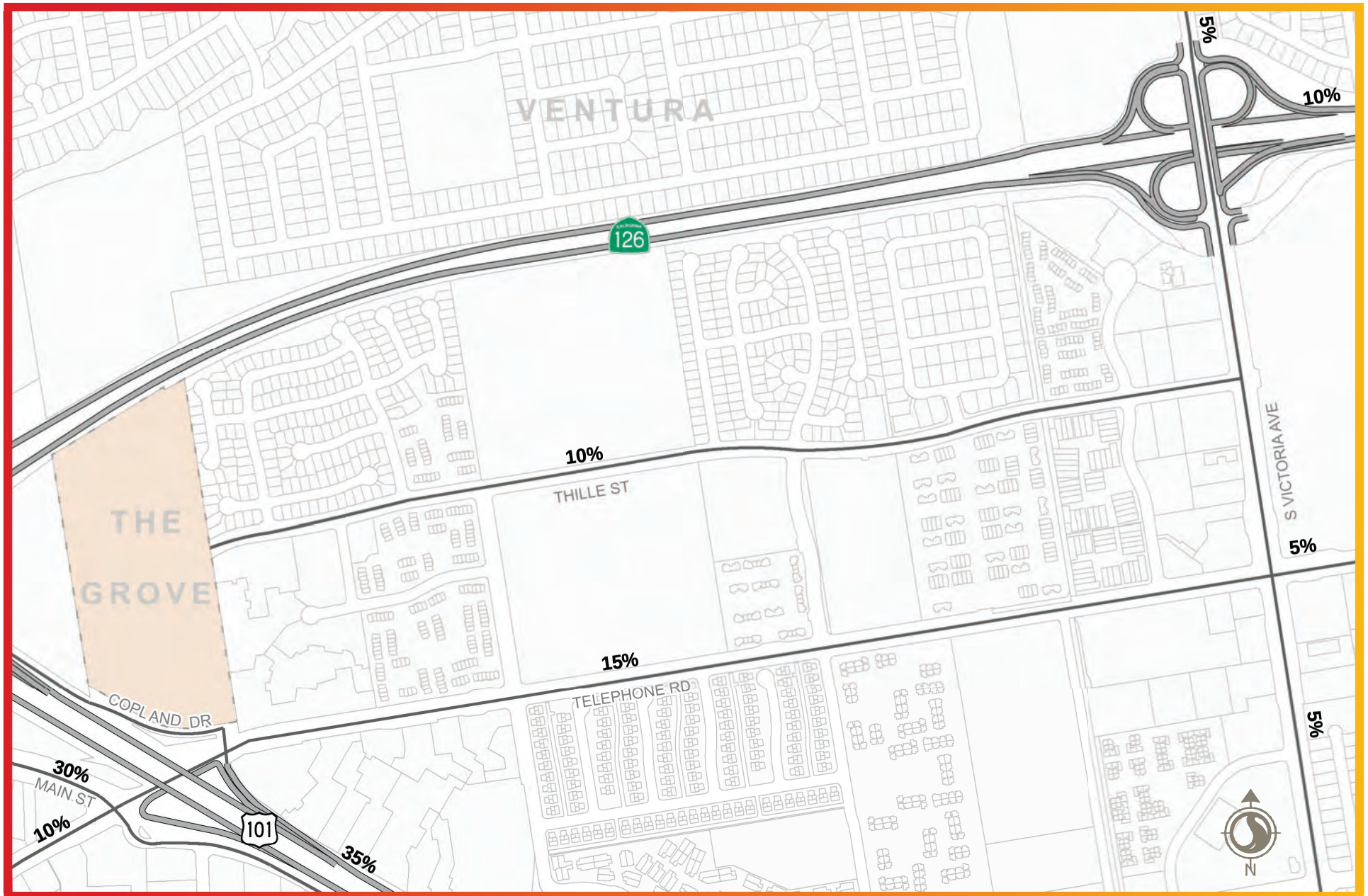

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Project Trip Distribution

Figure 6

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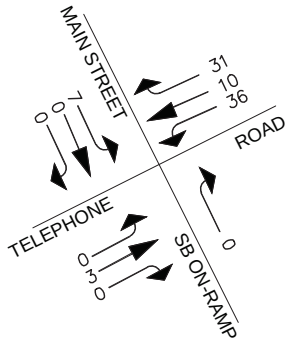
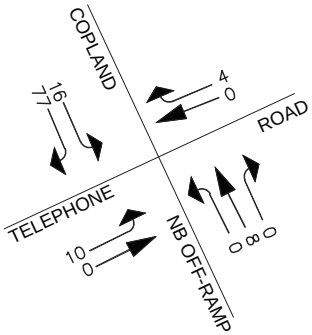
AM Peak Hour

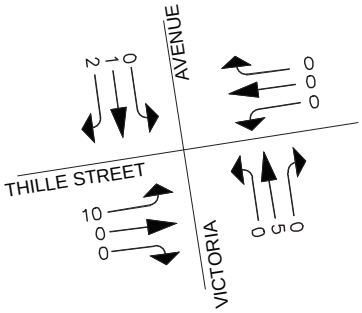
1. Main Street/101 SB Ramps & Telephone Road



2. Copland Drive/101 NB Ramps & Telephone Road

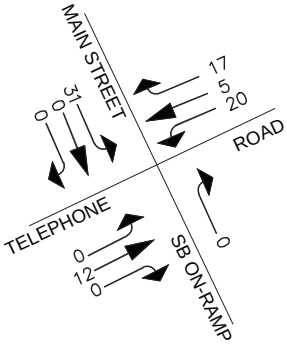


3. Victoria Avenue & Thille Street/Johnson Drive

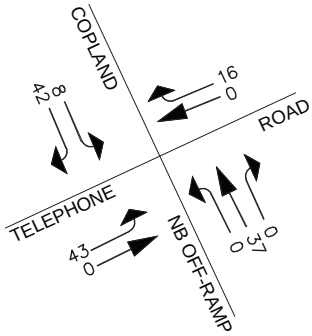


PM Peak Hour

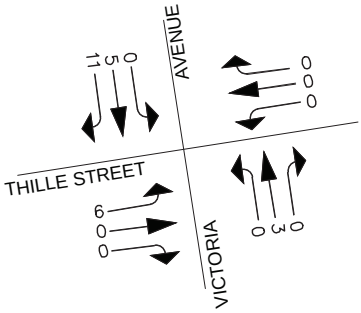
1. Main Street/101 SB Ramps & Telephone Road



2. Copland Drive/101 NB Ramps & Telephone Road



3. Victoria Avenue & Thille Street/Johnson Drive



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Project-Generated Peak Hour Trips

Figure 7

4.0 EXISTING PLUS PROJECT CONDITIONS

Peak hour project trips were added to the existing intersection volumes presented earlier. The existing-plus-project ICU values are summarized in Table 4 based on the peak hour turning movement volumes shown in Figure 6.

Table 4 Existing Plus Project Level of Service Conditions

	Existing				Existing Plus Project			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Intersection	**ICU**	**Delay**	**ICU**	**Delay**	**ICU**	**Delay**	**ICU**	**Delay**
1. Main/US-101 SB/ Valentine & Telephone	.55/A	33.1 sec/C	.66/B	35.8 sec/D	.56/A	34.0 sec/C	.66/B	36.3 sec/D
2. Copland/US-101 NB & Telephone	.48/A	24.7 sec/C	.42/A	14.1 sec/B	.54/A	27.2 sec/C	.45/A	16.1 sec/B
3. Victoria & Thille St	.49/A	25.0 sec/C	.54/A	27.0 sec/C	.49/A	25.2 sec/C	.55/A	27.3 sec/C

sec = seconds/vehicle

Level of Service Ranges:		ICU	Delay
	A	.00 - .60	0.00 - 10.0 sec/veh
	B	.61 - .70	10.1 – 20.0 sec/veh
	C	.71 - .80	20.1 – 35.0 sec/veh
	D	.81 - .90	35.1 – 55.0 sec/veh
	E	.91 - 1.00	55.1 – 80.0 sec/veh
	F	Above 1.00	Above 80.0 sec/veh

As shown in Table 4, the addition of project-generated traffic has no significant impact on the operation of any study intersections under existing conditions. The study intersections will continue to operate as LOS D or better during the AM and PM peak hours.

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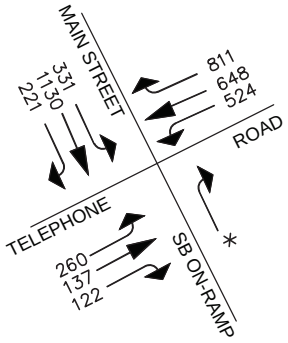
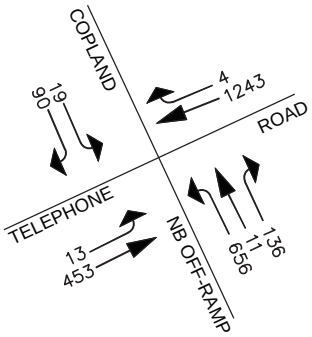
AM Peak Hour

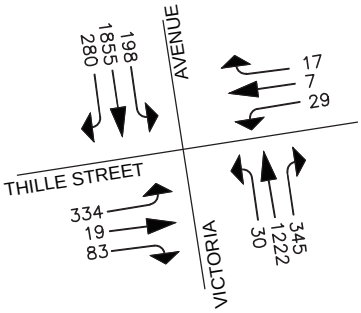
1. Main Street/101 SB Ramps & Telephone Road



2. Copland Drive/101 NB Ramps & Telephone Road

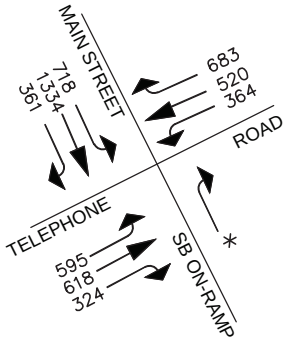


3. Victoria Avenue & Thille Street/Johnson Drive

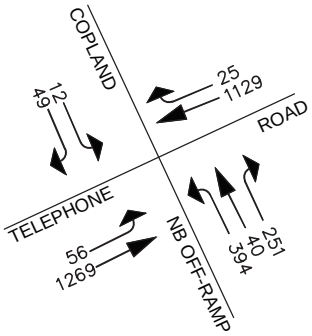


PM Peak Hour

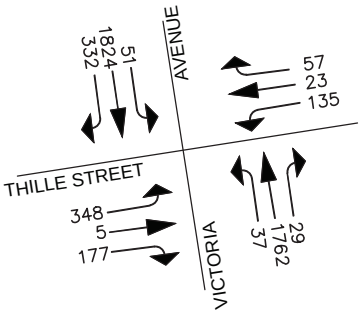
1. Main Street/101 SB Ramps & Telephone Road



2. Copland Drive/101 NB Ramps & Telephone Road



3. Victoria Avenue & Thille Street/Johnson Drive



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Existing + Project Peak Hour Volumes

Figure 8

5.0 YEAR 2025 GENERAL PLAN TRAFFIC CONDITIONS

Project impacts under buildout conditions were analyzed to determine the project's consistency with the City's General Plan. This would represent the buildout of the area, assumed to be Year 2025. The City utilizes a travel demand model as a tool to analyze various future scenarios. Figure 9 displays the traffic model links representing the roadway network surrounding the project site. Additionally, the traffic analysis zone (TAZ) encompassing the project site is identified on the Figure as TAZ 74.

Traffic model assignments for the AM and PM peak hours were completed for both with and without project scenarios. No-Project and With-Project peak hour volumes from the traffic model are shown in Figures 10 and 11, respectively.

Table 5 summarizes the intersection LOS under 2025 conditions (ICU calculation worksheets are included in Appendix B, and delay calculation worksheets are included in Appendix C). As shown in Table 5, the ICU values for AM and PM peak hour scenarios are less than .90. The with-project conditions result in acceptable LOS D or better.

Table 5 Year 2025 General Plan Level of Service Conditions

	2025 General Plan No-Project				2025 General Plan With-Project			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Intersection	**ICU**	**Delay**	**ICU**	**Delay**	**ICU**	**Delay**	**ICU**	**Delay**
1. Main/US-101 SB/ Valentine & Telephone	.61/B	21.3 sec/C	.86/D	46.8 sec/D	.61/B	21.4 sec/C	.87/D	48.4 sec/D
2. Copland/US-101 NB & Telephone	.53/A	26.4 sec/C	.67/B	25.4 sec/C	.56/A	28.7 sec/C	.67/B	31.5 sec/C
3. Victoria & Thille St	.52/A	23.0 sec/C	.60/A	24.6 sec/C	.53/A	23.4 sec/C	.60/A	24.6 sec/C

sec = seconds/vehicle

Level of Service Ranges:		ICU	Delay
	A	.00 - .60	0.00 - 10.0 sec/veh
	B	.61 - .70	10.1 – 20.0 sec/veh
	C	.71 - .80	20.1 – 35.0 sec/veh
	D	.81 - .90	35.1 – 55.0 sec/veh
	E	.91 - 1.00	55.1 – 80.0 sec/veh
	F	Above 1.00	Above 80.0 sec/veh

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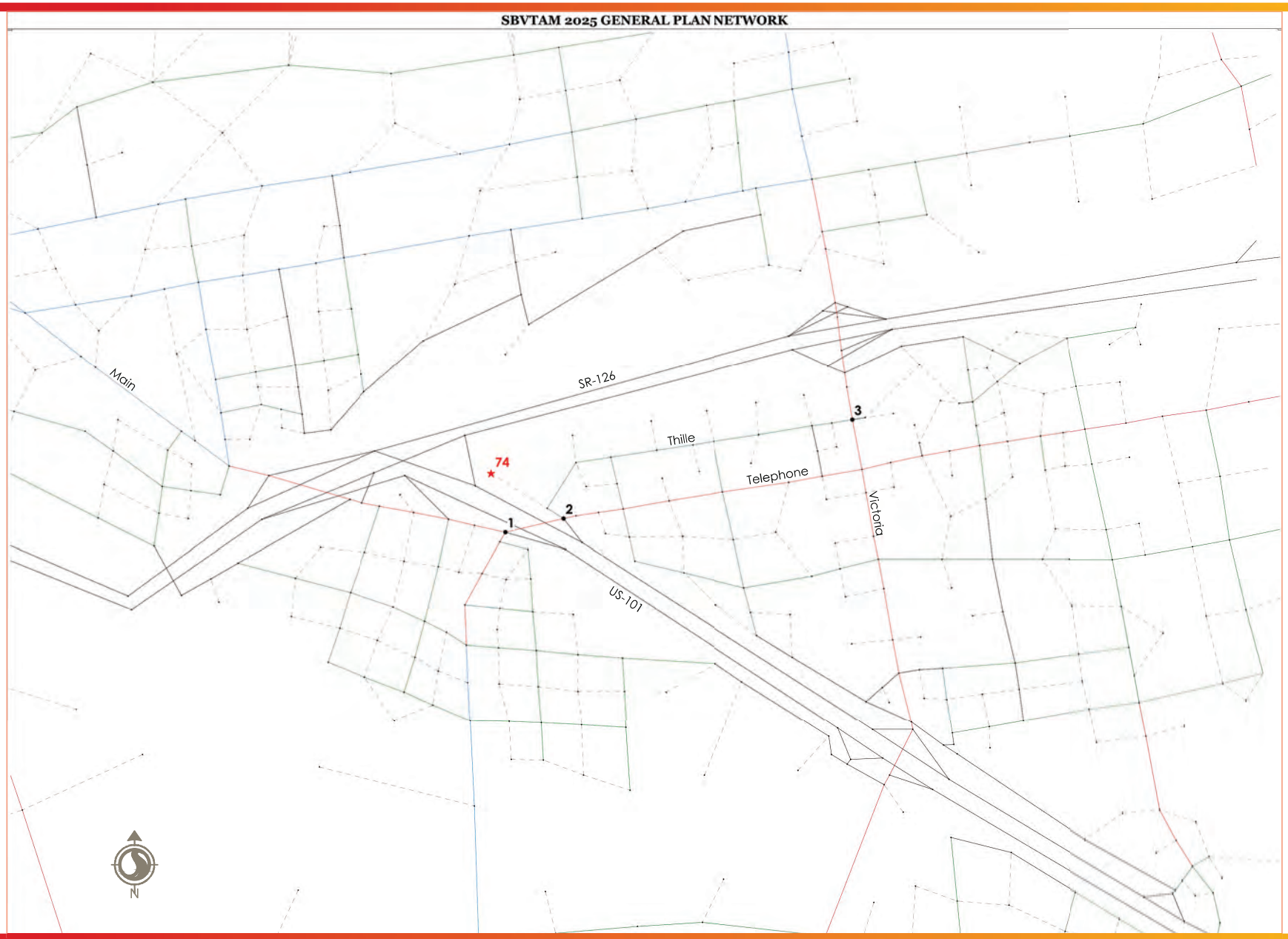

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Ventura Traffic Model Network

Figure 9

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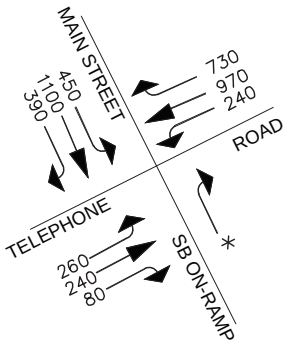
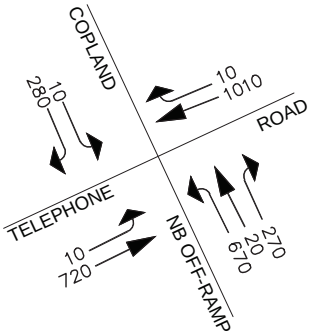
AM Peak Hour

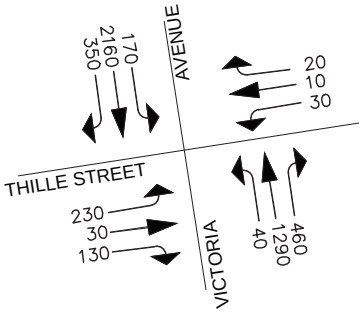
1. Main Street/101 SB Ramps & Telephone Road



2. Copland Drive/101 NB Ramps & Telephone Road

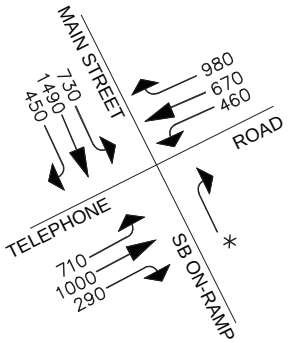


3. Victoria Avenue & Thille Street/Johnson Drive

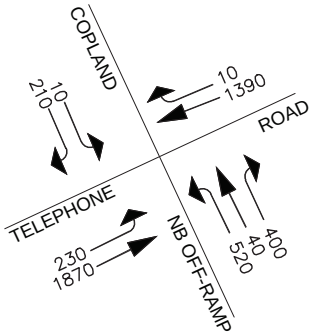


PM Peak Hour

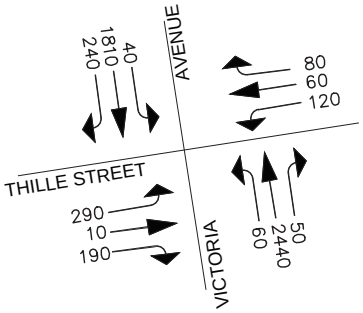
1. Main Street/101 SB Ramps & Telephone Road



2. Copland Drive/101 NB Ramps & Telephone Road



3. Victoria Avenue & Thille Street/Johnson Drive



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Year 2025 No-Project Peak Hour Volumes

Figure 10

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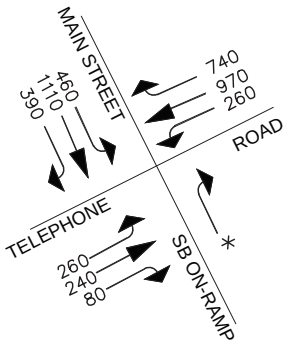
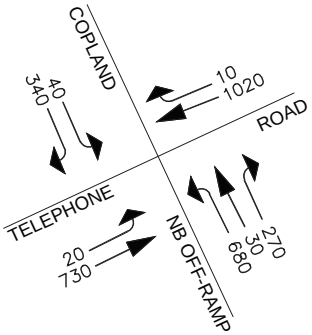
AM Peak Hour

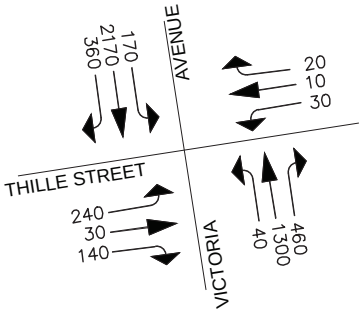
1. Main Street/101 SB Ramps & Telephone Road



2. Copland Drive/101 NB Ramps & Telephone Road

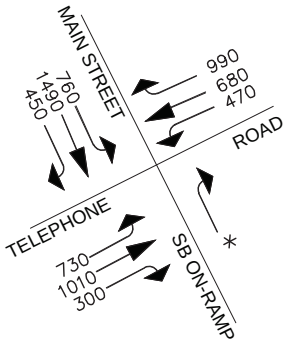


3. Victoria Avenue & Thille Street/Johnson Drive

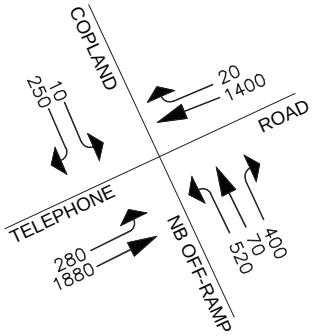


PM Peak Hour

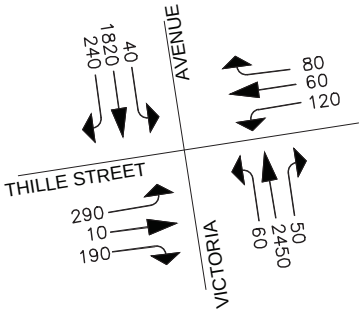
1. Main Street/101 SB Ramps & Telephone Road



2. Copland Drive/101 NB Ramps & Telephone Road



3. Victoria Avenue & Thille Street/Johnson Drive



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Year 2025 With-Project Peak Hour Volumes

Figure 11

The study intersections will operate at the same LOS for both scenarios during the AM and PM peak hours. The highest increase in average intersection delay (6.1 seconds/vehicle) occurs at the Copland Drive/US-101 northbound ramp and Telephone Road intersection during the PM peak hour. This intersection will continue to operate at acceptable LOS C with the proposed project, and the project has no significant impact. In addition, the intersection of Main Street/Valentine Road/US-101 southbound ramp and Telephone Road will operate at LOS D during the PM peak hour; however the project increases the average delay by less than 2 seconds, and the project has no significant impact on this location.

The ADT volumes without the project and with the project were also compared. The ADT impacts from TAZ 74 are summarized in Table 6. The project shows no increase in the Year 2025 ADT along Telephone Road just east of Copland Drive/US-101 Off Ramp or along Thille Street just west of Portola Road.

Table 6 Average Daily Traffic Volumes for The Grove Project

	Telephone Rd e/o Copland Dr/US-101 NB Off Ramp	Thille St w/o Portola Rd	Copland Dr n/o Telephone Rd
Existing (2015)	31,100	2,150	450
Project-Generated Daily Trips	250	170	1,510
Existing-Plus-Project	31,350	2,320	1,960
2025 Model ADT without Project	33,000	2,000	n/a*
2025 Model ADT with Project	33,000	2,000	n/a*
**Note: Copland Drive north of Telephone Road is not in the City's traffic model.*			

6.0 SUMMARY AND CONCLUSIONS

The proposed project consists of residential uses, including 58 single family dwellings and 192 multi-family units. The project will generate 127 AM peak hour trips, 163 PM peak hour trips, and 1,680 daily trips. The project peak hour trips were distributed to the surrounding roadway network and added to existing and Year 2025 traffic. The project has no significant impact on the study intersections during the peak hours or the ADT under existing or 2025 conditions, and as a result, no mitigation is required.

APPENDIX A – EXISTING PEAK HOUR TURNING MOVEMENT COUNTS AND ADT VOLUMES

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

E Main St/US-101 SB Ramp and Telephone Rd , Ventura

Date: 9/23/2015

Day: Wednesday

Project #: 15-5612-001

City: Ventura

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	445 PM

Peak Hour Summary

Southbound Approach (E Main St/US-101 SB Ramp)

	Lane 1	Lane 3	Lane 2		
AM	221	854	324	1040	AM
NOON	0	0	0	0	NOON
PM	361	1198	687	1261	PM

Eastbound Approach (Telephone Rd)

Lanes	AM	NOON	PM
	859	0	876
2	260	0	595
2	134	0	606
1	115	0	319

Westbound Approach

AM	NOON	PM	Lanes
780	0	666	1
638	0	515	1.5
154	0	176	1.5
458	0	1293	

CONTROL: Signalized

Northbound Approach

AM	1123	0	0	0
NOON	0	0	0	0
PM	1693	0	0	0
Lanes		0	0	0

Count Periods	Start	End
AM	6:30 AM	8:30 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	1399	1040	AM
	0	0	NOON
	2246	1261	PM

West Leg AM	NOON	PM	East Leg AM	NOON	PM
859	0	876	1572	0	1357
509	0	1520	458	0	1293

	South Leg	
AM	1123	0
NOON	0	0
PM	1693	0

Total Volume Per Leg

	North Leg
AM	2439
NOON	0
PM	3507

West Leg AM	NOON	PM	East Leg AM	NOON	PM
1368	0	2396	2030	0	2650

	South Leg
AM	1123
NOON	0
PM	1693

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

E Main St/Valentine Rd and Telephone Rd , Ventura

Date: 9/23/2015

Day: Wednesday

Project #: 15-5612-101

City: Ventura

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Peak Hour Summary

Southbound Approach (E Main St/Valentine Rd)

	Lanes 1	3	2		
AM	0	276	0	0	AM
NOON	0	0	0	0	NOON
PM	0	136	0	0	PM

Eastbound Approach (Telephone Rd)

Lanes	AM	NOON	PM
	0	0	0
2	0	0	0
2	0	0	0
1	7	0	5

Westbound Approach

Lanes	AM	NOON	PM
1	0	0	0
1.5	0	0	0
1.5	334	0	168
	45	0	232

Northbound Approach

					Lanes
AM	617	0	0	45	AM
NOON	0	0	0	0	NOON
PM	309	0	0	232	PM
		0	0	1	

CONTROL

Signalized

Count Periods	Start	End
AM	6:30 AM	8:30 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	276	0	AM
	0	0	NOON
	136	0	PM

West Leg AM	NOON	PM	East Leg AM	NOON	PM
0	0	0	334	0	168
7	0	5	45	0	232

	South Leg	
AM	617	45
NOON	0	0
PM	309	232

Total Volume Per Leg

	North Leg
AM	276
NOON	0
PM	136

West Leg AM	NOON	PM	East Leg AM	NOON	PM
7	0	5	379	0	400

	South Leg
AM	662
NOON	0
PM	541

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5612-001
N/S Street: E Main St/US-101 SB Ramp
E/W Street: Telephone Rd
DATE: 9/23/2015 DAY: Wednesday
CITY: Ventura

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
6:30 AM	1	1	1	1	0	0	0	1
6:45 AM	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	2	0	0	0	0
7:15 AM	0	0	0	1	0	0	0	1
7:30 AM	0	0	1	5	0	0	0	0
7:45 AM	0	1	0	1	0	0	0	1
8:00 AM	0	0	0	2	0	0	0	0
8:15 AM	0	0	2	2	0	0	0	0
TOTALS	**1**	**2**	**4**	**14**	**0**	**0**	**0**	**3**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
6:00 AM	0	0	0	0	0	0	0	1	0	1	2	0
6:15 AM	0	0	0	0	0	0	0	0	0	2	2	1
6:30 AM	0	0	0	1	1	0	0	1	0	1	0	0
6:45 AM	0	0	0	0	1	0	0	0	0	1	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	2	0
7:15 AM	0	0	0	0	0	0	0	3	0	0	1	0
7:30 AM	0	0	0	1	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**5**	**0**	**5**	**7**	**1**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	1	1	0	0	0	1
4:15 PM	0	0	1	1	0	0	1	0
4:30 PM	0	0	1	3	0	0	1	1
4:45 PM	0	3	0	0	0	0	1	0
5:00 PM	1	0	1	0	0	0	0	0
5:15 PM	0	0	1	0	0	0	0	0
5:30 PM	0	0	0	1	0	0	0	0
5:45 PM	0	0	0	3	0	0	0	0
TOTALS	**1**	**3**	**5**	**9**	**0**	**0**	**3**	**2**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	0	0	0	6	0	0	0	0
4:15 PM	0	0	0	4	0	0	0	0	0	0	1	0
4:30 PM	0	0	0	0	1	2	0	2	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	4	0	0	0	0
5:00 PM	0	0	1	1	1	0	0	2	0	0	0	0
5:15 PM	0	0	1	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	1	0	0	0	2	0	2	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	3	0
TOTALS	**0**	**0**	**2**	**6**	**2**	**2**	**0**	**16**	**0**	**2**	**4**	**0**

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5612-101
N/S Street: E Main St/Valentine Rd
E/W Street: Telephone Rd
DATE: 9/23/2015 DAY: Wednesday
CITY: Ventura

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
6:30 AM	0	0	1	1	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	2	0	0	0	0
7:15 AM	0	0	0	1	0	0	0	0
7:30 AM	0	0	1	5	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	2	0	0	0	0
8:15 AM	0	0	2	2	0	0	0	0
TOTALS	**0**	**0**	**4**	**13**	**0**	**0**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
6:00 AM	0	0	0	0	1	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	1	0	0	0	0	1	0	0
6:45 AM	0	0	0	0	1	0	0	0	0	1	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	1	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**3**	**0**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	1	1	0	0	0	0
4:15 PM	0	0	1	1	0	0	0	0
4:30 PM	0	0	1	3	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	1	0	0	0	0	0
5:15 PM	0	0	1	0	0	0	0	0
5:30 PM	0	0	0	1	0	0	0	0
5:45 PM	0	0	0	3	0	0	0	0
TOTALS	**0**	**0**	**5**	**9**	**0**	**0**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	1	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	1	0	0	0	1	0	0	0	0	0	0	0
5:15 PM	1	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	2	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**0**	**0**

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Copland Dr/US-101 NB Ramp and Telephone Rd , Ventura

Date: 9/23/2015

Day: Wednesday

Project #: 15-5612-002

City: Ventura

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Peak Hour Summary

Southbound Approach (Copland Dr/US-101 NB Ramp)

Lanes	0	1	1		
AM	13	0	3	6	AM
NOON	0	0	0	0	NOON
PM	7	0	4	25	PM

Eastbound Approach (Telephone Rd)

Lanes	AM	NOON	PM
	1912	0	1530
1	3	0	13
3	453	0	1269
0	0	0	0

Westbound Approach

AM	NOON	PM	Lanes
0	0	9	0
1243	0	1129	3
0	0	0	0
592	0	1524	

Northbound Approach

AM	0	656	3	136	AM
NOON	0	0	0	0	NOON
PM	0	394	3	251	PM
		1.5	0.5	1	Lanes

CONTROL: Signalized

Count Periods	Start	End
AM	6:30 AM	8:30 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	16	6	AM
	0	0	NOON
	11	25	PM

West Leg			East Leg		
AM	NOON	PM			
1912	0	1530	1243	0	1138
456	0	1282	592	0	1524
			AM	NOON	PM

	South Leg	
AM	0	795
NOON	0	0
PM	0	648

Total Volume Per Leg

	North Leg
AM	22
NOON	0
PM	36

West Leg			East Leg		
AM	NOON	PM			
2368	0	2812	1835	0	2662
			AM	NOON	PM

	South Leg
AM	795
NOON	0
PM	648

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5612-002
N/S Street: Copland Dr/US-101 NB Ramp
E/W Street: Telephone Rd
DATE: 9/23/2015 DAY: Wednesday
CITY: Ventura

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
6:30 AM	2	0	1	1	0	0	0	0
6:45 AM	1	0	0	0	0	1	0	0
7:00 AM	0	0	0	1	0	0	0	0
7:15 AM	0	2	0	1	0	1	0	0
7:30 AM	0	1	0	4	2	0	0	0
7:45 AM	0	0	1	1	0	0	0	0
8:00 AM	0	0	0	1	0	0	0	0
8:15 AM	0	2	0	0	0	0	0	0
TOTALS	**3**	**5**	**2**	**9**	**2**	**2**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
6:30 AM	0	0	0	0	0	0	0	0	0	0	5	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	2	0
7:00 AM	0	0	0	0	0	0	1	2	0	0	4	0
7:15 AM	0	0	0	0	0	0	0	1	0	0	4	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	4	0	0	4	0
8:00 AM	0	0	0	0	0	0	0	1	0	0	1	0
8:15 AM	0	0	1	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**8**	**0**	**0**	**20**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	2	2	0	1	0	0	0
4:15 PM	2	0	1	1	0	0	0	0
4:30 PM	3	0	0	1	0	0	0	0
4:45 PM	1	2	0	0	2	0	0	0
5:00 PM	2	1	1	0	0	1	0	0
5:15 PM	0	0	1	0	0	0	0	0
5:30 PM	1	1	0	1	0	1	0	0
5:45 PM	0	1	0	5	0	0	0	0
TOTALS	**9**	**7**	**5**	**8**	**3**	**2**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	1	0	1	0	0	0	0	1	0	0	0	0
4:15 PM	0	0	0	0	0	0	1	4	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	4	0	0	3	0
4:45 PM	0	0	0	0	0	0	0	2	0	0	2	0
5:00 PM	0	0	0	0	0	0	0	3	0	0	2	0
5:15 PM	0	0	0	0	0	0	0	1	0	0	3	0
5:30 PM	0	0	0	0	0	0	0	4	0	0	3	0
5:45 PM	0	0	0	0	0	0	0	3	0	0	0	0
TOTALS	**1**	**0**	**1**	**0**	**0**	**0**	**1**	**22**	**0**	**0**	**14**	**0**

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Victoria Ave and Thille St , Ventura

Date: 9/23/2015

Day: Wednesday

Project #: 15-5612-003

City: Ventura

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	445 PM

Peak Hour Summary

Southbound Approach (Victoria Ave)

	Lanes 0	4	1		
AM	278	1854	198	1558	AM
NOON	0	0	0	0	NOON
PM	321	1819	51	2154	PM

Eastbound Approach (Thille St)

Lanes	AM	NOON	PM
	315	0	381
1.5	324	0	338
0.5	19	0	5
1	83	0	177

Westbound Approach

AM	NOON	PM	Lanes
17	0	57	0.5
7	0	23	0.5
29	0	135	1
562	0	85	

CONTROL: Signalized

Northbound Approach

AM	1966	30	1217	345	AM
NOON	0	0	0	0	NOON
PM	2131	37	1759	29	PM
		1	4	0	Lanes

Count Periods	Start	End
AM	6:30 AM	8:30 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	2330	1558	AM
	0	0	NOON
	2191	2154	PM

West Leg AM	NOON	PM	East Leg AM	NOON	PM
315	0	381	53	0	215
426	0	520	562	0	85

	South Leg	
AM	1966	1592
NOON	0	0
PM	2131	1825

Total Volume Per Leg

	North Leg
AM	3888
NOON	0
PM	4345

West Leg AM	NOON	PM	East Leg AM	NOON	PM
741	0	901	615	0	300

	South Leg
AM	3558
NOON	0
PM	3956

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5612-003
N/S Street: Victoria Ave
E/W Street: Thille St
DATE: 9/23/2015
CITY: Ventura

DAY: Wednesday

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
6:30 AM	1	0	1	0	0	2	0	3
6:45 AM	1	3	0	2	3	1	2	0
7:00 AM	0	1	0	0	0	1	1	0
7:15 AM	0	2	3	1	3	0	4	0
7:30 AM	4	1	1	0	2	0	7	0
7:45 AM	0	0	1	1	0	0	3	0
8:00 AM	1	1	1	2	1	0	0	0
8:15 AM	1	0	0	2	0	0	0	0
TOTALS	**8**	**8**	**7**	**8**	**9**	**4**	**17**	**3**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	1	0	0	0	0	0	0	0	0	0	0
6:30 AM	3	1	0	0	0	0	0	1	0	0	0	0
6:45 AM	0	0	0	0	3	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	1	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	1	0	0
7:45 AM	0	2	0	0	0	0	1	0	0	0	0	0
TOTALS	**4**	**4**	**0**	**0**	**3**	**0**	**1**	**1**	**0**	**1**	**0**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	1	0	0	0	0	0	1	3
4:15 PM	3	0	0	2	0	1	1	3
4:30 PM	0	1	0	1	0	0	2	1
4:45 PM	0	1	0	1	1	0	0	0
5:00 PM	0	0	0	1	0	0	0	4
5:15 PM	1	0	1	2	0	1	0	2
5:30 PM	0	0	1	0	0	0	0	0
5:45 PM	0	0	0	0	1	1	0	0
TOTALS	**5**	**2**	**2**	**7**	**2**	**3**	**4**	**13**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	2	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	3	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	1	0	0	1	1	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0
5:45 PM	0	0	0	0	1	0	0	0	0	0	1	0
TOTALS	**0**	**1**	**0**	**0**	**7**	**1**	**0**	**0**	**0**	**0**	**2**	**0**

Prepared by NDS/ATD

VOLUME

Copland Dr N/O Telephone Rd

Day: Wednesday
Date: 9/23/2015

City: Ventura
Project #: CA15_5613_001

DAILY TOTALS	NB	SB	EB	WB	Total
	227	223	0	0	450

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	0		0						0		12:00	0		4						4	
00:15	0		0						0		12:15	8		6						14	
00:30	0		0						0		12:30	5		1						6	
00:45	0		0						0		12:45	5	18	2	13					7	31
01:00	1		0						1		13:00	6		3						9	
01:15	0		0						0		13:15	3		3						6	
01:30	0		0						0		13:30	5		5						10	
01:45	0	1	0						0	1	13:45	4	18	3	14					7	32
02:00	0		0						0		14:00	6		4						10	
02:15	0		0						0		14:15	5		5						10	
02:30	0		0						0		14:30	4		4						8	
02:45	0		0						0		14:45	7	22	5	18					12	40
03:00	0		0						0		15:00	4		11						15	
03:15	0		0						0		15:15	8		5						13	
03:30	1		0						1		15:30	2		3						5	
03:45	1	2	2	2					3	4	15:45	4	18	2	21					6	39
04:00	0		0						0		16:00	6		5						11	
04:15	0		1						1		16:15	1		3						4	
04:30	0		0						0		16:30	4		2						6	
04:45	0		1	2					1	2	16:45	8	19	2	12					10	31
05:00	0		0						0		17:00	4		4						8	
05:15	1		2						3		17:15	9		3						12	
05:30	0		2						2		17:30	1		0						1	
05:45	0	1	1	5					1	6	17:45	1	15	2	9					3	24
06:00	3		3						6		18:00	3		3						6	
06:15	6		3						9		18:15	4		5						9	
06:30	1		4						5		18:30	5		3						8	
06:45	1	11	2	12					3	23	18:45	2	14	4	15					6	29
07:00	2		2						4		19:00	0		2						2	
07:15	4		3						7		19:15	3		1						4	
07:30	2		4						6		19:30	1		3						4	
07:45	1	9	5	14					6	23	19:45	2	6	1	7					3	13
08:00	2		3						5		20:00	1		1						2	
08:15	1		4						5		20:15	0		0						0	
08:30	2		1						3		20:30	0		0						0	
08:45	3	8	3	11					6	19	20:45	1	2	2	3					3	5
09:00	1		3						4		21:00	2		2						4	
09:15	2		7						9		21:15	3		2						5	
09:30	2		2						4		21:30	3		0						3	
09:45	3	8	5	17					8	25	21:45	0	8	0	4					0	12
10:00	7		6						13		22:00	1		0						1	
10:15	7		6						13		22:15	0		0						0	
10:30	2		2						4		22:30	0		0						0	
10:45	6	22	4	18					10	40	22:45	0	1	0						0	1
11:00	11		10						21		23:00	0		0						0	
11:15	3		4						7		23:15	0		0						0	
11:30	3		2						5		23:30	0		0						0	
11:45	5	22	9	25					14	47	23:45	2	2	1	1					3	3
TOTALS		84		106						190	TOTALS		143		117						260
SPLIT %		44.2%		55.8%						42.2%	SPLIT %		55.0%		45.0%						57.8%

DAILY TOTALS	NB	SB	EB	WB	Total
	227	223	0	0	450

AM Peak Hour	10:15	11:00			10:15	PM Peak Hour	16:30	14:15			14:30
AM Pk Volume	26	25			48	PM Pk Volume	25	25			48
Pk Hr Factor	0.591	0.625			0.571	Pk Hr Factor	0.694	0.568			0.800
7 - 9 Volume	17	25	0	0	42	4 - 6 Volume	34	21	0	0	55
7 - 9 Peak Hour	07:00	07:30			07:15	4 - 6 Peak Hour	16:30	16:00			16:30
7 - 9 Pk Volume	9	16	0	0	24	4 - 6 Pk Volume	25	12	0	0	36
Pk Hr Factor	0.563	0.800	0.000	0.000	0.857	Pk Hr Factor	0.694	0.600	0.000	0.000	0.750

Prepared by NDS/ATD

VOLUME

Telephone Rd E/O Copland Dr/US-101 Off Ramp

Day: Wednesday
Date: 9/23/2015

City: Ventura
Project #: CA15_5613_003

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	15,818	15,198	31,016

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			21		15		36		12:00			363		265		628	
00:15			21		6		27		12:15			329		270		599	
00:30			22		7		29		12:30			303		309		612	
00:45			11	75	10	38	21	113	12:45			348	1343	331	1175	679	2518
01:00			9		9		18		13:00			332		332		664	
01:15			9		4		13		13:15			315		281		596	
01:30			12		6		18		13:30			310		283		593	
01:45			8	38	9	28	17	66	13:45			275	1232	267	1163	542	2395
02:00			5		7		12		14:00			334		268		602	
02:15			9		3		12		14:15			306		309		615	
02:30			1		4		5		14:30			300		273		573	
02:45			3	18	5	19	8	37	14:45			347	1287	270	1120	617	2407
03:00			6		4		10		15:00			305		229		534	
03:15			8		6		14		15:15			285		246		531	
03:30			9		18		27		15:30			298		271		569	
03:45			15	38	15	43	30	81	15:45			312	1200	269	1015	581	2215
04:00			4		14		18		16:00			368		264		632	
04:15			12		19		31		16:15			361		258		619	
04:30			13		25		38		16:30			367		268		635	
04:45			10	39	34	92	44	131	16:45			377	1473	253	1043	630	2516
05:00			10		25		35		17:00			413		324		737	
05:15			12		42		54		17:15			367		293		660	
05:30			14		60		74		17:30			377		281		658	
05:45			23	59	100	227	123	286	17:45			339	1496	267	1165	606	2661
06:00			30		78		108		18:00			313		234		547	
06:15			32		92		124		18:15			295		239		534	
06:30			40		148		188		18:30			292		252		544	
06:45			62	164	179	497	241	661	18:45			304	1204	200	925	504	2129
07:00			62		159		221		19:00			224		188		412	
07:15			83		251		334		19:15			249		171		420	
07:30			126		289		415		19:30			244		158		402	
07:45			162	433	372	1071	534	1504	19:45			209	926	141	658	350	1584
08:00			157		303		460		20:00			175		111		286	
08:15			147		279		426		20:15			171		115		286	
08:30			152		224		376		20:30			160		109		269	
08:45			164	620	248	1054	412	1674	20:45			126	632	87	422	213	1054
09:00			161		181		342		21:00			133		97		230	
09:15			166		224		390		21:15			141		81		222	
09:30			189		197		386		21:30			91		52		143	
09:45			213	729	255	857	468	1586	21:45			107	472	57	287	164	759
10:00			184		220		404		22:00			74		49		123	
10:15			205		258		463		22:15			70		47		117	
10:30			200		219		419		22:30			53		37		90	
10:45			245	834	250	947	495	1781	22:45			39	236	39	172	78	408
11:00			233		215		448		23:00			38		34		72	
11:15			266		260		526		23:15			35		21		56	
11:30			315		294		609		23:30			25		17		42	
11:45			328	1142	328	1097	656	2239	23:45			30	128	11	83	41	211
TOTALS				4189		5970		10159	TOTALS				11629		9228		20857
SPLIT %				41.2%		58.8%		32.8%	SPLIT %				55.8%		44.2%		67.2%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	15,818	15,198	31,016

AM Peak Hour			11:30	07:30	11:45	PM Peak Hour			16:45	12:30	16:45
AM Pk Volume			1335	1243	2495	PM Pk Volume			1534	1253	2685
Pk Hr Factor			0.919	0.835	0.951	Pk Hr Factor			0.929	0.944	0.911
7 - 9 Volume	0	0	1053	2125	3178	4 - 6 Volume	0	0	2969	2208	5177
7 - 9 Peak Hour			08:00	07:30	07:30	4 - 6 Peak Hour			16:45	17:00	16:45
7 - 9 Pk Volume	0	0	620	1243	1835	4 - 6 Pk Volume	0	0	1534	1165	2685
Pk Hr Factor	0.000	0.000	0.945	0.835	0.859	Pk Hr Factor	0.000	0.000	0.929	0.899	0.911

Prepared by NDS/ATD

VOLUME

Thille St W/O Portola Rd

Day: Wednesday
Date: 9/23/2015

City: Ventura
Project #: CA15_5613_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,063	1,091	2,154

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			1		3		4		12:00			14		15		29	
00:15			0		2		2		12:15			19		19		38	
00:30			2		2		4		12:30			15		20		35	
00:45			0	3	0	7	0	10	12:45			19	67	16	70	35	137
01:00			2		2		4		13:00			8		26		34	
01:15			0		2		2		13:15			17		10		27	
01:30			1		2		3		13:30			17		16		33	
01:45			1	4	1	7	2	11	13:45			13	55	14	66	27	121
02:00			1		0		1		14:00			20		15		35	
02:15			1		0		1		14:15			14		13		27	
02:30			0		0		0		14:30			13		18		31	
02:45			1	3	1	1	2	4	14:45			12	59	29	75	41	134
03:00			0		0		0		15:00			18		22		40	
03:15			0		0		0		15:15			14		17		31	
03:30			0		2		2		15:30			8		22		30	
03:45			0		0	2	0	2	15:45			10	50	16	77	26	127
04:00			1		0		1		16:00			12		16		28	
04:15			1		1		2		16:15			22		26		48	
04:30			2		0		2		16:30			17		20		37	
04:45			2	6	0	1	2	7	16:45			12	63	32	94	44	157
05:00			6		1		7		17:00			23		36		59	
05:15			6		0		6		17:15			23		33		56	
05:30			7		0		7		17:30			16		23		39	
05:45			12	31	0	1	12	32	17:45			15	77	39	131	54	208
06:00			7		3		10		18:00			17		33		50	
06:15			9		1		10		18:15			21		22		43	
06:30			14		0		14		18:30			23		22		45	
06:45			18	48	4	8	22	56	18:45			18	79	30	107	48	186
07:00			24		4		28		19:00			13		22		35	
07:15			39		6		45		19:15			12		14		26	
07:30			58		9		67		19:30			8		20		28	
07:45			31	152	17	36	48	188	19:45			11	44	19	75	30	119
08:00			24		16		40		20:00			5		15		20	
08:15			21		10		31		20:15			8		23		31	
08:30			14		8		22		20:30			7		23		30	
08:45			19	78	10	44	29	122	20:45			8	28	16	77	24	105
09:00			20		12		32		21:00			5		11		16	
09:15			12		10		22		21:15			8		12		20	
09:30			16		13		29		21:30			5		10		15	
09:45			19	67	5	40	24	107	21:45			3	21	14	47	17	68
10:00			10		4		14		22:00			3		9		12	
10:15			11		13		24		22:15			2		5		7	
10:30			17		14		31		22:30			2		3		5	
10:45			15	53	13	44	28	97	22:45			1	8	8	25	9	33
11:00			16		13		29		23:00			2		3		5	
11:15			17		9		26		23:15			2		4		6	
11:30			13		6		19		23:30			1		6		7	
11:45			15	61	14	42	29	103	23:45			1	6	1	14	2	20
TOTALS				506		233		739	TOTALS				557		858		1415
SPLIT %				68.5%		31.5%		34.3%	SPLIT %				39.4%		60.6%		65.7%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,063	1,091	2,154

AM Peak Hour			07:00	11:45	07:15	PM Peak Hour			18:00	17:00	17:00
AM Pk Volume			152	68	200	PM Pk Volume			79	131	208
Pk Hr Factor			0.655	0.850	0.746	Pk Hr Factor			0.859	0.840	0.881
7 - 9 Volume	0	0	230	80	310	4 - 6 Volume	0	0	140	225	365
7 - 9 Peak Hour			07:00	07:30	07:15	4 - 6 Peak Hour			17:00	17:00	17:00
7 - 9 Pk Volume	0	0	152	52	200	4 - 6 Pk Volume	0	0	77	131	208
Pk Hr Factor	0.000	0.000	0.655	0.765	0.746	Pk Hr Factor	0.000	0.000	0.837	0.840	0.881

APPENDIX B – INTERSECTION CAPACITY UTILIZATION WORKSHEETS

1. **Main/US-101 SB/Valentine & Telephone**

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3200	324	.10	687	.21
SBT	3	4800	1134	.24*	1334	.28*
SBR	f		221		361	
EBL	2	3200	260	.08*	595	.19
EBT	2	3200	134	.04	606	.19*
EBR	1	1600	122	.08	324	.20
WBL	1.5		488		344	
WBT	1.5	4800	638	.23*	515	.18*
WBR	f		780		666	
Right Turn Adjustment					EBR	.01*

Note: Assumes E/W Split Phasing

TOTAL CAPACITY UTILIZATION .55 .66

Existing + Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3200	331	.10	718	.22
SBT	3	4800	1134	.24*	1334	.28*
SBR	f		221		361	
EBL	2	3200	260	.08*	595	.19
EBT	2	3200	137	.04	618	.19*
EBR	1	1600	122	.08	324	.20
WBL	1.5		524		364	
WBT	1.5	4800	648	.24*	520	.18*
WBR	f		811		683	
Right Turn Adjustment					EBR	.01*

Note: Assumes E/W Split Phasing

TOTAL CAPACITY UTILIZATION .56 .66

2025 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3200	450	.14	730	.23
SBT	3	4800	1100	.23*	1490	.31*
SBR	f		390		450	
EBL	2	3200	260	.08	710	.22
EBT	2	3200	240	.08*	1000	.31*
EBR	1	1600	80	.05	290	.18
WBL	1.5		240	.15	460	
WBT	1.5	4800	970	.30*	670	.24*
WBR	f		730		980	

Note: Assumes E/W Split Phasing

TOTAL CAPACITY UTILIZATION .61 .86

2025 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3200	460	.14	760	.24
SBT	3	4800	1110	.23*	1490	.31*
SBR	f		390		450	
EBL	2	3200	260	.08	730	.23
EBT	2	3200	240	.08*	1010	.32*
EBR	1	1600	80	.05	300	.19
WBL	1.5		260	.16	470	
WBT	1.5	4800	970	.30*	680	.24*
WBR	f		740		990	

Note: Assumes E/W Split Phasing

TOTAL CAPACITY UTILIZATION .61 .87

2. US 101 NB Ramps & Telephone

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		656		394	
NBT	0.5	3200	3	.21*	3	.12*
NBR	1	1600	136	.09	251	.16
SBL	1	1600	3	.00	4	.00
SBT	1	1600	0	.01*	0	.00*
SBR	0	0	13		7	
EBL	1	1600	3	.00	13	.01
EBT	3	4800	453	.09	1269	.26*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	4800	1243	.26*	1129	.24
WBR	0	0	0		9	

Right Turn Adjustment NBR .04*
Note: Assumes N/S Split Phasing

TOTAL CAPACITY UTILIZATION .48 .42

Existing + Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		656		394	
NBT	0.5	3200	11	.21*	40	.14*
NBR	1	1600	136	.09	251	.16
SBL	1	1600	19	.01	12	.01
SBT	1	1600	0	.06*	0	.03*
SBR	0	0	90		49	
EBL	1	1600	13	.01*	56	.04*
EBT	3	4800	453	.09	1269	.26
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	4800	1243	.26*	1129	.24*
WBR	0	0	4		25	

Note: Assumes N/S Split Phasing

TOTAL CAPACITY UTILIZATION .54 .45

2025 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		670		520	
NBT	0.5	3200	20	.22*	40	.18*
NBR	1	1600	270	.17	400	.25
SBL	0.5		10		10	
SBT	0	3200	0	.09*	0	{.02}*
SBR	1.5		280		210	
EBL	1	1600	10	.01*	230	.14*
EBT	3	4800	720	.15	1870	.39
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	4800	1010	.21*	1390	.29*
WBR	0	0	10		10	

Right Turn Adjustment NBR .04*
Note: Assumes N/S Split Phasing

TOTAL CAPACITY UTILIZATION .53 .67

2025 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		680		520	
NBT	0.5	3200	30	.22*	70	.18*
NBR	1	1600	270	.17	400	.25
SBL	0.5		40		10	
SBT	0	3200	0	.12*	0	{.01}*
SBR	1.5		340		250	
EBL	1	1600	20	.01*	280	.18*
EBT	3	4800	730	.15	1880	.39
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	4800	1020	.21*	1400	.30*
WBR	0	0	10		20	

Note: Assumes N/S Split Phasing

TOTAL CAPACITY UTILIZATION .56 .67

3. Victoria & Thille

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	30	.02	37	.02*
NBT	4	6400	1217	.24*	1759	.28
NBR	0	0	345		29	
SBL	1	1600	198	.12*	51	.03
SBT	4	6400	1854	.33	1819	.33*
SBR	0	0	278		321	
EBL	1.5		324		338	
EBT	0.5	3200	19	.11*	5	.11*
EBR	1	1600	83	.05	177	.11
WBL	1	1600	29	.02	135	.08*
WBT	1	1600	7	.02*	23	.05
WBR	0	0	17		57	

Note: Assumes E/W Split Phasing

TOTAL CAPACITY UTILIZATION .49 .54

Existing + Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	30	.02	37	.02*
NBT	4	6400	1222	.24*	1762	.28
NBR	0	0	345		29	
SBL	1	1600	198	.12*	51	.03
SBT	4	6400	1855	.33	1824	.34*
SBR	0	0	280		332	
EBL	1.5		334		344	
EBT	0.5	3200	19	.11*	5	.11*
EBR	1	1600	83	.05	177	.11
WBL	1	1600	29	.02	135	.08*
WBT	1	1600	7	.02*	23	.05
WBR	0	0	17		57	

Note: Assumes E/W Split Phasing

TOTAL CAPACITY UTILIZATION .49 .55

2025 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	40	.03*	60	.04
NBT	4	6400	1290	.27	2440	.39*
NBR	0	0	460	.29	50	
SBL	1	1600	170	.11	40	.03*
SBT	4	6400	2160	.39*	1810	.32
SBR	0	0	350		240	
EBL	1.5		230		290	
EBT	0.5	3200	30	.08*	10	.09*
EBR	1	1600	130	.08	190	.12
WBL	1	1600	30	.02	120	.08
WBT	1	1600	10	.02*	60	.09*
WBR	0	0	20		80	

Note: Assumes E/W Split Phasing

TOTAL CAPACITY UTILIZATION .52 .60

2025 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	40	.03*	60	.04
NBT	4	6400	1300	.27	2450	.39*
NBR	0	0	460	.29	50	
SBL	1	1600	170	.11	40	.03*
SBT	4	6400	2170	.40*	1820	.32
SBR	0	0	360		240	
EBL	1.5		240		290	
EBT	0.5	3200	30	.08*	10	.09*
EBR	1	1600	140	.09	190	.12
WBL	1	1600	30	.02	120	.08
WBT	1	1600	10	.02*	60	.09*
WBR	0	0	20		80	

Note: Assumes E/W Split Phasing

TOTAL CAPACITY UTILIZATION .53 .60

APPENDIX C – INTERSECTION DELAY WORKSHEETS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	324	1134	221	0	0	0	260	134	122	488	638	780
Future Volume (vph)	324	1134	221	0	0	0	260	134	122	488	638	780
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	12	12	12	11	11	11	12	10	15
Storage Length (ft)	560		690	0		0	215		190	120		0
Storage Lanes	1		1	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3204	4916	1583	0	0	0	3319	3421	1531	1610	3164	1742
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	3204	4916	1583	0	0	0	3319	3421	1531	1610	3164	1742
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)			246						136			
Link Speed (mph)		40			30			40			40	
Link Distance (ft)		577			1203			384			319	
Travel Time (s)		9.8			27.3			6.5			5.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)										0%		
Lane Group Flow (vph)	360	1260	246	0	0	0	289	149	136	542	709	867
Turn Type	Split	NA	Perm				Split	NA	Perm	Split	NA	pt+ov
Protected Phases	4	4					5	5		6	6	6 4
Permitted Phases			4						5			
Detector Phase	4	4	4				5	5	5	6	6	6 4
Switch Phase												
Minimum Initial (s)	12.0	12.0	12.0				12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	26.5	26.5	26.5				18.0	18.0	18.0	25.0	25.0	
Total Split (s)	32.0	32.0	32.0				19.0	19.0	19.0	59.0	59.0	
Total Split (%)	29.1%	29.1%	29.1%				17.3%	17.3%	17.3%	53.6%	53.6%	
Yellow Time (s)	4.5	4.5	4.5				4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0				1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	-2.5	-2.5	-2.5				-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	3.0	3.0	3.0				3.0	3.0	3.0	3.0	3.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Recall Mode	Min	Min	Min				Min	Min	Min	C-Max	C-Max	
Act Effct Green (s)	29.0	29.0	29.0				16.0	16.0	16.0	56.0	56.0	88.0
Actuated g/C Ratio	0.26	0.26	0.26				0.15	0.15	0.15	0.51	0.51	0.80
v/c Ratio	0.43	0.97	0.41				0.60	0.30	0.40	0.66	0.44	0.62
Control Delay	35.5	59.7	6.3				49.8	43.9	11.1	27.7	21.9	8.2
Queue Delay	0.0	0.0	0.0				0.0	0.0	0.0	1.7	0.0	0.4
Total Delay	35.5	59.7	6.3				49.8	43.9	11.1	29.4	21.9	8.7
LOS	D	E	A				D	D	B	C	C	A
Approach Delay		48.0						39.1			18.4	
Approach LOS		D						D			B	

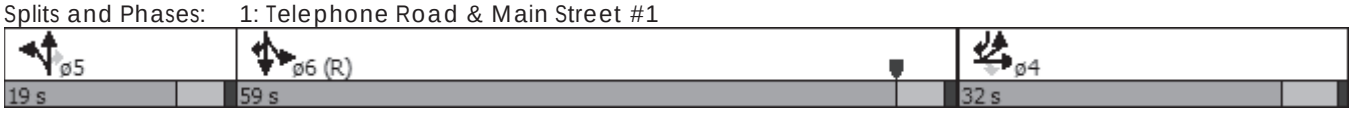
Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 42 (38%), Referenced to phase 6:SBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 33.1 Intersection LOS: C
Intersection Capacity Utilization 65.0% ICU Level of Service C

V:\2073\active\2073009620\analysis\synchro\AM Existing.syn

Analysis Period (min) 15
Description: Telephone Rd and Main St/US-101 SB

Splits and Phases: 1: Telephone Road & Main Street #1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	453	0	0	1243	0	656	3	136	3	0	13
Future Volume (vph)	3	453	0	0	1243	0	656	3	136	3	0	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	5085	0	0	5085	0	1681	1686	1583	1770	0	1583
Flt Permitted	0.950						0.950	0.953		0.950		
Satd. Flow (perm)	1770	5085	0	0	5085	0	1681	1686	1583	1770	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)									151			114
Link Speed (mph)		40			45			30			30	
Link Distance (ft)		203			2718			376			153	
Travel Time (s)		3.5			41.2			8.5			3.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	3	503	0	0	1381	0	364	368	151	3	0	14
Turn Type	Prot	NA			NA		Split	NA	Prot	Prot		Prot
Protected Phases	5	2			6		4	4	4	3		3
Permitted Phases										3		3
Detector Phase	5	2			6		4	4	4	3		3
Switch Phase												
Minimum Initial (s)	4.0	10.0			10.0		4.0	4.0	4.0	4.0		4.0
Minimum Split (s)	9.0	21.5			22.0		30.5	30.5	30.5	8.5		8.5
Total Split (s)	16.0	51.0			35.0		40.0	40.0	40.0	19.0		19.0
Total Split (%)	14.5%	46.4%			31.8%		36.4%	36.4%	36.4%	17.3%		17.3%
Yellow Time (s)	4.0	3.5			4.0		3.5	3.5	3.5	3.5		3.5
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0	1.0		1.0
Lost Time Adjust (s)	-2.0	-1.5			-2.0		-1.5	-1.5	-1.5	-1.5		-1.5
Total Lost Time (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0		3.0
Lead/Lag	Lag				Lead		Lead	Lead	Lead	Lag		Lag
Lead-Lag Optimize?	Yes				Yes		Yes	Yes	Yes	Yes		Yes
Recall Mode	Max	C-Max			C-Max		Min	Min	Min	None		None
Act Effct Green (s)	13.0	70.2			54.2		29.9	29.9	29.9	6.3		6.3
Actuated g/C Ratio	0.12	0.64			0.49		0.27	0.27	0.27	0.06		0.06
v/c Ratio	0.01	0.15			0.55		0.80	0.80	0.28	0.03		0.07
Control Delay	23.0	0.1			22.4		50.0	50.5	5.7	49.3		0.7
Queue Delay	0.0	0.0			0.0		0.1	0.1	0.0	0.0		0.0
Total Delay	23.0	0.1			22.4		50.1	50.6	5.7	49.3		0.7
LOS	C	A			C		D	D	A	D		A
Approach Delay		0.2			22.4			42.7				
Approach LOS		A			C			D				

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 90 (82%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 24.7 Intersection LOS: C
Intersection Capacity Utilization 55.6% ICU Level of Service B
Analysis Period (min) 15

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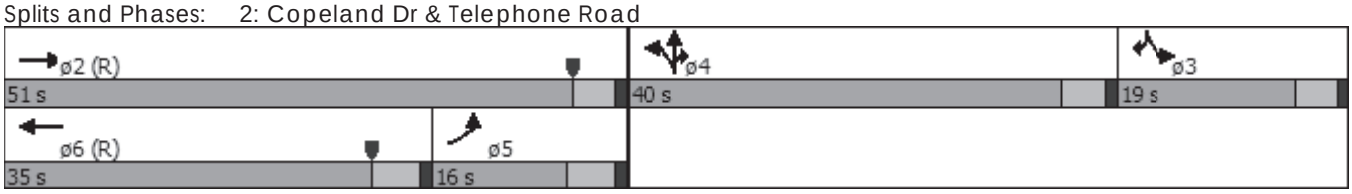
Description: Telephone Rd and Copland Dr/US 101 NB

Splits and Phases: 2: Copeland Dr & Telephone Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	324	19	83	29	7	17	30	1217	345	198	1854	278
Future Volume (vph)	324	19	83	29	7	17	30	1217	345	198	1854	278
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	250		0	240		0
Storage Lanes	0		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1681	1695	1583	1770	1665	0	1770	6196	0	1770	6280	0
Flt Permitted	0.950	0.958		0.950			0.950			0.950		
Satd. Flow (perm)	1681	1695	1583	1770	1665	0	1770	6196	0	1770	6280	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			149		19			82			47	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		618			847			500			506	
Travel Time (s)		14.0			19.3			8.5			8.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)	40%											
Lane Group Flow (vph)	216	165	92	32	27	0	33	1735	0	220	2369	0
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8	5	4	4		5	2		1	6	
Permitted Phases			8									
Detector Phase	8	8	5	4	4		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	10.0	6.0	6.0		10.0	10.0		4.0	10.0	
Minimum Split (s)	33.0	33.0	14.0	33.0	33.0		14.0	29.5		8.0	27.5	
Total Split (s)	16.0	16.0	20.0	18.5	18.5		20.0	50.5		22.5	55.5	
Total Split (%)	14.5%	14.5%	18.2%	16.8%	16.8%		18.2%	45.9%		20.5%	50.5%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	4.5		3.0	4.5	
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-1.0	-2.0	-2.0		-1.0	-3.5		-1.0	-3.5	
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lead/Lag			Lead				Lead	Lead		Lag	Lag	
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	
Recall Mode	Min	Min	None	Min	Min		None	C-Max		Max	C-Max	
Act Effct Green (s)	19.6	19.6	33.6	8.9	8.9		11.0	47.5		22.0	61.3	
Actuated g/C Ratio	0.18	0.18	0.31	0.08	0.08		0.10	0.43		0.20	0.56	
v/c Ratio	0.72	0.55	0.16	0.22	0.18		0.19	0.64		0.62	0.67	
Control Delay	58.2	49.4	1.4	50.7	27.2		48.2	24.5		48.9	18.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	58.2	49.4	1.4	50.7	27.2		48.2	24.5		48.9	18.7	
LOS	E	D	A	D	C		D	C		D	B	
Approach Delay		44.1			39.9			25.0			21.3	
Approach LOS		D			D			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 91 (83%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 25.0 Intersection LOS: C
Intersection Capacity Utilization 66.0% ICU Level of Service C
Analysis Period (min) 15

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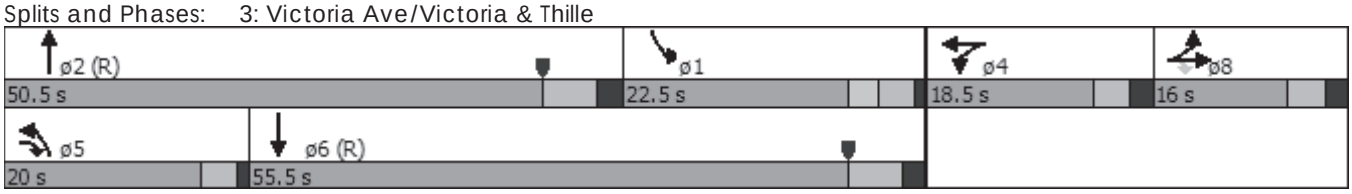
Description: Victoria Ave and Thille St

Splits and Phases: 3: Victoria Ave/Victoria & Thille



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	687	1334	361	0	0	0	595	606	324	344	515	666
Future Volume (vph)	687	1334	361	0	0	0	595	606	324	344	515	666
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	12	12	12	11	11	11	12	10	15
Storage Length (ft)	560		690	0		0	215		190	120		0
Storage Lanes	1		1	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3204	4916	1583	0	0	0	3319	3421	1531	1610	3126	1742
Flt Permitted	0.950						0.950			0.950	0.988	
Satd. Flow (perm)	3204	4916	1583	0	0	0	3319	3421	1531	1610	3126	1742
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)			401						92			
Link Speed (mph)		40			30			40			40	
Link Distance (ft)		577			1203			384			319	
Travel Time (s)		9.8			27.3			6.5			5.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	763	1482	401	0	0	0	661	673	360	191	763	740
Turn Type	Split	NA	Perm				Split	NA	Perm	Split	NA	pt+ov
Protected Phases	4	4					5	5		6	6	6 4
Permitted Phases			4						5			
Detector Phase	4	4	4				5	5	5	6	6	6 4
Switch Phase												
Minimum Initial (s)	12.0	12.0	12.0				12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	26.5	26.5	26.5				25.0	25.0	25.0	25.0	25.0	
Total Split (s)	40.0	40.0	40.0				35.0	35.0	35.0	35.0	35.0	
Total Split (%)	36.4%	36.4%	36.4%				31.8%	31.8%	31.8%	31.8%	31.8%	
Yellow Time (s)	4.5	4.5	4.5				4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0				1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	-2.5	-2.5	-2.5				-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	3.0	3.0	3.0				3.0	3.0	3.0	3.0	3.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Recall Mode	Min	Min	Min				Min	Min	Min	C-Max	C-Max	
Act Effct Green (s)	37.0	37.0	37.0				31.5	31.5	31.5	32.5	32.5	72.5
Actuated g/C Ratio	0.34	0.34	0.34				0.29	0.29	0.29	0.30	0.30	0.66
v/c Ratio	0.71	0.90	0.50				0.70	0.69	0.71	0.40	0.83	0.64
Control Delay	36.2	43.1	5.0				39.4	39.0	34.7	39.6	49.7	15.7
Queue Delay	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.5
Total Delay	36.2	43.1	5.0				39.4	39.0	34.7	39.6	49.7	16.1
LOS	D	D	A				D	D	C	D	D	B
Approach Delay		35.3						38.3			33.9	
Approach LOS		D						D			C	

Intersection Summary	
Area Type: Other	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 58 (53%), Referenced to phase 6:SBTL, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 35.8	Intersection LOS: D
Intersection Capacity Utilization 72.0%	ICU Level of Service C

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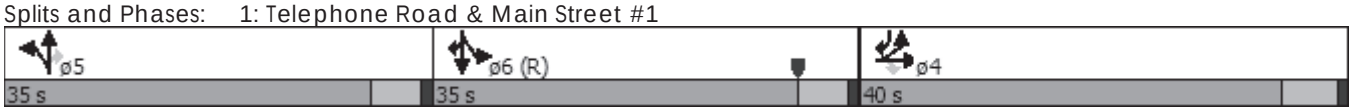
Analysis Period (min) 15

Splits and Phases: 1: Telephone Road & Main Street #1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	1269	0	0	1129	9	394	3	251	4	0	7
Future Volume (vph)	13	1269	0	0	1129	9	394	3	251	4	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	5085	0	0	5080	0	1681	1686	1583	1770	0	1583
Flt Permitted	0.950						0.950	0.953		0.950		
Satd. Flow (perm)	1770	5085	0	0	5080	0	1681	1686	1583	1770	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1				219			114
Link Speed (mph)		40			45			30			30	
Link Distance (ft)		203			2443			376			153	
Travel Time (s)		3.5			37.0			8.5			3.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	14	1410	0	0	1264	0	219	222	279	4	0	8
Turn Type	Prot	NA			NA		Split	NA	Prot	Prot		Prot
Protected Phases	5	2			6		4	4	4	3		3
Permitted Phases										3		3
Detector Phase	5	2			6		4	4	4	3		3
Switch Phase												
Minimum Initial (s)	4.0	10.0			10.0		4.0	4.0	4.0	4.0		4.0
Minimum Split (s)	9.0	21.5			22.0		30.5	30.5	30.5	8.5		8.5
Total Split (s)	16.0	59.0			43.0		35.0	35.0	35.0	16.0		16.0
Total Split (%)	14.5%	53.6%			39.1%		31.8%	31.8%	31.8%	14.5%		14.5%
Yellow Time (s)	4.0	3.5			4.0		3.5	3.5	3.5	3.5		3.5
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0	1.0		1.0
Lost Time Adjust (s)	-2.0	-1.5			-2.0		-1.5	-1.5	-1.5	-1.5		-1.5
Total Lost Time (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0		3.0
Lead/Lag	Lag				Lead		Lead	Lead	Lead	Lag		Lag
Lead-Lag Optimize?	Yes				Yes		Yes	Yes	Yes	Yes		Yes
Recall Mode	Max	C-Max			C-Max		Min	Min	Min	None		None
Act Effct Green (s)	13.0	79.3			63.3		20.7	20.7	20.7	6.4		6.4
Actuated g/C Ratio	0.12	0.72			0.58		0.19	0.19	0.19	0.06		0.06
v/c Ratio	0.07	0.38			0.43		0.69	0.70	0.59	0.04		0.04
Control Delay	28.1	0.5			15.3		52.6	53.0	14.6	49.5		0.4
Queue Delay	0.0	0.1			0.0		0.1	0.1	0.0	0.0		0.0
Total Delay	28.1	0.6			15.3		52.7	53.1	14.6	49.5		0.4
LOS	C	A			B		D	D	B	D		A
Approach Delay		0.8			15.3			38.1				
Approach LOS		A			B			D				

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 15 (14%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 14.1 Intersection LOS: B
Intersection Capacity Utilization 53.4% ICU Level of Service A
Analysis Period (min) 15

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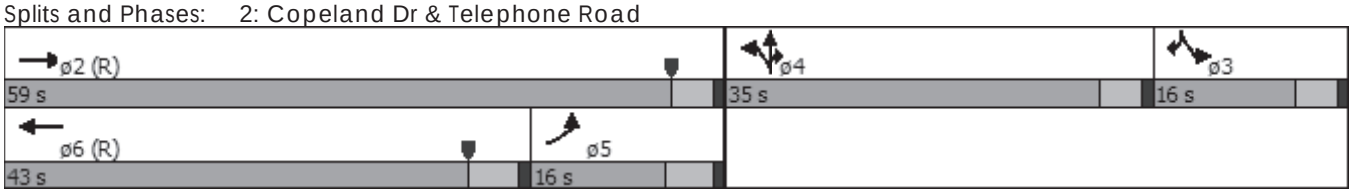
Splits and Phases: 2: Copeland Dr & Telephone Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	338	5	177	135	23	57	37	1759	29	51	1819	321
Future Volume (vph)	338	5	177	135	23	57	37	1759	29	51	1819	321
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	250		0	240		0
Storage Lanes	0		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1681	1688	1583	1770	1665	0	1770	6395	0	1770	6260	0
Flt Permitted	0.950	0.954		0.950			0.950			0.950		
Satd. Flow (perm)	1681	1688	1583	1770	1665	0	1770	6395	0	1770	6260	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			149		63			4			53	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		618			847			500			3140	
Travel Time (s)		14.0			19.3			8.5			53.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)	48%											
Lane Group Flow (vph)	196	186	197	150	89	0	41	1986	0	57	2378	0
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8	5	4	4		5	2		1	6	
Permitted Phases			8									
Detector Phase	8	8	5	4	4		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	10.0	6.0	6.0		10.0	10.0		4.0	10.0	
Minimum Split (s)	33.0	33.0	14.0	33.0	33.0		14.0	29.5		8.0	27.5	
Total Split (s)	20.0	20.0	15.0	21.5	21.5		15.0	53.5		12.5	53.5	
Total Split (%)	18.2%	18.2%	13.6%	19.5%	19.5%		13.6%	48.6%		11.4%	48.6%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	4.5		3.0	4.5	
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-1.0	-2.0	-2.0		-1.0	-3.5		-1.0	-3.5	
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lead/Lag			Lead				Lead	Lead		Lag	Lag	
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	
Recall Mode	Min	Min	None	Min	Min		None	C-Max		Max	C-Max	
Act Effct Green (s)	16.9	16.9	30.9	15.1	15.1		11.0	54.0		12.0	55.0	
Actuated g/C Ratio	0.15	0.15	0.28	0.14	0.14		0.10	0.49		0.11	0.50	
v/c Ratio	0.76	0.72	0.36	0.62	0.31		0.23	0.63		0.30	0.75	
Control Delay	64.1	60.6	10.9	55.5	18.8		49.2	22.4		49.6	24.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	64.1	60.6	10.9	55.5	18.8		49.2	22.4		49.6	24.1	
LOS	E	E	B	E	B		D	C		D	C	
Approach Delay		44.9			41.8			22.9			24.7	
Approach LOS		D			D			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 100 (91%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 27.0 Intersection LOS: C
Intersection Capacity Utilization 65.2% ICU Level of Service C
Analysis Period (min) 15

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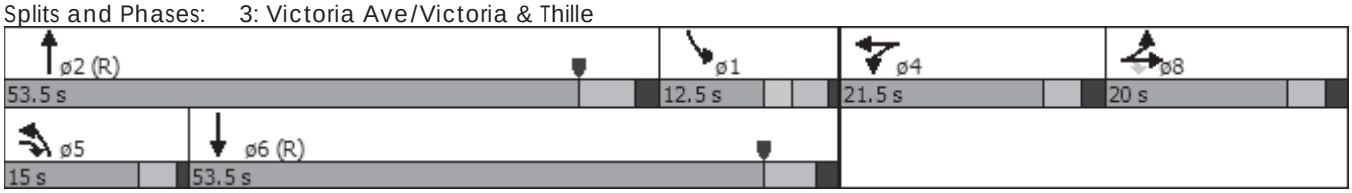
Splits and Phases: 3: Victoria Ave/Victoria & Thille



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	331	1134	221	0	0	0	260	137	122	524	648	811
Future Volume (vph)	331	1134	221	0	0	0	260	137	122	524	648	811
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	12	12	12	11	11	11	12	10	15
Storage Length (ft)	560		690	0		0	215		190	120		0
Storage Lanes	1		1	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3204	4916	1583	0	0	0	3319	3421	1531	1610	3164	1742
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	3204	4916	1583	0	0	0	3319	3421	1531	1610	3164	1742
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)			246						136			
Link Speed (mph)		40			30			40			40	
Link Distance (ft)		577			1203			384			319	
Travel Time (s)		9.8			27.3			6.5			5.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)										0%		
Lane Group Flow (vph)	368	1260	246	0	0	0	289	152	136	582	720	901
Turn Type	Split	NA	Perm				Split	NA	Perm	Split	NA	pt+ov
Protected Phases	4	4					5	5		6	6	6 4
Permitted Phases			4						5			
Detector Phase	4	4	4				5	5	5	6	6	6 4
Switch Phase												
Minimum Initial (s)	12.0	12.0	12.0				12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	26.5	26.5	26.5				18.0	18.0	18.0	25.0	25.0	
Total Split (s)	32.0	32.0	32.0				19.0	19.0	19.0	59.0	59.0	
Total Split (%)	29.1%	29.1%	29.1%				17.3%	17.3%	17.3%	53.6%	53.6%	
Yellow Time (s)	4.5	4.5	4.5				4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0				1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	-2.5	-2.5	-2.5				-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	3.0	3.0	3.0				3.0	3.0	3.0	3.0	3.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Recall Mode	Min	Min	Min				Min	Min	Min	C-Max	C-Max	
Act Effct Green (s)	29.0	29.0	29.0				16.0	16.0	16.0	56.0	56.0	88.0
Actuated g/C Ratio	0.26	0.26	0.26				0.15	0.15	0.15	0.51	0.51	0.80
v/c Ratio	0.44	0.97	0.41				0.60	0.31	0.40	0.71	0.45	0.65
Control Delay	35.6	59.7	6.3				49.8	43.9	11.1	30.3	22.9	10.0
Queue Delay	0.0	0.0	0.0				0.0	0.0	0.0	2.6	0.0	1.1
Total Delay	35.6	59.7	6.3				49.8	43.9	11.1	32.9	22.9	11.1
LOS	D	E	A				D	D	B	C	C	B
Approach Delay		48.0						39.1			20.7	
Approach LOS		D						D			C	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 42 (38%), Referenced to phase 6:SBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 34.0 Intersection LOS: C
Intersection Capacity Utilization 66.9% ICU Level of Service C

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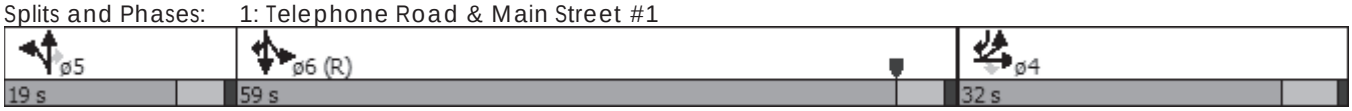
Analysis Period (min) 15

Splits and Phases: 1: Telephone Road & Main Street #1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	453	0	0	1243	4	656	11	136	19	0	90
Future Volume (vph)	13	453	0	0	1243	4	656	11	136	19	0	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	5085	0	0	5085	0	1681	1688	1583	1770	0	1583
Flt Permitted	0.950						0.950	0.954		0.950		
Satd. Flow (perm)	1770	5085	0	0	5085	0	1681	1688	1583	1770	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)									151			114
Link Speed (mph)		40			45			30			30	
Link Distance (ft)		203			2718			376			153	
Travel Time (s)		3.5			41.2			8.5			3.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	14	503	0	0	1385	0	364	377	151	21	0	100
Turn Type	Prot	NA			NA		Split	NA	Prot	Prot		Prot
Protected Phases	5	2			6		4	4	4	3		3
Permitted Phases										3		3
Detector Phase	5	2			6		4	4	4	3		3
Switch Phase												
Minimum Initial (s)	4.0	10.0			10.0		4.0	4.0	4.0	4.0		4.0
Minimum Split (s)	9.0	21.5			22.0		30.5	30.5	30.5	8.5		8.5
Total Split (s)	16.0	51.0			35.0		40.0	40.0	40.0	19.0		19.0
Total Split (%)	14.5%	46.4%			31.8%		36.4%	36.4%	36.4%	17.3%		17.3%
Yellow Time (s)	4.0	3.5			4.0		3.5	3.5	3.5	3.5		3.5
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0	1.0		1.0
Lost Time Adjust (s)	-2.0	-1.5			-2.0		-1.5	-1.5	-1.5	-1.5		-1.5
Total Lost Time (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0		3.0
Lead/Lag	Lag				Lead		Lead	Lead	Lead	Lag		Lag
Lead-Lag Optimize?	Yes				Yes		Yes	Yes	Yes	Yes		Yes
Recall Mode	Max	C-Max			C-Max		Min	Min	Min	None		None
Act Effct Green (s)	13.0	63.1			47.1		30.3	30.3	30.3	7.6		7.6
Actuated g/C Ratio	0.12	0.57			0.43		0.28	0.28	0.28	0.07		0.07
v/c Ratio	0.07	0.17			0.64		0.79	0.81	0.28	0.17		0.47
Control Delay	24.9	0.1			27.7		48.9	50.9	5.6	50.6		14.1
Queue Delay	0.0	0.0			0.0		0.2	0.2	0.0	0.0		0.0
Total Delay	24.9	0.1			27.7		49.1	51.1	5.6	50.6		14.1
LOS	C	A			C		D	D	A	D		B
Approach Delay		0.8			27.7			42.6				
Approach LOS		A			C			D				

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 90 (82%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 27.2 Intersection LOS: C
Intersection Capacity Utilization 58.1% ICU Level of Service B
Analysis Period (min) 15

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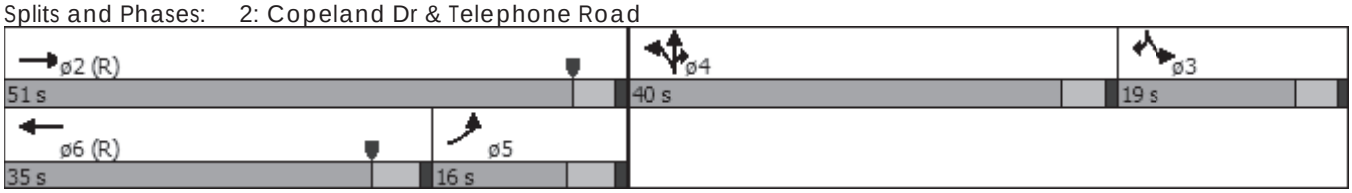
Splits and Phases: 2: Copeland Dr & Telephone Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	334	19	83	29	7	17	30	1222	345	198	1855	280
Future Volume (vph)	334	19	83	29	7	17	30	1222	345	198	1855	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	250		0	240		0
Storage Lanes	0		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1681	1695	1583	1770	1665	0	1770	6196	0	1770	6280	0
Flt Permitted	0.950	0.958		0.950			0.950			0.950		
Satd. Flow (perm)	1681	1695	1583	1770	1665	0	1770	6196	0	1770	6280	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			149		19			81			47	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		618			847			500			506	
Travel Time (s)		14.0			19.3			8.5			8.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)	40%											
Lane Group Flow (vph)	223	169	92	32	27	0	33	1741	0	220	2372	0
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8	5	4	4		5	2		1	6	
Permitted Phases			8									
Detector Phase	8	8	5	4	4		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	10.0	6.0	6.0		10.0	10.0		4.0	10.0	
Minimum Split (s)	33.0	33.0	14.0	33.0	33.0		14.0	29.5		8.0	27.5	
Total Split (s)	16.0	16.0	20.0	18.5	18.5		20.0	50.5		22.5	55.5	
Total Split (%)	14.5%	14.5%	18.2%	16.8%	16.8%		18.2%	45.9%		20.5%	50.5%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	4.5		3.0	4.5	
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-1.0	-2.0	-2.0		-1.0	-3.5		-1.0	-3.5	
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lead/Lag			Lead				Lead	Lead		Lag	Lag	
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	
Recall Mode	Min	Min	None	Min	Min		None	C-Max		Max	C-Max	
Act Effct Green (s)	19.6	19.6	33.6	8.9	8.9		11.0	47.5		22.0	61.3	
Actuated g/C Ratio	0.18	0.18	0.31	0.08	0.08		0.10	0.43		0.20	0.56	
v/c Ratio	0.75	0.56	0.16	0.22	0.18		0.19	0.64		0.62	0.67	
Control Delay	59.9	49.8	1.4	50.7	27.2		48.2	24.6		48.9	18.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	59.9	49.8	1.4	50.7	27.2		48.2	24.6		48.9	18.7	
LOS	E	D	A	D	C		D	C		D	B	
Approach Delay		45.3			39.9			25.0			21.3	
Approach LOS		D			D			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 91 (83%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 25.2 Intersection LOS: C
Intersection Capacity Utilization 66.3% ICU Level of Service C
Analysis Period (min) 15

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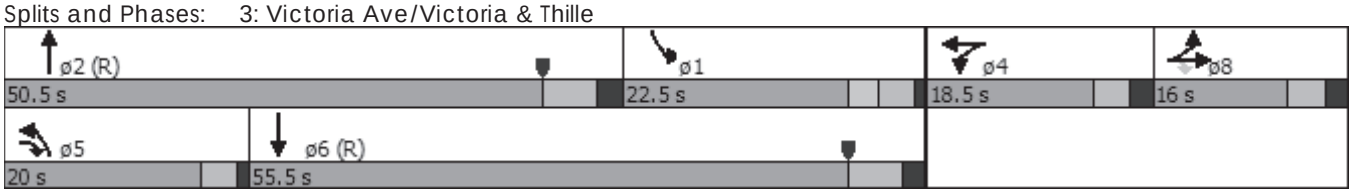
Splits and Phases: 3: Victoria Ave/Victoria & Thille



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	718	1334	361	0	0	0	595	618	324	364	520	683
Future Volume (vph)	718	1334	361	0	0	0	595	618	324	364	520	683
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	12	12	12	11	11	11	12	10	15
Storage Length (ft)	560		690	0		0	215		190	120		0
Storage Lanes	1		1	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3204	4916	1583	0	0	0	3319	3421	1531	1610	3123	1742
Flt Permitted	0.950						0.950			0.950	0.987	
Satd. Flow (perm)	3204	4916	1583	0	0	0	3319	3421	1531	1610	3123	1742
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)			401						83			
Link Speed (mph)		40			30			40			40	
Link Distance (ft)		577			1203			384			319	
Travel Time (s)		9.8			27.3			6.5			5.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	798	1482	401	0	0	0	661	687	360	202	780	759
Turn Type	Split	NA	Perm				Split	NA	Perm	Split	NA	pt+ov
Protected Phases	4	4					5	5		6	6	6 4
Permitted Phases			4						5			
Detector Phase	4	4	4				5	5	5	6	6	6 4
Switch Phase												
Minimum Initial (s)	12.0	12.0	12.0				12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	26.5	26.5	26.5				25.0	25.0	25.0	25.0	25.0	
Total Split (s)	40.0	40.0	40.0				35.0	35.0	35.0	35.0	35.0	
Total Split (%)	36.4%	36.4%	36.4%				31.8%	31.8%	31.8%	31.8%	31.8%	
Yellow Time (s)	4.5	4.5	4.5				4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0				1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	-2.5	-2.5	-2.5				-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	3.0	3.0	3.0				3.0	3.0	3.0	3.0	3.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Recall Mode	Min	Min	Min				Min	Min	Min	C-Max	C-Max	
Act Effct Green (s)	37.0	37.0	37.0				31.6	31.6	31.6	32.4	32.4	72.4
Actuated g/C Ratio	0.34	0.34	0.34				0.29	0.29	0.29	0.29	0.29	0.66
v/c Ratio	0.74	0.90	0.50				0.69	0.70	0.72	0.43	0.85	0.66
Control Delay	37.3	43.1	5.0				39.4	39.4	36.1	37.7	48.6	18.7
Queue Delay	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	1.7
Total Delay	37.3	43.1	5.0				39.4	39.4	36.1	37.7	48.6	20.4
LOS	D	D	A				D	D	D	D	D	C
Approach Delay		35.7						38.7			35.0	
Approach LOS		D						D			D	

Intersection Summary	
Area Type: Other	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 58 (53%), Referenced to phase 6:SBTL, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 36.3	Intersection LOS: D
Intersection Capacity Utilization 72.5%	ICU Level of Service C

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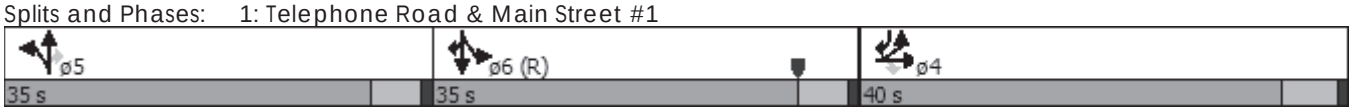
Analysis Period (min) 15

Splits and Phases: 1: Telephone Road & Main Street #1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	1269	0	0	1129	25	394	40	251	12	0	49
Future Volume (vph)	56	1269	0	0	1129	25	394	40	251	12	0	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	5085	0	0	5070	0	1681	1699	1583	1770	0	1583
Flt Permitted	0.950						0.950	0.960		0.950		
Satd. Flow (perm)	1770	5085	0	0	5070	0	1681	1699	1583	1770	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					3				201			114
Link Speed (mph)		40			45			30			30	
Link Distance (ft)		203			2443			376			153	
Travel Time (s)		3.5			37.0			8.5			3.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	62	1410	0	0	1282	0	219	263	279	13	0	54
Turn Type	Prot	NA			NA		Split	NA	Prot	Prot		Prot
Protected Phases	5	2			6		4	4	4	3		3
Permitted Phases										3		3
Detector Phase	5	2			6		4	4	4	3		3
Switch Phase												
Minimum Initial (s)	4.0	10.0			10.0		4.0	4.0	4.0	4.0		4.0
Minimum Split (s)	9.0	21.5			22.0		30.5	30.5	30.5	8.5		8.5
Total Split (s)	16.0	59.0			43.0		35.0	35.0	35.0	16.0		16.0
Total Split (%)	14.5%	53.6%			39.1%		31.8%	31.8%	31.8%	14.5%		14.5%
Yellow Time (s)	4.0	3.5			4.0		3.5	3.5	3.5	3.5		3.5
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0	1.0		1.0
Lost Time Adjust (s)	-2.0	-1.5			-2.0		-1.5	-1.5	-1.5	-1.5		-1.5
Total Lost Time (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0		3.0
Lead/Lag	Lag				Lead		Lead	Lead	Lead	Lag		Lag
Lead-Lag Optimize?	Yes				Yes		Yes	Yes	Yes	Yes		Yes
Recall Mode	Max	C-Max			C-Max		Min	Min	Min	None		None
Act Effct Green (s)	13.0	72.7			56.7		23.2	23.2	23.2	6.9		6.9
Actuated g/C Ratio	0.12	0.66			0.52		0.21	0.21	0.21	0.06		0.06
v/c Ratio	0.30	0.42			0.49		0.62	0.73	0.57	0.12		0.26
Control Delay	31.2	0.9			19.6		46.2	52.2	15.4	50.5		3.1
Queue Delay	0.0	0.1			0.0		0.2	0.3	0.0	0.0		0.0
Total Delay	31.2	1.0			19.6		46.4	52.4	15.4	50.5		3.1
LOS	C	A			B		D	D	B	D		A
Approach Delay		2.3			19.6			37.1				
Approach LOS		A			B			D				

Intersection Summary	
Area Type: Other	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 15 (14%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 16.1	Intersection LOS: B
Intersection Capacity Utilization 54.3%	ICU Level of Service A
Analysis Period (min) 15	

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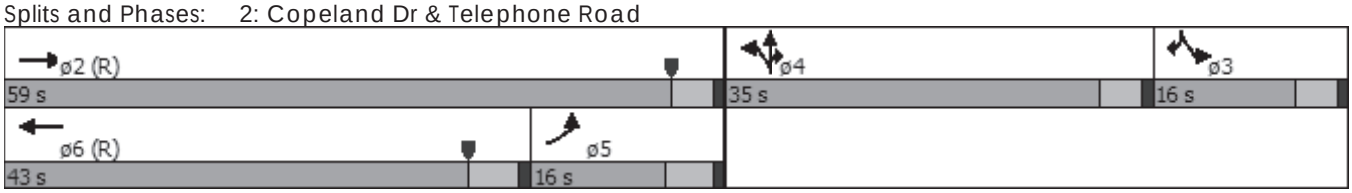
Splits and Phases: 2: Copeland Dr & Telephone Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	348	5	177	135	23	57	37	1762	29	51	1824	332
Future Volume (vph)	348	5	177	135	23	57	37	1762	29	51	1824	332
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	250		0	240		0
Storage Lanes	0		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1681	1688	1583	1770	1665	0	1770	6395	0	1770	6260	0
Flt Permitted	0.950	0.954		0.950			0.950			0.950		
Satd. Flow (perm)	1681	1688	1583	1770	1665	0	1770	6395	0	1770	6260	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			149		63			4			55	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		618			847			500			3140	
Travel Time (s)		14.0			19.3			8.5			53.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)	48%											
Lane Group Flow (vph)	201	192	197	150	89	0	41	1990	0	57	2396	0
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8	5	4	4		5	2		1	6	
Permitted Phases			8									
Detector Phase	8	8	5	4	4		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	10.0	6.0	6.0		10.0	10.0		4.0	10.0	
Minimum Split (s)	33.0	33.0	14.0	33.0	33.0		14.0	29.5		8.0	27.5	
Total Split (s)	20.0	20.0	15.0	21.5	21.5		15.0	53.5		12.5	53.5	
Total Split (%)	18.2%	18.2%	13.6%	19.5%	19.5%		13.6%	48.6%		11.4%	48.6%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	4.5		3.0	4.5	
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-1.0	-2.0	-2.0		-1.0	-3.5		-1.0	-3.5	
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lead/Lag			Lead				Lead	Lead		Lag	Lag	
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	
Recall Mode	Min	Min	None	Min	Min		None	C-Max		Max	C-Max	
Act Effct Green (s)	17.1	17.1	31.1	15.1	15.1		11.0	53.8		12.0	54.8	
Actuated g/C Ratio	0.16	0.16	0.28	0.14	0.14		0.10	0.49		0.11	0.50	
v/c Ratio	0.77	0.73	0.36	0.62	0.31		0.23	0.64		0.30	0.76	
Control Delay	64.8	61.5	10.9	55.5	18.8		49.2	22.5		49.6	24.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	64.8	61.5	10.9	55.5	18.8		49.2	22.5		49.6	24.4	
LOS	E	E	B	E	B		D	C		D	C	
Approach Delay		45.7			41.8			23.1			25.0	
Approach LOS		D			D			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 100 (91%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 27.3 Intersection LOS: C
Intersection Capacity Utilization 65.5% ICU Level of Service C
Analysis Period (min) 15

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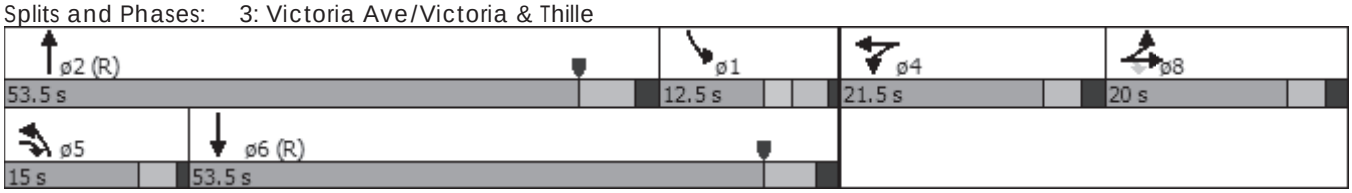
Splits and Phases: 3: Victoria Ave/Victoria & Thille



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	450	1100	390	0	0	0	260	240	80	240	970	730
Future Volume (vph)	450	1100	390	0	0	0	260	240	80	240	970	730
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	12	12	12	11	11	11	12	10	15
Storage Length (ft)	560		690	0		0	215		190	120		0
Storage Lanes	1		1	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3204	4916	1583	0	0	0	3319	3421	1531	1610	3164	1742
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	3204	4916	1583	0	0	0	3319	3421	1531	1610	3164	1742
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)			318						91			
Link Speed (mph)		40			30			40			40	
Link Distance (ft)		577			1203			384			319	
Travel Time (s)		9.8			27.3			6.5			5.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)										0%		
Lane Group Flow (vph)	474	1158	411	0	0	0	274	253	84	253	1021	768
Turn Type	Split	NA	Perm				Split	NA	Perm	Split	NA	pt+ov
Protected Phases	4	4					5	5		6	6	6 4
Permitted Phases			4						5			
Detector Phase	4	4	4				5	5	5	6	6	6 4
Switch Phase												
Minimum Initial (s)	12.0	12.0	12.0				12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	26.5	26.5	26.5				18.0	18.0	18.0	25.0	25.0	
Total Split (s)	30.0	30.0	30.0				18.0	18.0	18.0	42.0	42.0	
Total Split (%)	33.3%	33.3%	33.3%				20.0%	20.0%	20.0%	46.7%	46.7%	
Yellow Time (s)	4.5	4.5	4.5				4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0				1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	-2.5	-2.5	-2.5				-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	3.0	3.0	3.0				3.0	3.0	3.0	3.0	3.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Recall Mode	Min	Min	Min				Min	Min	Min	C-Max	C-Max	
Act Effct Green (s)	27.0	27.0	27.0				15.0	15.0	15.0	39.0	39.0	69.0
Actuated g/C Ratio	0.30	0.30	0.30				0.17	0.17	0.17	0.43	0.43	0.77
v/c Ratio	0.49	0.79	0.59				0.50	0.44	0.25	0.36	0.74	0.58
Control Delay	28.0	33.4	10.4				37.6	36.6	8.8	9.8	14.4	6.3
Queue Delay	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	1.7
Total Delay	28.0	33.4	10.4				37.6	36.6	8.8	9.8	14.5	8.0
LOS	C	C	B				D	D	A	A	B	A
Approach Delay		27.5						33.2			11.5	
Approach LOS		C						C			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 6:SBTL, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 21.3	Intersection LOS: C
Intersection Capacity Utilization 68.1%	ICU Level of Service C

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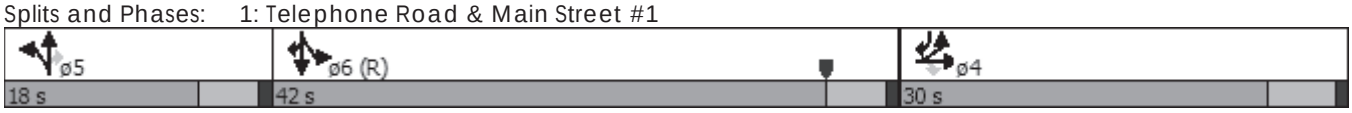
Analysis Period (min) 15
Description: Telephone Rd and Main St/US-101 SB

Splits and Phases: 1: Telephone Road & Main Street #1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	720	0	0	1010	10	670	20	270	10	0	280
Future Volume (vph)	10	720	0	0	1010	10	670	20	270	10	0	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	5085	0	0	5075	0	1681	1690	1583	1770	0	1583
Flt Permitted	0.950						0.950	0.955		0.950		
Satd. Flow (perm)	1770	5085	0	0	5075	0	1681	1690	1583	1770	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					2				284			139
Link Speed (mph)		40			45			30			30	
Link Distance (ft)		203			2718			376			153	
Travel Time (s)		3.5			41.2			8.5			3.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	11	758	0	0	1074	0	352	374	284	11	0	295
Turn Type	Prot	NA			NA		Split	NA	Prot	Prot		Prot
Protected Phases	5	2			6		4	4	4	3		3
Permitted Phases										3		3
Detector Phase	5	2			6		4	4	4	3		3
Switch Phase												
Minimum Initial (s)	4.0	10.0			10.0		4.0	4.0	4.0	4.0		4.0
Minimum Split (s)	9.0	21.5			22.0		30.5	30.5	30.5	8.5		8.5
Total Split (s)	9.0	37.0			28.0		32.0	32.0	32.0	21.0		21.0
Total Split (%)	10.0%	41.1%			31.1%		35.6%	35.6%	35.6%	23.3%		23.3%
Yellow Time (s)	4.0	3.5			4.0		3.5	3.5	3.5	3.5		3.5
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0	1.0		1.0
Lost Time Adjust (s)	-2.0	-1.5			-2.0		-1.5	-1.5	-1.5	-1.5		-1.5
Total Lost Time (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0		3.0
Lead/Lag	Lead				Lag		Lead	Lead	Lead	Lag		Lag
Lead-Lag Optimize?	Yes				Yes		Yes	Yes	Yes	Yes		Yes
Recall Mode	Max	C-Max			C-Max		Min	Min	Min	None		None
Act Effct Green (s)	13.8	41.8			25.0		25.0	25.0	25.0	14.2		14.2
Actuated g/C Ratio	0.15	0.46			0.28		0.28	0.28	0.28	0.16		0.16
v/c Ratio	0.04	0.32			0.76		0.75	0.80	0.44	0.04		0.81
Control Delay	33.7	5.1			33.9		40.1	42.9	5.3	29.8		35.9
Queue Delay	0.0	0.0			0.0		0.1	0.1	0.0	0.0		0.0
Total Delay	33.7	5.1			33.9		40.1	43.1	5.3	29.8		35.9
LOS	C	A			C		D	D	A	C		D
Approach Delay		5.5			33.9			31.4				
Approach LOS		A			C			C				

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 60 (67%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 26.4 Intersection LOS: C
Intersection Capacity Utilization 66.2% ICU Level of Service C
Analysis Period (min) 15

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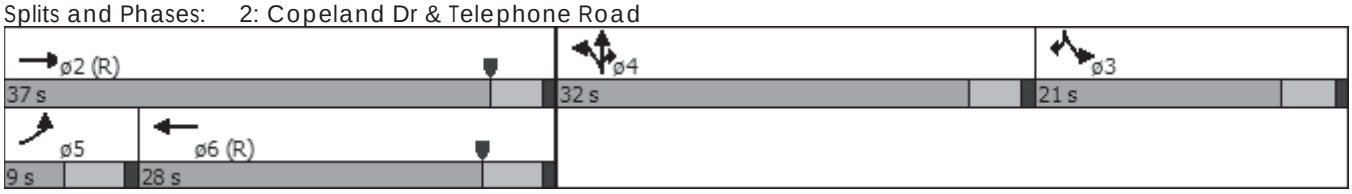
Description: Telephone Rd and Copland Dr/US 101 NB

Splits and Phases: 2: Copeland Dr & Telephone Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	30	130	30	10	20	40	1290	460	170	2160	350
Future Volume (vph)	230	30	130	30	10	20	40	1290	460	170	2160	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	250		0	240		0
Storage Lanes	0		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1681	1706	1583	1770	1680	0	1770	6158	0	1770	6273	0
Flt Permitted	0.950	0.964		0.950			0.950			0.950		
Satd. Flow (perm)	1681	1706	1583	1770	1680	0	1770	6158	0	1770	6273	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			149		21			80			40	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		618			847			500			506	
Travel Time (s)		14.0			19.3			8.5			8.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)	40%											
Lane Group Flow (vph)	145	129	137	32	32	0	42	1842	0	179	2642	0
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8	5	4	4		5	2		1	6	
Permitted Phases			8									
Detector Phase	8	8	5	4	4		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	10.0	6.0	6.0		10.0	10.0		4.0	10.0	
Minimum Split (s)	33.0	33.0	14.0	33.0	33.0		14.0	29.5		8.0	27.5	
Total Split (s)	33.0	33.0	14.0	23.0	23.0		14.0	33.0		21.0	40.0	
Total Split (%)	30.0%	30.0%	12.7%	20.9%	20.9%		12.7%	30.0%		19.1%	36.4%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	4.5		3.0	4.5	
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-1.0	-2.0	-2.0		-1.0	-3.5		-1.0	-3.5	
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lead/Lag			Lead				Lead	Lead		Lag	Lag	
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	
Recall Mode	Min	Min	None	Min	Min		None	C-Max		Max	C-Max	
Act Effct Green (s)	15.9	15.9	29.9	9.0	9.0		11.0	55.1		18.0	62.1	
Actuated g/C Ratio	0.14	0.14	0.27	0.08	0.08		0.10	0.50		0.16	0.56	
v/c Ratio	0.60	0.52	0.25	0.22	0.21		0.24	0.59		0.62	0.74	
Control Delay	53.7	50.4	4.9	50.6	28.0		49.4	20.1		53.1	20.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	53.7	50.4	4.9	50.6	28.0		49.4	20.1		53.1	20.1	
LOS	D	D	A	D	C		D	C		D	C	
Approach Delay		36.4			39.3			20.8			22.2	
Approach LOS		D			D			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 23.0 Intersection LOS: C
Intersection Capacity Utilization 69.3% ICU Level of Service C
Analysis Period (min) 15

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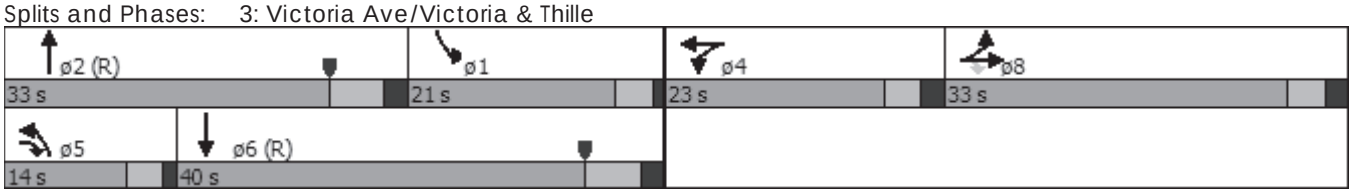
Description: Victoria Ave and Thille St

Splits and Phases: 3: Victoria Ave/Victoria & Thille



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	730	1490	450	0	0	0	710	1000	290	460	670	980
Future Volume (vph)	730	1490	450	0	0	0	710	1000	290	460	670	980
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	12	12	12	11	11	11	12	10	15
Storage Length (ft)	560		690	0		0	215		190	120		0
Storage Lanes	1		1	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3204	4916	1583	0	0	0	3319	3421	1531	1610	3123	1742
Flt Permitted	0.950						0.950			0.950	0.987	
Satd. Flow (perm)	3204	4916	1583	0	0	0	3319	3421	1531	1610	3123	1742
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)			474						91			
Link Speed (mph)		40			30			40			40	
Link Distance (ft)		577			1203			384			319	
Travel Time (s)		9.8			27.3			6.5			5.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	768	1568	474	0	0	0	747	1053	305	242	947	1032
Turn Type	Split	NA	Perm				Split	NA	Perm	Split	NA	pt+ov
Protected Phases	4	4					5	5		6	6	6 4
Permitted Phases			4						5			
Detector Phase	4	4	4				5	5	5	6	6	6 4
Switch Phase												
Minimum Initial (s)	12.0	12.0	12.0				12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	26.5	26.5	26.5				25.0	25.0	25.0	25.0	25.0	
Total Split (s)	31.0	31.0	31.0				29.0	29.0	29.0	30.0	30.0	
Total Split (%)	34.4%	34.4%	34.4%				32.2%	32.2%	32.2%	33.3%	33.3%	
Yellow Time (s)	4.5	4.5	4.5				4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0				1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	-2.5	-2.5	-2.5				-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	3.0	3.0	3.0				3.0	3.0	3.0	3.0	3.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Recall Mode	Min	Min	Min				Min	Min	Min	C-Max	C-Max	
Act Effct Green (s)	28.0	28.0	28.0				26.0	26.0	26.0	27.0	27.0	58.0
Actuated g/C Ratio	0.31	0.31	0.31				0.29	0.29	0.29	0.30	0.30	0.64
v/c Ratio	0.77	1.03	0.58				0.78	1.07	0.60	0.50	1.01	0.92
Control Delay	34.3	61.5	5.6				36.1	80.3	24.8	21.0	52.2	23.2
Queue Delay	0.0	0.0	0.0				0.0	2.1	0.0	0.0	0.0	8.5
Total Delay	34.3	61.5	5.6				36.1	82.4	24.8	21.0	52.2	31.8
LOS	C	E	A				D	F	C	C	D	C
Approach Delay		44.6						57.6			39.3	
Approach LOS		D						E			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 6:SBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 46.8	Intersection LOS: D
Intersection Capacity Utilization 95.0%	ICU Level of Service F

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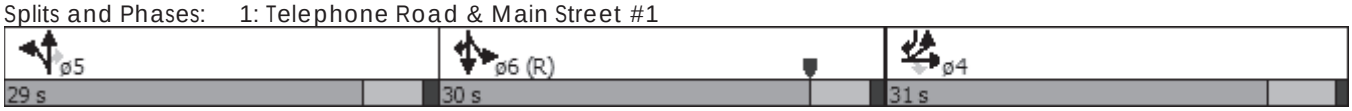
Analysis Period (min) 15

Splits and Phases: 1: Telephone Road & Main Street #1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	1870	0	0	1390	10	520	40	400	10	0	210
Future Volume (vph)	230	1870	0	0	1390	10	520	40	400	10	0	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	5085	0	0	5080	0	1681	1695	1583	1770	0	1583
Flt Permitted	0.950						0.950	0.958		0.950		
Satd. Flow (perm)	1770	5085	0	0	5080	0	1681	1695	1583	1770	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1				139			221
Link Speed (mph)		40			45			30			30	
Link Distance (ft)		203			2443			376			153	
Travel Time (s)		3.5			37.0			8.5			3.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	242	1968	0	0	1474	0	273	316	421	11	0	221
Turn Type	Prot	NA			NA		Split	NA	Prot	Prot		Prot
Protected Phases	5	2			6		4	4	4	3		3
Permitted Phases										3		3
Detector Phase	5	2			6		4	4	4	3		3
Switch Phase												
Minimum Initial (s)	4.0	10.0			10.0		4.0	4.0	4.0	4.0		4.0
Minimum Split (s)	9.0	21.5			22.0		30.5	30.5	30.5	8.5		8.5
Total Split (s)	17.0	49.5			32.5		30.5	30.5	30.5	10.0		10.0
Total Split (%)	18.9%	55.0%			36.1%		33.9%	33.9%	33.9%	11.1%		11.1%
Yellow Time (s)	4.0	3.5			4.0		3.5	3.5	3.5	3.5		3.5
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0	1.0		1.0
Lost Time Adjust (s)	-2.0	-1.5			-2.0		-1.5	-1.5	-1.5	-1.5		-1.5
Total Lost Time (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0		3.0
Lead/Lag	Lead				Lag		Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?	Yes				Yes		Yes	Yes	Yes	Yes		Yes
Recall Mode	Max	C-Max			C-Max		Min	Min	Min	None		None
Act Effct Green (s)	19.0	51.5			29.5		22.9	22.9	22.9	6.6		6.6
Actuated g/C Ratio	0.21	0.57			0.33		0.25	0.25	0.25	0.07		0.07
v/c Ratio	0.65	0.68			0.89		0.64	0.73	0.83	0.09		0.69
Control Delay	46.3	6.0			36.5		36.2	40.6	35.2	40.3		18.2
Queue Delay	0.0	0.4			2.9		0.1	0.2	0.0	0.0		4.2
Total Delay	46.3	6.4			39.4		36.3	40.8	35.2	40.3		22.3
LOS	D	A			D		D	D	D	D		C
Approach Delay		10.8			39.4			37.3				
Approach LOS		B			D			D				

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 74 (82%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 25.4 Intersection LOS: C
Intersection Capacity Utilization 74.2% ICU Level of Service D
Analysis Period (min) 15

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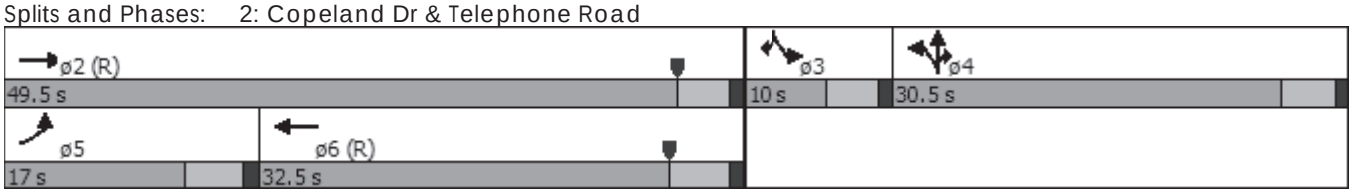
Splits and Phases: 2: Copeland Dr & Telephone Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	290	10	190	120	60	80	60	2440	50	40	1810	240
Future Volume (vph)	290	10	190	120	60	80	60	2440	50	40	1810	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	250		0	240		0
Storage Lanes	0		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1681	1692	1583	1770	1703	0	1770	6389	0	1770	6293	0
Flt Permitted	0.950	0.956		0.950			0.950			0.950		
Satd. Flow (perm)	1681	1692	1583	1770	1703	0	1770	6389	0	1770	6293	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			200		60			3			29	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		618			847			500			3140	
Travel Time (s)		14.0			19.3			8.5			53.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)	48%											
Lane Group Flow (vph)	159	157	200	126	147	0	63	2621	0	42	2158	0
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8	5	4	4		5	2		1	6	
Permitted Phases			8									
Detector Phase	8	8	5	4	4		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	10.0	6.0	6.0		10.0	10.0		4.0	10.0	
Minimum Split (s)	33.0	33.0	14.0	33.0	33.0		14.0	29.5		8.0	27.5	
Total Split (s)	33.0	33.0	14.0	33.0	33.0		14.0	36.0		8.0	30.0	
Total Split (%)	30.0%	30.0%	12.7%	30.0%	30.0%		12.7%	32.7%		7.3%	27.3%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	4.5		3.0	4.5	
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-1.0	-2.0	-2.0		-1.0	-3.5		-1.0	-3.5	
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lead/Lag			Lead				Lead	Lead		Lag	Lag	
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	
Recall Mode	Min	Min	None	Min	Min		None	C-Max		Max	C-Max	
Act Effct Green (s)	16.8	16.8	31.2	14.2	14.2		11.4	62.0		5.0	55.6	
Actuated g/C Ratio	0.15	0.15	0.28	0.13	0.13		0.10	0.56		0.05	0.51	
v/c Ratio	0.62	0.61	0.34	0.55	0.54		0.34	0.73		0.53	0.68	
Control Delay	53.6	53.0	5.3	53.4	33.1		51.3	20.7		74.7	22.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	53.6	53.0	5.3	53.4	33.1		51.3	20.7		74.7	22.9	
LOS	D	D	A	D	C		D	C		E	C	
Approach Delay		34.7			42.4			21.4			23.9	
Approach LOS		C			D			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 29.5 (27%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 24.6 Intersection LOS: C
Intersection Capacity Utilization 69.2% ICU Level of Service C
Analysis Period (min) 15

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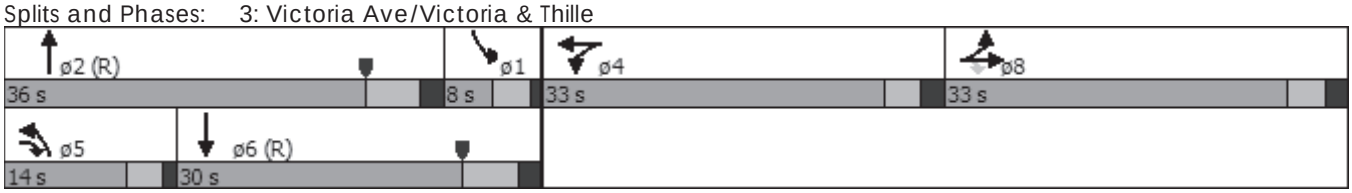
Splits and Phases: 3: Victoria Ave/Victoria & Thille



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	460	1110	390	0	0	0	260	240	80	260	970	740
Future Volume (vph)	460	1110	390	0	0	0	260	240	80	260	970	740
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	12	12	12	11	11	11	12	10	15
Storage Length (ft)	560		690	0		0	215		190	120		0
Storage Lanes	1		1	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3204	4916	1583	0	0	0	3319	3421	1531	1610	3164	1742
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	3204	4916	1583	0	0	0	3319	3421	1531	1610	3164	1742
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)			318						91			
Link Speed (mph)		40			30			40			40	
Link Distance (ft)		577			1203			384			319	
Travel Time (s)		9.8			27.3			6.5			5.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)										0%		
Lane Group Flow (vph)	484	1168	411	0	0	0	274	253	84	274	1021	779
Turn Type	Split	NA	Perm				Split	NA	Perm	Split	NA	pt+ov
Protected Phases	4	4					5	5		6	6	6 4
Permitted Phases			4						5			
Detector Phase	4	4	4				5	5	5	6	6	6 4
Switch Phase												
Minimum Initial (s)	12.0	12.0	12.0				12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	26.5	26.5	26.5				18.0	18.0	18.0	25.0	25.0	
Total Split (s)	30.0	30.0	30.0				18.0	18.0	18.0	42.0	42.0	
Total Split (%)	33.3%	33.3%	33.3%				20.0%	20.0%	20.0%	46.7%	46.7%	
Yellow Time (s)	4.5	4.5	4.5				4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0				1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	-2.5	-2.5	-2.5				-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	3.0	3.0	3.0				3.0	3.0	3.0	3.0	3.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Recall Mode	Min	Min	Min				Min	Min	Min	C-Max	C-Max	
Act Effct Green (s)	27.0	27.0	27.0				15.0	15.0	15.0	39.0	39.0	69.0
Actuated g/C Ratio	0.30	0.30	0.30				0.17	0.17	0.17	0.43	0.43	0.77
v/c Ratio	0.50	0.79	0.59				0.50	0.44	0.25	0.39	0.74	0.58
Control Delay	28.2	33.7	10.4				37.6	36.6	8.8	10.7	14.9	5.6
Queue Delay	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	1.7
Total Delay	28.2	33.7	10.4				37.6	36.6	8.8	10.7	14.9	7.3
LOS	C	C	B				D	D	A	B	B	A
Approach Delay		27.8						33.2			11.5	
Approach LOS		C						C			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 6:SBTL, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 21.4	Intersection LOS: C
Intersection Capacity Utilization 68.3%	ICU Level of Service C

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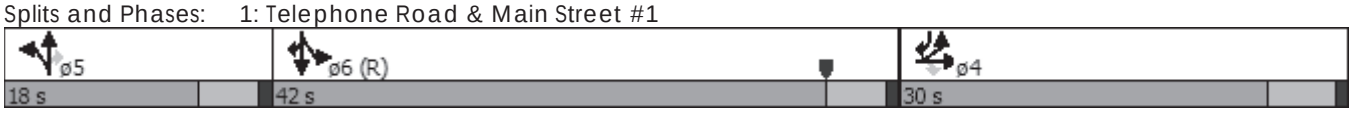
Analysis Period (min) 15
Description: Telephone Rd and Main St/US-101 SB

Splits and Phases: 1: Telephone Road & Main Street #1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	730	0	0	1020	10	680	30	270	40	0	340
Future Volume (vph)	20	730	0	0	1020	10	680	30	270	40	0	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	5085	0	0	5075	0	1681	1692	1583	1770	0	1583
Flt Permitted	0.950						0.950	0.956		0.950		
Satd. Flow (perm)	1770	5085	0	0	5075	0	1681	1692	1583	1770	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					2				284			139
Link Speed (mph)		40			45			30			30	
Link Distance (ft)		203			2718			376			153	
Travel Time (s)		3.5			41.2			8.5			3.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	21	768	0	0	1085	0	358	390	284	42	0	358
Turn Type	Prot	NA			NA		Split	NA	Prot	Prot		Prot
Protected Phases	5	2			6		4	4	4	3		3
Permitted Phases										3		3
Detector Phase	5	2			6		4	4	4	3		3
Switch Phase												
Minimum Initial (s)	4.0	10.0			10.0		4.0	4.0	4.0	4.0		4.0
Minimum Split (s)	9.0	21.5			22.0		30.5	30.5	30.5	8.5		8.5
Total Split (s)	9.0	36.0			27.0		31.0	31.0	31.0	23.0		23.0
Total Split (%)	10.0%	40.0%			30.0%		34.4%	34.4%	34.4%	25.6%		25.6%
Yellow Time (s)	4.0	3.5			4.0		3.5	3.5	3.5	3.5		3.5
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0	1.0		1.0
Lost Time Adjust (s)	-2.0	-1.5			-2.0		-1.5	-1.5	-1.5	-1.5		-1.5
Total Lost Time (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0		3.0
Lead/Lag	Lead				Lag		Lead	Lead	Lead	Lag		Lag
Lead-Lag Optimize?	Yes				Yes		Yes	Yes	Yes	Yes		Yes
Recall Mode	Max	C-Max			C-Max		Min	Min	Min	None		None
Act Effct Green (s)	11.3	38.3			24.0		25.2	25.2	25.2	17.4		17.4
Actuated g/C Ratio	0.13	0.43			0.27		0.28	0.28	0.28	0.19		0.19
v/c Ratio	0.09	0.35			0.80		0.76	0.82	0.44	0.12		0.86
Control Delay	34.6	6.9			36.1		40.5	45.3	5.3	29.3		41.2
Queue Delay	0.0	0.0			0.0		0.1	0.2	0.0	0.0		0.0
Total Delay	34.6	6.9			36.1		40.7	45.5	5.3	29.3		41.2
LOS	C	A			D		D	D	A	C		D
Approach Delay		7.6			36.1			32.8				
Approach LOS		A			D			C				

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 60 (67%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 28.7	Intersection LOS: C
Intersection Capacity Utilization 70.6%	ICU Level of Service C
Analysis Period (min) 15	

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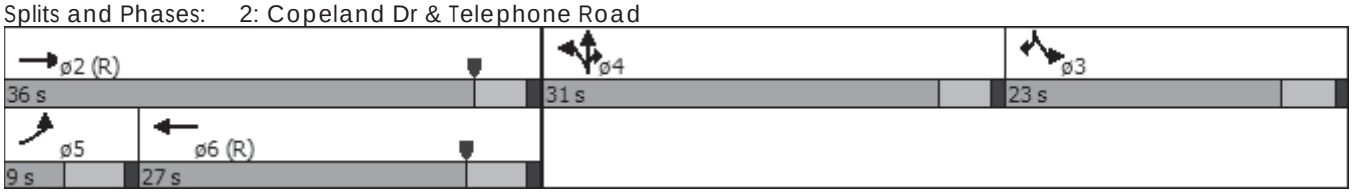
Description: Telephone Rd and Copland Dr/US 101 NB

Splits and Phases: 2: Copeland Dr & Telephone Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	240	30	140	30	10	20	40	1300	460	170	2170	360
Future Volume (vph)	240	30	140	30	10	20	40	1300	460	170	2170	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	250		0	240		0
Storage Lanes	0		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1681	1704	1583	1770	1680	0	1770	6158	0	1770	6273	0
Flt Permitted	0.950	0.963		0.950			0.950			0.950		
Satd. Flow (perm)	1681	1704	1583	1770	1680	0	1770	6158	0	1770	6273	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			149		21			81			42	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		618			847			500			506	
Travel Time (s)		14.0			19.3			8.5			8.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)	40%											
Lane Group Flow (vph)	152	133	147	32	32	0	42	1852	0	179	2663	0
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8	5	4	4		5	2		1	6	
Permitted Phases			8									
Detector Phase	8	8	5	4	4		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	10.0	6.0	6.0		10.0	10.0		4.0	10.0	
Minimum Split (s)	33.0	33.0	14.0	33.0	33.0		14.0	29.5		8.0	27.5	
Total Split (s)	33.0	33.0	14.0	22.0	22.0		14.0	34.0		21.0	41.0	
Total Split (%)	30.0%	30.0%	12.7%	20.0%	20.0%		12.7%	30.9%		19.1%	37.3%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	4.5		3.0	4.5	
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-1.0	-2.0	-2.0		-1.0	-3.5		-1.0	-3.5	
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lead/Lag			Lead				Lead	Lead		Lag	Lag	
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	
Recall Mode	Min	Min	None	Min	Min		None	C-Max		Max	C-Max	
Act Effct Green (s)	16.4	16.4	30.4	8.9	8.9		11.0	54.7		18.0	61.7	
Actuated g/C Ratio	0.15	0.15	0.28	0.08	0.08		0.10	0.50		0.16	0.56	
v/c Ratio	0.61	0.53	0.27	0.22	0.21		0.24	0.60		0.62	0.75	
Control Delay	53.6	49.9	5.6	50.7	28.0		49.4	20.5		53.1	20.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	53.6	49.9	5.6	50.7	28.0		49.4	20.5		53.1	20.6	
LOS	D	D	A	D	C		D	C		D	C	
Approach Delay		36.1			39.3			21.2			22.7	
Approach LOS		D			D			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 23.4 Intersection LOS: C
Intersection Capacity Utilization 69.9% ICU Level of Service C
Analysis Period (min) 15

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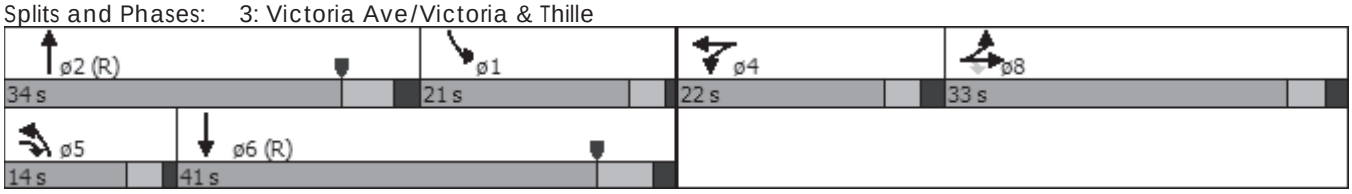
Description: Victoria Ave and Thille St

Splits and Phases: 3: Victoria Ave/Victoria & Thille



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	760	1490	450	0	0	0	730	1010	300	470	680	990
Future Volume (vph)	760	1490	450	0	0	0	730	1010	300	470	680	990
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	12	12	12	11	11	11	12	10	15
Storage Length (ft)	560		690	0		0	215		190	120		0
Storage Lanes	1		1	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3204	4916	1583	0	0	0	3319	3421	1531	1610	3123	1742
Flt Permitted	0.950						0.950			0.950	0.987	
Satd. Flow (perm)	3204	4916	1583	0	0	0	3319	3421	1531	1610	3123	1742
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)			474						91			
Link Speed (mph)		40			30			40			40	
Link Distance (ft)		577			1203			384			319	
Travel Time (s)		9.8			27.3			6.5			5.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	800	1568	474	0	0	0	768	1063	316	247	964	1042
Turn Type	Split	NA	Perm				Split	NA	Perm	Split	NA	pt+ov
Protected Phases	4	4					5	5		6	6	6 4
Permitted Phases			4						5			
Detector Phase	4	4	4				5	5	5	6	6	6 4
Switch Phase												
Minimum Initial (s)	12.0	12.0	12.0				12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	26.5	26.5	26.5				25.0	25.0	25.0	25.0	25.0	
Total Split (s)	31.0	31.0	31.0				29.0	29.0	29.0	30.0	30.0	
Total Split (%)	34.4%	34.4%	34.4%				32.2%	32.2%	32.2%	33.3%	33.3%	
Yellow Time (s)	4.5	4.5	4.5				4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0				1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	-2.5	-2.5	-2.5				-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	3.0	3.0	3.0				3.0	3.0	3.0	3.0	3.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Recall Mode	Min	Min	Min				Min	Min	Min	C-Max	C-Max	
Act Effct Green (s)	28.0	28.0	28.0				26.0	26.0	26.0	27.0	27.0	58.0
Actuated g/C Ratio	0.31	0.31	0.31				0.29	0.29	0.29	0.30	0.30	0.64
v/c Ratio	0.80	1.03	0.58				0.80	1.08	0.62	0.51	1.03	0.93
Control Delay	35.9	61.5	5.6				37.2	83.6	25.7	20.7	55.1	22.7
Queue Delay	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	14.6
Total Delay	35.9	61.5	5.6				37.2	83.6	25.7	20.7	55.1	37.3
LOS	D	E	A				D	F	C	C	E	D
Approach Delay		45.0						58.5			43.1	
Approach LOS		D						E			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 6:SBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 48.4	Intersection LOS: D
Intersection Capacity Utilization 95.9%	ICU Level of Service F

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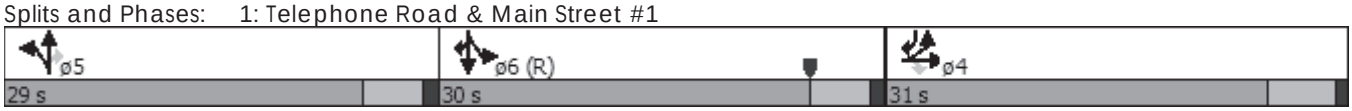
Analysis Period (min) 15

Splits and Phases: 1: Telephone Road & Main Street #1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	280	1880	0	0	1400	20	520	70	400	10	0	250
Future Volume (vph)	280	1880	0	0	1400	20	520	70	400	10	0	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	5085	0	0	5075	0	1681	1702	1583	1770	0	1583
Flt Permitted	0.950						0.950	0.962		0.950		
Satd. Flow (perm)	1770	5085	0	0	5075	0	1681	1702	1583	1770	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					2				139			263
Link Speed (mph)		40			45			30			30	
Link Distance (ft)		203			2443			376			153	
Travel Time (s)		3.5			37.0			8.5			3.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	295	1979	0	0	1495	0	273	348	421	11	0	263
Turn Type	Prot	NA			NA		Split	NA	Prot	Prot		Prot
Protected Phases	5	2			6		4	4	4	3		3
Permitted Phases										3		3
Detector Phase	5	2			6		4	4	4	3		3
Switch Phase												
Minimum Initial (s)	4.0	10.0			10.0		4.0	4.0	4.0	4.0		4.0
Minimum Split (s)	9.0	21.5			22.0		30.5	30.5	30.5	8.5		8.5
Total Split (s)	19.0	49.5			30.5		30.5	30.5	30.5	10.0		10.0
Total Split (%)	21.1%	55.0%			33.9%		33.9%	33.9%	33.9%	11.1%		11.1%
Yellow Time (s)	4.0	3.5			4.0		3.5	3.5	3.5	3.5		3.5
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0	1.0		1.0
Lost Time Adjust (s)	-2.0	-1.5			-2.0		-1.5	-1.5	-1.5	-1.5		-1.5
Total Lost Time (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0		3.0
Lead/Lag	Lead				Lag		Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?	Yes				Yes		Yes	Yes	Yes	Yes		Yes
Recall Mode	Max	C-Max			C-Max		Min	Min	Min	None		None
Act Effct Green (s)	20.2	50.7			27.5		23.6	23.6	23.6	6.7		6.7
Actuated g/C Ratio	0.22	0.56			0.31		0.26	0.26	0.26	0.07		0.07
v/c Ratio	0.74	0.69			0.96		0.62	0.78	0.81	0.08		0.73
Control Delay	48.4	6.0			47.2		35.1	43.1	33.5	40.2		18.5
Queue Delay	0.0	0.4			11.7		0.2	0.4	0.0	0.0		4.8
Total Delay	48.4	6.4			58.9		35.3	43.5	33.5	40.2		23.3
LOS	D	A			E		D	D	C	D		C
Approach Delay		11.8			58.9			37.3				
Approach LOS		B			E			D				

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 73 (81%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 31.5 Intersection LOS: C
Intersection Capacity Utilization 75.9% ICU Level of Service D
Analysis Period (min) 15

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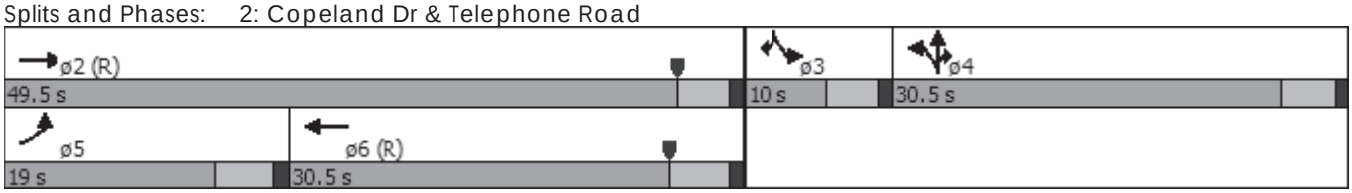
Splits and Phases: 2: Copeland Dr & Telephone Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	290	10	190	120	60	80	60	2450	50	40	1820	240
Future Volume (vph)	290	10	190	120	60	80	60	2450	50	40	1820	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	250		0	240		0
Storage Lanes	0		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1681	1692	1583	1770	1703	0	1770	6389	0	1770	6299	0
Flt Permitted	0.950	0.956		0.950			0.950			0.950		
Satd. Flow (perm)	1681	1692	1583	1770	1703	0	1770	6389	0	1770	6299	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			200		60			3			29	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		618			847			500			3140	
Travel Time (s)		14.0			19.3			8.5			53.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)	48%											
Lane Group Flow (vph)	159	157	200	126	147	0	63	2632	0	42	2169	0
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8	5	4	4		5	2		1	6	
Permitted Phases			8									
Detector Phase	8	8	5	4	4		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	10.0	6.0	6.0		10.0	10.0		4.0	10.0	
Minimum Split (s)	33.0	33.0	14.0	33.0	33.0		14.0	29.5		8.0	27.5	
Total Split (s)	33.0	33.0	14.0	33.0	33.0		14.0	36.0		8.0	30.0	
Total Split (%)	30.0%	30.0%	12.7%	30.0%	30.0%		12.7%	32.7%		7.3%	27.3%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	4.5		3.0	4.5	
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-1.0	-2.0	-2.0		-1.0	-3.5		-1.0	-3.5	
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lead/Lag			Lead				Lead	Lead		Lag	Lag	
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	
Recall Mode	Min	Min	None	Min	Min		None	C-Max		Max	C-Max	
Act Effct Green (s)	16.8	16.8	31.2	14.2	14.2		11.4	62.0		5.0	55.6	
Actuated g/C Ratio	0.15	0.15	0.28	0.13	0.13		0.10	0.56		0.05	0.51	
v/c Ratio	0.62	0.61	0.34	0.55	0.54		0.34	0.73		0.53	0.68	
Control Delay	53.6	53.0	5.3	53.4	33.1		51.3	20.8		74.7	23.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	53.6	53.0	5.3	53.4	33.1		51.3	20.8		74.7	23.0	
LOS	D	D	A	D	C		D	C		E	C	
Approach Delay		34.7			42.4			21.5			24.0	
Approach LOS		C			D			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 100 (91%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 24.6 Intersection LOS: C
Intersection Capacity Utilization 69.4% ICU Level of Service C
Analysis Period (min) 15

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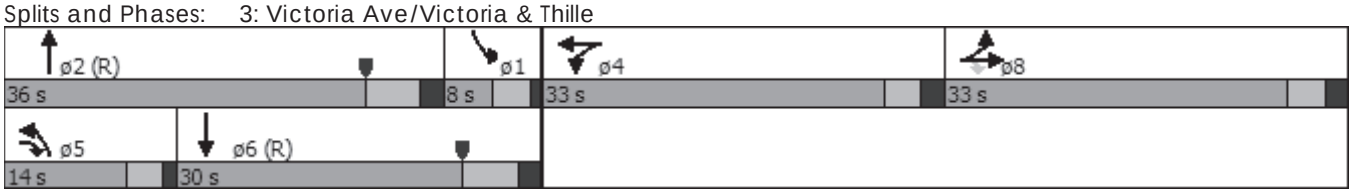
Splits and Phases: 3: Victoria Ave/Victoria & Thille



AUSTIN-FOUST ASSOCIATES, INC.
TRAFFIC ENGINEERING AND TRANSPORTATION PLANNING

February 22, 2012

Rincon Consultants, Inc.
180 N. Ashwood Avenue
Ventura, CA 93003

ATTENTION: Mr. Joe Power

SUBJECT: **THE GROVE IN VENTURA**

Dear Mr. Power:

As requested, we have evaluated the proposed changes to The Grove project in the City of Ventura. The evaluation focused on the changes relative to the land use plan addressed in the March 4, 2011 traffic impact study.

A summary of the land use and trip generation for the previous and revised plan can be seen in Table 1. The revised plan changes the apartment and condominium mix, eliminates the Live/Work units and reduces the mixed use office space. As can be seen, the result is a reduction in trip generation for all but the PM entering volume which remains the same as before. The conclusion therefore is that the previous finding of no significant project impact is unchanged with the revised plan.

We hope this information provides what you need at this time, and appreciate the opportunity to assist in the analysis work for this project.

Very Truly Yours,

Terence W. Austin

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2223 Wellington Avenue, Suite 300 • Santa Ana, California 92701-3161
Tel: (714) 667-0496 Fax: (714) 667-7952
www.austinfoust.com

Table 1

TRIP GENERATION SUMMARY

Land Use	Amount	AM Peak Hour			PM Peak Hour			ADT
		In	Out	Total	In	Out	Total	
Trip Rates								
Single-Family Detached (ITE 210)	DU	.19	.56	.75	.64	.37	1.01	9.57
Apartment (ITE 220)	DU	.10	.41	.51	.40	.22	.62	6.65
Condominium/Townhouse (ITE 231)[1]	DU	.17	.50	.67	.45	.33	.78	7.85
Live/Work (ITE 231 & ITE 710)[2]	DU	.48	.54	1.02	.51	.61	1.12	10.33
Office (ITE 710)	TSF	1.36	.19	1.55	.25	1.24	1.49	11.01
Trip Generation (Previous Plan)								
Single-Family Detached	60 DU	11	34	45	38	22	60	574
Apartment	60 DU	6	25	31	24	13	37	399
Condominium	100 DU	17	50	67	45	33	78	785
Live/Work	20 DU	10	11	21	10	12	22	207
Office	8.0 TSF	11	2	13	2	10	12	88
Total		55	122	177	119	90	209	2,053
Trip Generation (Revised Plan)								
Single-Family Detached	60 DU	11	34	45	38	22	60	574
Apartment	142 DU	14	58	72	57	31	88	944
Condominium	50 DU	9	25	34	23	16	39	393
Office	4.0 TSF	6	1	7	1	5	6	44
Total		40	119	158	119	74	193	1,955

Notes:

1. Condominium/Townhouse ADT rate derived from SFD and Apartments ADT rates.

Memo

To:	Kioren Moss, MAI Moss & Associates	From:	Cassandra Carlin Stantec Consulting Services Inc.
File:	2073008770	Date:	June 30, 2014

Reference: The Grove Specific Plan – City of Ventura

Stantec Consulting Services Inc. (Stantec) has evaluated the proposed land use changes for The Grove project in the City of Ventura, per your request. The evaluation compared the proposed plan to the land use plan addressed in a memo prepared by Austin-Foust Associates, dated February 22, 2012.

A summary of the land use and trip generation for the revised plan is provided in Table 1, along with a comparison to the trip generation for the previous plan. The revised plan eliminates the commercial land uses and slightly reduces the dwelling units. As shown, the result is an across the board reduction in trip generation. The conclusion is that the previous finding of no significant impact is still in effect with the revised plan.

We hope this information provides you with the needed information and as always, we appreciate the opportunity to assist in the evaluation for this project.

Attachments: Land use and Trip Generation Summary
2014 Traffic Count Data

Table 1

The Groves - Proposed Project Land Use and Trip Generation Summary

Land Use Type	Units		AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	ADT
Proposed Project (June 2014)									
1. Single Family -Detached	58	DU	11	32	43	37	21	58	555
2. Condominiums	50	DU	4	19	23	23	16	39	393
3. Apartments	142	DU	14	58	72	57	31	88	944
TOTAL			29	109	138	117	68	185	1,892
Previous Plan									
1. Single Family -Detached	60	DU	11	34	45	38	22	60	574
2. Condominiums	50	DU	9	25	34	23	16	39	393
3. Apartments	142	DU	14	58	72	57	31	88	944
4. Office	4	TSF	6	1	7	1	5	6	44
TOTAL			40	118	158	119	74	193	1,955
Difference			***-11***	***-9***	***-20***	***-2***	***-6***	***-8***	***-63***
% Change			*-28%*	*-8%*	*-13%*	*-2%*	*-8%*	*-4%*	*-3%*

Trip Rates									
1. Single Family -Detached		DU	0.19	0.56	0.75	0.64	0.37	1.01	9.57
2. Condominiums		DU	0.17	0.50	0.67	0.45	0.33	0.78	7.68
3. Apartments		DU	0.10	0.41	0.51	0.40	0.22	0.62	6.65
4. Office		TSF	1.36	0.19	1.55	0.25	1.24	1.49	11.01

1. US-101 NB Ramp & Telephone Rd

Existing (2014) Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		645		493	{.15}*
NBT	0.5	3200	3	.20*	2	.15
NBR	1	1600	111	.07	273	.17
SBL	1	1600	10	.01*	5	.00
SBT	0	0	0		0	
SBR	1	1600	16	.01	18	.01
EBL	1	1600	6	.00	11	.01
EBT	3	4800	477	.10	1295	.27*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	4800	1120	.23*	1114	.23
WBR	0	0	6		7	
Right Turn Adjustment					NBR	.02*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.49**		**.49**

2. US-101 SB Ramp & Telephone Rd

Existing (2014) Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	1	1600	40	.03	203	.13
SBL	2	3200	335	.10	738	.23
SBT	3	4800	974	.20*	1381	.29*
SBR	f		167		255	
EBL	2	3200	180	.06*	647	.20*
EBT	2	3200	133	.04	592	.19
EBR	1	1600	86	.05	313	.20
WBL	1.5		554		331	
WBT	1.5	4800	618	.24*	533	.18*
WBR	1	1600	590	.37	721	.45
Right Turn Adjustment					WBR	.05*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.55**		**.77**

3. Victoria Ave & Johnson Drive

Existing (2014) Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	32	.02*	58	.04*
NBT	4	6400	657	.14	1399	.22
NBR	0	0	254	.16	30	
SBL	1	1600	160	.10	53	.03
SBT	4	6400	1321	.24*	1344	.25*
SBR	0	0	196		283	
EBL	1.5		280		326	
EBT	0.5	3200	15	.09*	27	.11*
EBR	1	1600	54	.03	156	.10
WBL	1	1600	36	.02*	168	.11*
WBT	0	0	11		34	
WBR	1	1600	12	.01	67	.04
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.42**		**.56**

City of Ventura

THE GROVE
TRAFFIC STUDY

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March 4, 2011

THE GROVE – CITY OF VENTURA
TRAFFIC STUDY

This report summarizes the results of an analysis of the proposed The Grove in the City of Ventura. The report has been prepared in support of the conditional use permit (CUP) application being prepared for the project site.

PROJECT DESCRIPTION

The proposed project consists of 220 homes, 20 live/work units, and 8,000 square feet of office space. The project site is located on the north side of Telephone Road east of US-101 and south of SR-126 as shown in Figure 1. The site is currently being used for agricultural uses. The site is adjacent to a mobile home park on the west and single-family homes and apartments on the east.

Access to the project site is provided by a signalized entrance on Telephone Road at Copland Drive opposite the US-101 northbound off-ramp. Access will also be provided by a connection to Thille Street.

Figure 2 illustrates the proposed site plan.

EXISTING AND SHORT-RANGE CONDITIONS

Existing peak hour intersection volumes and average daily traffic (ADT) volumes were collected in February 2011. Project impacts at the intersections of Telephone Road at Main Street/US-101 southbound/Valentine Street, Copland Drive/US-101 northbound at Telephone Road, and Victoria Avenue at Thille Street were examined. Existing peak hour volumes are illustrated in Figure 3.

The project is expected to be completed by 2012. Year 2012 background peak hour volumes were estimated by applying a 1.5 percent annual growth factor to the existing counts. Figure 4 illustrates the 2012 background peak hour volumes at the study intersections.

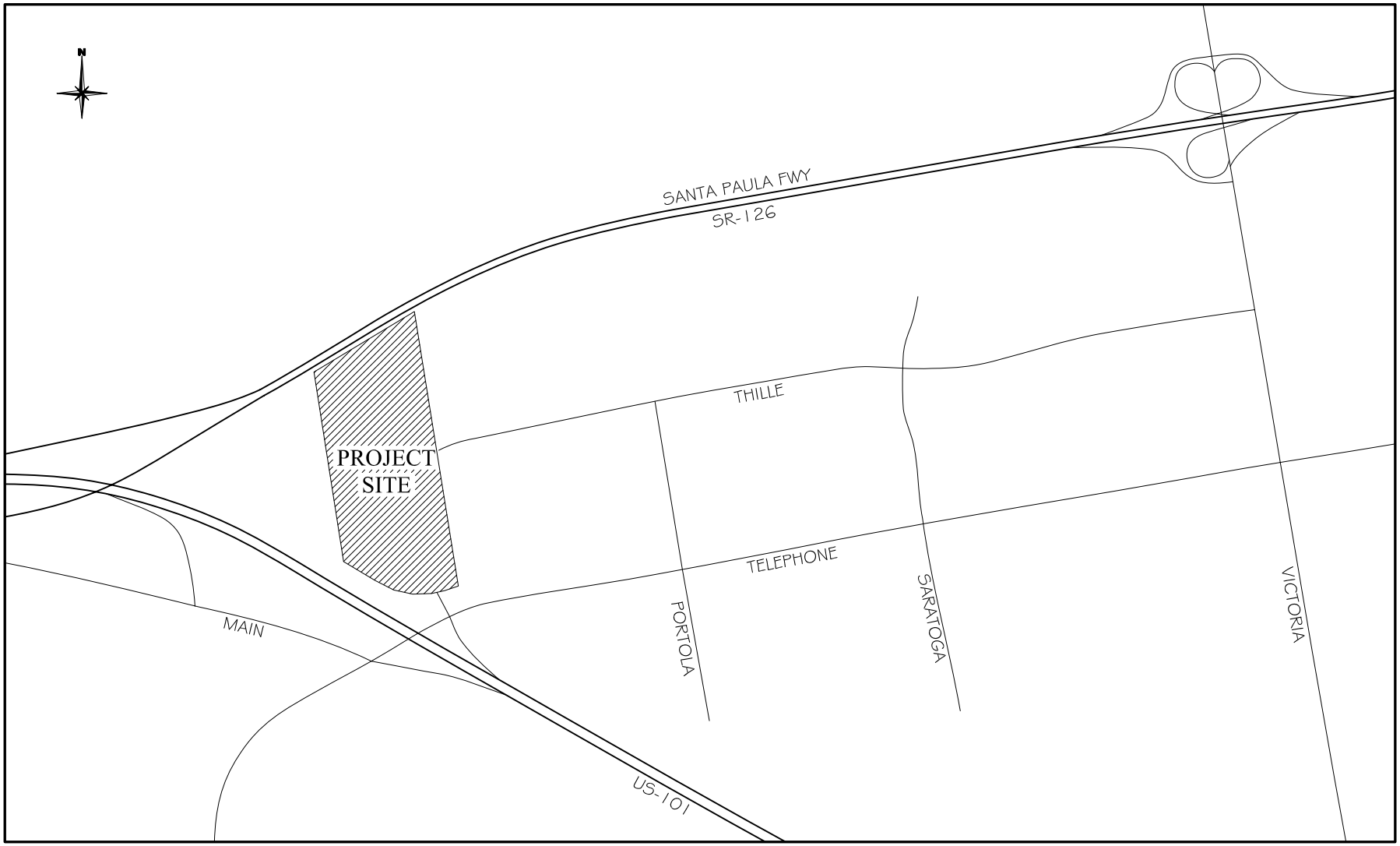
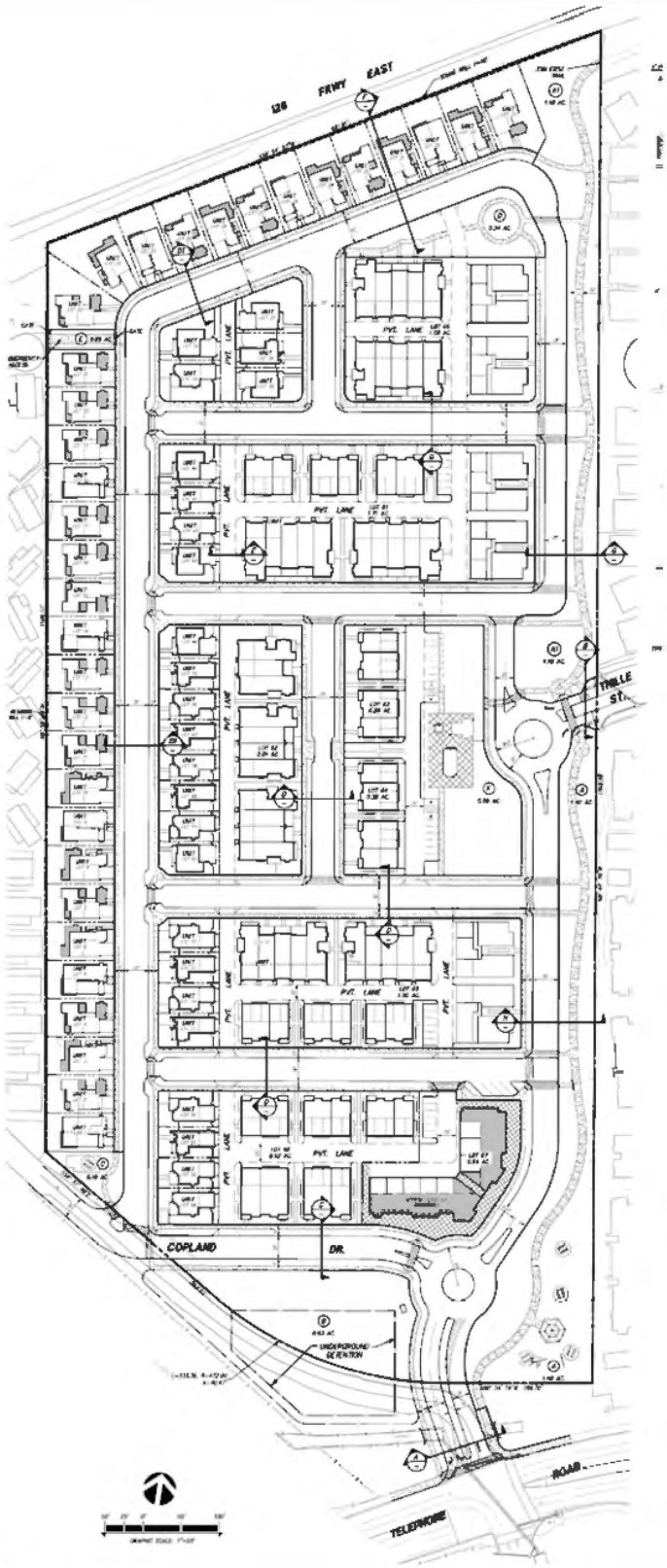


Figure 1

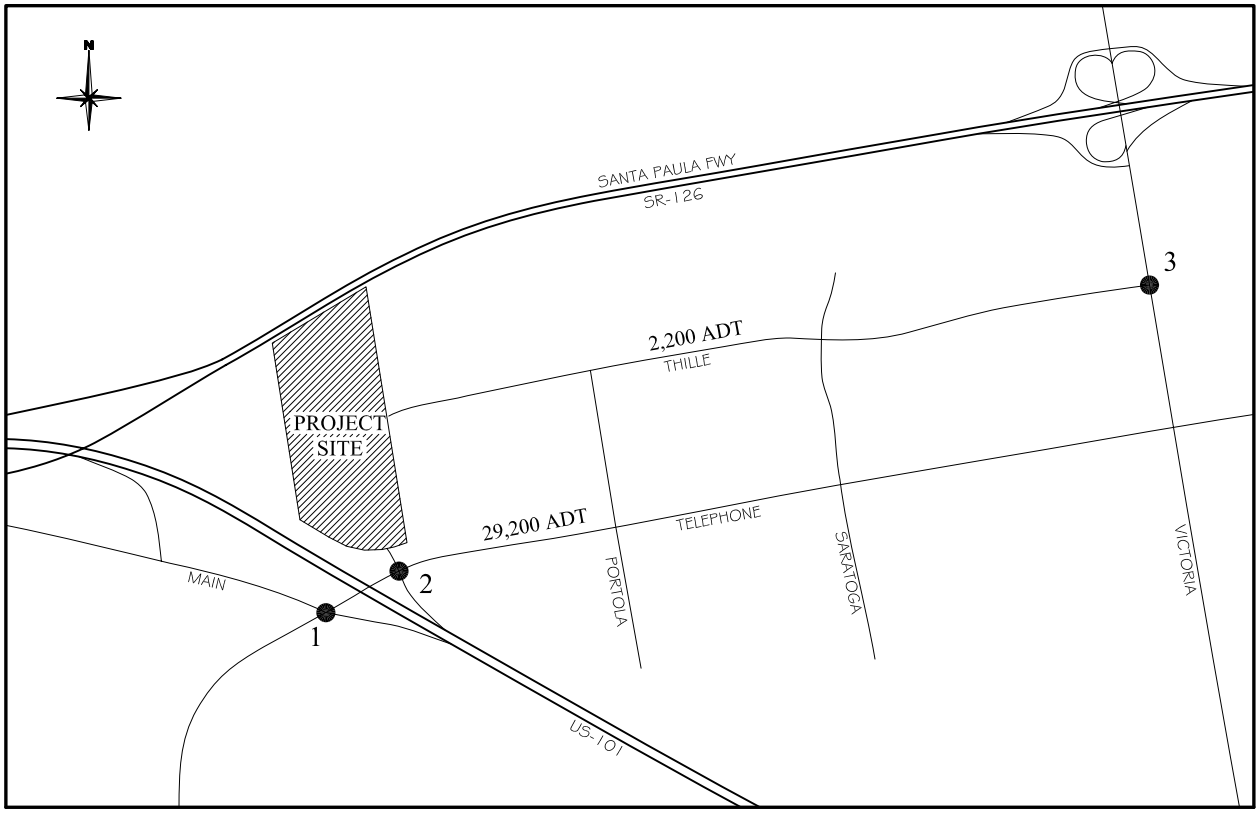
PROJECT LOCATION



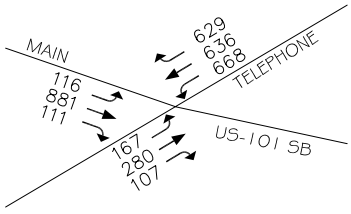
Source: William Hezmalhalch Architects Inc.

Figure 2

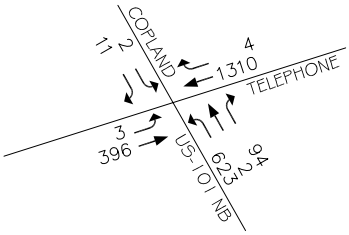
PROPOSED SITE PLAN



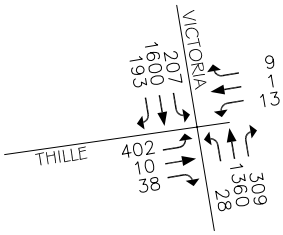
AM PEAK HOUR



1. Telephone & Main/ US-101 SB/Valentine

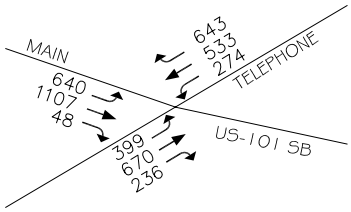


2. Copland/US-101 NB & Telephone

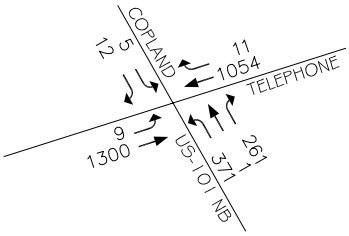


3. Victoria & Thille

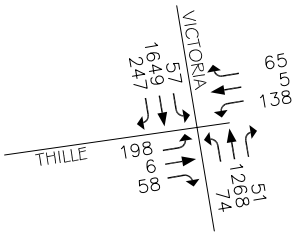
PM PEAK HOUR



1. Telephone & Main/ US-101 SB/Valentine



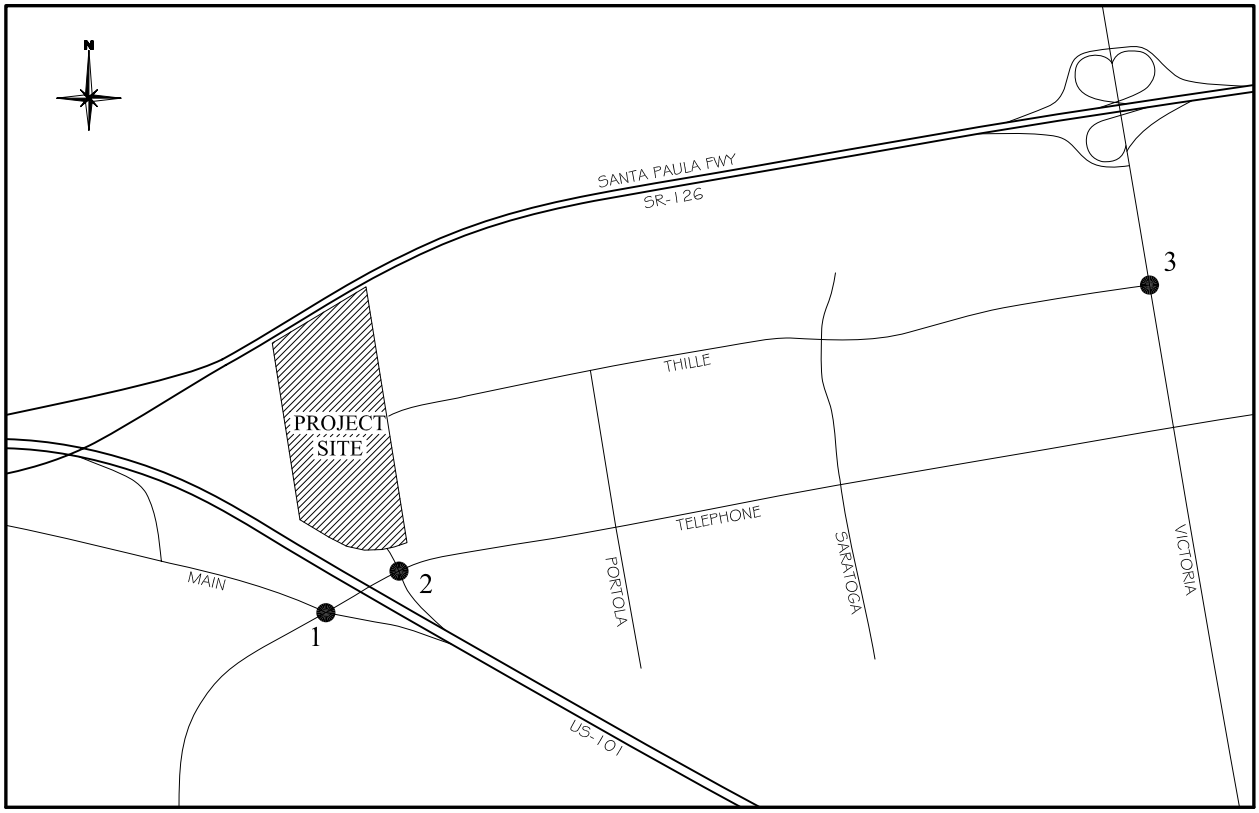
2. Copland/US-101 NB & Telephone



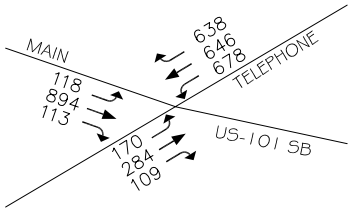
3. Victoria & Thille

Figure 3

EXISTING PEAK HOUR VOLUMES



AM PEAK HOUR



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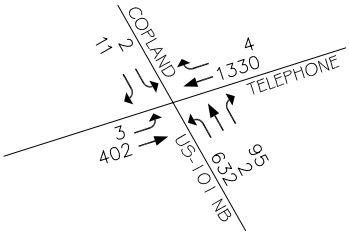

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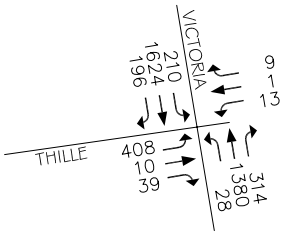
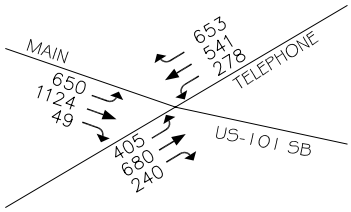
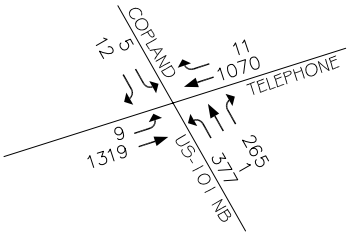


3. Victoria & Thille

PM PEAK HOUR



1. Telephone & Main/ US-101 SB/Valentine



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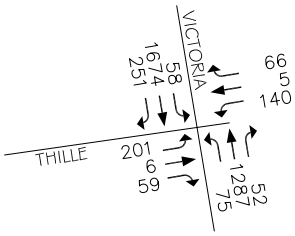


3. Victoria & Thille

Figure 4

2012 NO-PROJECT PEAK HOUR VOLUMES

TRIP GENERATION AND DISTRIBUTION

The project consists of 60 single-family homes, 60 apartment units, 100 condominium units, 20 live/work units, and 8,000 square feet of office space. Peak hour and daily trip generation rates for the proposed uses were obtained from Institute of Transportation Engineers (ITE) "Trip Generation, 8th Edition." Trip rates for the live/work units were conservatively derived by combining the ITE rates for condominiums and office space, assuming approximately 225 square feet of office space per unit. The trip rates and the resulting trip generation for the proposed project are summarized in Table 1. As this table indicates, the proposed project will generate 177 AM peak hour trips, 209 PM peak hour trips, and 2,053 daily trips.

Trip distribution for the proposed uses was determined from locations and levels of development in relation to the location of the project site. Approximately 55 percent of project traffic is oriented toward US-101, 10 percent is oriented toward SR-126, and 35 percent is oriented toward the local arterials as shown in Figure 5. Project trips were assigned to the arterial network according to the distribution assumed here. Project-generated peak hour trips for the proposed project are illustrated in Figure 6.

Peak hour project trips were added to the volumes presented earlier. The existing-plus-project peak hour turning movement volumes are illustrated in Figure 7, and 2012-plus-project peak hour volumes are illustrated in Figure 8.

TRAFFIC IMPACT ANALYSIS

The intersection analysis is based on the intersection capacity utilization (ICU) methodology as used by the City of Ventura. The City of Ventura uses level of service (LOS) "D" as the desirable standard (ICU is equal to .90 or less) for a majority of the intersections. Freeway ramp intersections are allowed to achieve LOS "E" (ICU is equal to 1.00 or less). The threshold of significance for project impacts is an increase of more than .01 when the with-project ICU is more than .90 (or more than 1.00 for freeway access intersections).

Table 2 summarizes the AM and PM peak hour ICU values for the study intersections.

Table 1
TRIP GENERATION SUMMARY

Land Use	Amount		AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	ADT
Trip Rates									
Single-Family Detached (ITE 210)		DU	.19	.56	.75	.64	.37	1.01	9.57
Apartment (ITE 220)		DU	.10	.41	.51	.40	.22	.62	6.65
Condominium/Townhouse (ITE 231)[1]		DU	.17	.50	.67	.45	.33	.78	7.85
Live/Work (ITE 231 & ITE 710)[2]		DU	.48	.54	1.02	.51	.61	1.12	10.33
Office (ITE 710)		TSF	1.36	.19	1.55	.25	1.24	1.49	11.01
Trip Generation									
Single-Family Detached	60	DU	11	34	45	38	22	60	574
Apartment	60	DU	6	25	31	24	13	37	399
Condominium	100	DU	17	50	67	45	33	78	785
Live/Work	20	DU	10	11	21	10	12	22	207
Office	8.0	TSF	11	2	13	2	10	12	88
Total			55	122	177	119	90	209	2,053

Notes:
1. Condominium/Townhouse ADT rate derived from SFD and Apartments ADT rates.
2. Live/Work trip rates derived from Condominium/Townhouse rates plus Office rates (average 225 sq ft per DU)

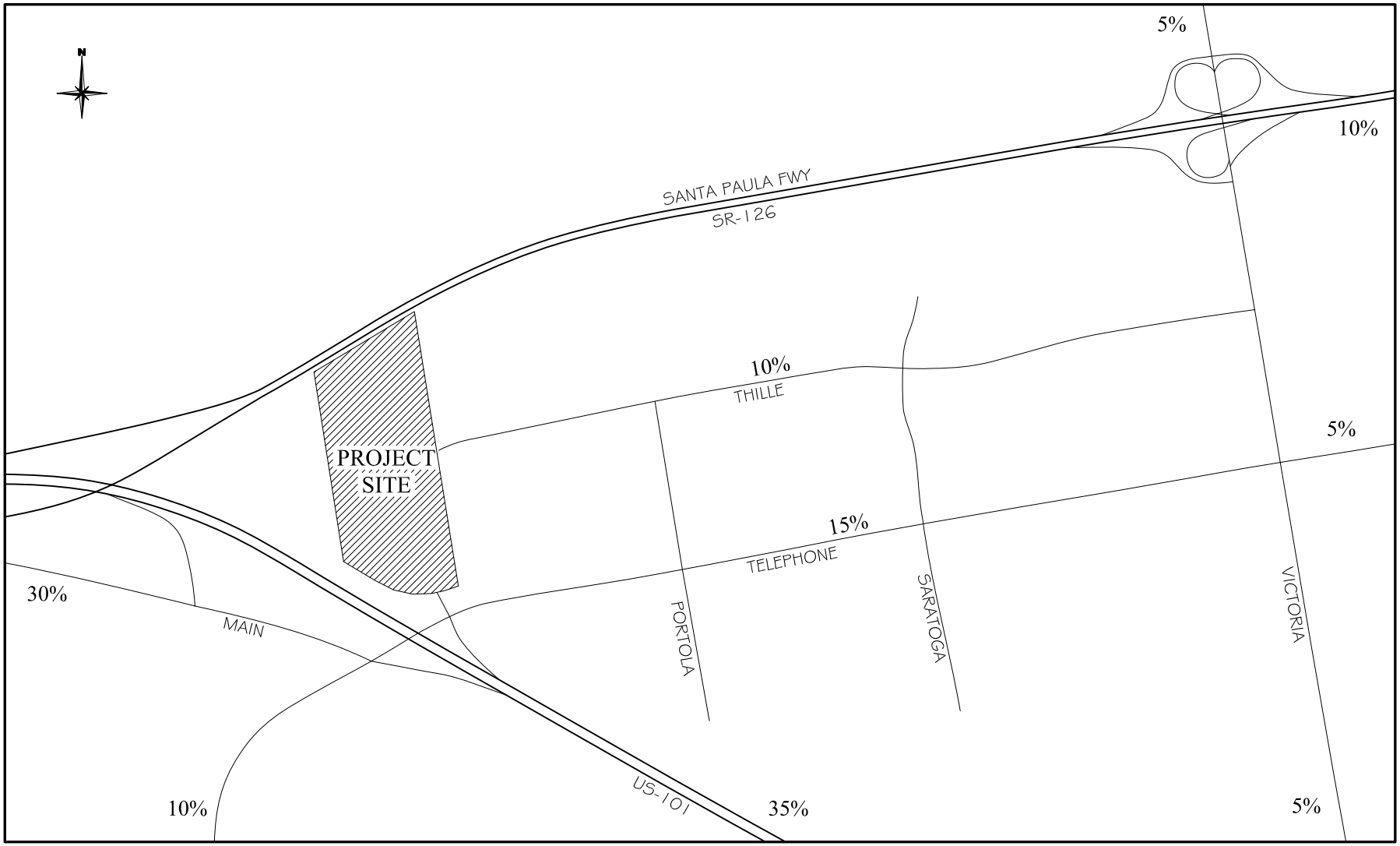
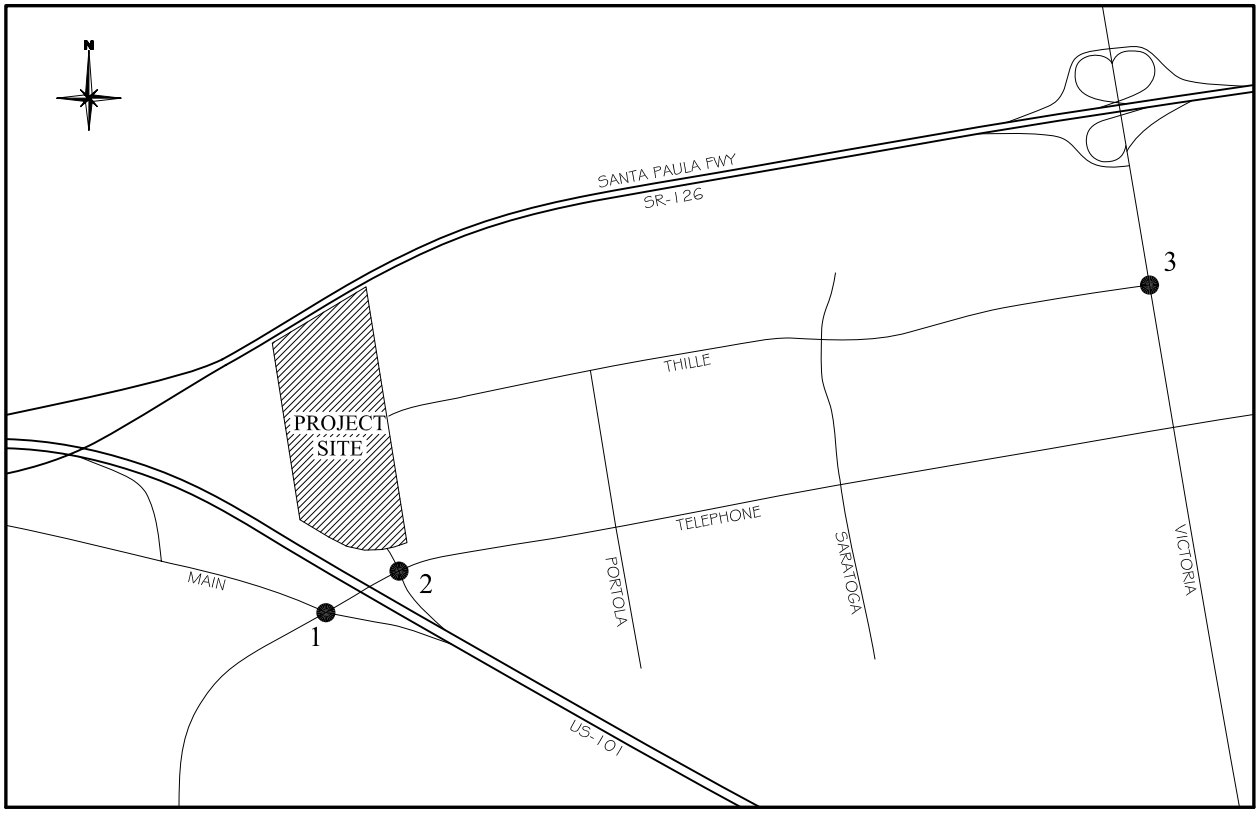
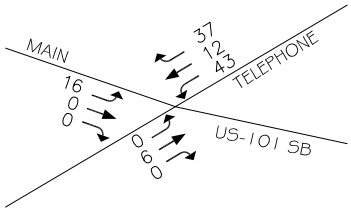


Figure 5

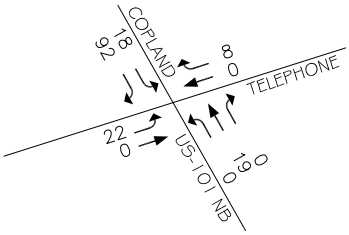
GENERAL PROJECT DISTRIBUTION



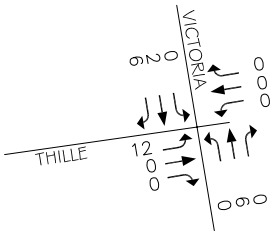
AM PEAK HOUR



1. Telephone & Main/ US-101 SB/Valentine

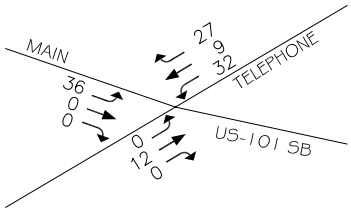


2. Copland/US-101 NB & Telephone

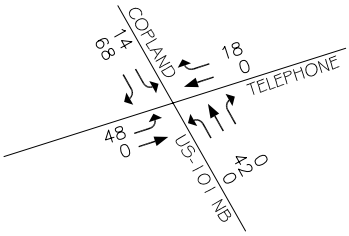


3. Victoria & Thille

PM PEAK HOUR



1. Telephone & Main/ US-101 SB/Valentine



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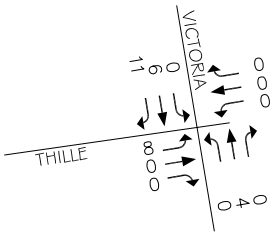
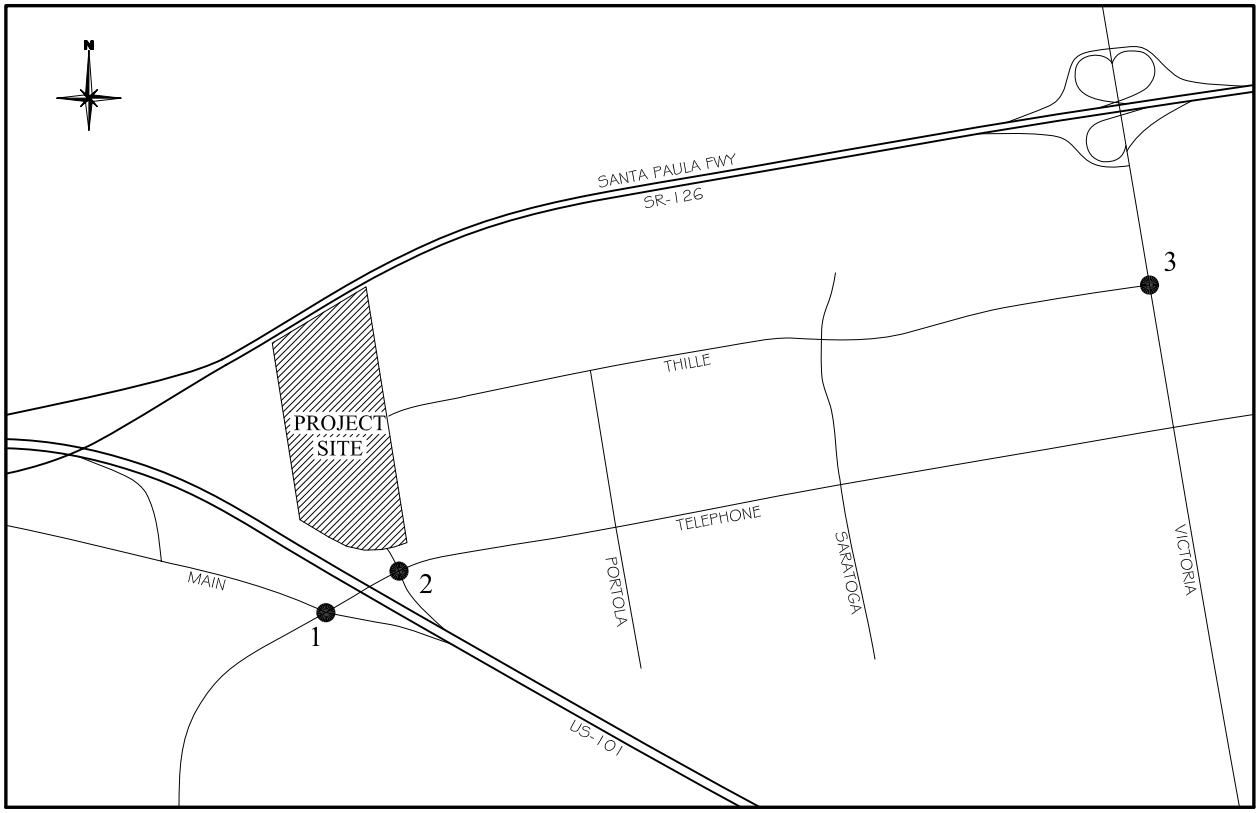


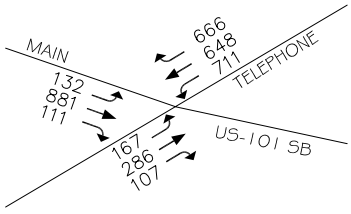
3. Victoria & Thille

Figure 6

PROJECT-GENERATED
PEAK HOUR TRIPS



AM PEAK HOUR



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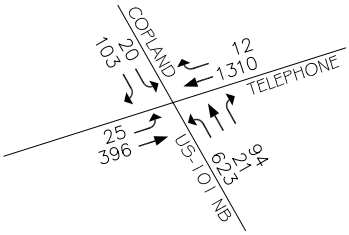
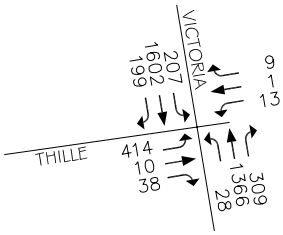
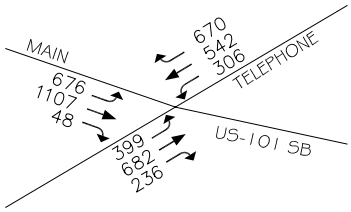


2. Copland/US-101 NB & Telephone



3. Victoria & Thille

PM PEAK HOUR



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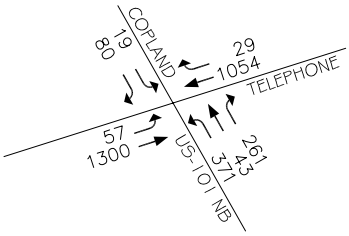

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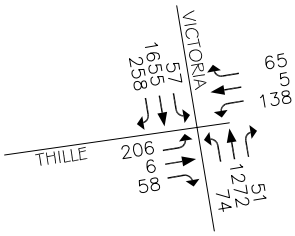
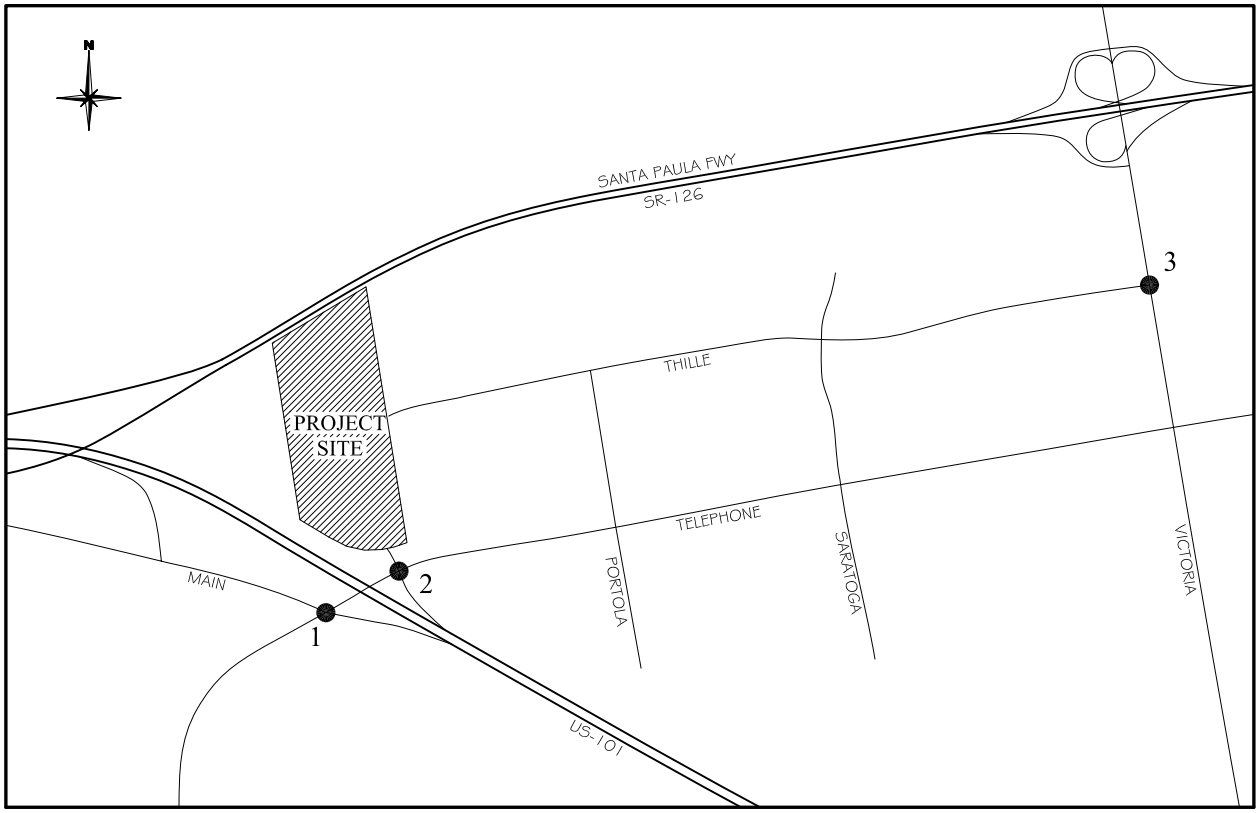


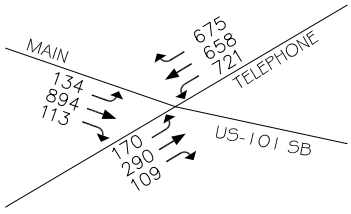
3. Victoria & Thille

Figure 7

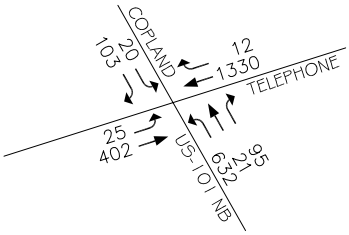
EXISTING-PLUS-PROJECT
PEAK HOUR VOLUMES



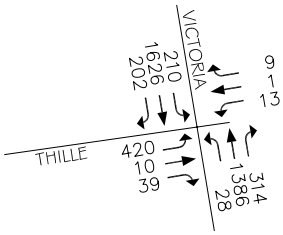
AM PEAK HOUR



1. Telephone & Main/ US-101 SB/Valentine

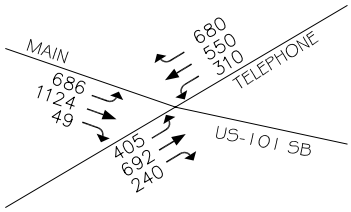


2. Copland/US-101 NB & Telephone



3. Victoria & Thille

PM PEAK HOUR



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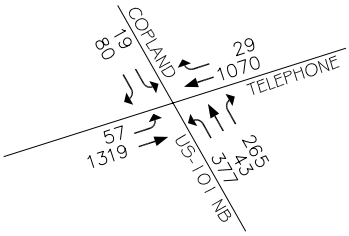
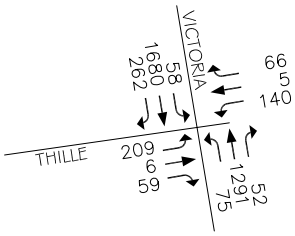


2. Copland/US-101 NB & Telephone



3. Victoria & Thille

Figure 8

2012 WITH-PROJECT
PEAK HOUR VOLUMES

Table 2
ICU SUMMARY

Intersection	No-Project AM		No-Project PM		With Project AM		With Project PM	
Existing								
1. Telephone & Main/US-101 SB	.54	A	.61	B	.55	A	.62	B
2. Copland/US-101 NB & Telephone	.48	A	.43	A	.54	A	.45	A
3. Victoria & Thille	.53	A	.50	A	.53	A	.51	A
2012								
1. Telephone & Main/US-101 SB	.56	A	.61	B	.57	A	.63	B
2. Copland/US-101 NB & Telephone	.49	A	.44	A	.54	A	.46	A
3. Victoria & Thille	.53	A	.50	A	.54	A	.51	A

Level of Service Ranges:		
	.00 – .60	A
	.61 – .70	B
	.71 – .80	C
	.81 – .90	D
	.91 – 1.00	E
	Above 1.00	F

As this table indicates, the study intersections are currently operating at level of service (LOS) "A" during the AM and PM peak hours. With the addition of project-generated traffic, the intersections will continue to operate at LOS "A" during the AM and PM peak hours. The project will have no significant impact on the operation of the intersections under existing conditions.

The study intersections at US-101 ramps are under Caltrans jurisdiction. Caltrans utilizes the Highway Capacity Manual (HCM) delay methodology for analyzing intersection impacts. Table 3 summarizes the project impacts at the intersections of Telephone Road at Main Street/US-101 SB and Copland Drive/US-101 NB at Telephone Road. As this table indicates, the study intersections will operate at LOS "B" or better during the AM and PM peak hours using the HCM delay methodology, and the project has no significant impacts on the intersections.

SUMMARY AND CONCLUSIONS

The proposed project consists of 220 residential units, 20 live/work units, and 8,000 square feet of office space. The proposed project will generate 177 AM peak hour trips, 209 PM peak hour trips, and 2,053 daily trips. The project peak hour trips were distributed to the surrounding arterial network and added to existing and year 2012 traffic. The project has no significant impact on the study intersections during the peak hours; therefore, no mitigation is required. It is recommended that the project participate in any future traffic improvements through the payment of Traffic Mitigation Fees, collected by the City of Ventura.

REFERENCES

1. "Trip Generation, 8th Edition," Institute of Transportation Engineers, 2008.
2. "Highway Capacity Manual 2000", Transportation Research Board.

Table 3
HCM DELAY SUMMARY

Intersection	No-Project AM		No-Project PM		With Project AM		With Project PM	
Existing								
1. Telephone & Main/US-101 SB	22 sec	C	26 sec	C	22 sec	C	26 sec	C
2. Copland/US-101 NB & Telephone	21 sec	C	15 sec	B	24 sec	C	18 sec	B
2012								
1. Telephone & Main/US-101 SB	22 sec	C	26 sec	C	22 sec	C	27 sec	C
2. Copland/US-101 NB & Telephone	21 sec	C	15 sec	B	25 sec	C	18 sec	B

Level of Service Ranges:		
	0 – 10 sec	A
	10 – 20 sec	B
	20 – 35 sec	C
	35 – 55 sec	D
	55 – 80 sec	E
	Above 80 sec	F

APPENDIX A

INTERSECTION CAPACITY UTILIZATION WORKSHEETS

1. Telephone & Main/US-101 SB On-Ramp

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	167	.05	399	.12
NBT	2	3200	280	.09*	670	.21*
NBR	1	1600	107	.07	236	.15
SBL	1.5		668		274	
SBT	1.5	4800	636	.27*	533	.17*
SBR	f		629		643	
EBL	2	3200	116	.04	640	.20
EBT	3	4800	881	.18*	1107	.23*
EBR	f		111		48	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	

Note: Assumes N/S Split Phasing

TOTAL CAPACITY UTILIZATION .54 .61

Existing + Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	167	.05	399	.12
NBT	2	3200	286	.09*	682	.21*
NBR	1	1600	107	.07	236	.15
SBL	1.5		711		306	
SBT	1.5	4800	648	.28*	542	.18*
SBR	f		666		670	
EBL	2	3200	132	.04	676	.21
EBT	3	4800	881	.18*	1107	.23*
EBR	f		111		48	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	

Note: Assumes N/S Split Phasing

TOTAL CAPACITY UTILIZATION .55 .62

2012 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	170	.05	405	.13
NBT	2	3200	284	.09*	680	.21*
NBR	1	1600	109	.07	240	.15
SBL	1.5		678		278	
SBT	1.5	4800	646	.28*	541	.17*
SBR	f		638		653	
EBL	2	3200	118	.04	650	.20
EBT	3	4800	894	.19*	1124	.23*
EBR	f		113		49	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	

Note: Assumes N/S Split Phasing

TOTAL CAPACITY UTILIZATION .56 .61

2012 with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	170	.05	405	.13
NBT	2	3200	290	.09*	692	.22*
NBR	1	1600	109	.07	240	.15
SBL	1.5		721		310	
SBT	1.5	4800	658	.29*	550	.18*
SBR	f		675		680	
EBL	2	3200	134	.04	686	.21
EBT	3	4800	894	.19*	1124	.23*
EBR	f		113		49	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	

Note: Assumes N/S Split Phasing

TOTAL CAPACITY UTILIZATION .57 .63

2. US-101 NB Off-Ramp & Telephone

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		623		371	
NBT	0.5	3200	2	.20*	1	.12*
NBR	1	1600	94	.06	261	.16
SBL	1	1600	2	.00	5	.00
SBT	0	0	0		0	
SBR	1	1600	11	.01	12	.01
EBL	1	1600	3	.00	9	.01
EBT	3	4800	396	.08	1300	.27*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	4800	1310	.27*	1054	.22
WBR	0	0	4		11	
Right Turn Adjustment			SBR	.01*	NBR	.04*

Note: Assumes N/S Split Phasing

TOTAL CAPACITY UTILIZATION .48 .43

Existing + Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		623		371	
NBT	0.5	3200	21	.20*	43	.13*
NBR	1	1600	94	.06	261	.16
SBL	1	1600	20	.01*	19	.01*
SBT	0	0	0		0	
SBR	1	1600	103	.06	80	.05
EBL	1	1600	25	.02*	57	.04
EBT	3	4800	396	.08	1300	.27*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	4800	1310	.28*	1054	.23
WBR	0	0	12		29	
Right Turn Adjustment			SBR	.03*	Multi	.04*

Note: Assumes N/S Split Phasing

TOTAL CAPACITY UTILIZATION .54 .45

2012 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		632		377	
NBT	0.5	3200	2	.20*	1	.12*
NBR	1	1600	95	.06	265	.17
SBL	1	1600	2	.00	5	.00
SBT	0	0	0		0	
SBR	1	1600	11	.01	12	.01
EBL	1	1600	3	.00	9	.01
EBT	3	4800	402	.08	1319	.27*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	4800	1330	.28*	1070	.23
WBR	0	0	4		11	
Right Turn Adjustment			SBR	.01*	NBR	.05*

Note: Assumes N/S Split Phasing

TOTAL CAPACITY UTILIZATION .49 .44

2012 with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		632		377	
NBT	0.5	3200	21	.20*	43	.13*
NBR	1	1600	95	.06	265	.17
SBL	1	1600	20	.01*	19	.01*
SBT	0	0	0		0	
SBR	1	1600	103	.06	80	.05
EBL	1	1600	25	.02*	57	.04
EBT	3	4800	402	.08	1319	.27*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	4800	1330	.28*	1070	.23
WBR	0	0	12		29	
Right Turn Adjustment			SBR	.03*	Multi	.05*

Note: Assumes N/S Split Phasing

TOTAL CAPACITY UTILIZATION .54 .46

3. Victoria & Thille

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	28	.02	74	.05*
NBT	4	6400	1360	.26*	1268	.21
NBR	0	0	309		51	
SBL	1	1600	207	.13*	57	.04
SBT	4	6400	1600	.28	1649	.30*
SBR	0	0	193		247	
EBL	1.5		402		198	
EBT	0.5	3200	10	.13*	6	.06*
EBR	1	1600	38	.02	58	.04
WBL	1	1600	13	.01	138	.09*
WBT	1	1600	1	.01*	5	.04
WBR	0	0	9		65	

Note: Assumes E/W Split Phasing

TOTAL CAPACITY UTILIZATION .53 .50

Existing + Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	28	.02	74	.05*
NBT	4	6400	1366	.26*	1272	.21
NBR	0	0	309		51	
SBL	1	1600	207	.13*	57	.04
SBT	4	6400	1602	.28	1655	.30*
SBR	0	0	199		258	
EBL	1.5		414		206	
EBT	0.5	3200	10	.13*	6	.07*
EBR	1	1600	38	.02	58	.04
WBL	1	1600	13	.01	138	.09*
WBT	1	1600	1	.01*	5	.04
WBR	0	0	9		65	

Note: Assumes E/W Split Phasing

TOTAL CAPACITY UTILIZATION .53 .51

2012 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	28	.02	75	.05*
NBT	4	6400	1380	.26*	1287	.21
NBR	0	0	314		52	
SBL	1	1600	210	.13*	58	.04
SBT	4	6400	1624	.28	1674	.30*
SBR	0	0	196		251	
EBL	1.5		408		201	
EBT	0.5	3200	10	.13*	6	.06*
EBR	1	1600	39	.02	59	.04
WBL	1	1600	13	.01	140	.09*
WBT	1	1600	1	.01*	5	.04
WBR	0	0	9		66	

Note: Assumes E/W Split Phasing

TOTAL CAPACITY UTILIZATION .53 .50

2012 with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	28	.02	75	.05*
NBT	4	6400	1386	.27*	1291	.21
NBR	0	0	314		52	
SBL	1	1600	210	.13*	58	.04
SBT	4	6400	1626	.29	1680	.30*
SBR	0	0	202		262	
EBL	1.5		420		209	
EBT	0.5	3200	10	.13*	6	.07*
EBR	1	1600	39	.02	59	.04
WBL	1	1600	13	.01	140	.09*
WBT	1	1600	1	.01*	5	.04
WBR	0	0	9		66	

Note: Assumes E/W Split Phasing

TOTAL CAPACITY UTILIZATION .54 .51

APPENDIX B

HCM DELAY WORKSHEETS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	116	881	111	0	0	0	167	280	107	668	636	629
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0				4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00				0.97	0.95	1.00	0.91	0.91	1.00
Frt	1.00	1.00	0.85				1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00				0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (prot)	3433	5085	1583				3433	3539	1583	1610	3344	1583
Flt Permitted	0.95	1.00	1.00				0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (perm)	3433	5085	1583				3433	3539	1583	1610	3344	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	129	979	123	0	0	0	186	311	119	742	707	699
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	58	0	0	0
Lane Group Flow (vph)	129	979	123	0	0	0	186	311	61	475	974	699
Turn Type	Prot		Free				Split		Perm	Split		Free
Protected Phases	7	4					2	2		6	6	
Permitted Phases			Free						2			Free
Actuated Green, G (s)	20.8	20.8	81.3				16.2	16.2	16.2	32.3	32.3	81.3
Effective Green, g (s)	20.8	20.8	81.3				16.2	16.2	16.2	32.3	32.3	81.3
Actuated g/C Ratio	0.26	0.26	1.00				0.20	0.20	0.20	0.40	0.40	1.00
Clearance Time (s)	4.0	4.0					4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	878	1301	1583				684	705	315	640	1329	1583
v/s Ratio Prot	0.04	c0.19					0.05	0.09		c0.29	0.29	
v/s Ratio Perm			0.08						0.04			c0.44
v/c Ratio	0.15	0.75	0.08				0.27	0.44	0.19	0.74	0.73	0.44
Uniform Delay, d1	23.4	27.9	0.0				27.6	28.6	27.1	20.9	20.8	0.0
Progression Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	2.5	0.1				1.0	2.0	1.4	4.6	2.1	0.9
Delay (s)	23.5	30.4	0.1				28.5	30.6	28.5	25.6	23.0	0.9
Level of Service	C	C	A				C	C	C	C	C	A
Approach Delay (s)		26.6			0.0			29.6			16.4	
Approach LOS		C			A			C			B	

Intersection Summary

HCM Average Control Delay	21.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	81.3	Sum of lost time (s)	8.0
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	396	0	0	1310	4	623	2	94	2	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.91			0.91		0.95	0.95	1.00	1.00		1.00
Frt	1.00	1.00			1.00		1.00	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	0.95	1.00	0.95		1.00
Satd. Flow (prot)	1770	5085			5083		1681	1686	1583	1770		1583
Flt Permitted	0.95	1.00			1.00		0.95	0.95	1.00	0.69		1.00
Satd. Flow (perm)	1770	5085			5083		1681	1686	1583	1285		1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	3	440	0	0	1456	4	692	2	104	2	0	12
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	75	0	0	11
Lane Group Flow (vph)	3	440	0	0	1460	0	346	348	29	2	0	1
Turn Type	Prot						Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases									2	6		6
Actuated Green, G (s)	1.1	29.2			24.1		18.1	18.1	18.1	5.8		5.8
Effective Green, g (s)	1.1	29.2			24.1		18.1	18.1	18.1	5.8		5.8
Actuated g/C Ratio	0.02	0.45			0.37		0.28	0.28	0.28	0.09		0.09
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	30	2281			1882		467	469	440	114		141
v/s Ratio Prot	0.00	c0.09			c0.29		0.21	c0.21				
v/s Ratio Perm									0.02	c0.00		0.00
v/c Ratio	0.10	0.19			0.78		0.74	0.74	0.07	0.02		0.01
Uniform Delay, d1	31.5	10.8			18.1		21.4	21.4	17.3	27.1		27.0
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	1.5	0.0			2.1		6.2	6.2	0.1	0.1		0.0
Delay (s)	33.0	10.9			20.2		27.6	27.6	17.3	27.1		27.0
Level of Service	C	B			C		C	C	B	C		C
Approach Delay (s)		11.0			20.2			26.3			27.1	
Approach LOS		B			C			C			C	

Intersection Summary

HCM Average Control Delay	20.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	65.1	Sum of lost time (s)	16.0
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	640	1107	48	0	0	0	399	670	236	274	533	643
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0				4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00				0.97	0.95	1.00	0.91	0.91	1.00
Frt	1.00	1.00	0.85				1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00				0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583				3433	3539	1583	1610	3382	1583
Flt Permitted	0.95	1.00	1.00				0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583				3433	3539	1583	1610	3382	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	711	1230	53	0	0	0	443	744	262	304	592	714
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	73	0	0	0
Lane Group Flow (vph)	711	1230	53	0	0	0	443	744	189	274	622	714
Turn Type	Prot		Free				Split		Perm	Split		Free
Protected Phases	7	4					2	2		6	6	
Permitted Phases			Free						2			Free
Actuated Green, G (s)	25.9	25.9	87.0				28.1	28.1	28.1	21.0	21.0	87.0
Effective Green, g (s)	25.9	25.9	87.0				28.1	28.1	28.1	21.0	21.0	87.0
Actuated g/C Ratio	0.30	0.30	1.00				0.32	0.32	0.32	0.24	0.24	1.00
Clearance Time (s)	4.0	4.0					4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1022	1514	1583				1109	1143	511	389	816	1583
v/s Ratio Prot	0.21	c0.24					0.13	c0.21		0.17	c0.18	
v/s Ratio Perm			0.03						0.12			0.45
v/c Ratio	0.70	0.81	0.03				0.40	0.65	0.37	0.70	0.76	0.45
Uniform Delay, d1	27.1	28.3	0.0				22.9	25.2	22.6	30.2	30.7	0.0
Progression Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	3.4	0.0				1.1	2.9	2.1	5.7	4.2	0.9
Delay (s)	29.1	31.7	0.0				24.0	28.1	24.7	35.9	34.9	0.9
Level of Service	C	C	A				C	C	C	D	C	A
Approach Delay (s)		30.0			0.0			26.2			20.0	
Approach LOS		C			A			C			C	

Intersection Summary

HCM Average Control Delay	25.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	12.0
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	1300	0	0	1054	11	371	1	261	5	0	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.91			0.91		0.95	0.95	1.00	1.00		1.00
Frt	1.00	1.00			1.00		1.00	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	0.95	1.00	0.95		1.00
Satd. Flow (prot)	1770	5085			5078		1681	1686	1583	1770		1583
Flt Permitted	0.95	1.00			1.00		0.95	0.95	1.00	0.65		1.00
Satd. Flow (perm)	1770	5085			5078		1681	1686	1583	1202		1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	10	1444	0	0	1171	12	412	1	290	6	0	13
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	228	0	0	12
Lane Group Flow (vph)	10	1444	0	0	1182	0	206	207	62	6	0	1
Turn Type	Prot						Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases									2	6		6
Actuated Green, G (s)	1.1	30.5			25.4		13.3	13.3	13.3	6.2		6.2
Effective Green, g (s)	1.1	30.5			25.4		13.3	13.3	13.3	6.2		6.2
Actuated g/C Ratio	0.02	0.49			0.41		0.21	0.21	0.21	0.10		0.10
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	31	2501			2080		361	362	340	120		158
v/s Ratio Prot	0.01	c0.28			0.23		0.12	c0.12				
v/s Ratio Perm									0.04	c0.00		0.00
v/c Ratio	0.32	0.58			0.57		0.57	0.57	0.18	0.05		0.01
Uniform Delay, d1	30.1	11.2			14.1		21.8	21.8	19.9	25.2		25.1
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	6.0	0.3			0.4		2.2	2.2	0.3	0.2		0.0
Delay (s)	36.0	11.5			14.4		24.0	24.0	20.2	25.4		25.2
Level of Service	D	B			B		C	C	C	C		C
Approach Delay (s)		11.7			14.4			22.4			25.2	
Approach LOS		B			B			C			C	

Intersection Summary

HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	12.0
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	132	881	111	0	0	0	167	286	107	711	648	666
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0				4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00				0.97	0.95	1.00	0.91	0.91	1.00
Frt	1.00	1.00	0.85				1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00				0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (prot)	3433	5085	1583				3433	3539	1583	1610	3341	1583
Flt Permitted	0.95	1.00	1.00				0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (perm)	3433	5085	1583				3433	3539	1583	1610	3341	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	147	979	123	0	0	0	186	318	119	790	720	740
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	51	0	0	0
Lane Group Flow (vph)	147	979	123	0	0	0	186	318	68	490	1020	740
Turn Type	Prot		Free				Split		Perm	Split		Free
Protected Phases	7	4					2	2		6	6	
Permitted Phases			Free						2			Free
Actuated Green, G (s)	20.9	20.9	82.8				16.2	16.2	16.2	33.7	33.7	82.8
Effective Green, g (s)	20.9	20.9	82.8				16.2	16.2	16.2	33.7	33.7	82.8
Actuated g/C Ratio	0.25	0.25	1.00				0.20	0.20	0.20	0.41	0.41	1.00
Clearance Time (s)	4.0	4.0					4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	867	1284	1583				672	692	310	655	1360	1583
v/s Ratio Prot	0.04	c0.19					0.05	0.09		0.30	c0.31	
v/s Ratio Perm			0.08						0.04			c0.47
v/c Ratio	0.17	0.76	0.08				0.28	0.46	0.22	0.75	0.75	0.47
Uniform Delay, d1	24.2	28.7	0.0				28.3	29.4	28.0	20.9	21.0	0.0
Progression Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	2.7	0.1				1.0	2.2	1.6	4.7	2.4	1.0
Delay (s)	24.3	31.4	0.1				29.3	31.6	29.6	25.6	23.3	1.0
Level of Service	C	C	A				C	C	C	C	C	A
Approach Delay (s)		27.5			0.0			30.6			16.5	
Approach LOS		C			A			C			B	

Intersection Summary

HCM Average Control Delay	21.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	82.8	Sum of lost time (s)	8.0
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	396	0	0	1310	12	623	21	94	20	0	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.91			0.91		0.95	0.95	1.00	1.00		1.00
Frt	1.00	1.00			1.00		1.00	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	0.96	1.00	0.95		1.00
Satd. Flow (prot)	1770	5085			5079		1681	1691	1583	1770		1583
Flt Permitted	0.95	1.00			1.00		0.95	0.96	1.00	0.56		1.00
Satd. Flow (perm)	1770	5085			5079		1681	1691	1583	1049		1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	440	0	0	1456	13	692	23	104	22	0	114
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	75	0	0	102
Lane Group Flow (vph)	28	440	0	0	1468	0	360	355	29	22	0	12
Turn Type	Prot						Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases									2	6		6
Actuated Green, G (s)	2.8	30.1			23.3		19.2	19.2	19.2	7.1		7.1
Effective Green, g (s)	2.8	30.1			23.3		19.2	19.2	19.2	7.1		7.1
Actuated g/C Ratio	0.04	0.44			0.34		0.28	0.28	0.28	0.10		0.10
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	72	2238			1730		472	475	444	109		164
v/s Ratio Prot	c0.02	0.09			c0.29		c0.21	0.21				
v/s Ratio Perm									0.02	c0.02		0.01
v/c Ratio	0.39	0.20			0.85		0.76	0.75	0.07	0.20		0.07
Uniform Delay, d1	32.0	11.7			20.9		22.5	22.4	18.0	28.1		27.7
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	3.5	0.0			4.1		7.2	6.3	0.1	0.9		0.2
Delay (s)	35.4	11.8			25.0		29.7	28.7	18.1	29.0		27.9
Level of Service	D	B			C		C	C	B	C		C
Approach Delay (s)		13.2			25.0			27.8			28.0	
Approach LOS		B			C			C			C	

Intersection Summary

HCM Average Control Delay	24.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	68.4	Sum of lost time (s)	16.0
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	676	1107	48	0	0	0	399	682	236	306	542	670
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0				4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00				0.97	0.95	1.00	0.91	0.91	1.00
Frt	1.00	1.00	0.85				1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00				0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583				3433	3539	1583	1610	3381	1583
Flt Permitted	0.95	1.00	1.00				0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583				3433	3539	1583	1610	3381	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	751	1230	53	0	0	0	443	758	262	340	602	744
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	61	0	0	0
Lane Group Flow (vph)	751	1230	53	0	0	0	443	758	201	306	636	744
Turn Type	Prot		Free				Split		Perm	Split		Free
Protected Phases	7	4					2	2		6	6	
Permitted Phases			Free						2			Free
Actuated Green, G (s)	26.0	26.0	87.2				28.1	28.1	28.1	21.1	21.1	87.2
Effective Green, g (s)	26.0	26.0	87.2				28.1	28.1	28.1	21.1	21.1	87.2
Actuated g/C Ratio	0.30	0.30	1.00				0.32	0.32	0.32	0.24	0.24	1.00
Clearance Time (s)	4.0	4.0					4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1024	1516	1583				1106	1140	510	390	818	1583
v/s Ratio Prot	0.22	c0.24					0.13	c0.21		c0.19	0.19	
v/s Ratio Perm			0.03						0.13			0.47
v/c Ratio	0.73	0.81	0.03				0.40	0.66	0.39	0.78	0.78	0.47
Uniform Delay, d1	27.5	28.3	0.0				23.0	25.5	22.9	30.9	30.9	0.0
Progression Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.8	3.4	0.0				1.1	3.1	2.3	9.9	4.7	1.0
Delay (s)	30.2	31.7	0.0				24.1	28.6	25.2	40.9	35.5	1.0
Level of Service	C	C	A				C	C	C	D	D	A
Approach Delay (s)		30.4			0.0			26.6			21.3	
Approach LOS		C			A			C			C	

Intersection Summary

HCM Average Control Delay	26.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	87.2	Sum of lost time (s)	12.0
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	1300	0	0	1054	29	371	43	261	19	0	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.91			0.91		0.95	0.95	1.00	1.00		1.00
Frt	1.00	1.00			1.00		1.00	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	0.96	1.00	0.95		1.00
Satd. Flow (prot)	1770	5085			5065		1681	1702	1583	1770		1583
Flt Permitted	0.95	1.00			1.00		0.95	0.96	1.00	0.61		1.00
Satd. Flow (perm)	1770	5085			5065		1681	1702	1583	1134		1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	63	1444	0	0	1171	32	412	48	290	21	0	89
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	222	0	0	79
Lane Group Flow (vph)	63	1444	0	0	1200	0	231	229	68	21	0	10
Turn Type	Prot						Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases									2	6		6
Actuated Green, G (s)	4.9	32.0			23.1		14.8	14.8	14.8	7.1		7.1
Effective Green, g (s)	4.9	32.0			23.1		14.8	14.8	14.8	7.1		7.1
Actuated g/C Ratio	0.07	0.49			0.35		0.22	0.22	0.22	0.11		0.11
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	132	2469			1775		378	382	356	122		171
v/s Ratio Prot	0.04	c0.28			c0.24		c0.14	0.13				
v/s Ratio Perm									0.04	c0.02		0.01
v/c Ratio	0.48	0.58			0.68		0.61	0.60	0.19	0.17		0.06
Uniform Delay, d1	29.3	12.2			18.2		23.0	22.9	20.7	26.7		26.4
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	2.7	0.4			1.0		2.9	2.5	0.3	0.7		0.1
Delay (s)	32.0	12.5			19.3		25.9	25.4	21.0	27.4		26.5
Level of Service	C	B			B		C	C	C	C		C
Approach Delay (s)		13.3			19.3			23.8			26.7	
Approach LOS		B			B			C			C	

Intersection Summary

HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	65.9	Sum of lost time (s)	16.0
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	118	894	113	0	0	0	170	284	109	678	646	638
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0				4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00				0.97	0.95	1.00	0.91	0.91	1.00
Frt	1.00	1.00	0.85				1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00				0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (prot)	3433	5085	1583				3433	3539	1583	1610	3344	1583
Flt Permitted	0.95	1.00	1.00				0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (perm)	3433	5085	1583				3433	3539	1583	1610	3344	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	131	993	126	0	0	0	189	316	121	753	718	709
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	57	0	0	0
Lane Group Flow (vph)	131	993	126	0	0	0	189	316	64	482	989	709
Turn Type	Prot		Free				Split		Perm	Split		Free
Protected Phases	7	4					2	2		6	6	
Permitted Phases			Free						2			Free
Actuated Green, G (s)	20.9	20.9	81.7				16.2	16.2	16.2	32.6	32.6	81.7
Effective Green, g (s)	20.9	20.9	81.7				16.2	16.2	16.2	32.6	32.6	81.7
Actuated g/C Ratio	0.26	0.26	1.00				0.20	0.20	0.20	0.40	0.40	1.00
Clearance Time (s)	4.0	4.0					4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	878	1301	1583				681	702	314	642	1334	1583
v/s Ratio Prot	0.04	c0.20					0.06	0.09		c0.30	0.30	
v/s Ratio Perm			0.08						0.04			c0.45
v/c Ratio	0.15	0.76	0.08				0.28	0.45	0.20	0.75	0.74	0.45
Uniform Delay, d1	23.5	28.1	0.0				27.8	28.8	27.4	21.1	21.0	0.0
Progression Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	2.7	0.1				1.0	2.1	1.5	4.9	2.3	0.9
Delay (s)	23.6	30.8	0.1				28.8	30.9	28.8	26.0	23.2	0.9
Level of Service	C	C	A				C	C	C	C	C	A
Approach Delay (s)		27.0			0.0			29.9			16.6	
Approach LOS		C			A			C			B	

Intersection Summary

HCM Average Control Delay	21.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	81.7	Sum of lost time (s)	8.0
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	402	0	0	1330	4	632	2	95	2	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.91			0.91		0.95	0.95	1.00	1.00		1.00
Frt	1.00	1.00			1.00		1.00	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	0.95	1.00	0.95		1.00
Satd. Flow (prot)	1770	5085			5083		1681	1686	1583	1770		1583
Flt Permitted	0.95	1.00			1.00		0.95	0.95	1.00	0.69		1.00
Satd. Flow (perm)	1770	5085			5083		1681	1686	1583	1285		1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	3	447	0	0	1478	4	702	2	106	2	0	12
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	77	0	0	11
Lane Group Flow (vph)	3	447	0	0	1482	0	351	353	29	2	0	1
Turn Type	Prot						Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases									2	6		6
Actuated Green, G (s)	1.1	29.2			24.1		18.1	18.1	18.1	5.8		5.8
Effective Green, g (s)	1.1	29.2			24.1		18.1	18.1	18.1	5.8		5.8
Actuated g/C Ratio	0.02	0.45			0.37		0.28	0.28	0.28	0.09		0.09
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	30	2281			1882		467	469	440	114		141
v/s Ratio Prot	0.00	c0.09			c0.29		0.21	c0.21				
v/s Ratio Perm									0.02	c0.00		0.00
v/c Ratio	0.10	0.20			0.79		0.75	0.75	0.07	0.02		0.01
Uniform Delay, d1	31.5	10.9			18.2		21.4	21.5	17.3	27.1		27.0
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	1.5	0.0			2.3		6.7	6.7	0.1	0.1		0.0
Delay (s)	33.0	10.9			20.5		28.2	28.2	17.4	27.1		27.0
Level of Service	C	B			C		C	C	B	C		C
Approach Delay (s)		11.0			20.5			26.8			27.1	
Approach LOS		B			C			C			C	

Intersection Summary

HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	65.1	Sum of lost time (s)	16.0
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	650	1124	49	0	0	0	405	680	240	278	541	653
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0				4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00				0.97	0.95	1.00	0.91	0.91	1.00
Frt	1.00	1.00	0.85				1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00				0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583				3433	3539	1583	1610	3382	1583
Flt Permitted	0.95	1.00	1.00				0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583				3433	3539	1583	1610	3382	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	722	1249	54	0	0	0	450	756	267	309	601	726
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	71	0	0	0
Lane Group Flow (vph)	722	1249	54	0	0	0	450	756	196	278	632	726
Turn Type	Prot		Free				Split		Perm	Split		Free
Protected Phases	7	4					2	2		6	6	
Permitted Phases			Free						2			Free
Actuated Green, G (s)	26.0	26.0	87.2				28.1	28.1	28.1	21.1	21.1	87.2
Effective Green, g (s)	26.0	26.0	87.2				28.1	28.1	28.1	21.1	21.1	87.2
Actuated g/C Ratio	0.30	0.30	1.00				0.32	0.32	0.32	0.24	0.24	1.00
Clearance Time (s)	4.0	4.0					4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1024	1516	1583				1106	1140	510	390	818	1583
v/s Ratio Prot	0.21	c0.25					0.13	c0.21		0.17	c0.19	
v/s Ratio Perm			0.03						0.12			0.46
v/c Ratio	0.71	0.82	0.03				0.41	0.66	0.38	0.71	0.77	0.46
Uniform Delay, d1	27.2	28.5	0.0				23.0	25.5	22.9	30.3	30.8	0.0
Progression Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	3.8	0.0				1.1	3.0	2.2	6.1	4.6	1.0
Delay (s)	29.4	32.2	0.0				24.2	28.5	25.0	36.3	35.4	1.0
Level of Service	C	C	A				C	C	C	D	D	A
Approach Delay (s)		30.4			0.0			26.6			20.3	
Approach LOS		C			A			C			C	

Intersection Summary

HCM Average Control Delay	26.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	87.2	Sum of lost time (s)	12.0
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	1319	0	0	1070	11	377	1	265	5	0	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.91			0.91		0.95	0.95	1.00	1.00		1.00
Frt	1.00	1.00			1.00		1.00	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	0.95	1.00	0.95		1.00
Satd. Flow (prot)	1770	5085			5078		1681	1686	1583	1770		1583
Flt Permitted	0.95	1.00			1.00		0.95	0.95	1.00	0.65		1.00
Satd. Flow (perm)	1770	5085			5078		1681	1686	1583	1202		1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	10	1466	0	0	1189	12	419	1	294	6	0	13
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	230	0	0	12
Lane Group Flow (vph)	10	1466	0	0	1200	0	209	211	64	6	0	1
Turn Type	Prot						Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases									2	6		6
Actuated Green, G (s)	1.1	31.1			26.0		13.7	13.7	13.7	6.2		6.2
Effective Green, g (s)	1.1	31.1			26.0		13.7	13.7	13.7	6.2		6.2
Actuated g/C Ratio	0.02	0.49			0.41		0.22	0.22	0.22	0.10		0.10
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	31	2510			2096		366	367	344	118		156
v/s Ratio Prot	0.01	c0.29			0.24		0.12	c0.13				
v/s Ratio Perm									0.04	c0.00		0.00
v/c Ratio	0.32	0.58			0.57		0.57	0.57	0.19	0.05		0.01
Uniform Delay, d1	30.6	11.3			14.2		22.0	22.0	20.1	25.7		25.6
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	6.0	0.3			0.4		2.1	2.2	0.3	0.2		0.0
Delay (s)	36.5	11.7			14.6		24.2	24.2	20.4	25.9		25.6
Level of Service	D	B			B		C	C	C	C		C
Approach Delay (s)		11.9			14.6			22.6			25.7	
Approach LOS		B			B			C			C	

Intersection Summary

HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	63.0	Sum of lost time (s)	12.0
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	134	894	113	0	0	0	170	290	109	721	658	675
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0				4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00				0.97	0.95	1.00	0.91	0.91	1.00
Frt	1.00	1.00	0.85				1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00				0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (prot)	3433	5085	1583				3433	3539	1583	1610	3341	1583
Flt Permitted	0.95	1.00	1.00				0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (perm)	3433	5085	1583				3433	3539	1583	1610	3341	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	149	993	126	0	0	0	189	322	121	801	731	750
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	49	0	0	0
Lane Group Flow (vph)	149	993	126	0	0	0	189	322	72	497	1035	750
Turn Type	Prot		Free				Split		Perm	Split		Free
Protected Phases	7	4					2	2		6	6	
Permitted Phases			Free						2			Free
Actuated Green, G (s)	21.1	21.1	83.3				16.2	16.2	16.2	34.0	34.0	83.3
Effective Green, g (s)	21.1	21.1	83.3				16.2	16.2	16.2	34.0	34.0	83.3
Actuated g/C Ratio	0.25	0.25	1.00				0.19	0.19	0.19	0.41	0.41	1.00
Clearance Time (s)	4.0	4.0					4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	870	1288	1583				668	688	308	657	1364	1583
v/s Ratio Prot	0.04	c0.20					0.06	0.09		0.31	c0.31	
v/s Ratio Perm			0.08						0.05			c0.47
v/c Ratio	0.17	0.77	0.08				0.28	0.47	0.23	0.76	0.76	0.47
Uniform Delay, d1	24.3	28.9	0.0				28.6	29.7	28.3	21.1	21.1	0.0
Progression Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	2.9	0.1				1.1	2.3	1.8	5.0	2.5	1.0
Delay (s)	24.4	31.8	0.1				29.7	32.0	30.1	26.1	23.6	1.0
Level of Service	C	C	A				C	C	C	C	C	A
Approach Delay (s)		27.8			0.0			30.9			16.7	
Approach LOS		C			A			C			B	

Intersection Summary

HCM Average Control Delay	22.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	83.3	Sum of lost time (s)	8.0
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	402	0	0	1330	12	632	21	95	20	0	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.91			0.91		0.95	0.95	1.00	1.00		1.00
Frt	1.00	1.00			1.00		1.00	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	0.96	1.00	0.95		1.00
Satd. Flow (prot)	1770	5085			5079		1681	1690	1583	1770		1583
Flt Permitted	0.95	1.00			1.00		0.95	0.96	1.00	0.56		1.00
Satd. Flow (perm)	1770	5085			5079		1681	1690	1583	1049		1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	447	0	0	1478	13	702	23	106	22	0	114
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	76	0	0	102
Lane Group Flow (vph)	28	447	0	0	1490	0	365	360	30	22	0	12
Turn Type	Prot						Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases									2	6		6
Actuated Green, G (s)	2.8	30.1			23.3		19.2	19.2	19.2	7.1		7.1
Effective Green, g (s)	2.8	30.1			23.3		19.2	19.2	19.2	7.1		7.1
Actuated g/C Ratio	0.04	0.44			0.34		0.28	0.28	0.28	0.10		0.10
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	72	2238			1730		472	474	444	109		164
v/s Ratio Prot	c0.02	0.09			c0.29		c0.22	0.21				
v/s Ratio Perm									0.02	c0.02		0.01
v/c Ratio	0.39	0.20			0.86		0.77	0.76	0.07	0.20		0.07
Uniform Delay, d1	32.0	11.8			21.0		22.6	22.5	18.0	28.1		27.7
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	3.5	0.0			4.7		7.7	6.9	0.1	0.9		0.2
Delay (s)	35.4	11.8			25.7		30.3	29.4	18.1	29.0		27.9
Level of Service	D	B			C		C	C	B	C		C
Approach Delay (s)		13.2			25.7			28.3			28.0	
Approach LOS		B			C			C			C	

Intersection Summary

HCM Average Control Delay	24.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	68.4	Sum of lost time (s)	16.0
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	686	1124	49	0	0	0	405	692	240	310	550	680
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0				4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00				0.97	0.95	1.00	0.91	0.91	1.00
Frt	1.00	1.00	0.85				1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00				0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583				3433	3539	1583	1610	3381	1583
Flt Permitted	0.95	1.00	1.00				0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583				3433	3539	1583	1610	3381	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	762	1249	54	0	0	0	450	769	267	344	611	756
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	60	0	0	0
Lane Group Flow (vph)	762	1249	54	0	0	0	450	769	207	310	645	756
Turn Type	Prot		Free				Split		Perm	Split		Free
Protected Phases	7	4					2	2		6	6	
Permitted Phases			Free						2			Free
Actuated Green, G (s)	26.0	26.0	87.3				28.1	28.1	28.1	21.2	21.2	87.3
Effective Green, g (s)	26.0	26.0	87.3				28.1	28.1	28.1	21.2	21.2	87.3
Actuated g/C Ratio	0.30	0.30	1.00				0.32	0.32	0.32	0.24	0.24	1.00
Clearance Time (s)	4.0	4.0					4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1022	1514	1583				1105	1139	510	391	821	1583
v/s Ratio Prot	0.22	c0.25					0.13	c0.22		c0.19	0.19	
v/s Ratio Perm			0.03						0.13			0.48
v/c Ratio	0.75	0.82	0.03				0.41	0.68	0.41	0.79	0.79	0.48
Uniform Delay, d1	27.7	28.5	0.0				23.1	25.6	23.1	31.0	30.9	0.0
Progression Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	3.8	0.0				1.1	3.2	2.4	10.5	5.0	1.0
Delay (s)	30.7	32.3	0.0				24.2	28.9	25.5	41.5	35.9	1.0
Level of Service	C	C	A				C	C	C	D	D	A
Approach Delay (s)		30.9			0.0			26.8			21.5	
Approach LOS		C			A			C			C	

Intersection Summary

HCM Average Control Delay	26.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	87.3	Sum of lost time (s)	12.0
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	1319	0	0	1070	29	377	43	265	19	0	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.91			0.91		0.95	0.95	1.00	1.00		1.00
Frt	1.00	1.00			1.00		1.00	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	0.96	1.00	0.95		1.00
Satd. Flow (prot)	1770	5085			5065		1681	1702	1583	1770		1583
Flt Permitted	0.95	1.00			1.00		0.95	0.96	1.00	0.60		1.00
Satd. Flow (perm)	1770	5085			5065		1681	1702	1583	1126		1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	63	1466	0	0	1189	32	419	48	294	21	0	89
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	218	0	0	80
Lane Group Flow (vph)	63	1466	0	0	1218	0	230	237	76	21	0	9
Turn Type	Prot						Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases									2	6		6
Actuated Green, G (s)	4.9	32.7			23.8		15.0	15.0	15.0	7.1		7.1
Effective Green, g (s)	4.9	32.7			23.8		15.0	15.0	15.0	7.1		7.1
Actuated g/C Ratio	0.07	0.49			0.36		0.22	0.22	0.22	0.11		0.11
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	130	2489			1805		377	382	355	120		168
v/s Ratio Prot	0.04	c0.29			c0.24		0.14	c0.14				
v/s Ratio Perm									0.05	c0.02		0.01
v/c Ratio	0.48	0.59			0.68		0.61	0.62	0.21	0.17		0.06
Uniform Delay, d1	29.7	12.2			18.2		23.3	23.3	21.1	27.2		26.8
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	2.8	0.4			1.0		2.9	3.1	0.3	0.7		0.1
Delay (s)	32.6	12.6			19.2		26.2	26.5	21.4	27.9		27.0
Level of Service	C	B			B		C	C	C	C		C
Approach Delay (s)		13.4			19.2			24.4			27.2	
Approach LOS		B			B			C			C	

Intersection Summary

HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	66.8	Sum of lost time (s)	16.0
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX C

PEAK HOUR AND DAILY COUNT DATA

TRAFFIC DATA SERVICES, INC
SUMMARY OF VEHICULAR TURNING MOVEMENTS

N/S ST : US-101 SB ON RAMP/VALENTINE RD
E/W ST: THELEPHONE RD
CITY: VENTURA

FILENAME: 02110401
DATE: 3/01/11
DAY: TUESDAY

PERIOD	NORTHBOUND			SOUTHBOUND				EASTBOUND				WESTBOUND				XXXXBOUND				
BEGINNING	NL	NT	NR	SL	ST1	ST2	SR	EL	ET	ER1	ER2	WL1	WL2	WT	WR	XL	XT	XR	XR	TOTAL
LANES:			1	2	3		1	2	2	1		1.5		1.5	1					
6:00 AM																				
:15 AM																				
:30 AM																				
:45 AM																				
7:00 AM			13	23	169	12	18	21	19	0	11	33	56	74	61					510
:15 AM			10	26	191	21	35	25	14	0	26	47	78	113	110					696
:30 AM			7	29	206	24	33	29	22	0	30	62	67	126	152					787
:45 AM			14	27	196	44	30	40	17	0	25	60	158	221	181					1013
8:00 AM			8	31	193	51	26	46	23	0	27	44	142	164	159					914
:15 AM			12	29	135	32	22	52	35	0	25	47	88	125	137					739
:30 AM			16	26	142	36	19	48	31	0	22	35	87	138	129					729
:45 AM			17	21	136	33	15	31	20	0	24	43	70	140	149					699
9:00 AM																				
:15 AM																				
:30 AM																				
:45 AM																				
10:00 AM																				
:15 AM																				
:30 AM																				
:45 AM																				

PEAK HOUR BEGINS AT: PHF: 0.85

730 AM

VOLUMES =	0	0	41	0	116	730	151	111	167	97	0	107	213	455	636	629	0	0	0	0	3453

COMMENTS: NR = FROM VALENTINE RD TO US-101 SB ON RAMP
ST1 = TO US-101 SB ON RAMP
ST2 = TO VALENTINE RD
ER1 = TO VALENTINE RD
ER2 = TO US-101 SB ON RAMP
WL1 = TO US-101 SB ON RAMP
WL2 = TO VALENTINE RD

TRAFFIC DATA SERVICES, INC
SUMMARY OF VEHICULAR TURNING MOVEMENTS

N/S ST : US-101 SB ON RAMP/VALENTINE RD
E/W ST: THELEPHONE RD
CITY: VENTURA

FILENAME: 02110401P
DATE: 3/01/11
DAY: TUESDAY

PERIOD	NORTHBOUND			SOUTHBOUND				EASTBOUND				WESTBOUND				XXXXBOUND				
BEGINNING	NL	NT	NR	SL	ST1	ST2	SR	EL	ET	ER1	ER2	WL1	WL2	WT	WR	XL	XT	XR	XR	TOTAL
LANES:			1	2	3		1	2	2	1		1.5		1.5	1					
2:00 PM																				
:15 PM																				
:30 PM																				
:45 PM																				
3:00 PM																				
:15 PM																				
:30 PM																				
:45 PM																				
4:00 PM			34	139	237	39	15	87	84	2	52	24	42	132	134					1021
:15 PM			35	142	246	46	13	125	101	1	66	28	26	128	176					1133
:30 PM			59	138	251	37	11	117	106	0	63	45	40	144	168					1179
:45 PM			46	138	219	32	9	70	77	1	51	29	40	129	165					1006
5:00 PM			83	121	214	34	6	36	58	0	40	42	37	110	172					953
:15 PM			71	154	244	23	10	48	63	0	52	38	27	98	163					991
:30 PM			68	140	209	30	7	33	58	0	42	25	30	110	167					919
:45 PM			72	137	214	29	10	34	49	0	38	30	38	101	151					903
6:00 PM																				
:15 PM																				
:30 PM																				
:45 PM																				

PEAK HOUR BEGINS AT: PHF: 0.92
1600 PM

VOLUMES =	0	0	174	0	557	953	154	48	399	368	4	232	126	148	533	643	0	0	0	0	4339

COMMENTS:
NR = FROM VALENTINE RD TO US-101 SB ON RAMP
ST1 = TO US-101 SB ON RAMP
ST2 = TO VALENTINE RD
ER1 = TO VALENTINE RD
ER2 = TO US-101 SB ON RAMP
WL1 = TO US-101 SB ON RAMP
WL2 = TO VALENTINE RD

TRAFFIC DATA SERVICES, INC.
(714) 541-2228
Summary of Vehicular Turning Movements

N/S ST : US-101 NB OFF RAMP/COPLAND CIR
E/W ST: TELEPHONE RD
CITY: VENTURA

FILENAME: 02110402
DATE: 3/01/11
DAY: TUESDAY

PERIOD	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
BEGINS	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Total
LANES:	1.5	0.5	1	1		1	1	3			3	0	
7:00 AM	78	1	19	2		2	2	46			135	0	285
15 AM	123	1	25	1		1	2	54			214	0	421
30 AM	128	0	20	0		4	0	68			274	0	494
45 AM	210	1	28	0		1	2	110			345	2	699
8:00 AM	164	1	24	1		2	0	120			279	2	593
15 AM	121	0	22	1		4	1	98			219	0	466
30 AM	133	0	33	1		4	0	107			208	0	486
45 AM	145	0	26	2		2	1	140			244	2	562
PEAK HOUR BEGINS AT: 730 AM													PHF: 0.81
VOLUMES =	623	2	94	2	0	11	3	396	0	0	1117	4	2252

FILENAME: 02110402P
DATE: 3/01/11
DAY: TUESDAY

PERIOD	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
BEGINS	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Total
4:00 PM	88	1	38	2		0	1	325			264	2	721
15 PM	101	3	50	3		5	2	306			264	1	735
30 PM	117	1	70	0		5	6	321			255	4	779
45 PM	95	0	51	1		2	4	310			243	2	708
5:00 PM	95	0	78	2		3	0	379			273	2	832
15 PM	64	0	54	1		3	5	354			262	5	748
30 PM	117	1	78	1		4	0	359			276	2	838
45 PM	93	1	77	0		8	2	278			242	3	704
PEAK HOUR BEGINS AT: 1645 PM													PHF: 0.93
VOLUMES =	371	1	261	5	0	12	9	1402	0	0	1054	11	3126

COMMENTS:

TRAFFIC DATA SERVICES, INC.
(714) 541-2228
Summary of Vehicular Turning Movements

N/S ST : VICTORIA AVE
E/W ST: THILLE ST
CITY: VENTURA

FILENAME: 02110403
DATE: 3/02/11
DAY: WEDNESDAY

PERIOD	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
BEGINS	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Total
LANES:	1	4	0	1	4	0	1.5	0.5	1	1	0.5	0.5	
7:00 AM	6	260	52	40	361	30	71	0	7	0	0	1	828
15 AM	5	271	61	46	379	32	86	0	4	1	0	3	888
30 AM	12	372	87	54	429	58	130	6	13	4	1	5	1171
45 AM	7	336	89	59	403	54	114	3	15	6	0	0	1086
8:00 AM	4	381	72	48	389	49	72	1	6	2	0	1	1025
15 AM	10	291	48	36	314	20	42	41	1	6	0	5	814
30 AM	18	255	75	35	382	72	66	5	10	24	4	9	955
45 AM	13	261	66	31	374	61	51	1	9	2	1	2	872

PEAK HOUR BEGINS AT: PHF: 0.89
715 AM

VOLUMES =	28	1360	309	207	1600	193	402	10	38	13	1	9	4170

FILENAME: 02110403P
DATE: 3/02/11
DAY: WEDNESDAY

PERIOD	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
BEGINS	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Total
4:00 PM	21	319	17	15	429	80	60	4	19	52	4	25	1045
15 PM	24	331	13	14	436	67	52	1	17	39	1	19	1014
30 PM	17	307	11	18	410	59	46	0	11	32	0	12	923
45 PM	12	311	10	10	374	41	40	1	11	15	0	9	834
5:00 PM	6	256	6	8	351	36	32	0	8	6	1	2	712
15 PM	14	273	5	4	369	15	25	2	13	18	2	2	742
30 PM	10	281	1	6	276	40	29	0	6	0	0	1	650
45 PM	11	269	0	3	268	32	18	0	4	0	0	0	605

PEAK HOUR BEGINS AT: PHF: 0.91
1600 PM

VOLUMES =	74	1268	51	57	1649	247	198	6	58	138	5	65	3816

COMMENTS:

2223 WELLINGTON ST 315
SANTA ANA CA 92701

STREET : TELEPHONE E/O
: US-101 NB OFF RAMP
CITY : VENTURA

Site: 021104.001
Date: 03/01/11

Interval	EB				WB				Combined				Day: Tuesday
Begin	AM		PM		AM		PM		AM		PM		
12:00	20	49	318	1,253	6	23	284	1,214	26	72	602	2,467	
12:15	18		296		8		290		26		586		
12:30	5		346		4		304		9		650		
12:45	6		293		5		336		11		629		
01:00	6	25	274	1,195	4	15	306	1,194	10	40	580	2,389	
01:15	8		340		3		288		11		628		
01:30	4		279		5		294		9		573		
01:45	7		302		3		306		10		608		
02:00	2	16	290	1,176	1	12	256	1,030	3	28	546	2,206	
02:15	3		282		5		244		8		526		
02:30	4		308		5		238		9		546		
02:45	7		296		1		292		8		588		
03:00	3	17	304	1,255	8	23	282	1,098	11	40	586	2,353	
03:15	5		322		5		272		10		594		
03:30	3		292		4		276		7		568		
03:45	6		337		6		268		12		605		
04:00	6	33	344	1,404	13	62	238	1,011	19	95	582	2,415	
04:15	10		336		12		260		22		596		
04:30	4		366		13		257		17		623		
04:45	13		358		24		256		37		614		
05:00	7	55	438	1,572	32	193	283	1,036	39	248	721	2,608	
05:15	12		400		32		272		44		672		
05:30	14		376		57		243		71		619		
05:45	22		358		72		238		94		596		
06:00	31	150	342	1,156	76	453	226	822	107	603	568	1,978	
06:15	33		326		104		206		137		532		
06:30	36		258		107		212		143		470		
06:45	50		230		166		178		216		408		
07:00	78	404	222	773	130	906	154	549	208	1,310	376	1,322	
07:15	88		208		191		140		279		348		
07:30	100		182		269		134		369		316		
07:45	138		161		316		121		454		282		
08:00	154	598	153	569	276	1,008	118	353	430	1,606	271	922	
08:15	110		157		264		80		374		237		
08:30	154		125		238		85		392		210		
08:45	180		134		230		70		410		204		
09:00	174	712	120	404	197	839	65	231	371	1,551	185	635	
09:15	156		94		198		66		354		160		
09:30	198		102		228		50		426		152		
09:45	184		88		216		50		400		138		
10:00	200	755	50	165	239	900	48	118	439	1,655	98	283	
10:15	199		45		222		34		421		79		
10:30	154		50		182		20		336		70		
10:45	202		20		257		16		459		36		
11:00	231	1,097	24	84	236	1,086	24	62	467	2,183	48	146	
11:15	286		26		278		20		564		46		
11:30	278		15		297		12		575		27		
11:45	302		19		275		6		577		25		
Totals	3,911		11,006		5,520		8,718		9,431		19,724		
Split%	41.5		55.8		58.5		44.2						
Day Totals		14,917				14,238				29,155			
Day Splits		51.2				48.8							
Peak Hour	11:00		04:45		07:30		12:15		11:00		04:30		
Volume	1,097		1,572		1,125		1,236		2,183		2,630		
Factor	0.91		0.90		0.89		0.92		0.95		0.91		

2223 WELLINGTON ST 315
SANTA ANA CA 92701

STREET : THILLE W/O
: PORTOLA
CITY : VENTURA

Site: 021104.002
Date: 03/01/11

Interval	EB				WB				Combined				Day: Tuesday
Begin	AM		PM		AM		PM		AM		PM		
12:00	3	6	10	54	3	10	26	64	6	16	36	118	
12:15	1		12		3		15		4		27		
12:30	2		12		2		13		4		25		
12:45	0		20		2		10		2		30		
01:00	1	3	13	61	0	4	20	68	1	7	33	129	
01:15	0		13		3		21		3		34		
01:30	1		16		0		11		1		27		
01:45	1		19		1		16		2		35		
02:00	0	0	14	57	0	2	20	64	0	2	34	121	
02:15	0		18		2		18		2		36		
02:30	0		11		0		14		0		25		
02:45	0		14		0		12		0		26		
03:00	0	2	9	67	0	0	18	88	0	2	27	155	
03:15	0		19		0		29		0		48		
03:30	1		20		0		24		1		44		
03:45	1		19		0		17		1		36		
04:00	0	4	16	60	1	3	28	108	1	7	44	168	
04:15	1		14		0		22		1		36		
04:30	1		18		1		30		2		48		
04:45	2		12		1		28		3		40		
05:00	7	30	18	69	0	3	32	157	7	33	50	226	
05:15	1		18		1		48		2		66		
05:30	7		17		2		29		9		46		
05:45	15		16		0		48		15		64		
06:00	9	45	16	67	3	11	26	112	12	56	42	179	
06:15	7		18		2		33		9		51		
06:30	10		17		4		32		14		49		
06:45	19		16		2		21		21		37		
07:00	32	157	12	49	1	20	34	89	33	177	46	138	
07:15	31		14		2		27		33		41		
07:30	42		10		8		14		50		24		
07:45	52		13		9		14		61		27		
08:00	31	114	9	28	23	53	14	57	54	167	23	85	
08:15	27		6		10		18		37		24		
08:30	34		4		7		13		41		17		
08:45	22		9		13		12		35		21		
09:00	12	51	6	21	12	40	8	42	24	91	14	63	
09:15	9		5		10		13		19		18		
09:30	16		3		10		8		26		11		
09:45	14		7		8		13		22		20		
10:00	12	58	4	9	10	45	5	24	22	103	9	33	
10:15	19		4		11		5		30		9		
10:30	11		0		8		9		19		9		
10:45	16		1		16		5		32		6		
11:00	8	53	1	6	4	46	2	11	12	99	3	17	
11:15	13		2		14		2		27		4		
11:30	18		2		14		5		32		7		
11:45	14		1		14		2		28		3		
Totals	523		548		237		884		760		1,432		
Split%	68.8		38.3		31.2		61.7						
Day Totals		1,071				1,121				2,192			
Day Splits		48.9				51.1							
Peak Hour	07:00		03:15		08:00		05:00		07:30		05:00		
Volume	157		74		53		157		202		226		
Factor	0.75		0.93		0.58		0.82		0.83		0.86		

Appendix 4.16 **Sewer Infrastructure Review prepared by Kennedy/Jenks Consultants dated July 20, 2015; Letter prepared by Jensen Design & Survey, Inc. regarding Broome – "The Grove Specific Plan" Sewer Monitoring dated July 31, 2013, with an attached Broom Sewer Study prepared by DownStream Services, Inc. dated July 11, 2013**

Draft Water System Hydraulic Evaluation and Supply Requirements for The Grove Specific Plan prepared by RBF Consulting dated July 11, 2013; and the Water System Hydraulic Evaluation and Supply Requirements for The Grove Specific Plan prepared by Michael Baker International dated June 16, 2015 and updated August 4, 2015

Kennedy/Jenks Consultants
Engineers & Scientists
2775 North Ventura Road, Suite 100
Oxnard, California 93036
805-973-5700
FAX: 805-973-1440

20 July 2015

Mr. John Broome
The Groves, LLC
c/o Kioren Mos
Moss & Associates
3319 Telegraph Road, #201
Ventura, CA 93003

Subject: Sewer Infrastructure Review – The Groves/Broome Project (at Telephone/101)
K/J 1389022*01

Dear Mr. Broome:

The City of Ventura (City) requested this work to evaluate the ability of the City's existing collection system to accommodate a planned development near Telephone Road and the 101 Freeway within the Thille Community. Kennedy/Jenks previously worked with the City on the Wastewater System Master Plan (Master Plan) in 2010. The goal of this study is to determine what effect the additional sewer flow from The Groves (Project) will have on the City's existing collection system.

Kennedy/Jenks prepared and submitted a draft Sewer Infrastructure Review for the Grove Development in April 2014. An updated Sewer Infrastructure Review was submitted in October 2014 and then again in January 2015. The City requested additional modifications in April 2015. The modifications requested by the City included the following:

1. Revise model with the pipe slope information provided by the City (Mr. Julian De Anda) on April 20, 2015. The pipe slopes in the model to be revised are along East Main Street from approximately South Mills Road to Telephone Road and along Telephone Road from East Main Street to approximately Copland Drive. Use the information in the spreadsheet provided by the City to update both the pipe lengths and the pipe slopes in the model. Also update the model to include two additional manholes as requested by the City.

2. Use the revised model to update the Sewer Infrastructure Review report. Rerun the scenarios in the model with the updated pipeline information. Use the results from these model scenarios to update the results in the Sewer Infrastructure Review report. Update the figures as needed to reflect the updated results from the model.

1.0 - Introduction and Background

The proposed development (known as The Grove Development) includes 59 single family residences, 191 apartments and about 5 acres of parks/trails. Refer to Figure 1 which shows the location of the Project and identifies it as "The Grove Parcel."

2.0 - Existing Wastewater Infrastructure

The wastewater from the Project will connect to the City's sewer collection system in Telephone Road on the north side of the 101 Highway. The connection will be to an existing 8-inch sewer in Copland Drive that connects to a 10-inch sewer in Telephone Road. Once in Telephone Road, the wastewater flows west along Main Street, then south along the 101 Freeway, and then further south through a right-of-way to the Ventura Water Reclamation Facility.

3.0 – Updated Flow Estimate

The Groves was listed in the Master Plan as a near-term project, with an expected 208 dwelling units, and a total expected flow of 40,352 gallons per day (gpd), or 28.02 gallons per minute (gpm). The current plan calls for 59 single family residences and 191 apartments, for a total of 250 dwelling units. In accordance with the Master Plan's criteria of 194 gallons per day per dwelling unit for estimating wastewater flows for "near-term" developments, the estimated flow from the 250 units is 48,500 gpd, or 33.68 gpm. No adjustment to the flows was made for any retail space or the parks/trails, as there is no retail space indicated in the current development plan. The flow of 33.68 gpm is used for both the Near-Term and Ultimate scenarios.

4.0- Hydraulic Model Analysis

The flow monitoring that was conducted by Downstream Services, Inc. was provided by the City and used to recalibrate the model in the area upstream of the Project and in the separate subcatchment. The results from the more upstream flow monitoring location, labeled as FM-02 in the flow monitoring report, indicate an average flow of 52 gpm and a peak dry weather flow of 91 gpm. The Master Plan model showed an average flow of 87 gpm in pipe P-853, which corresponds to flow monitoring location FM-02, and a peak dry weather flow of 185 gpm. Therefore, the average day loads at all 47 manholes upstream from pipe P-853 were scaled down equally to a total average day load of 42 gpm, so that with the peaking equation in the Master Plan model, the peak dry weather flow in the model in pipe P-853 is 91 gpm, equal to what was measured during the flow monitoring. These same adjustments were made to the Near-Term and Ultimate scenarios in the model. The locations of pipe P-853 and flow monitoring location FM-02 are shown on Figure 1.

The results from the second flow monitoring location, in the separate subcatchment, labeled as FM-03 in the flow monitoring report, indicate an average flow of 83 gpm and a peak flow of 146 gpm. The Master Plan model showed an average flow of 32 gpm in pipe P-1834, which corresponds to flow monitoring location FM-03, and a peak dry weather flow of 69 gpm. After the recalibration of the upstream area, an additional adjustment was made to the loads at all 88

manholes upstream from pipe P-1834. The flows at these manholes were scaled up equally to a total average day load of 68 gpm, so that with the peaking equation in the Master Plan model, the peak dry weather flow in the model in pipe P-1834 is 146 gpm, equal to what was measured during the flow monitoring. These same adjustments were made to the Near-Term and Ultimate scenarios in the model. The locations of pipe P-1834 and flow monitoring location FM-03 are shown on Figure 1.

The results from the third, most downstream flow monitoring location, labeled as FM-04 in the flow monitoring report, indicate an average flow of 324 gpm and a peak flow of 569 gpm. The Master Plan model showed an average flow of 119 gpm in pipe P-2136, which corresponds to flow monitoring location FM-04, and a peak dry weather flow of 405 gpm. After the recalibration of the upstream area, an additional adjustment was made to the loads at all 174 manholes upstream from pipe P-2136 and downstream from pipe P-1834. The flows at these manholes were scaled up equally so that a total average day flow of 191 gpm passed through pipe P-2136, so that with the peaking equation in the Master Plan model, the peak dry weather flow in the model in pipe P-2136 is 569 gpm, equal to the peak flow that was measured during the flow monitoring. These same adjustments were made to the Near-Term and Ultimate scenarios in the model. The locations of pipe PC-82 and flow monitoring location MH05777 are shown on Figure 1.

Note that while the flow monitoring report included results for a fourth location, referred to as FM-01, the City indicated that these results were not to be used for this analysis.

The initial hydraulic analysis involved analyzing a proposed diversion of flows on Telephone Road at Portola Road, approximately 1,500 feet upstream from the Project. This diversion would direct flow from an upstream sewer that leads to the sewer where the Project connects, into a separate subcatchment. The idea is to redirect flow from the sewer to which the Project will connect in order to make capacity available to accommodate the flows from the Project. However, for this to be possible, the effect of the redirected flows on the separate subcatchment must be analyzed after the model was recalibrated using the recent flow monitoring data. The locations chosen for the flow monitoring appear to have been chosen to support analysis of this proposed diversion. An initial hydraulic analysis was performed to investigate the effect of the proposed diversion on the collection system just downstream from the proposed diversion.

The final hydraulic analysis consisted of increasing the flow contribution from the parcel where The Groves project is proposed from 28.02 gpm to 33.68 gpm. The model was evaluated using wet weather flow conditions for Existing, Near-Term and Ultimate flow scenarios with the additional flow. This final analysis did not include the proposed diversion mentioned in the paragraph above since the City indicated that the final analysis performed should consist of analyzing the system as it is currently configured.

5.0- Evaluation Criteria

The Peak Wet Weather Flow (PWWF) scenario was analyzed based on the design criteria outlined in Section 2.4 of the Master Plan. For the basis of evaluating system deficiencies, the flow d/D ratios defining a deficient pipe are as follows per the Master Plan:

- For pipes 15 inches and smaller, the allowable d/D is 66 percent for existing system flows and 50 percent when receiving additional flows from near-term and ultimate developments.
- For pipes greater than 15 inches, the allowable d/D is 75 percent.
- For pipes passing under a freeway, the allowable d/D is 50 percent.

6.0 - Findings

The initial hydraulic analysis involved testing the model under existing conditions to determine the effect of the proposed redirection of flows at the intersection on Telephone Road at Portola Road. The sewers between this point and the location of FM-04 were analyzed to determine the effect of the additional flow from Telephone Road. Figures 2 and 3 are profiles of these sewer lines, one for the existing recalibrated system, and one for the system with the proposed redirection of flows incorporated. The profile that includes the redirected flows shows greater flows, and a small amount of surcharging. Table 1 below summarizes the depth to diameter ratios and the flows for the sewers shown in the profile for each scenario.

Table 1: Model Results Based on Flow Redirection

ID	Diameter (in)	Existing Total Peak Wet Weather Flow (gpm)	Existing d/D	Redirected Total Peak Wet Weather Flow (gpm)	Redirected d/D
P-1897	8	11	0.11	386	0.72
P-1898	8	24	0.16	392	0.73
P-1858	10	271	0.65	576	1.00
P-1859	10	271	0.34	576	0.51
P-1860	10	271	0.43	576	0.68
P-1900	10	271	0.40	576	0.62
P-1861	10	271	0.36	576	0.56
P-1855	10	271	0.36	576	0.56
P-1935	12	285	0.40	588	0.61
P-1934	12	304	0.40	604	0.60
P-1836	12	317	0.43	615	0.65
P-1933	12	317	0.43	615	0.64
P-1834	12	380	0.48	671	0.69
P-1835	12	380	0.48	671	0.70
P-1833	12	380	0.53	671	0.81
P-1832	15	380	0.44	671	0.62
P-2137	15	816	0.67	941	0.75
PC-216	15	705	0.38	806	0.41

ID	Diameter (in)	Existing Total Peak Wet Weather Flow (gpm)	Existing d/D	Redirected Total Peak Wet Weather Flow (gpm)	Redirected d/D
PC-222	12	1062	0.43	1218	0.46
PC-223	18	1136	0.49	1308	0.53
PC-221	15	1427	0.40	1635	0.43
P-1840	15	1431	0.65	1639	0.72
PC-217	15	1431	0.61	1639	0.66

The depth-to-diameter values in Table 1 that do not meet the evaluation criteria are colored in blue. As can be seen, the additional flow introduced into these sewer pipelines due to the proposed redirection causes several pipes to exceed the d/D criteria for existing peak wet weather flow conditions.

The final hydraulic analysis included evaluating the system without the proposed redirection of flow but with the updated flow estimate from the Project using the recalibrated model. The analysis indicated that the system downstream from the Project shows basically the same Master Plan deficiencies as it did before the flow estimate and model were updated. The Master Plan indicates that projects E16, E35 and E25 are existing system improvement needs based on Master Plan Figure 5-4c which shows the deficiencies in the area downstream of the Project.

Table 2 shows results from the model that was updated with the revised flows for the Project and the recalibration effort. Results are shown both with and without the flows from the Project under peak wet weather flows for Existing and Ultimate conditions. The pipes that are included in Table 2 are indicated in Figure 4. The d/D ratios in blue are equal to or greater than 0.67. The d/D ratios shown in green are between from 0.5 to 0.67. The deficiencies are similar to what is shown in Master Plan Figure 5-4c.

Table 3 shows results from the same model, but for dry weather scenarios.

Please let us know if you have any questions or need additional information.

Very truly yours,

KENNEDY/JENKS CONSULTANTS, INC.

Jeff Savard, P.E.
Vice President

Enclosures:
Figures 1, 2, 3 and 4
Master Plan Figure 5-4c

Table 2: Model Results Near The Groves for Various Wet Weather Flow Conditions

Pipe ID From Sewer Model	Ex Pipe Dia (in.)	*Calibrated Existing (PWWF) Flow Conditions Without Project (gpm)	*Calibrated Existing (PWWF) Flow Conditions Without Project (d/D)	*Calibrated Existing (PWWF) Flow Conditions With Project (gpm)	*Calibrated Existing (PWWF) Flow Conditions With Project (Model d/D)	Project Contribution to Existing (PWWF) Flow Conditions Pipe Deficiency (%)	Ultimate (PWWF) Flow Conditions Without Project (gpm)	Ultimate (PWWF) Flow Conditions Without Project (Model d/D)	Ultimate (PWWF) Flow Conditions With Project (gpm)	Ultimate (PWWF) Flow Conditions With Project (Model d/D)	Project Contribution to Ultimate (PWWF) Flow Conditions Pipe Deficiency (%)	Ultimate Conditions Proposed Pipe Diameter (in)
P-852	8	253	0.50	253	0.50	0.00%	442	0.72	442	0.72	0.00%	10
P-853	8	255	0.54	255	0.54	0.00%	443	1.00	443	1.00	0.00%	12
P-2055	8	287	0.49	287	0.49	0.00%	473	0.67	473	0.67	0.00%	10
P-2054	8	290	0.48	290	0.48	0.00%	475	0.65	475	0.65	0.00%	10
P-2053	8	292	0.47	292	0.47	0.00%	477	0.64	477	0.64	0.00%	10
P-2044	8	382	0.63	382	0.63	0.00%	576	1.00	576	1.00	0.00%	12
P-2043	10	512	0.49	512	0.49	0.00%	720	0.61	720	0.61	0.00%	12
P-4448	10	563	0.63	563	0.63	0.00%	771	1.00	771	1.00	0.00%	15
P-4447	10	563	0.37	563	0.37	0.00%	771	0.44	771	0.44	0.00%	
P-4446	10	563	0.62	563	0.62	0.00%	771	0.78	771	0.78	0.00%	15
P-4445	10	563	0.63	563	0.63	0.00%	771	0.82	771	0.82	0.00%	15
P-4444	10	563	0.55	563	0.55	0.00%	771	0.68	771	0.68	0.00%	12
P-4443	10	880	0.71	909	0.73	3.25%	1,277	1.00	1,301	1.00	1.84%	15
P-4442	10	880	0.73	909	0.75	3.25%	1,277	1.00	1,301	1.00	1.84%	15
P-4441	10	972	1.00	1,001	1.00	2.89%	1,352	1.00	1,376	1.00	1.74%	18
P-4440	10	972	0.76	1,001	0.78	2.89%	1,355	1.00	1,379	1.00	1.74%	15
P-4439	10	986	0.80	1,015	1.00	2.84%	1,367	1.00	1,391	1.00	1.72%	15
P-3904	10	991	1.00	1,020	1.00	2.82%	1,372	1.00	1,396	1.00	1.72%	18
P-3905	12	1,011	0.58	1,040	0.59	2.76%	1,392	0.72	1,416	0.73	1.69%	15
P-3906	12	1,027	1.00	1,056	1.00	2.70%	1,407	1.00	1,431	1.00	1.68%	18
P-3907	12	1,045	0.77	1,073	0.79	2.65%	1,421	1.00	1,445	1.00	1.66%	18
P-3908	12	1,045	0.36	1,074	0.36	2.65%	1,422	0.42	1,446	0.43	1.66%	
P-3909	12	1,045	0.60	1,074	0.61	2.65%	1,422	0.74	1,446	0.75	1.66%	18
P-3910	12	1,045	0.61	1,074	0.62	2.65%	1,422	0.76	1,446	0.78	1.66%	18
PC-250	12	1,045	0.67	1,074	0.69	2.65%	1,422	1.00	1,446	1.00	1.66%	18
P-3912	12	1,045	0.65	1,074	0.66	2.65%	1,422	1.00	1,446	1.00	1.66%	18
P-3911	12	1,045	0.73	1,074	0.75	2.65%	1,422	1.00	1,446	1.00	1.66%	18
P-3976	15	1,045	0.55	1,074	0.56	2.65%	1,422	0.68	1,446	0.69	1.66%	18
PC-251	15	1,045	0.43	1,074	0.44	2.65%	1,422	0.52	1,446	0.52	1.66%	18
P-3982	15	2,627	0.56	2,651	0.56	0.90%	3,300	0.65	3,324	0.65	0.72%	18
P-3981	15	2,627	0.66	2,651	0.67	0.90%	3,300	0.80	3,324	0.80	0.72%	18

Table 3: Model Results Near The Groves for Various Dry Weather Flow Conditions

Pipe ID From Sewer Model	Existing Pipe Diameter (in.)	*Calibrated Existing (PDWF) Flow Conditions Without Project (gpm)	*Calibrated Existing (PDWF) Flow Conditions Without Project (d/D)	*Calibrated Existing (PDWF) Flow Conditions With Project (gpm)	*Calibrated Existing (PDWF) Flow Conditions With Project (Model d/D)	Project Contribution to Existing (PDWF) Flow Conditions Pipe Deficiency (%)	Ultimate (PDWF) Flow Conditions Without Project (gpm)	Ultimate (PDWF) Flow Conditions Without Project (Model d/D)	Ultimate (PDWF) Flow Conditions With Project (gpm)	Ultimate (PDWF) Flow Conditions With Project (Model d/D)	Project Contribution to Ultimate (PDWF) Flow Conditions Pipe Deficiency (%)
P-852	8	90	0.18	90	0.29	0.00%	174	0.40	174	0.40	0.00%
P-853	8	91	0.20	91	0.31	0.00%	175	0.44	175	0.44	0.00%
P-2055	8	104	0.17	104	0.28	0.00%	189	0.39	189	0.39	0.00%
P-2054	8	106	0.17	106	0.28	0.00%	190	0.38	190	0.38	0.00%
P-2053	8	107	0.16	107	0.27	0.00%	191	0.37	191	0.37	0.00%
P-2044	8	147	0.28	147	0.36	0.00%	239	0.47	239	0.47	0.00%
P-2043	10	208	0.20	208	0.30	0.00%	312	0.37	312	0.37	0.00%
P-4448	10	233	0.30	233	0.38	0.00%	338	0.46	338	0.46	0.00%
P-4447	10	233	0.12	233	0.24	0.00%	338	0.29	338	0.29	0.00%
P-4446	10	233	0.29	233	0.37	0.00%	338	0.45	338	0.45	0.00%
P-4445	10	233	0.30	233	0.38	0.00%	338	0.46	338	0.46	0.00%
P-4444	10	233	0.24	233	0.33	0.00%	338	0.41	338	0.41	0.00%
P-4443	10	396	0.38	412	0.44	3.86%	618	0.56	634	0.57	2.42%
P-4442	10	396	0.40	412	0.45	3.86%	618	0.57	634	0.58	2.42%
P-4441	10	446	0.48	461	0.50	3.43%	667	0.63	682	0.64	2.25%
P-4440	10	446	0.43	461	0.47	3.43%	668	0.58	684	0.59	2.25%
P-4439	10	453	0.45	469	0.48	3.37%	676	0.60	692	0.61	2.22%
P-3904	10	456	0.48	472	0.50	3.35%	679	0.63	694	0.64	2.21%
P-3905	12	467	0.29	483	0.38	3.27%	692	0.46	708	0.47	2.17%
P-3906	12	476	0.61	492	0.58	3.21%	701	0.74	717	0.75	2.14%
P-3907	12	486	0.44	501	0.47	3.15%	711	0.58	726	0.59	2.12%
P-3908	12	486	0.13	502	0.25	3.15%	711	0.29	727	0.30	2.11%
P-3909	12	486	0.31	502	0.39	3.15%	711	0.47	727	0.48	2.11%
P-3910	12	486	0.32	502	0.39	3.15%	711	0.48	727	0.49	2.11%
PC-250	12	486	0.37	502	0.43	3.15%	711	0.52	727	0.53	2.11%
P-3912	12	486	0.35	502	0.42	3.15%	711	0.51	727	0.52	2.11%
P-3911	12	486	0.41	502	0.45	3.15%	711	0.56	727	0.57	2.11%
P-3976	15	486	0.27	502	0.36	3.15%	711	0.44	727	0.45	2.11%
PC-251	15	486	0.18	502	0.29	3.15%	711	0.35	727	0.36	2.11%
P-3982	15	1484	0.34	1,499	0.40	1.02%	1915	0.46	1931	0.46	0.80%
P-3981	15	1484	0.44	1,499	0.47	1.02%	1915	0.54	1931	0.54	0.80%

VENTURASEWER20140221

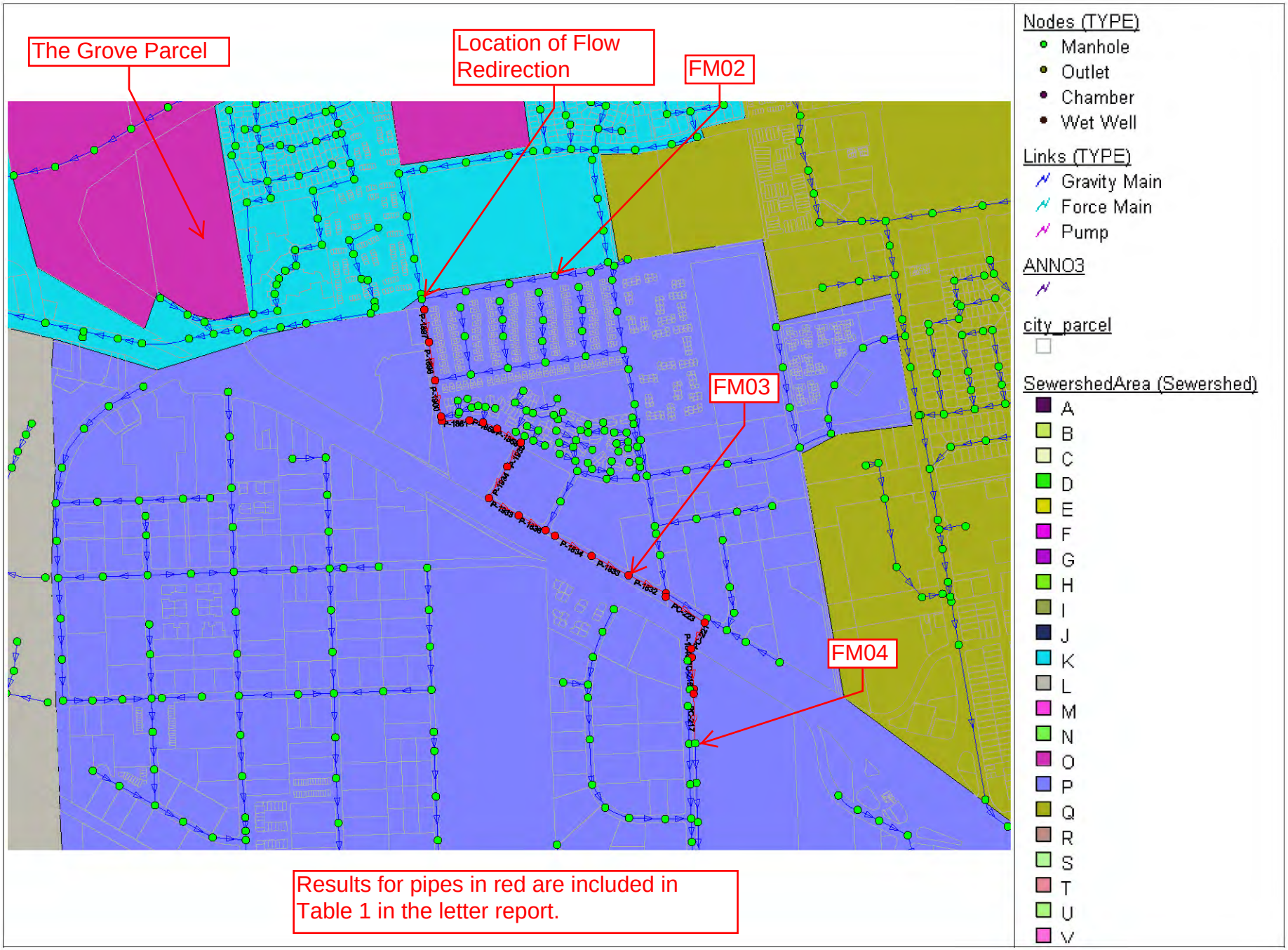


Figure 1

Date: Tuesday, March 04, 2014

Figure 2 - Existing Recalibrated System - PWWF

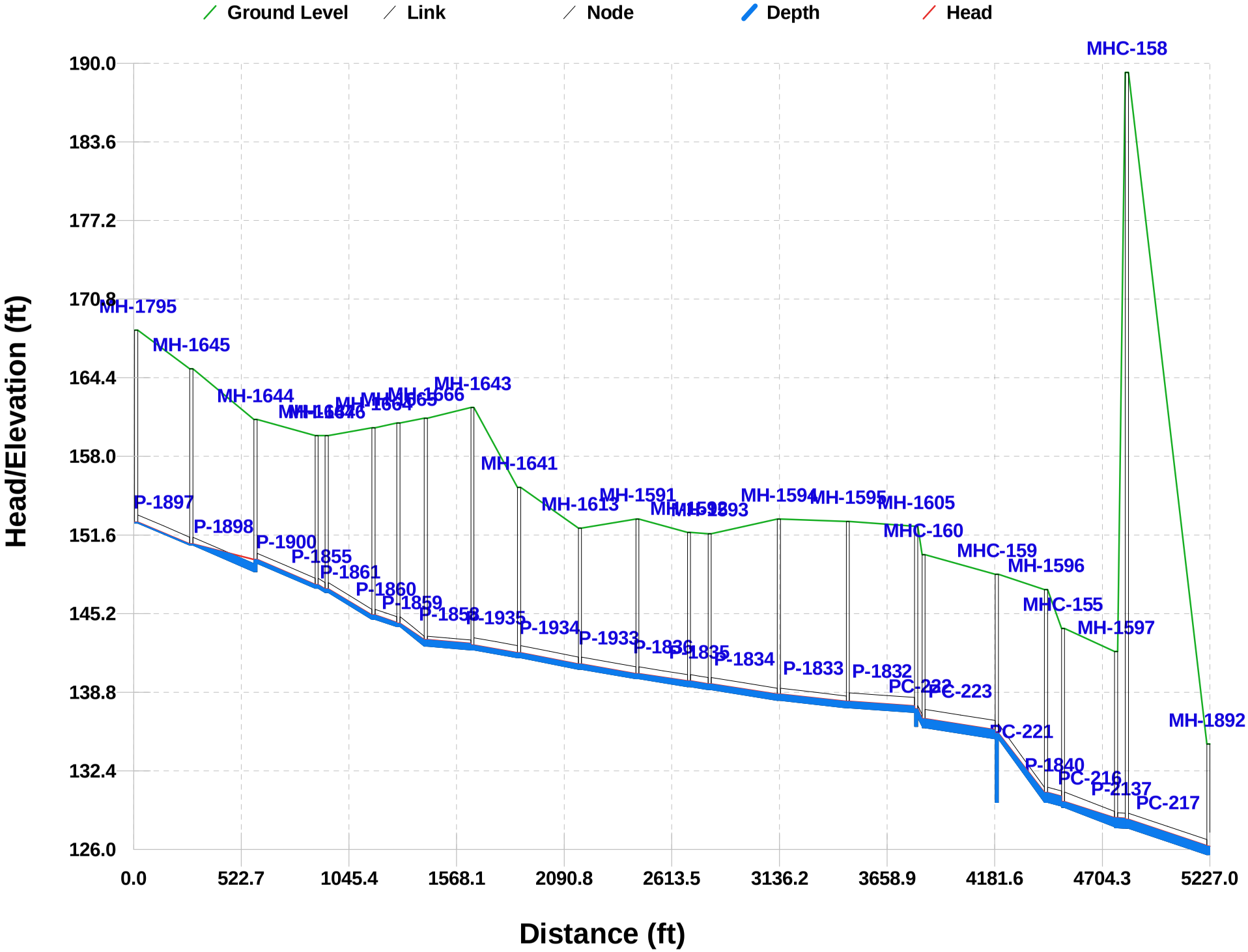
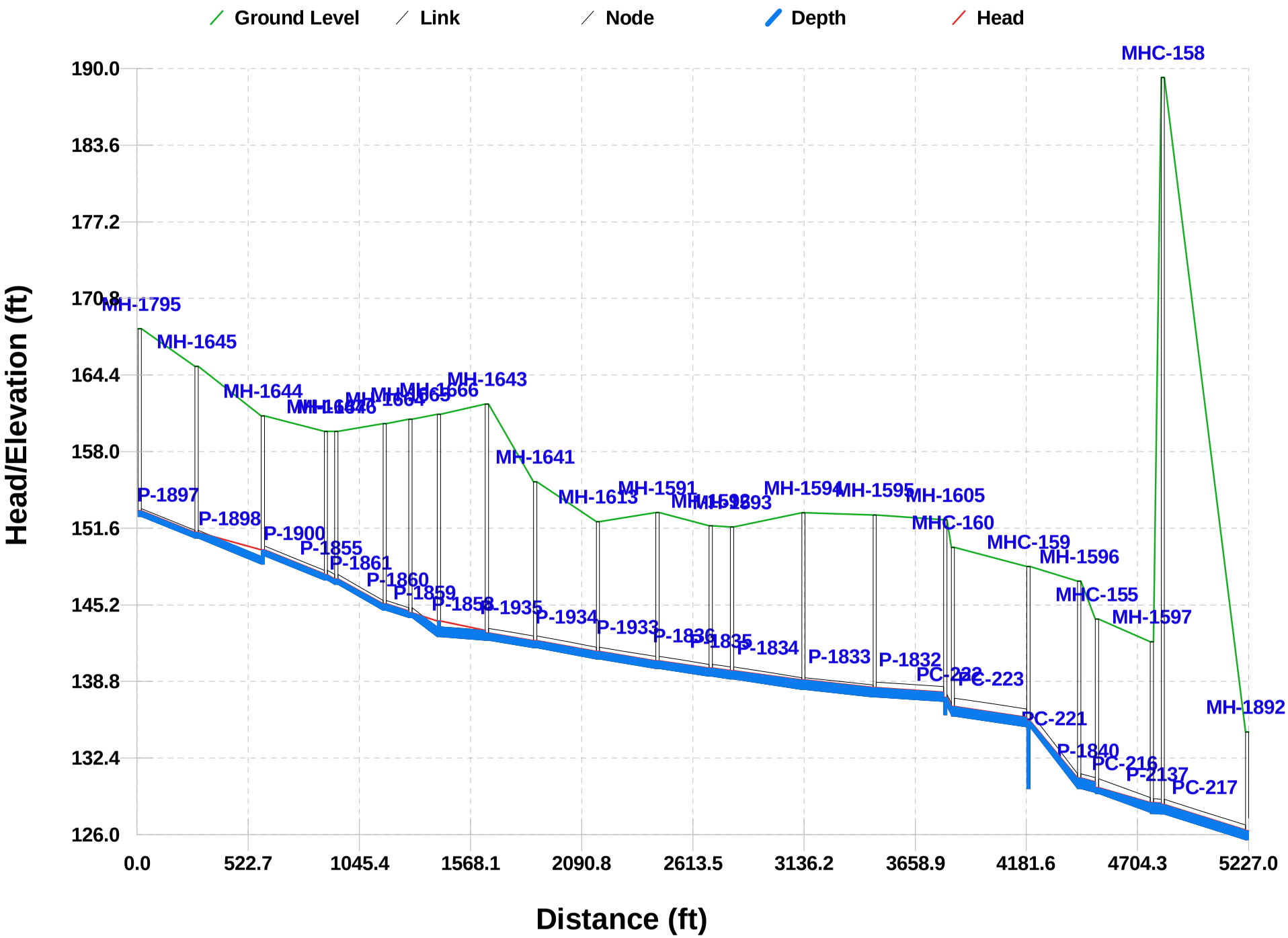
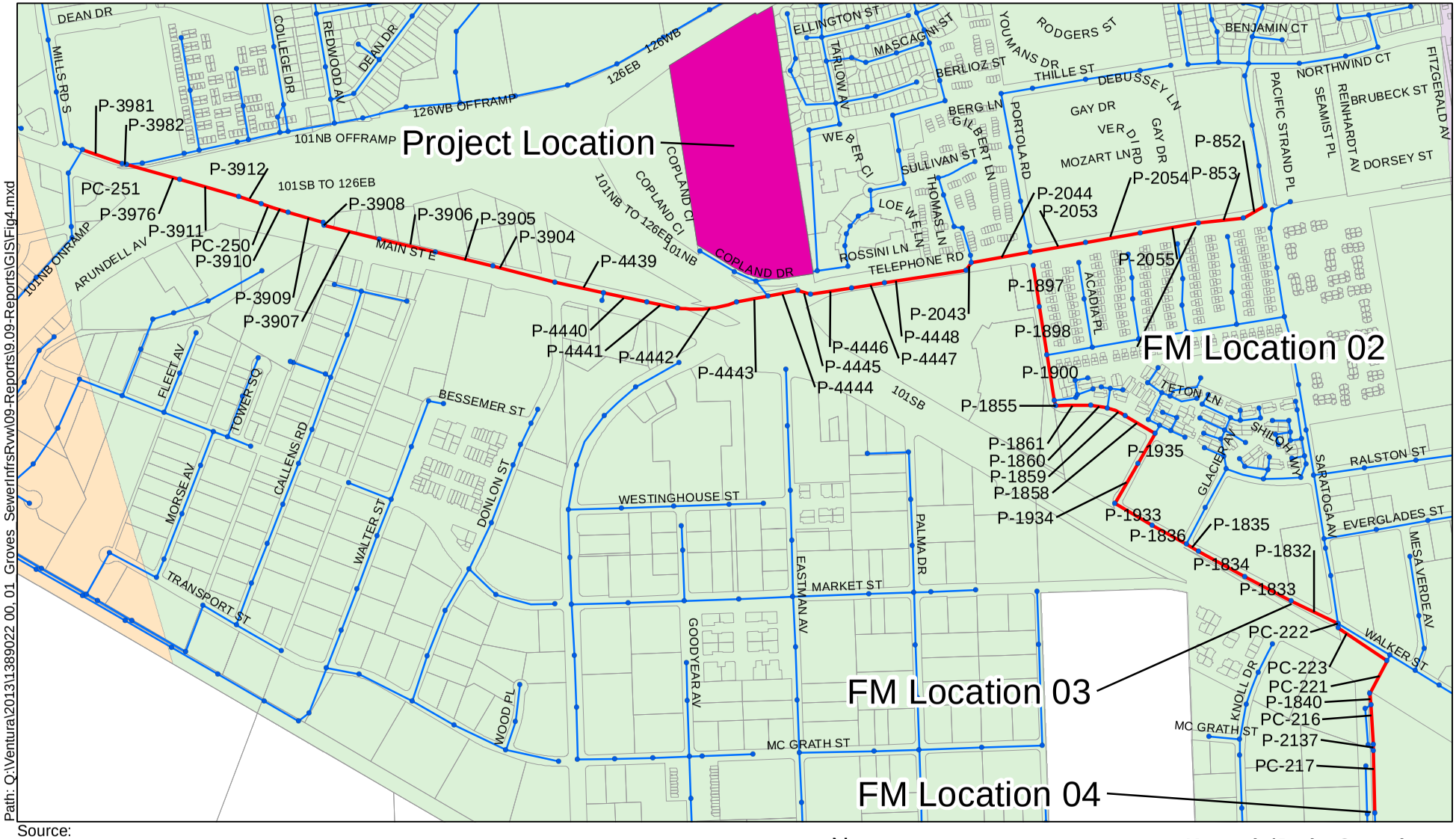


Figure 3 - Recalibrated System with Redirection Incorporated - PWWF





Source:

Legend

- Project Location
- Manholes
- Flow Path for The Groves Project
- Lift Stations
- Gravity Sewer/Force Main

N

0 2,000

Scale: Feet

Kennedy/Jenks Consultants

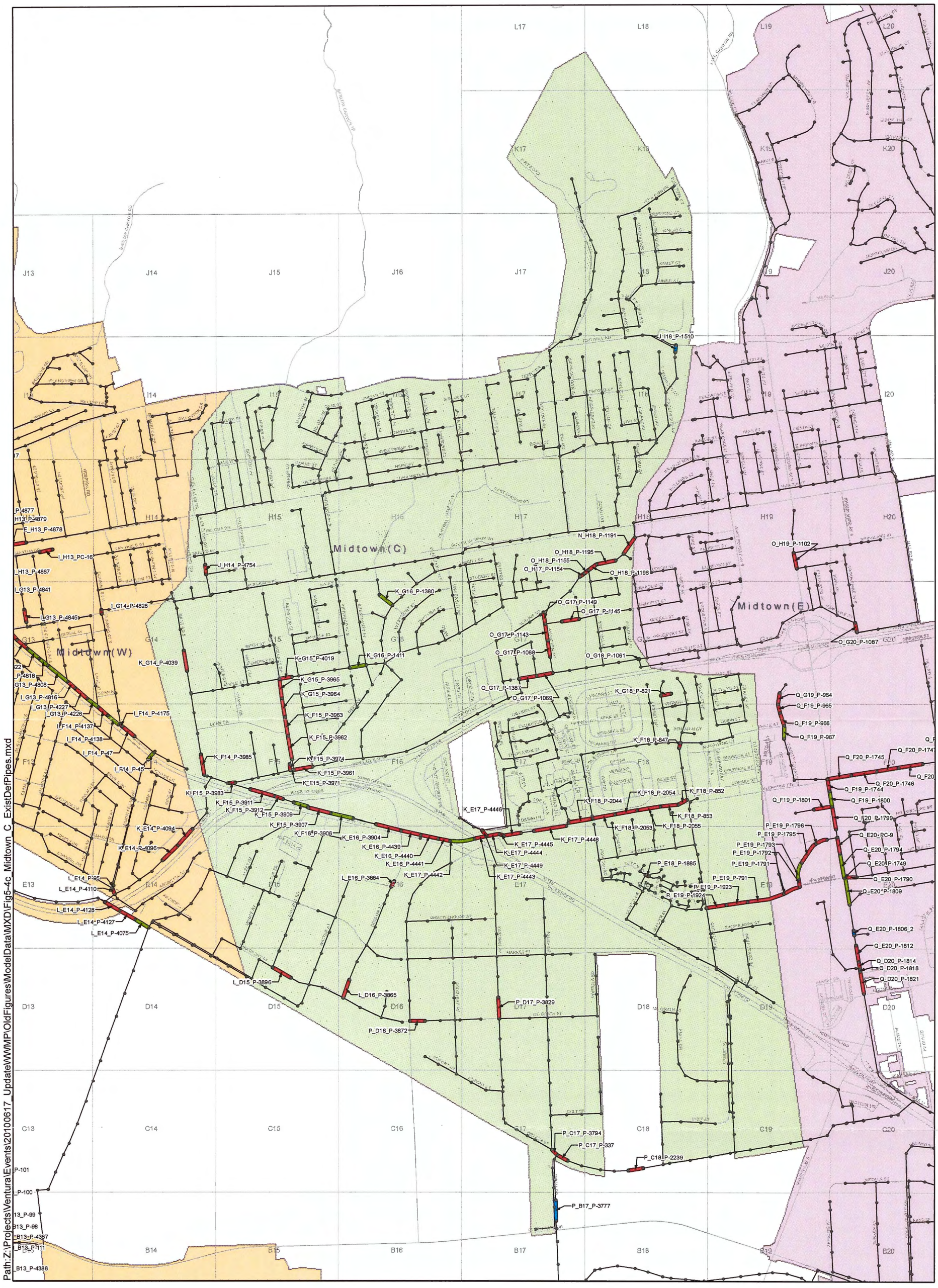
City of San Buenaventura
Ventura, California

Pipeline IDs Along Upper Wastewater Flow Path Downstream from The Groves Project

K/J 1389022*01
June 2015

Figure 4

Path: Q:\Ventura\2013\1389022 00, 01 Groves SewerInfrsRvw\09-Reports\9.09-Reports\GIS\Fig4.mxd



Legend

- Manholes
- Street
- Atlas Sheet
- Gravity Sewer
- Existing Average Dry System Deficiencies
- Existing Peak Dry System Deficiencies
- Existing Peak Wet System Deficiencies

N

0 750 1,500

Scale: Feet

Kennedy/Jenks Consultants

City of San Buenaventura
San Buenaventura, California

Existing System Deficient Pipelines
Midtown (Center)

K/J 1089015*00
August 2010

Figure 5-4c

JENSEN DESIGN & SURVEY, INC

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www.jdscivil.com

BRO03.3714
July 31, 2013

City of San Buenaventura
Shaida Baharloo, PE
501 Poli Street
Ventura, CA 93002

Subject: Broome - "The Grove Specific Plan" Sewer Monitoring

Shaida:

Enclosed with this letter are copies of the recent sewer video work performed by Downstream Services, Inc.,(DSI) at the city's request. The work was requested by the city due to discrepancies in flow depth between the previous monitoring results and flow depths measured by the city. These occurred in the manhole located in Main Street, across from Target.

We have reviewed the video and concur with observations originally provided by Downstream Services, Inc. in 2011 stating that there is localized blockage in the pipe, upstream of the subject manhole. You can observe in the video a consistent shallow flow depth occurs between the two manholes until just before entering the downstream one.

We understand from the contractor that they had requested the line to be cleaned prior to the work being performed. They had also requested that city personnel be onsite with a plug so that the full nature of the blockage could be determined. As neither request was addressed, the nature of the blockage could not be determined due to it being submerged. An email sent on July 11, 2013 to the city from DSI is attached describing the situation.

The flow depths observed in the two runs of sewer line appear to have consistent and shallow depths. Besides the blockage in question, it appears that there may be two other areas with bellies in the pipe, causing the depth of flow to increase. This additional video work has been done at City request, and results are very similar to the original monitoring effort in 2011 that our client paid for; but was not reviewed by the City until this year.

Based on the provided video results, we feel that the original flow data is adequate for the required sewer study to be performed by Kennedy-Jenks.

Please contact the undersigned if you have any questions.

Sincerely,
Jensen Design & Survey, Inc.

Frederick T. Giroux, PE
Engineering Manager

cc: Kioren Moss, Joe Chrisman
Groves, LLC – John Broome

Rick Giroux

From: Roberts, Wilma <WilmaR@downstreamservices.com>
Sent: Thursday, July 11, 2013 4:00 PM
To: Rob Talmadge
Cc: kdmven@earthlink.net; jchrisman@hathawaylawfirm.com; john@broomeranches.com; Iain Holt; Rick Giroux; Carr, Kim; Roberts, Victor
Subject: RE: Broom Sewer Study
Attachments: TC Plan.pdf

Hi Rob,

Crews performed the CCTV Inspection yesterday and were met by a City crew on site. Our crew started at the upstream manhole and moved toward MH 1. City re-numbered this MH 2 on the video. (See attached map) The video we are sending you shows an obstruction partially under the flow at 378 Ft. You will see that the camera is attempting to climb over it and then continues on for a few more feet. You will also notice the fast moving flow and the increase in depth as we near the obstruction. (Our camera was raised half way thru the segment)

In order to get a clear view of the obstruction we had instructed the City (Mr. Ralph Casillas) to clean the line and block the flow by plugging the upstream manhole.
We gave the City advance notice (one week) for this as well as to prepare the site for our arrival with traffic control.
The DSI truck arrived on time (2:45 AM) and traffic control and the proper "no park" signs had not been set up. When City personnel arrived they said that the line had been cleaned the day before, but they had not been instructed to bring a plug for the line or provide traffic control per the required plan.

We spent some time planning for this work and obtained traffic control plans and permits per the City's requirements.
Plugging the flow from the area to be CCTV-ed would have provided you with a clear view of the obstruction.
It is our hope that the additional commentary provided on the video by our CCTV operator will be sufficient for your needs. If necessary, we can provide you with a proposal to clean the line and remove the obstruction.

The video disc and report (2 sets) is being sent to you via UPS overnight and we will send the invoice separately to you at Jensen Design.
P.S. A copy of the video was handed to the City crew per their request.

Please call if you have any questions.

Best regards,

WILMA ROBERTS
PRESIDENT
DOWNSTREAM SERVICES, INC.
2855 PROGRESS PLACE
ESCONDIDO, CA 92029
760-746-2544 x.101

DownStream Services, Inc.

Please view our variety of pipeline services on our website
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Irvine, CA 92618-2027
949.472.3505
949.472.8373 Fax
www.rbf.com
www.mbakercorp.com

MEMORANDUM

To: The Groves, LLC **JN:** 133749

From: Kevin Gustorf, P.E., RBF Consulting
Sam Valdez, P.E., RBF Consulting

Date: July 11, 2013

Subject: Water System Hydraulic Evaluation and Supply Discussion for The Grove Specific Plan (Vesting Tentative Tract No. 5626) in the City of Ventura

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Introduction

The Groves, LLC is proposing to construct a new residential/commercial development in the City of San Buenaventura (City, or Ventura) referred to as "The Grove Specific Plan" (Project, or The Grove). The Project site is located north of Telephone Road, east of Highway 101, and south of Highway 126, and will consist of 59 single-family homes, up to 191 townhouse/apartment units, up to 4,000 square feet of retail/office space, a 1,000 square foot clubhouse, and 4.92 acres of parks/trails constructed on a 25.37 acre parcel. See Attachment 1 for the Project Concept Site Plan. The Project is proposed to be served from the City's domestic water distribution system and is expected to generate additional water usage, which will have an impact on the City's water system. The purpose of this analysis is to quantify the expected addition of water demand for the Project and utilize the City's existing hydraulic model to determine if the City's existing distribution system can accommodate the proposed Project while meeting the requirements of the water system criteria established in the City's 2011 Water Master Plan (WMP). This analysis will also briefly discuss the City's existing water supply.

Background

As part of the City's 2011 WMP, RBF Consulting prepared a calibrated hydraulic model for the City's domestic water distribution system. The existing water demands were allocated to the model based on the water consumption data for the calendar years 2004 and 2005. The Project parcel was vacant at the time of the preparation of the 2011 WMP. While it is apparent that the parcel has been used at some point as a nursery, it is understood from discussions with City staff that the nursery is/was not directly using water from the City's system; therefore, it is

DRAFT

assumed that there are currently no water demands associated with this parcel for the purpose of this analysis (See Attachment 3 for Project email correspondence). Any new water demand introduced as part of the Project will be treated as a direct addition to the City's existing water demands. The proposed Project will be served from the City's 330 Pressure Zone.

In addition, the City maintains a database of projects, known as "Pending Projects" that are in various phases of the planning process. The database includes all projects from those that are in construction to those that are in the conceptual phase, which includes The Grove, identified as Project "PROJ-00723". All Pending Projects as identified by the City as of December 31, 2012 have been incorporated into this hydraulic model analysis.

The City completed a Comprehensive Water Resources Report (CWRR), which was accepted by City Council on June 10, 2013. The CWRR accounts for only those Projects that are either "Under Construction" or have "All Planning Approvals". The CWRR will be updated on annual basis to reflect the changes to the existing land use and water demand, as well as future development and related water demand requirements.

The current baseline water demand and predicted future water demand, which includes only the Under Construction and Approved Projects as of December 31, 2012, as stated in the CWRR are as follows:

- Total Current Baseline Water Demand = 17,601 acre-feet/year
- Total Predicted Future Water Demand = 18,643 acre-feet/year

Demand Estimates

As previously stated, it is assumed that the parcel for the proposed Project is currently vacant and does not currently have any water usage from the City's water system. The expected addition of water demand for the Project will be a result of the construction of 59 single-family homes, up to 191 townhouse/apartment units, up to 4,000 square feet of retail/office space, a 1,000 square foot clubhouse, and 4.92 acres of parks/trails. The demand estimates for the Project were calculated using the water demand factors from the CWRR.

Water demand factors allow for the estimation of water demands for new developments based the land use type, number of dwelling units (DU), and building square footage. Water demand factors also account for water loss and are generally considered to be conservative. These factors, taken directly from the CWRR, are listed in Table 1. It should be noted that these factors correspond to average day demand.

Table 1: Water Demand Factors[1]

	Water Demand Factor Classification	Water Demand Factor
Residential	Residential (0-8 du/ac)	370 gpd/du
	Residential (9-20 du/ac)	250 gpd/du
	Residential (21+ du/ac)	250 gpd/du
Non-Residential	Commercial/Retail/Industrial/Hotel Public/Institutional	265 gpd/ksf
	Hospital/Assisted Living	545 gpd/bed
	Park/Landscape/Irrigation	2,000 gpd/acre

[1] Source: Table 3-3 of the June 10, 2013 Comprehensive Water Resources Report, prepared by RBF Consulting

The residential portion of the project demands consist of the single family use and townhouse/apartment use, which were classified in the "Residential (9-20 du/ac)" and Residential (21+ du/ac) land use categories respectively, both with water demand planning factors of 250 gallons per day per dwelling unit (gpd/DU). Multiplying the water demand planning factors by the total number of dwelling units results in a total residential average day demand of 43.40 gpm, or 70.01 acre-feet per year (AFY). This calculation is illustrated in Table 2.

Table 2: Estimated Average Day Residential Water Demand

Area (Ac)	Unit Type	No. Units	Density (DU/ac)	Water Demand Factor Classification	Demand Factor (gpd/DU)	Avg Day Demand (gpd)	Avg Day Demand (gpm)	Avg Day Demand (AFY)
5.44	Single Family	59	10.8	Residential (9-20 du/ac)	250	14,750	10.24	16.52
7.80	Townhouse/Apartment	191	24.5	Residential (21+ du/ac)	250	47,750	33.16	53.49
					Totals	**62,500**	**43.40**	**70.01**

The non-residential portion of the project demands consist of the retail/office use and clubhouse, which were classified in the "Commercial/Retail/Industrial/Hotel" land use category, and the parks/trails, which were classified in the "Parks/Landscape/Irrigation" land use category, with water demand planning factors of 265 gallons per day per thousand square feet (gpd/ksf)

and 2,000 gallons per day per acre (gpd/ac), respectively. Multiplying the water demand planning factors by the total retail/office, clubhouse, and parks/trails area results in a total non-residential average day demand of 7.75 gpm, or 12.51 acre-feet per year. This calculation is illustrated in Table 3.

Table 3: Estimated Average Day Non-residential Water Demand

Land Use Type	Water Demand Factor Classification	Quantity	Unit	Demand Factor	Unit	Avg Day Demand (gpd)	Avg Day Demand (gpm)	Avg Day Demand (AFY)
Retail/Office	Commercial/Retail/Industrial/Hotel	4,000	SF	265	gpd/ksf	1,060	0.74	1.19
Clubhouse	Commercial/Retail/Industrial/Hotel	1,000	SF	265	gpd/ksf	265	0.18	0.30
Parks/Trails	Park/Landscape/Irrigation	4.92	ac	2,000	gpd/ac	9,840	6.83	11.02
					Totals	**11,165**	**7.75**	**12.51**

Water demand peaking factors were then applied to the total average day demand of 51.16 gpm to translate this value to a maximum day demand and peak hour demand, which are considered the critical demand conditions for this hydraulic analysis. Maximum day demand represents the highest demand day of the year, while the peak hour demand represents the hour of highest demand during a maximum day demand based on the demand diurnal patterns, which represent demand variations throughout the day. Based on the peaking factors from the 2011 WMP of 1.52 for maximum day demand and 3.97 for peak hour demand, demand totals of 77.76 gpm and 203.09 gpm have been calculated for maximum day and peak hour demand, respectively. It should be noted that the peak hour condition is simulated in the hydraulic model over an extended period simulation (EPS) during a maximum day, and may not match the calculated peak hour values exactly. It should also be noted that the peak demand period for the entire City system, 330 Zone, or The Grove, may not correspond to the same time during the day. See Table 4 for a summary of the separate demand conditions.

Table 4: Demand Summary Based on Water Demand Planning Factors[1]

Demand Condition	Peaking Factor	Demand (gpm)	Demand (AFY)
Average Day	N/A	51.16	82.52
Maximum Day	1.52 x Average Day	77.76	125.43
Peak Hour[2]	3.97 x Average Day	203.09	327.61

[1] Adapted Table III-2 from the City of San Buenaventura Water Master Plan, March 2011, prepared by RBF Consulting

[2] Note: Actual demand under EPS simulation may vary slightly due to diurnal patterns.

Fire Flow Requirements

The City's domestic water distribution system must be capable of providing the maximum day demand plus the required fire flow for The Grove. Since all residential units will have a fire sprinkler system, the required fire flow would be a combination of flow for the sprinkler system and flow at the adjacent hydrant(s); however, since the required fire sprinkler demands were unknown at the time of the this evaluation, the required fire flow utilized for the purpose of this analysis assumes a non-sprinklered building. The information of the largest structure, which is one of the apartment complexes, is listed in Table 5.

Table 5: Building Information

Construction Type	Type V-B
Largest Individual Total Building Floor Area (ft^2)	36,000
Sprinklered?	Yes [1]

[1] Since sprinkler demands are unknown at this time, the building is assumed to not be sprinklered for the purposes of this analysis.

With a building construction of Type V-B and fire flow calculation area of 36,000 square feet, Appendix B of the 2010 California Fire Code (CFC) requires a flow of 5,000 gpm with duration of four (4) hours at a residual pressure of 20 psi. The fire flow requirements are summarized in Table 6. It should be noted that the provision of an approved fire sprinkler system may allow for a reduction in total fire flow required.

Table 6: Fire Flow Requirements[1]

Hydrant Flow (gpm)[2]	5,000
Duration (hours)	4
Residual Pressure (psi)	20

[1] Per Appendix B of the 2010 California Fire Code
[2] For a non-sprinklered building.

It should be noted that fire sprinkler system pressure requirements for the on-site private system were not included as part of this analysis. Reported pressure results correspond to the City's system pressures upstream of any meters and/or backflow prevention devices.

Hydraulic Model Evaluation

The City's existing hydraulic model has been used for this hydraulic model evaluation, which examines the impacts to the City's system that would be caused by the additional demand from The Grove project. The City's existing system has been evaluated under maximum day demand 24-hour duration extended period simulations (EPS), which simulates a variation in demand up to the peak hour demand (PHD), and has also been evaluated under a fire flow scenario occurring over the peak hour demand. The evaluation criteria, evaluation procedure, and hydraulic model results are discussed in the following sections.

Evaluation Criteria

The criteria used for this evaluation are per the City's 2011 WMP and are summarized herein.

Recommended Service Pressures (psi)

Minimum	40
Maximum	150
Fire Flow	20

Notes:

1. Service pressures above 80 psi require a pressure regulator as stated in the Uniform Plumbing Code.
2. Services pressures above 150 psi require special approval and either individual pressure regulators or a regulating station on the main line.

Pipeline Velocity Criteria (fps)

Peak Hour Demand [1]	10
Maximum Day Demand plus Fire Flow	15
Minimum	1

[1] With a maximum friction loss of 10 ft/1,000 ft.

Water Demand Peaking Factors

Demand Condition	Peaking Factor
Maximum Day	1.52 x Average Day
Peak Hour [1]	3.97 x Average Day

[1] Actual peak hour factors for individual nodes are per the assigned diurnal in the hydraulic model.

Hydraulic Model Analysis

The Grove project is located at the northern end of the 330 Zone, which serves the southern-central areas of the City's distribution system. The current water supply sources for the 330 Zone include the following:

- 330 Booster Pump Station
- Golf Course Booster Pump Station
- Petit PRV (Emergency)
- Telegraph and Mills Upper PRV (Emergency)

Supply is taken from the 330 Zone by the following facilities:

- Mariano Booster Pump Station
- Bailey Booster Pump Station
- Main and Mills PRV (Emergency)
- Palma PRV

Storage for the 330 Zone is provided by the following water storage tanks:

- Bailey Reservoir

The Project water utility plan (See Attachment 2) indicates that the Project will receive water service from two connection points: one to the existing 12-inch waterline in Thille Street, and one to the existing 12-inch waterline in Telephone Road. In order to make these connections, it will be necessary to extend the existing City waterlines to the Project parcel. This was accomplished in the model by adding three junctions (J2342, J2340, and J2338) and three pipes (L6473, L6469, and L6471). The model junctions J2342 and J2340 were used to simulate the proposed Project demand. The demand variation at these junctions is based on the "PATN33" diurnal pattern, which is used throughout the model. This diurnal pattern is based on actual meter data from a master meter for a large residential apartment complex performed as part of the 2011 WMP. This diurnal pattern has two peaks, one occurring in the morning at 7:00 AM, and a second peak later in the evening at 7:00 PM, and is expected to be an accurate representation of demand fluctuations for The Grove. See Attachment 4 for the assigned diurnal pattern. For the purpose of the fire flow analysis, the required fire flow was split equally between junctions J2342 and J2340.

The City's existing hydraulic model has been used to run an EPS under maximum day demand, which includes peak hour demand, under existing conditions to establish a baseline set of system pressures and internal pipeline velocities for the 330 Zone. These baseline results have

been compared to the post-Project results to determine the sensitivity of the City's system to changes in demand at the location of the Project. Subsequent EPS simulations were run under maximum day demand with The Grove and maximum day demand with The Grove plus the required fire flow of 5,000 gpm for a duration of 4 hours from 6:00 AM to 10:00 AM with the system wide peak hour demand occurring at 7:00 AM. An additional set of scenarios have been evaluated that includes all Pending Projects to determine if any deficiencies will be ultimately created at buildout of the currently identified Pending Projects (as of December 31, 2012). A summary of the model scenarios is listed in Table 7.

Table 7: Model Scenario Summary

Scenario No.	Description
1	Existing MDD
2	Existing MDD + The Grove MDD
3	Existing MDD + The Grove MDD + Fire Flow @ The Grove
4	Existing MDD + All Pending Projects (12/31/12) MDD
5	Existing MDD + All Pending Projects MDD + Fire Flow @ The Grove

MDD = Maximum Day Demand

Tables 8 and 9 include model results for elements at or immediately adjacent to The Grove as well as any elements within the 330 Zone identified as critical based on evaluation criteria. See Attachment 5 for an exhibit showing the locations and IDs of the nodes and pipes adjacent to the Project.

Table 8: Hydraulic Model Results - Junctions

Node	Pressure Zone	Elev (ft)	Static Press (psi)	Ex MDD		Ex MDD + The Grove		Ex MDD + The Grove + Fire Flow		Ex MDD + All Pending Projects		Ex MDD + All Pending Projects + Fire Flow	
				Min Pressure (psi)	Min Head (ft)	Min Pressure (psi)	Min Head (ft)	Min Pressure (psi)	Min Head (ft)	Min Pressure (psi)	Min Head (ft)	Min Pressure (psi)	Min Head (ft)
LOCAL JUNCTIONS													
J2338	330	150.19	77.8	67.9	307	66.9	305	49.6	265	66.1	303	45.6	255
J2340	330	150.19	77.8	67.9	307	66.9	305	48.7	262	66.1	303	44.6	253
J2342	330	169.69	69.4	62.6	314	61.7	312	42.0	267	60.2	309	38.8	259
J4829	330	142.00	81.4	70.2	304	69.4	302	53.6	266	68.8	301	49.4	256
J4947	330	147.51	79.0	68.7	306	67.7	304	50.9	265	67.0	302	46.8	256
J4949	330	168.57	69.9	62.9	314	62.2	312	47.7	279	60.6	308	44.4	271
J4975	330	176.61	66.4	59.6	314	58.8	312	43.6	277	57.2	309	40.4	270
J4977	330	181.11	64.5	57.7	314	56.9	313	41.8	277	55.4	309	38.5	270
J4979	330	177.86	65.9	59.1	314	58.3	312	41.8	274	56.7	309	38.6	267
J4981	330	174.77	67.2	60.4	314	59.6	312	42.9	274	58.0	309	39.7	266
J4983	330	169.69	69.4	62.6	314	61.8	312	43.9	271	60.2	309	40.7	264
J4985	330	170.71	69.0	62.1	314	61.3	312	43.6	271	59.7	309	40.4	264
J4987	330	179.17	65.3	58.5	314	57.7	312	40.3	272	56.1	309	37.1	265
J4989	330	186.45	62.1	55.3	314	54.5	312	37.4	273	52.9	309	34.2	265
J4991	330	183.34	63.5	56.7	314	55.9	312	39.0	273	54.3	309	35.7	266
J5015	330	188.92	61.1	54.3	314	53.4	312	36.3	273	51.9	309	33.0	265
J5017	330	170.77	68.9	62.1	314	61.3	312	45.1	275	59.7	309	41.9	267
330 ZONE CRITICAL JUNCTIONS													
J5235	330	219.62	47.8	42.1	317	41.6	316	32.1	294	40.0	312	29.3	287
J5301	330	228.68	43.9	37.1	314	36.9	314	32.3	303	33.4	306	29.4	297
J5303	330	241.67	38.2	31.6	314	31.3	314	26.8	303	27.9	306	23.9	297
J5305	330	225.89	45.1	38.6	315	38.3	314	33.9	304	35.1	307	31.1	298
J5377	330	221.30	47.1	42.1	318	41.8	318	37.9	309	39.4	312	35.6	303
J5379	330	219.92	47.7	42.7	318	42.4	318	38.5	309	40.0	312	36.2	303
J5405	330	234.16	41.5	36.3	318	36.1	317	32.1	308	33.4	311	29.8	303
J5407	330	238.36	39.7	33.7	316	33.5	316	29.2	306	30.4	309	26.6	300
J5409	330	221.13	47.1	42.0	318	41.7	317	37.7	308	39.2	312	35.4	303
J5411	330	222.61	46.5	41.3	318	41.1	317	37.1	308	38.5	312	34.8	303
J5415	330	219.89	47.7	42.5	318	42.2	317	38.2	308	39.7	311	35.9	303

Note: Shaded cells indicate elements that did not meet the evaluation criteria.

Table 9: Hydraulic Model Results – Pipes

ID	Diameter (in)	Length (ft)	Ex MDD		Ex MDD + The Grove		Ex MDD + The Grove + Fire Flow		Ex MDD + All Pending Projects		Ex MDD + All Pending Projects + Fire Flow	
			Max Flow (gpm)	Max Velocity (fps)	Max Flow (gpm)	Max Velocity (fps)	Max Flow (gpm)	Max Velocity (fps)	Max Flow (gpm)	Max Velocity (fps)	Max Flow (gpm)	Max Velocity (fps)
LOCAL PIPES												
L6056	12	444	1,308	3.7	1,211	3.4	1,023	2.9	1,091	3.1	986	2.8
L6058	12	216	1,364	3.9	1,266	3.6	1,047	3.0	1,123	3.2	1,010	2.9
L6084	12	677	359	1.0	339	1.0	889	2.5	329	0.9	823	2.3
L6086	12	414	438	1.2	459	1.3	360	1.0	450	1.3	421	1.2
L6088	12	389	372	1.1	441	1.3	1,867	5.3	435	1.2	1,872	5.3
L6090	12	353	212	0.6	239	0.7	852	2.4	235	0.7	857	2.4
L6092	12	351	48	0.1	164	0.5	1,851	5.3	165	0.5	1,850	5.3
L6094	12	140	39	0.1	28	0.1	825	2.3	28	0.1	825	2.3
L6096	12	441	34	0.1	58	0.2	871	2.5	57	0.2	872	2.5
L6098	12	642	45	0.1	72	0.2	627	1.8	72	0.2	628	1.8
L6100	12	188	134	0.4	175	0.5	989	2.8	174	0.5	990	2.8
L6102	12	423	156	0.4	197	0.6	1,011	2.9	196	0.6	1,011	2.9
L6126	10	780	16	0.1	30	0.1	288	1.2	29	0.1	289	1.2
L6128	10	247	31	0.1	44	0.2	303	1.2	44	0.2	303	1.2
L6130	12	446	146	0.4	112	0.3	1,016	2.9	108	0.3	1,011	2.9
L6134	12	733	92	0.3	92	0.3	1,165	3.3	97	0.3	1,160	3.3
L6469	12	1,478	1,364	3.9	1,422	4.0	2,004	5.7	1,246	3.5	2,132	6.1
L6471	12	170	0	0.0	157	0.4	2,657	7.5	157	0.4	2,657	7.5
L6473	12	328	0	0.0	157	0.4	2,657	7.5	157	0.4	2,657	7.5
330 ZONE CRITICAL PIPES												
L9740	12	9	3,829	10.9	3,889	11.0	4,745	13.5	4,223	12.0	5,037	14.3
L9744	12	10	3,829	10.9	3,889	11.0	4,745	13.5	4,223	12.0	5,037	14.3
L9746	12	10	4,648	13.2	4,718	13.4	5,713	16.2	5,135	14.6	6,173	17.5
L9748	12	10	5,119	14.5	5,206	14.8	6,457	18.3	5,699	16.2	6,911	19.6
L9964	6	7	1,030	11.7	1,029	11.7	1,028	11.7	1,028	11.7	1,025	11.6
L9966	6	13	1,030	11.7	1,029	11.7	1,028	11.7	1,028	11.7	1,025	11.6

Note: Shaded cells indicate elements that did not meet the evaluation criteria.

Based on the hydraulic model results, all pressures were found to be acceptable within the immediate Project area under all of the evaluated scenarios. Pressures below the minimum criteria were identified among a series of eleven junctions (model IDs J5235, J5301, J5303, J5305, J5377, J5379, J5405, J5407, J5409, J5411, and J5415) located at the north-central area of the 330 Zone at the pressure zone boundary at Walcott Avenue and near the intersection of Telephone Road and Johnson Drive. The addition of the Project demands did not create any new pressure deficiencies, although existing deficiencies were slightly worsened. These junctions are located at relatively high elevations for the 330 Zone, which is evident from their static pressures that range from approximately 38 to 48 psi. Five of these junctions (model IDs J5301, J5303, J5305, J5405, and J5407) were identified as already being deficient under existing conditions; however, the remaining six (model IDs J5235, J5377, J5379, J5409, J5411, and J5415) will eventually become deficient after all Pending Projects are built. Under the fire flow scenario, all 330 Zone service pressures remained above the required 20 psi. Overall, the additional Project decreased 330 Zone pressures a maximum of 0.6 psi and decreased local pressures by a max of 1.1 psi. With all Pending Projects in place, the local pressures decreased a maximum of approximately 2.4 psi.

Based on the hydraulic model results, all pipeline internal velocities were found to be acceptable within the immediate Project area under all of the evaluated scenarios, with a maximum velocity of approximately 8 feet per second under fire flow conditions. The Grove is served off of a 12-inch looped system within the 330 Zone. Overall the additional demand had a minor impact on pipe velocities, increasing by a maximum of 0.4 feet per second, and did not create any new deficiencies, although existing deficiencies were slightly worsened. With all Pending Projects in place, the velocities increase by a maximum of approximately 1.7 feet per second. All six pipes that were identified as deficient are located at the suction sides of the Mariano Booster Pump Station and Bailey Pump Station. Velocities at or directly adjacent to pump stations are typically higher than normal system velocities, and are not expected to be a concern.

The additional demand of the Project will also require a nominal increase in regulatory reservoir storage equal to 175 percent of the maximum day demand. This equates to an increase in required storage in the 330 Zone of 195,960 gallons.

Known Hydraulic Issues in the 330 Zone

The hydraulic calculations and analyses performed as part of the 2011 WMP had previously identified the eleven low pressure junctions that were identified as deficient under this analysis. Potential solutions were evaluated for these areas in the 2011 WMP; however, it was determined that shifting the zone boundary between the 330 and 430 Zones was not practical

due to the limited nature of the deficiencies. No recommendations were made regarding these locations in the 2011 WMP.

The 330 Zone reservoir storage was determined to be deficient by 4.11 MG in the existing condition in the 2011 WMP. It was also determined that pump capacity is not available to utilize excess storage of the 210 Zone. It was recommended to proceed with two Capital Improvement Projects to develop two new groundwater wells with back-up power to mitigate the 330 Zone reservoir storage deficiency.

Additional Hydraulic Considerations

This hydraulic evaluation examines the impacts of The Grove specifically on the City's domestic water distribution system; however, the on-site system (anything including or downstream of a meter and/or backflow prevention device, if provided) has been specifically excluded from this evaluation. It should be understood that the pressures reported in this analysis be taken as the pressure in the City's system at ground elevation. Additional headlosses through backflow prevention devices (typically around 10 pounds per square inch (psi), although this value will vary based on the make, size, and flow of the backflow preventer) and on-site piping must be taken into account by others. The water pressure will also decrease for each building story at an amount of roughly 5.2 psi per story (assuming 12 feet per floor). RBF Consulting does not assume responsibility for any private on-site piping.

Hydraulic Evaluation Conclusion and Recommendations

The proposed Grove project consists of 59 single-family homes, up to 191 townhouse/apartment units, up to 4,000 square feet of retail/office, a 1,000 square foot clubhouse, and 4.92 acres of parks/trails, which is expected to produce an average day demand of 51.16 gpm, maximum day demand of 77.76 gpm, and peak hour demand of 203.09 gpm. While the Project was evaluated with a fire flow of 5,000 gpm for a non-sprinklered building since the fire sprinkler system demand was not available, it is understood that all residential units will be equipped with fire sprinkler systems, which may allow for a reduction in fire flow required. Ultimately, the fire flow requirement is subject to the approval of the local fire authority.

Hydraulic model results indicated that the City's existing domestic water distribution system has available capacity to support the increased water demand of The Grove and is able to meet the required fire flow without introducing any new pressure or pipeline velocity deficiencies under current conditions. There are a few locations within the 330 Zone where the minimum pressure is not met; however, those deficiencies existed prior to the proposed Project, although these deficiencies are expected to slightly worsen. Under the build out of all Pending Projects, six

additional junctions will become deficient. These deficient junctions represent two separate locations at the north-central area of the 330 Zone at the pressure zone boundary at Walcott Avenue and near the intersection of Telephone Road and Johnson Drive.

The hydraulic model results for the 330 Zone as a result of the addition of the proposed Grove project are as follows:

- Local pressures will decrease by a maximum of approximately 1.1 psi during maximum day demand, with all local pressures remaining above 53 psi.
- At Pending Project build out, local pressures are expected to decrease approximately 2.4 psi, with all local pressures remaining above 51 psi.
- Under maximum day demand plus fire flow conditions, all local pressures remained above 36 psi.
- At Pending Project build out under maximum day demand plus fire flow condition, all local pressures remained above 33 psi.
- The current deficient pressures in the 330 Zone will decrease by a maximum of approximately 0.6 psi, although they are expected to ultimately decrease by a maximum of approximately 3.7 psi under maximum day demand at Pending Project build out.
- Local pipeline velocities will increase by a maximum of approximately 0.4 feet per second under maximum day demand conditions.
- At Pending Project build out, local pipeline velocities are expected to increase by a maximum of approximately 0.7 feet per second.
- Local pipeline velocities remain under 7.5 feet per second during a fire flow condition.
- The additional demand of the Project will require an increase in regulatory reservoir storage in the 330 Zone of 195,960 gallons, however current CIP projects for two new wells will help to mitigate this deficiency.

Water Supply Discussion

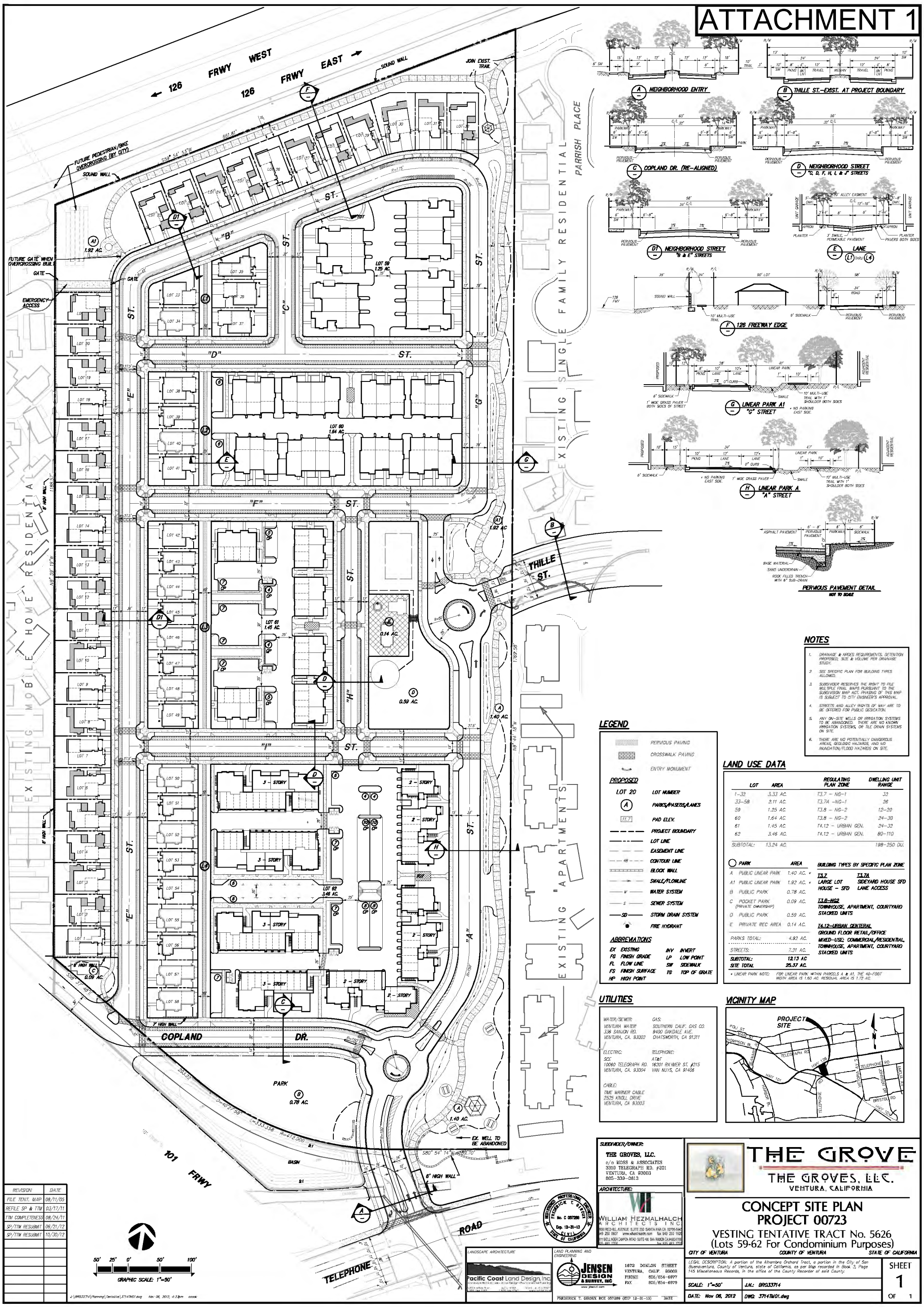
As mentioned previously in the Background section of this memorandum, a CWRR was accepted by City Council on June 10, 2013 (see Attachment 6). The CWRR identifies the City's existing (as of December 31, 2012) baseline water demand as 17,601 AFY and the existing and reliable water supply as 19,600 AFY. The future water supply projections range from 18,173 AFY to 24,590 AFY. The future water demand for all existing land use, under construction and approved projects is projected to be 18,643 AFY. This Project is projected to require an annual water supply of 82.52 AFY to meet the projected water demand requirements.

Attachments:

Attachment 1: The Grove Concept Site Plan
Attachment 2: The Grove Water Utility Plan
Attachment 3: Project email correspondence
Attachment 4: Diurnal Curve
Attachment 5: Model Pipe and Junction IDs
Attachment 6: June 10, 2013 City Council Agenda Item - CWRR

cc: Susan Rungren, P.E., Ventura Water
Shaida Baharloo, P.E., City of Ventura
File

ATTACHMENT 1



NOTES

1. DRAINAGE & NPDES REQUIREMENTS, DETENTION PROPOSED, SIZE & VOLUME PER DRAINAGE STUDY.
2. SEE SPECIFIC PLAN FOR BUILDING TYPES ALLOWED.
3. SUBDIVIDER RESERVES THE RIGHT TO FILE MULTIPLE FINAL MAPS PURSUANT TO THE SUBDIVISION MAP ACT. PHASING OF THIS MAP IS SUBJECT TO CITY ENGINEER'S APPROVAL.
4. STREETS AND ALLEY RIGHTS OF WAY ARE TO BE OFFERED FOR PUBLIC DEDICATION.
5. ANY ON-SITE WELLS OR IRRIGATION SYSTEMS TO BE ABANDONED. THERE ARE NO KNOWN IRRIGATION SYSTEMS, OR TILE DRAIN SYSTEMS ON SITE.
6. THERE ARE NO POTENTIALLY DANGEROUS AREAS, GEOLOGIC HAZARDS, AND NO INUNDATION/FLOOD HAZARDS ON SITE.

LAND USE DATA

LOT	AREA	REGULATING PLAN ZONE	DWELLING UNIT RANGE
1–32	3.33 AC.	T3.7 – NG–1	32
33–58	2.11 AC.	T3.7A –NG–1	26
59	1.25 AC.	T3.8 – NG–2	12–20
60	1.64 AC.	T3.8 – NG–2	24–30
61	1.45 AC.	T4.12 – URBAN GEN.	24–32
62	3.46 AC.	T4.12 – URBAN GEN.	80–110
SUBTOTAL:	13.24 AC.		198–250 DU.

PARK		AREA
A	PUBLIC LINEAR PARK	1.40 AC. *
A1	PUBLIC LINEAR PARK	1.92 AC. *
B	PUBLIC PARK	0.78 AC.
C	POCKET PARK (PRIVATE OWNERSHIP)	0.09 AC.
D	PUBLIC PARK	0.59 AC.
E	PRIVATE REC AREA	0.14 AC.
PARKS TOTAL:		4.92 AC.
STREETS:		7.21 AC.
SUBTOTAL:		12.13 AC
SITE TOTAL		25.37 AC.

* LINEAR PARK NOTE: FOR LINEAR PARK WITHIN PARCELS A & A1, THE 40-FOOT WIDTH AREA IS 1.60 AC. RESIDUAL AREA IS 1.72 AC.

BUILDING TYPES BY SPECIFIC PLAN ZONE

T3.7
LARGE LOT HOUSE – SFD

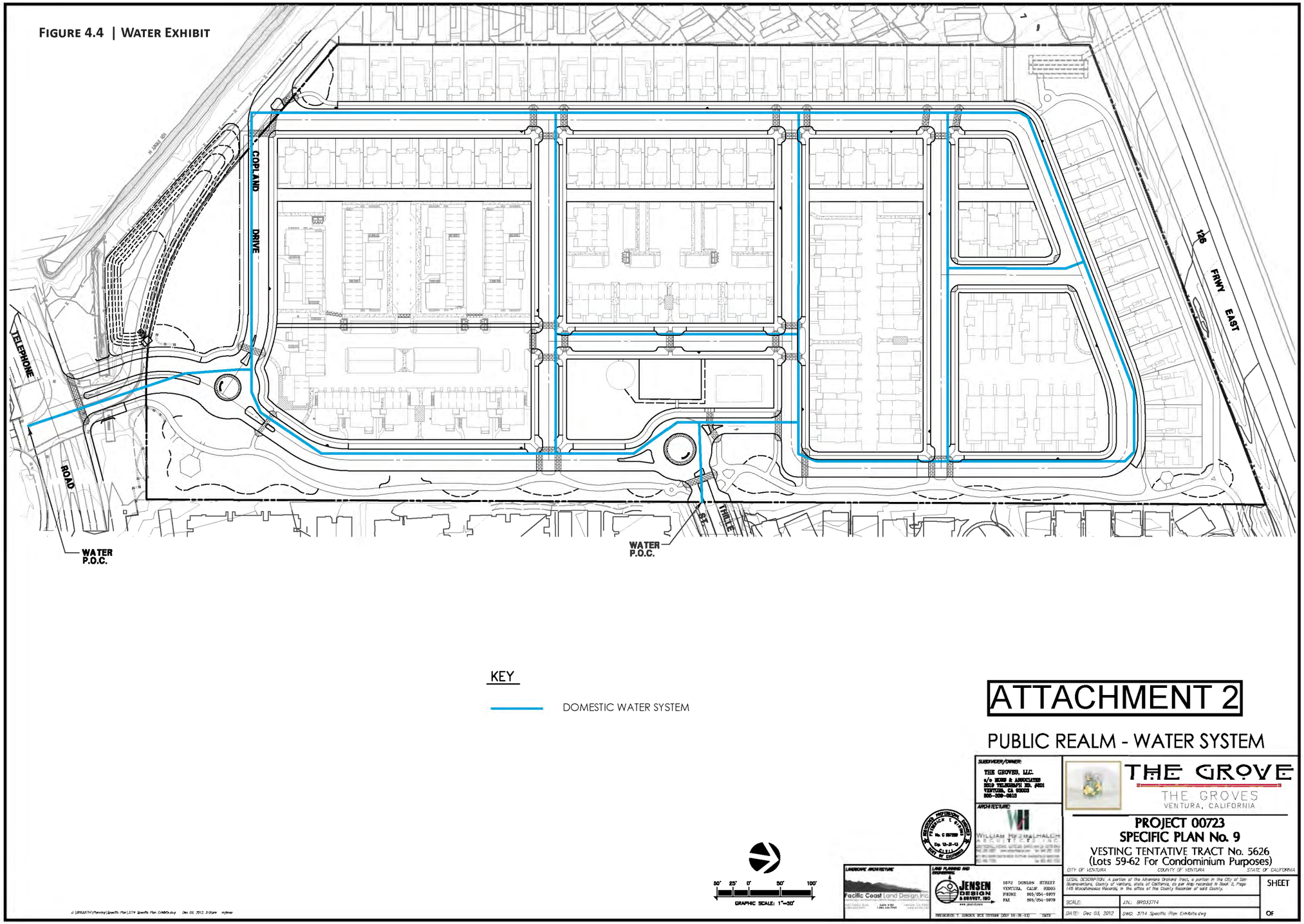
T3.7A
SIDEYARD HOUSE SFD LANE ACCESS

T3.8–NG2
TOWNHOUSE, APARTMENT, COURTYARD STACKED UNITS

T4.12–URBAN GENTERAL
GROUND FLOOR RETAIL/OFFICE
MIXED–USE: COMMERCIAL/RESIDENTIAL, TOWNHOUSE, APARTMENT, COURTYARD STACKED UNITS

REVISION	DATE
FILE TENT. MAP	08/11/05
REFILE SP & TTM	03/17/11
TTM COMPLETENESS	08/24/11
SP/TTM RESUBMIT	06/21/12
SP/TTM RESUBMIT	10/30/12

FIGURE 4.4 | WATER EXHIBIT



Valdez, Sam

From: Gustorf, Kevin
Sent: Friday, May 03, 2013 11:53 AM
To: Valdez, Sam
Subject: RE: Broome Specific Plan

Yes.

From: Valdez, Sam
Sent: Friday, May 03, 2013 11:45 AM
To: Gustorf, Kevin
Subject: RE: Broome Specific Plan

Construction Type V-B? (If uncertain, this is the worst case and the construction type that I will use for the fire flow.)

Sam

From: Gustorf, Kevin
Sent: Friday, May 03, 2013 11:14 AM
To: Valdez, Sam
Subject: FW: Broome Specific Plan

See below.

From: Rob Talmadge [mailto:RobT@JDSCIVIL.COM]
Sent: Friday, May 03, 2013 10:41 AM
To: Gustorf, Kevin
Cc: Rick Giroux
Subject: RE: Broome Specific Plan

That would be one of the apartment buildings, if built as proposed. The building footprint would be 12,000 s.f.; at 3 stories = 36,000 s.f. total. Potentially up to four of these structures in the plan.

Hope that helps

Robert Talmadge, AICP
Associate
Jensen Design & Survey
1672 Donlon Street
Ventura, CA 93003
email: robt@jdscivil.com
jdscivil.com

805 654-6977
805-654-6979 fax

ATTACHMENT 3

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Please consider the environment before printing this e-mail.

From: Gustorf, Kevin [mailto:KGUSTORF@rbf.com]
Sent: Friday, May 03, 2013 10:36 AM
To: Rob Talmadge
Cc: Rick Giroux
Subject: RE: Broome Specific Plan

Rob,

I should have clarified my question. For the townhouses/apartments, I'm assuming that some of the units are joined, but not necessarily all of them (all 229,000 SF). I need to know what is the total square footage of the largest contiguous structure (i.e. an apartment complex, 4-unit townhouse complex, etc.)?

Thanks,
Kevin

From: Rob Talmadge [mailto:RobT@JDSCIVIL.COM]
Sent: Friday, May 03, 2013 10:30 AM
To: Gustorf, Kevin
Cc: Rick Giroux
Subject: RE: Broome Specific Plan

Square footages were noted below.. scroll down below in red

Let me know if anything else needed

thanks

Robert Talmadge, AICP
Associate
Jensen Design & Survey
1672 Donlon Street
Ventura, CA 93003
email: robt@jdscivil.com
jdscivil.com

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Please consider the environment before printing this e-mail.

From: Gustorf, Kevin [mailto:KGUSTORF@rbf.com]
Sent: Friday, May 03, 2013 10:10 AM
To: Rob Talmadge
Cc: Rick Giroux
Subject: RE: Broome Specific Plan

Rob,

Do you know the maximum building square footage for the project?

Thanks,
Kevin

From: Rob Talmadge [mailto:RobT@JDSCIVIL.COM]
Sent: Wednesday, May 01, 2013 8:35 AM
To: Gustorf, Kevin
Cc: Rick Giroux
Subject: RE: Broome Specific Plan

Kevin – The land use data below is correct, and the square footages you asked for are provided next to the types of units as well.

Other info:

The attached page is from the city engineering design standards. It talks about the water MAINS, but not sprinkler flow. I don't know about sprinkler demand. Usually the fire sprinkler consultant handles that.

You could look at some of the manufacturers for their gpm rates… also – here is a contact for sprinkler info:

Jack Collings:
jcollings@collingsandassociates.com

All new residential units constructed have to be sprinklered. See the city of Ventura sprinkler policy and handbook.

http://www.cityofventura.net/files/file/fire/fire_prevention/Automatic%20Fire%20Sprinkler%20Handbook%202011-1.pdf
http://www.cityofventura.net/files/file/fire/fire_prevention/FP-2SprinklerPolicy.pdf

Robert Talmadge, AICP
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email: robt@jdscivil.com
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Please consider the environment before printing this e-mail.

From: Gustorf, Kevin [mailto:KGUSTORF@rbf.com]
Sent: Wednesday, May 01, 2013 8:15 AM
To: Rob Talmadge
Cc: Valdez, Sam
Subject: RE: Broome Specific Plan

Hi Rob,

Can you please confirm the proposed land use information indicated in the email below is still accurate.

Thanks,
Kevin

From: Rob Talmadge [mailto:RobT@JDSCIVIL.COM]
Sent: Friday, December 14, 2012 10:02 AM
To: Gustorf, Kevin; Iain Holt
Cc: kdmven@earthlink.net; john@broomeranches.com; jchrisman@hathawaylawfirm.com
Subject: FW: Broome Specific Plan

Kevin – I presume the information that Iain Holt mentions below was forwarded to you, but also attached is the direct link to the Pending Projects section.

http://maps.cityofventura.net/menu/flex/citymap/index.html?config=config_pending.xml

When the Broome/Grove site is clicked; you'll notice the proposed land use. That particular description on the web site is a little dated, and should be amended as follows for water use purposes:

- 59 Single Family Residences – average 2,000 s.f per building = 118,000 s.f total
- Up to 191 Townhouse/Apartments – average 1,200 s.f. per unit = 229,200 s.f. total
- Up to 4,000 s.f. retail/office use
- Private Rec clubhouse – approx. 1,000 s.f.
- 4.92 acres of parks/trails (we can provide turfed areas if necessary)

ATTACHMENT 3

And if you could have verbiage in your updated proposal that you will include addressing comments from the City after draft submittal, many thanks.

Look forward to seeing your proposal.

Thanks

ROB

Robert Talmadge, AICP
Associate
Jensen Design & Survey
1672 Donlon Street
Ventura, CA 93003
email: robt@jdscivil.com
jdscivil.com

805 654-6977
805-654-6979 fax

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Please consider the environment before printing this e-mail.

From: Holt, Iain [mailto:iholt@ci.ventura.ca.us]
Sent: Thursday, December 13, 2012 3:01 PM
To: Rob Talmadge
Subject: Broome Specific Plan

Rob,

I believe that Kevin at RBF now has the list of projects that will be needed for the water study. If not, I have attached a ppt. slide that shows the pressure zone boundaries. Also the pending projects can be found on the link below.

http://maps.cityofventura.net/menu/index.htm
Go to City Maps at top of page and click on pending projects.

Iain Holt
Senior Planner
Community Development Dept.
City of Ventura
(805) 654-7752 phone
(805) 653-0763 fax

ATTACHMENT 3

Valdez, Sam

From: Gustorf, Kevin
Sent: Thursday, May 02, 2013 10:49 AM
To: Valdez, Sam
Subject: FW: The Grove Project

FYI

From: Baharloo, Shaida [mailto:sbaharloo@ci.ventura.ca.us]
Sent: Thursday, May 02, 2013 10:01 AM
To: Gustorf, Kevin
Cc: Susan Rungren (srungren@venturawater.net)
Subject: Re: The Grove Project

Kevin,
This parcel was outside of the City and agricultural use. There's a well on site that they are conditioned to get rid of. Therefore, there is not connection from them to the City at this point.

Shaida Baharloo, PE , QSD
Civil Engineer
Community Development
& Ventura Water
Phone: (805) 677-3930

From: "Kevin Gustorf" <KGUSTORF@rbf.com>
To: "Susan Rungren (srungren@venturawater.net)" <srungren@venturawater.net>
Cc: "Shaida Baharloo (sbaharloo@ci.ventura.ca.us)" <sbaharloo@ci.ventura.ca.us>
Sent: Thursday, May 2, 2013 9:57:36 AM
Subject: The Grove Project

Susan,

We are preparing a water system study for The Grove project. I would like to confirm if there is/was an existing water connection to the City system for that parcel. Can you help me to identify if there is/was? The Grove parcel APN is **0790240035**.

Thanks,
Kevin

Kevin J. Gustorf, PE
Vice President – Water Resources
RBF Consulting
A Company of Michael Baker Corporation
949.472.3429 (ofc)
949.981.0928 (cell)

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www.rbf.com
www.mbakercorp.com

Creating Value … Delivering Solutions.

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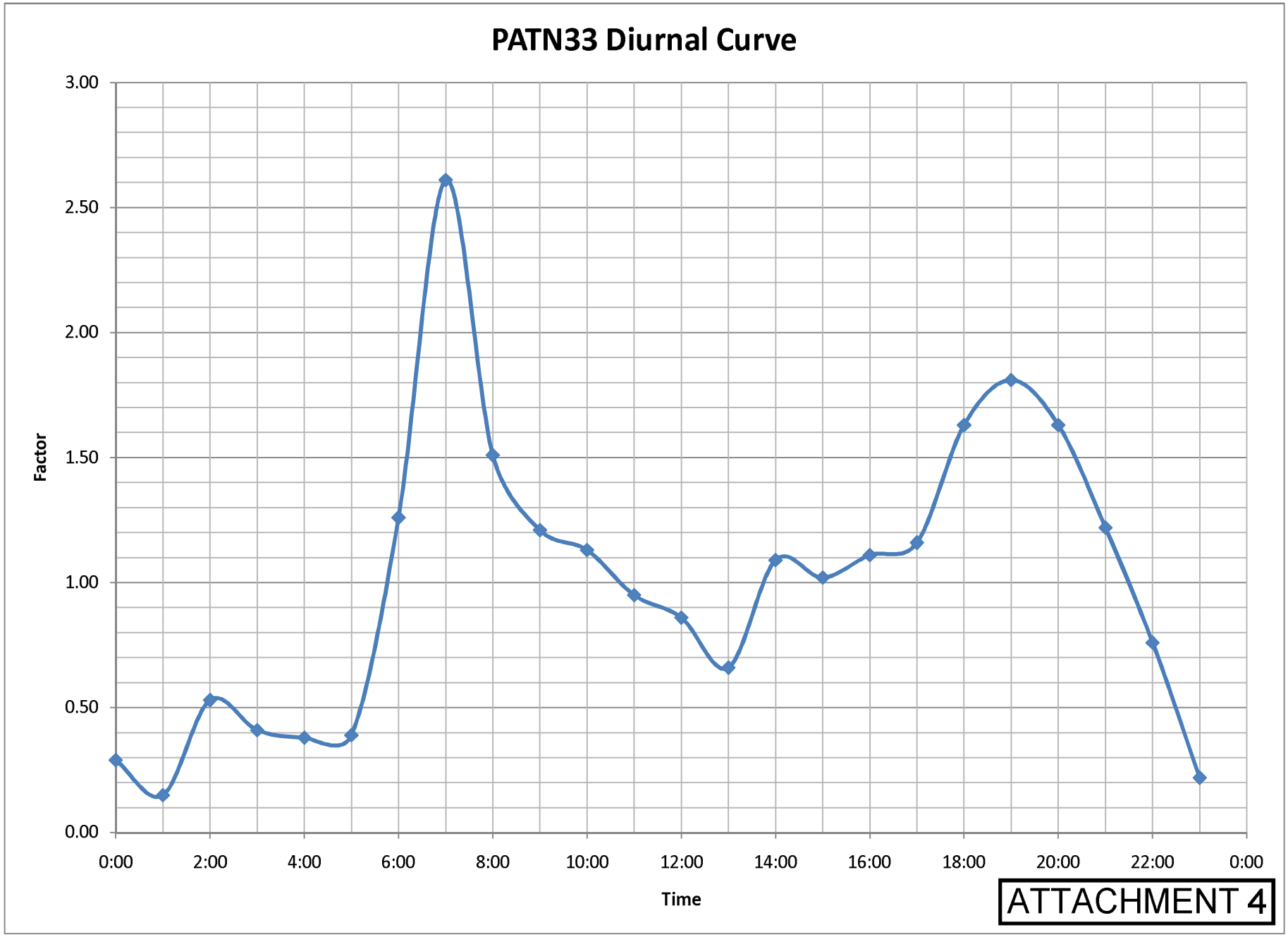
PATN33 Diurnal Curve
3.00
2.50
2.00
1.50
1.00
0.50
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Factor
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4:00
6:00
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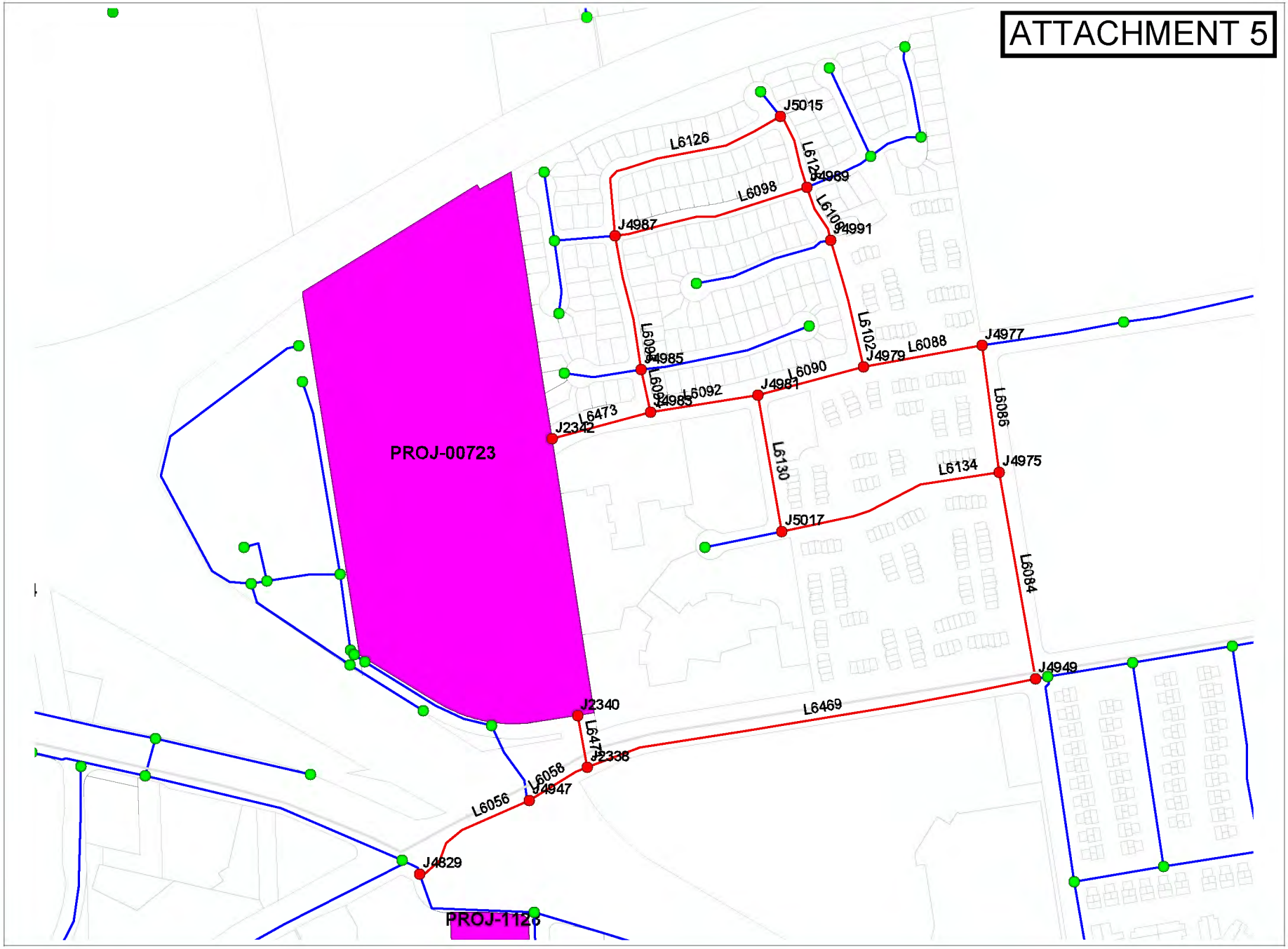
Time
ATTACHMENT 4


ATTACHMENT 5
PROJ-00723
PROJ-1128
J5015
L6126
L6128
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J4829

CITY OF VENTURA

ADMINISTRATIVE REPORT

Date: May 1, 2013

Agenda Item No.: **9**

Council Action Date: June 3, 2013

To: Honorable Mayor and City Council

From: Mark D. Watkins, City Manager
Shana Epstein, Ventura Water General Manager

Subject: **2013 Comprehensive Water Resources Report**

RECOMMENDATION

It is recommended that Council:

a. Approve the 2013 Comprehensive Water Resources Report;

b. Direct staff to provide an annual update on the City's projected water supply and demand;

c. Direct staff to use the local water land use demand factors for the evaluation of all development;

d. Direct staff to use the standardized "Water Demand Impact Summary" matrix to quantify the water supply demand of each individual project and the cumulative water supply demand of all approved projects;

e. If desired, provide policy direction to meet long-term water supply and demand beyond the five-year planning horizon.

PREVIOUS COUNCIL ACTIONS

Over the years, the City Council has approved various planning documents such as the 2005 General Plan, 2007 Downtown Specific Plan, 2009 Wells/Saticoy Plan; numerous development projects; and the 2010 Urban Water Management Plan, 2011 amendment. In July 2010, Council held a Water Resource Update Workshop that included the City's current water supply issues. In September 2012, Council received the first year status report of our Water Efficiency Plan and in November 2012, Council directed staff to return with a proposal for a water rights/water in lieu fee ordinance for their consideration.

On March 4, 2013, Council received the Draft 2013 Comprehensive Water Resources Report and directed the City Manager, Ventura Water and Community Development to

ATTACHMENT 6

work together to develop a short term balance of water supply and demand; a predictable use of data to serve pending and projected development over the next 5 years; provide a recommendation for long term water supply and demand policy; and return to Council in May.

SUMMARY

Why are we here?

Today's water supply is 19,600 acre feet per year (AFY) which is 30% (8,700 AFY) less than the 28,300 AFY anticipated in the 2005 General Plan EIR.

Why is the City's current water supply so much less than the supply anticipated in the 2005 General Plan?

There are several reasons why the numbers are different:

- 2005 Foster Park Storm Damage – The Foster Park Wells and Intake were extensively damaged in the 2005 storms. The projected 6,700 AFY yield from the Ventura River has been reduced to less than 4,200 AFY. Although repairs were made, additional work is scheduled in the Capital Improvement Plan that will hopefully restore production to pre-2005 levels.

- Saticoy County Yard Well – This well is not operational and was anticipated to yield an additional 2,400 AFY. It has been determined that additional environmental clearance is warranted for the operation of the well. It has also been determined that the anticipated additional water supply from the well of 2,400 AFY is zero. No additional water rights or allocations is anticipated from this well.

- Casitas Demand - Casitas water is supplied based on the actual demand for service within the District boundaries. The City currently has an 8,000 AFY allocation available but only uses 5,000 AFY within district boundaries.

- Fox Canyon Ground Water Management Agency (FCGMA) Groundwater Credits – The General Plan interchanges FCGMA water credits, water allocations, and water rights. It appears that the General Plan overestimates the FCGMA allocation per acre of land (2.5 AF/acre in lieu of 1.5 AF/acre) as well as included land outside the FCGMA.

Why do we need to update the numbers?

Understanding and monitoring our water supply and demand is essential to planning for and managing a stable and reliable water system to support our community and economic growth. Our supply and demand plays an important role and dramatically

ATTACHMENT 6

influences the planning for, development of and investment of significant dollars in capital improvements and new water supplies. Updating the numbers will also provide transparency, predictability and np front disclosure for the development community.

This report provides more current information for the 2005 General Plan, 2010 Urban Water Management Plan, and the 2011 Water Master Plan, regarding current water supply, current water consumption and demand figures. While the projections in this report cannot supersede the General Plan until the General Plan is updated, the numbers in this report should be used for water supply and demand planning purposes by land development and all the departments of the City.

As the City's water agency, Ventura Water is responsible for providing the Conncil and the public with the most current and best information available on our water supply and the City's estimated demand based on updated land use demand factors and development predictions provided by Community Development staff. Staff is responsible to provide this information in as predictable, timely, and accurate manner as possible. Creating a disciplined methodology and process will ensure that the Council and the public have this essential information. Tonight's recommendations propose to implement this system.

DISCUSSION

Attached for the Council's consideration is the updated 2013 Comprehensive Water Resource Report. This report provides Council the:

- Best information available on the City's current and projected water supplies;
- Projected amount of water the City has to meet for the demand of approved development;
- Proposed City specific water usage demand factors that reflect our local experience and best practices; and
- Base line data to standardize project water demand use in a summary matrix for Council, Planning Commission, and Design Review Committee's use in their decision-making.

Water Supply & Demand

Below is the summary of the most current and best information available on our water snpply and demand.

ATTACHMENT 6

Projected	2013 (AFY)	2015 (AFY)	2020 (AFY)
Supply	19,600	18,173 -21,173	18,390 – 23,890
Demand	17,755*	18,062	18,643
Available Supply	**1,999**	**111 -3,111**	**(253) – 5,247**

**Baseline – 5 year average (Calendar Years 2008 – 2012) plus built for Calendar Year 2012, and assumes 350 units built annually from the approved projects list for future years*

Water supply is not stagnant and often times is highly influenced by many circumstances including weather, state, regulatory and other actions beyond our control. Ranges are used to reflect the various supply variables and operational constraints for the Casitas Municipal Water District, Ventura River/Foster Park, and the Santa Paula Groundwater Basin:

- The supply from the Casitas Municipal Water District is limited to the water demand within the district boundaries. Today's demand within the boundaries is roughly 5,000 AFY. The City currently has an 8,000 AFY allocation available but only uses 5,000 AFY within district boundaries.

- The supply from the Ventura River/Foster Park shows the variance in water that is currently yielded (less than 4,200 AFY) and the amount of water that may be produced with the restoration of Foster Park (6,700 AFY). This year's dry conditions are likely to limit the yield to less than 2,800 AF.

- The City's allocation per the Santa Paula Basin Judgment is 3,000 AFY. However, this allocation may be impacted by a declaration of overdraft or drought conditions.

Due to high Total Dissolved Solids (TDS) in our groundwater, our water quality may limit our supply. The Department of Public Health requires Ventura Water to blend water sonrces to reduce the TDS. Blending requires the use of more high quality water to balance the groundwater TDS and can result in using less ground water, which can impact supply.

Like supply, water demand is also not static. Water demand is the sum of our current total customer consumption and the water supply for development the City has a legal commitment to deliver, but has not yet been built (this is based on the current list of approved projects). Annual weather fluctuations have a significant impact on our customers' consumption. Due to the lack of rain this year, our customers' year to date consumption is almost 30% higher than it was last year at this time. Ventura customers are generally very conscientious of their water use. However, even the most prudent customers use more water in dry years, unless a call for conservation is made by Ventura Water. This is why an average of several years' consumption is used as a base to represent our current customer demand.

ATTACHMENT 6

The projections are based on the list of currently approved development projects provided by the Community Development Department. The list reflects those projects that the City has a legal commitment to provide water service that were approved through the end of the 2012 calendar year. For 2013 and going forward, an absorption rate for water demand reflects building permits for 350 units issued each year. Staff anticipates that it is unlikely that this historical high number would be exceeded in any given year. The 350-unit absorption rate is consistent with the General Plan's 0.88% growth goals.

Water Land Use Demand Factors

The General Plan used very conservative water demand factors for land use planning. To refine these demand factors to be consistent with our local experience and water efficiency, and provide more accurate estimates, City of Ventura land use demand factors were developed. In those land use instances where we had little or no local land use and consumption experience and history, best industry practices were used.

Staff proposes to utilize these local water land use demand factors to estimate the impact of development on the water supply. With the use of these standardized demand factors, calculating the water demand for development proposals will be straightforward and consistent. This will provide developers, staff, and Council a clear-cut, methodical, and predictable process. Below are the water land use demand factors proposed to be utilized for projects approved in 2013 and going forward.

General Plan & Ventura Water Use Demand Factors

Land Use	General Plan Demand Factor	Proposed Ventura Demand Factor
Residential	*450 gpd/du*	
Residential 0 - 8 du/acre		370 gpd/du
Residential 9 - 20 du/acre		250 gpd/du
Residential 21+ du/acre		250 gpd/du
Retail	*250 gpd/ksf*	
Office	*250 gpd/ksf*	
Industrial	*315 gpd/ksf*	
Commercial/Retail/Industrial/Hotel Public/Institutional		265 gpd/ksf
Hotel	*500 gpd/ksf*	
Hospital/Assisted Living		545 gpd/bed
Park/Landscape/Irrigation		2,000 gpd/acre

gpd/du – gallons per day per dwelling unit
gpd/ksf – gallons per day per thousand square feet

Conceptual project applications will use the above land use categories. For those projects that do not define the residential density, the highest density demand factor will be used. Industrial, commercial, and retail will assume square footage reflecting the

ATTACHMENT 6

highest and best use of the acreage. As a project is revised, further defined, density decreased or density increased, the water demand for the project will be required to be revised.

Standardized Water Demand Impact Summary

To provide predictability and consistency, a Water Demand Impact Summary is proposed to create a basic matrix to summarize a project's water demand and the cumulative water impacts from other projects. This will be straightforward and provide clarity for the developer and staff, and will provide Council essential standardized information to allow for informed decision-making.

SAMPLE - Water Demand Impact Summary
Sample Development Project - Original Matrix Prepared January 20, 2014
REVISION #1 May 1, 2014

Land Use Type	Units	Demand Factor	Total Average Demand	AFY Demand
Residential (0-8) du/ac	85	370 gpd/du	21.84 gpm	35.23
			TOTAL PROJECT DEMAND (AFY)	**35.23**
			TOTAL PROJECT WATER RIGHTS (AFY)	**0**
a.			Baseline (existing demand + approved projects) Demand (AFY)	18,643
b.			All Projects Approved Since Jan 1 Demand (AFY)	200
c.			All Conceptual Projects in Planning Process Demand (AFY)	200
			Cumulative Projects (a+b+c) Demand (AFY)	19,043
			Current Supply (plus additional water rights acquired since Jan 1 (AFY)	19,625
			Remaining Available Supply (AFY)	582
			Additional Supply (Water Rights) Acquired Per this Project (AFY)	0
			Available Supply	582

This matrix will provide essential information for the tracking of the amount of water supply the City has committed. Past practices have not included the tracking of this information. This circumstance is at least partly due to the fact that a project, once approved, may or may not ever be built. While some approved projects move quickly to construction, some are never built, and some are modified prior to being built. Due to the complexity of tracking many projects, no mechanism existed to predict and track water use demand and supply.

Staff is proposing to incorporate the disciplined use of this matrix to create the mechanism to track the water committed out of the available supply. The matrix will also allow projects to provide straightforward information demonstrating and

ATTACHMENT 6

documenting the required compliance with CEQA. Council, Planning Commission, Design Review Committee, and the public will be provided this information in this standardized format for each development. As projects are built, modified or abandoned, those demands will be tracked accordingly.

Long Term Water Supply and Demand Policies

Ventura Water staff is responsible for providing the best supply and demand information available to Council to allow informed decision-making. How Council chooses to utilize available water supply is Council's role as policy makers. Additionally, it is Council's policy prerogative to provide staff direction to develop new water sources. Staff will continue to provide Council essential information regarding the options, advantages, disadvantages, and costs associated with developing new water supplies.

IMPACTS

There are no financial impacts to receiving the report at this time. The ongoing tracking of water supply and demand will be absorbed by Ventura Water staff. The proposed tracking system will facilitate these efforts.

ALTERNATIVES

Council could direct staff to provide additional information, modify the demand factors, and/or revise the report.

Shana Epstein
Ventura Water General Manager

Reviewed as to fiscal impacts

for Jay Panzica
Chief Financial Officer

FORWARDED TO THE CITY COUNCIL

ATTACHMENT 6

Office of the City Manager

Attachment: 2013 Comprehensive Water Resources Report

ATTACHMENT 6

02N 22W 07 P01S

ORIGINAL
File with DWR

Page 1 of 1

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 812372

DWR USE ONLY — DO NOT FILL IN

02N	22W	07

STATE WELL NO./STATION NO.

LATITUDE 34 15 47 4 — LONGITUDE 119 13 44 4

017 91-01-124 01-035

APN/TRS/OTHER

Owner's Well No. Copland #1

Date Work Began 07/03/00 Ended 07/10/00

Local Permit Agency County of Ventura

Permit No. 4763 Permit Date 06/28/00

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD Reverse Rotary FLUID Water

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	40	Brown clay
40	45	Fine sand
45	185	Brown clay
185	200	Sand and gravel
200	370	Blue clay
370	390	Gravel and rocks
390	460	Blue clay
460	490	Gravel and rocks
490	510	Blue clay
510	580	Sand, gravel and rocks
580		End

TOTAL DEPTH OF BORING 580 Feet

TOTAL DEPTH OF COMPLETED WELL 580 Feet

WELL OWNER

Name Broome Ranch/John Broome

Mailing Address 1 Caryle Drive

Oxnard, CA 93033
CITY STATE ZIP

WELL LOCATION

Address Copland Circle

City Ventura

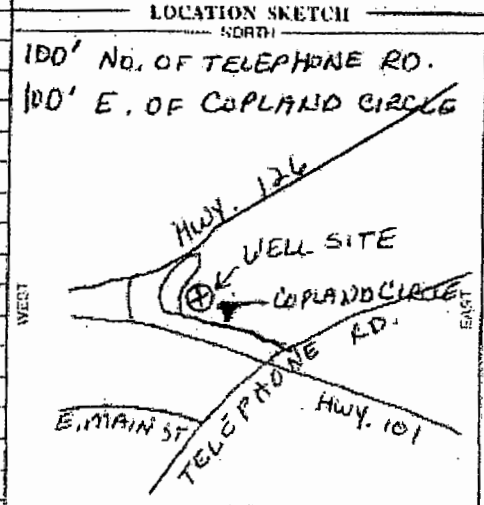
County Ventura

APN Book 079 Page 240 Parcel 079-0-240-035

Township 2N Range 22W Section 7 P1

Latitude ___ DEG ___ MIN ___ SEC NORTH Longitude ___ DEG ___ MIN ___ SEC WEST

LOCATION SKETCH



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and check orientation. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

X NEW WELL

MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)

___ DESTROY (Describe procedure and material under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY
X Domestic ___ Public
___ Irrigation ___ Industrial

MONITORING ___

TEST WELL ___

RECHARGE FACILITIES
HEAT EXCHANGE ___
DIRECT REUSE ___
INJECTION ___
VAPOR EXTRACTION ___
SPARGING ___
VENTILATION ___
OTHER (Specify) ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 190 (Ft) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 141 (Ft) & DATE MEASURED 8/12/00

ESTIMATED YIELD* 300 (GPM) & TEST TYPE constant rate

TEST LENGTH 24 (Hrs) TOTAL DRAWDOWN 24 (Ft)

*May not be representative of a well's long-term yield.

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	ERL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	460	18"	X				Steel	10"	.250	
460	580	18"	slotted				steel	10"	.250	.050

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE: CEMENT (✓)	BEN TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	200	X			
200	580				6x12

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
X Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Barbour Well Surveying Corporation
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

934 W. Verdulera St. Camarillo CA 93010
ADDRESS CITY STATE ZIP

Signature [signature] Oct 2, 2000 627325
WELL BUILDER/AUTHORIZED REPRESENTATIVE DATE SIGNED C-57 LICENSE NUMBER

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

~~TRIPLICATE~~
Owner's Copy

COPY

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 812364

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Page 1 of 1
Owner's Well No. Copland #1
Date Work Began 06/12/01, Ended 06/21/01
Local Permit Agency County of Ventura
Permit No. 4951 Permit Date 06/08/01

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD _____ FLUID _____

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	460	Install 8" x .148 wall 304 SS blank casing inside existing 10" casing.
460	580	Install 8" 304SS wire wrap well screen with .060 opening inside existing 10" casing.
0	580	Install 4x8 gravel between casings.

TOTAL DEPTH OF BORING _____ (Feet)
TOTAL DEPTH OF COMPLETED WELL 580 (Feet)

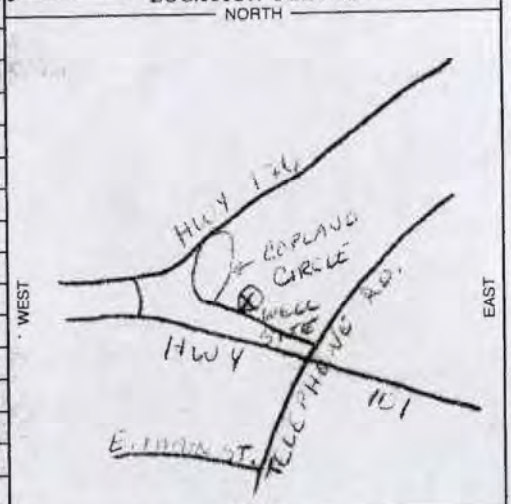
WELL OWNER

Name Broome Ranches
Mailing Address 1 Caryle Drive
City Oxnard, State CA Zip 93033

WELL LOCATION

Address Copland Circle
City Ventura, CA
County Ventura
APN Book ___ Page ___ Parcel 079-0-240-035
Township ___ Range ___ Section ___
Latitude ___ DEG. ___ MIN. ___ SEC. NORTH Longitude ___ DEG. ___ MIN. ___ SEC. WEST

LOCATION SKETCH



Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. ***PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

___ NEW WELL
MODIFICATION/REPAIR
___ Deepen
X Other (Specify)
___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

PLANNED USES (✓)

WATER SUPPLY
___ Domestic ___ Public
X Irrigation ___ Industrial
MONITORING ___
TEST WELL ___
CATHODIC PROTECTION ___
HEAT EXCHANGE ___
DIRECT PUSH ___
INJECTION ___
VAPOR EXTRACTION ___
SPARGING ___
REMEDIATION ___
OTHER (SPECIFY) ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER _____ (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 141 (Ft.) & DATE MEASURED 06/21/01
ESTIMATED YIELD * 500 (GPM) & TEST TYPE _____
TEST LENGTH _____ (Hrs.) TOTAL DRAWDOWN _____ (Ft.)
** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	460		X				304SS	8	.148	
460	580			X			304SS	8		.060

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE: CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	580				4x8 Select

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other _____

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Barbour Well Surveying Corporation
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS 934 W. Verdulera Street, CITY Camarillo, STATE CA ZIP 93010

Signed _____ WELL DRILLER/AUTHORIZED REPRESENTATIVE
DATE SIGNED 06/27/01
C-57 LICENSE NUMBER 627325

Barbour Well
Broom Ranch
7/13/01
X=456
Y=78
fractured silica sand
high density
>TDS 2410 mg/l

>From john@h2osystems.com Fri Jul 13 14:18:48 2001
From: "John H. Schnieders" <john@h2osystems.com>
To: <info@barbourwell.com>
Subject: BRoome Ranch Well
Date: Fri, 13 Jul 2001 15:55:42 -0500
X-Mailer: Microsoft Outlook IMO, Build 9.0.2416 (9.0.2910.0)
Importance: Normal
X-SLUIDL: F0ADCC1A-77A311D5-9B5B00A0-C9ACAE14

Joel,
I didn't get a complete report together before our lab shut down but I wanted to get this photograph off to you which shows the micro crystal structure of the debris in the water sample. This material was captured from the water sample by centrifuging and does not represent the sediment in the sample container. Microscopic analysis of both samples appeared to be identical. (Magnification was 200X.)

Analysis of the water sample showed silica levels of 26.2 mg/l for the 553' sample and 28.1 mg/l for the 533' sample. These concentrations are high and may cause some crystal formation considering the high total dissolved solids levels of 2500 mg/l. The level at which we normally expect crystal formation is near the 40 mg/l concentration. Again however that would be at a TDS level of 500 mg/l. Mike a geologists in our lab did feel that at least some of the particles represented fractured silica sand.
I plan to investigate further and will get back to you next week. If you need to get a hold of me our lab will be shut down for vacations. Please use my home phone number which I will check from time to time. My number is 785-242-6316.
John

Barbour Well 071301.pdf

County of Ventura

WELL PERMIT APPLICATION

800 South Victoria Avenue, Ventura CA 93009

Permit No. 4763

NAME OF WELL OWNER	OWNER MAILING ADDRESS (STREET, CITY, ZIP)	
Mr. John Broome/Broome Ranches	1 Caryle Drive Oxnard, CA 93033	
OWNER TELEPHONE NUMBER	NAME OF WELL DRILLER	LICENSE NUMBER
(805) 488-5333	Barbour Well Surveying Corporation	627325

I hereby agree to comply with all regulations pertaining to well construction, repair, modification and destruction. Within 30 days of completion of work, I will furnish the Ventura County Public Works Agency, Water Resources and Development Department, Water Resources Division with a complete and accurate log of the well. Any modification of this permit requires approval by the Director. Call (805) 654-2907 or 654-2024. ***When signed by the Director of Public Works, this application is a permit.***

Applicant's Signature [signature] Date June 27, 2000

☐ Owner ☒ Driller ☐ Consultant (List Firm and Phone Number) Barbour (805) 482-4988

Estimated Dates of Work: Start 06/29/00 Completion 07/31/00 FAX: (805) 987-6538

TYPE OF WORK (Check)		USE (Check)		EQUIPMENT (Check)		WELL DEPTH	PROPOSED CASING	
Water Supply Well	☒	Public ☐	Domestic ☐	Air Rotary	☐	600 FEET	Steel XX	
Repair or Modification	☐	Agricultural	☒	Mud Rotary	☐	DIAMETER WELL BORE	PVC	
Destruction	☐	LUFT Invest/Clean-up	☐	Hollow Stem	☐	18" INCHES	Other	
Monitoring (No. ____)	☐	Site Assess/Leak Detect	☐	Cable Tool	☐		Diameter 10"	
Borehole (No. ____)	☐	Other	☐	Other Reverse	☒		Wall or Gage .250	

PROPOSED SEALING ZONE(s)	SEALING MATERIAL (Check)	PERFORATIONS OR SCREEN
From 70 (100) to 0 Ft with Concrete	Neat Cement ☐ Bentonite Clay ☐	From 350 to 600 Ft
From ____ to ____ Ft with ____	Cement Grout ☐ Concrete ☒	From ____ to ____ Ft
From ____ to ____ Ft with ____	(10 Sack/Yd³ Mix) (6 Sack/Yd³ Mix)	From ____ to ____ Ft

FOR OFFICE USE

Permit Start Date 6-28-00 $ 475.00 Fee Paid On 6-28-00 Receipt No. 4747

Expiration Date 12-28-00 Date Sealed 7-10-00 Inspector's Signature L Richardson

Disposition of Application: ☒ Approved with conditions below ☐ Denied Used 6-sack Sand slurry for seal

Agency: ☐ GMA ☐ UWCD ☒ City Ventura ☐ Other ____

Permit conditioned and checked by Linda Richardson Date 6-28-00

CONDITIONS FOR NEW WELL:

1. Diameter of well borehole shall be at least 4 inches larger than outside diameter of casing, to the base of sealing.
2. Cement Grout or Concrete annular sealing material shall be applied by means of a grout pipe placed within 2 ft. of the base of the sealing zone from a depth of 70 feet to ground surface.
3. Public Works Inspector shall be present during placement of all sealing material. **(NOTE: 24-hour advance notice is required: call (805) 654-2904 or 654-2024).**
4. All work must be performed by a well contractor licensed by the State of California, and registered with Ventura County.
5. A **completed well log** on a California Department of Water Resources (DWR) Drillers Report Form shall be submitted to this department within **30 days** of well completion. **Mail to:** County of Ventura - Public Works Agency, Water Resources and Engineering Department 800 South Victoria Avenue Ventura, CA. 93009-1600

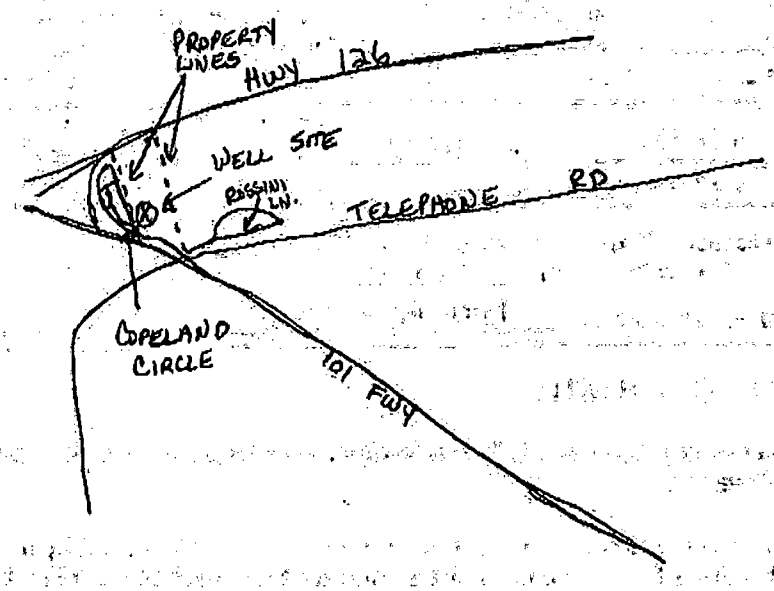
Public Works Director LaVern Hoffman Date 6-28-00

County of Ventura
WELL PERMIT APPLICATION
800 South Victoria Avenue, Ventura CA 93009

Permit No. 4763

LOCATION

INDICATE BELOW THE EXACT LOCATION OF WELL WITH RESPECT TO THE FOLLOWING ITEMS: PROPERTY LINES, WATER BODIES OR WATER COURSES, DRAINAGE PATTERN, ROADS, EXISTING WELLS, SEWERS AND PRIVATE SEWAGE DISPOSAL SYSTEMS. INCLUDE DIMENSIONS. LIST ASSESSOR'S PARCEL NUMBER AND THOMAS BROS. GUIDE NUMBER.



Assessor's Parcel Number 079 - 0 - 240 - 035 Thomas Bros. Guide 492-A4

FOR OFFICE USE

02N22W07N — Water Well Number

6243 — Date Number

4763 — Permit Number

WATER WELL SEALING RECORD

PERMIT # 4763

RT DATE 6 / 28 / 00

EXPIRATION DATE 12 / 28 / 00

☒ NEW WELL ☐ DESTRUCTION ☐ OTHER 6 sack sand concrete

TYPE OF MATERIAL USED

WELL #	DELIVERED TO SITE Cu. Yd.	LEFT OVER Cu. Yd.	USED FOR SEALING Cu. Yd.	BOREHOLE Diameter (NEW WELLS)	WELL CASING Diameter	DEPTH OF SEAL FROM	DEPTH OF SEAL TO
☐ ☐ MIX ON SITE	6 yds	Ø		18	10	100	0
☐ ☐ MIX ON SITE							
☐ ☐ MIX ON SITE							

METHOD OF SEAL PLACEMENT: ☒ GROUT PIPE ☐ DROP ☐ OTHER

NUMBER OF GROUT PIPE SECTIONS 4 LENGTH OF EACH SECTION 21 FEET

(DESTRUCTION ONLY)
CONFIRMATION THAT THE CASING WAS RIPPED OR PERFORATED AS REQUIRED BY THE PERMIT.

REMARKS: Used 6-sack sand slurry for seal. Brought sample back to office for GL inspection. Overnight setup appears ok

DESCRIBE ANY VARIANCE IN THE SEALING METHOD OR MATERIAL FROM PERMIT CONDITIONS, OF ANY OTHER FACTOR WHICH, IN YOUR ESTIMATION, MIGHT HAVE CAUSED THE SEALING OPERATION TO BE LESS THAN SATISFACTORY

IN MY OPINION, THE WELL SEALING WAS:

34° 15' 47.4"
119° 13' 44.4"

☐ SATISFACTORY

☐ UNSATISFACTORY FOR REASONS DESCRIBED ABOVE

INSPECTION SERVICES
START 1450
COMPLETED 1600

OPTION:

☒ ATTACHED PHOTO OF SITE AND IMMEDIATE VICINITY
☒ ATTACHED CEMENT TRUCK REPORT
☐ OTHER

DATE SEALED: 7 / 10 / 00

L Richardson
INSPECTOR

7-10-00
DATE

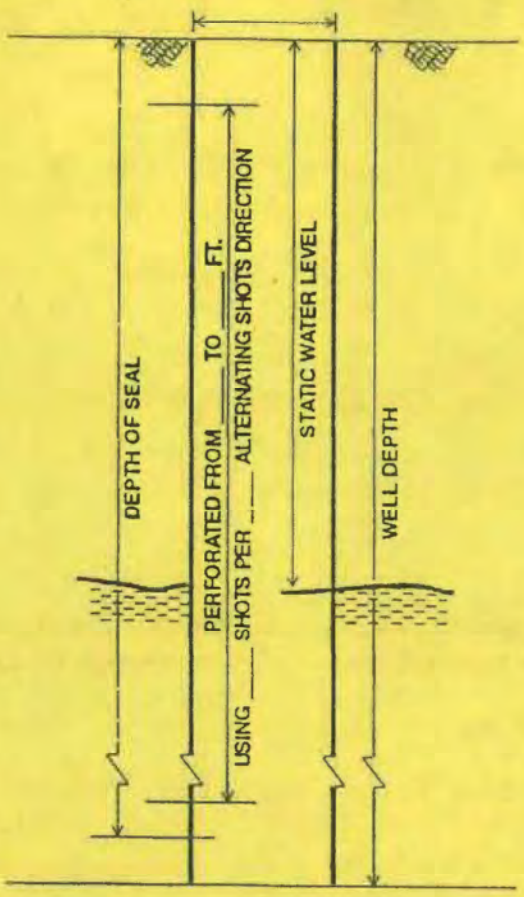
REVISED 8/92, SEALING1.CDR/WMF/PM

(OVER)

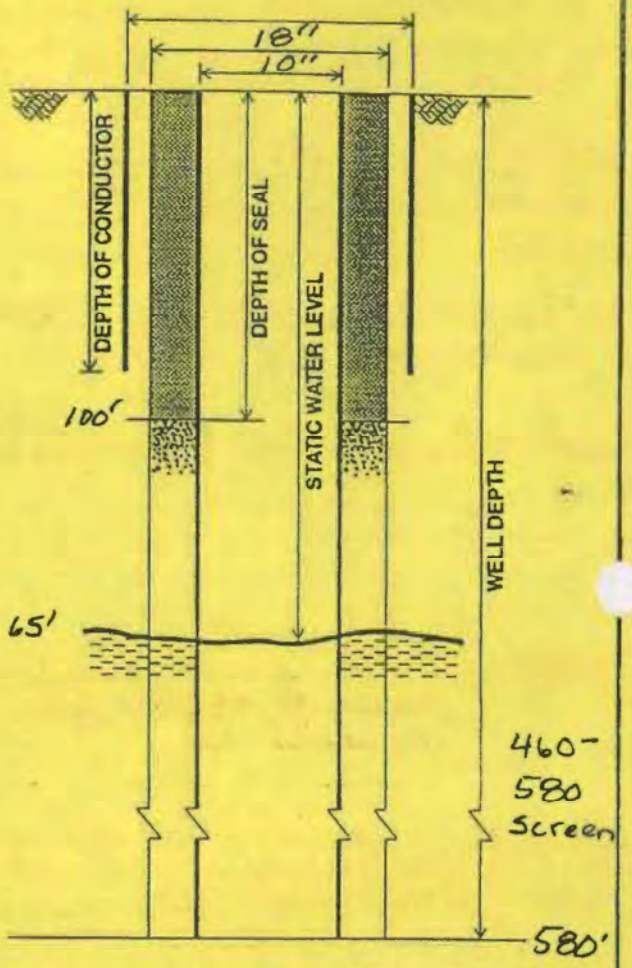
INSPECTION NOTES

PERMIT # 4763

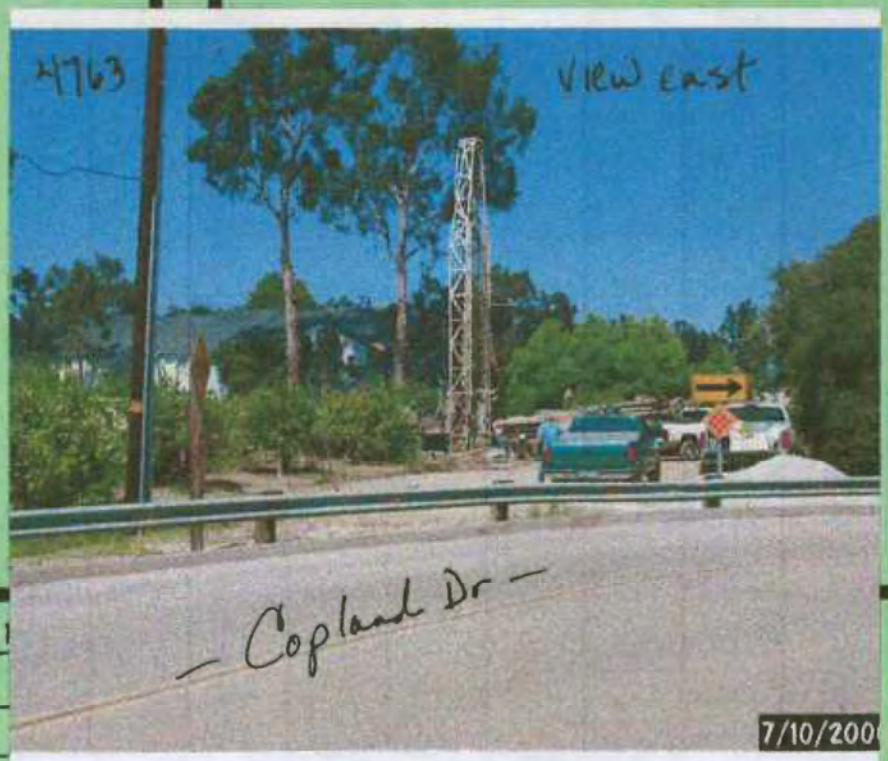
☐ DESTRUCTION



☒ NEW WELL



QUANTITIES OF		WATER	CEMENT	BENTONITE	SAND	GRAVEL	CLAY
☐ NEAT CEMENT	(CEMENT SLURRY): CEMENT + WATER				—	—	—
☐ CEMENT GROUT:	CEMENT + WATER + SAND					—	—
☐ CONCRETE:	CEMENT + WATER + SAND + GRAVEL						—
☐ CLAY PELLETS:	SOMETIMES USED AS A SEAL BETWEEN GRAVEL SURROUNDING PERFORATIONS AND CONCRETE SEAL IN SHALLOW (MONITORING) WELLS						



WELL # 2N 22W 7

DATE 7/10/00

EXPLANATION:

PHOTOS _____

TAKEN BY S Richardson

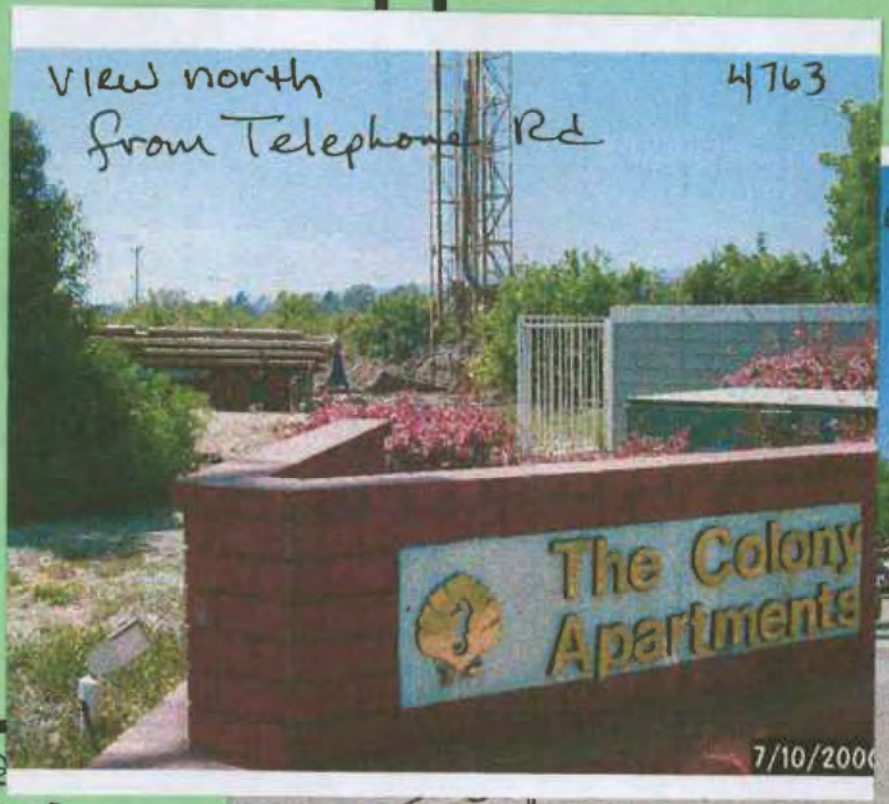
2/00-UR

PAGE___OF___

G RECORD

3____

EDIATE VICINITY



WELL # 2N 2

DATE 7/10/00

EXPLANATION:

PHOTOS

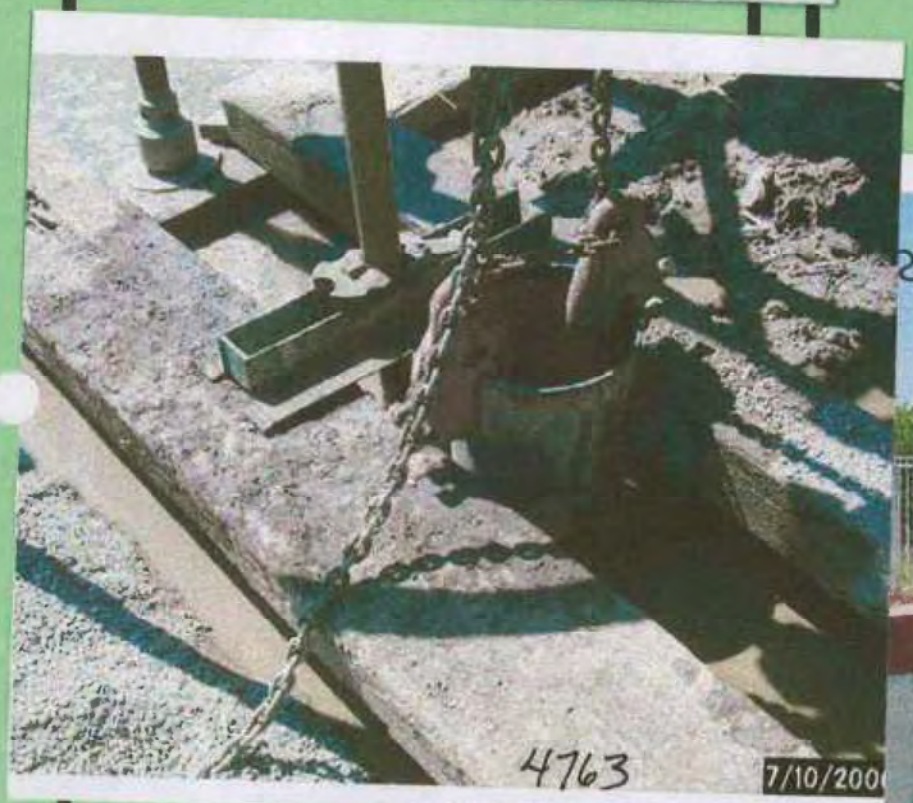
TAKEN BY L Richardson

PAGE___OF___

ALING RECORD

263

MMEDIATE VICINITY



WELL # 2N 2

DATE 7/10/00

EXPLANATION:

PHOTOS

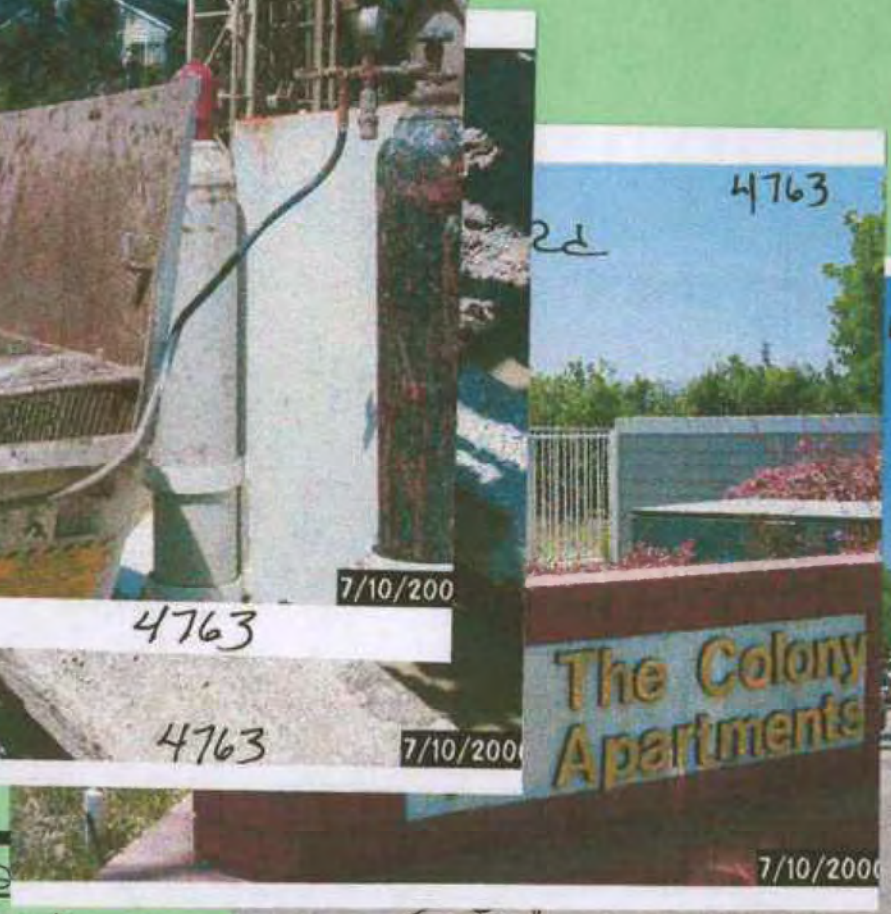
TAKEN BY

PAGE___OF___

WATER WELL SEALING RECORD

PERMIT # 4763

PHOTOS OF SITE AND IMMEDIATE VICINITY



WELL # 2N 2

DATE 7/10/00

EXPLANATION:

PHOTOS _____

TAKEN BY L Richardson

2/99-MR

SOUTHDOWN CONCRETE PRODUCTS, INC.

CORPORATE OFFICE: 2601 Saturn Street, Suite 200, Brea, CA 92821-6702
(714) 985-4190 • Fax (714) 985-4062

ORDER DESK
(800) 966-7796

Azusa (21) 1201 W. Gladstone
Compton (05) 2722 N. Alameda St.
Hollywood (12) 1000 N. La Brea
Inglewood (06) 505 Railroad Pl.
Irvine (09) 16161 Construction Circle E.
Los Angeles (14) 625 Lamar
Moorpark (42) 9035 Happy Camp Rd.
Orange (31) 1730 N. Main St.
S. J. Capistrano (01) 31601 Ortega Hwy.
Santa Paula (44) 1430 Santa Clara
Simi Valley (43) 300 W. Los Angeles Ave.
Sun Valley (10) 8960 Bradley
Walnut (04) 20903 Courier Rd.

TICKET NO. 389231

2:13PM

SANTA PAULA PLANT #44 459782

DATE	LEAVE PLANT	ARRIVE JOB	START UNLOAD	FINISH UNLOAD	LEAVE JOB	ARRIVE PLANT	STANDING TIME
11-1-00	1425	1435	1500	1540			0

PLANT/ALLEY	SALESMAN	ORDER NO.	ENTERED BY	APPLICATION
44		2005 - 1		FILL

CEMENT	FLYASH	W/C SAND	3/8" ROCK	1" ROCK	1 1/2" ROCK	LWT SAND	CU FT LWT AGG

GALS. FREE MOIST	GALS. ADDED	MAX GALS. ALLOW	GALS. ADDED ON JOB (BEGIN / MIDDLE / END)	DRUM REVOLUTIONS (BEGIN / MIDDLE / END)	SLUMP ☐ SLUMP ☐ SLUMP ☐ CYL ☐ CYL ☐ CYL ☐ (BEGIN / MIDDLE / END)	SLUMP METER
						700

CUSTOMER P.O.	CUSTOMER JOB NO.	ZONE	MAP PAGE	TIME	TRUCK	DRIVER
		15058	U495A4	15:00	344	JOSE D.

CUSTOMER NAME	CUSTOMER NO.	SPECIAL INSTRUCTIONS
COAST DRILLING, COD	14042	LOOK FOR DRILLING RIG, 455-5218 ROBERT GET GLEN

DELIVERY ADDRESS	PROJECT NO.
C/O TELEPHONE/COPLAND, VENTURA	

CROSS STREETS	TOTAL ORDERED	TOTAL SHIPPED
	5.00	5.00

LOAD #	QUANTITY	UOM	MIX NO.	SLUMP	PRODUCT DESCRIPTION	UNIT PRICE	EXTENSION
	5.00	CY	1000.0017	5.00	6 SK. SCHOOL STRIP	[illegible]	[illegible]
	1.00	FUEL			FUEL SURCHARGE	5.00	5.00

Aggregate	Target	Actual	Status
WASH CON	21630 Lb	21920	OutTol 5.5
CEMENT	4512 Lb	4520	In Tol
WATER #1	337 Gal	337	In Tol

ENVIRONMENTAL	
BALANCE FORWARD	50.00
MINIMUM LOAD	28.49
SALES TAX	421.49
SUB-TOTAL	
STANDING TIME	
TOTAL	

☐ CHARGE ☐ COD

WEIGHMASTER CERTIFICATE

THIS TO CERTIFY that the following described commodity was weighed, measured or counted by a weighmaster, whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed by Chapter 7 (commencing with Section 12700) of Division 5 of the California Business and Professions code, administered by the Division of Measurement Standards of the California Department of Food and Agriculture.

Southdown Concrete Products, Inc.
By Deputy Judy Parenteau
X

STANDING TIME: Customer is allowed 4 minutes per cu. yd. unloading time from arrival at job to finish unloading. Excess time will be charged at the prevailing rate per hour or any part thereof.

REASON FOR DELAY TIME:
☐ JOB BROKE DOWN ☐ JOB NOT READY ☐ ADDING WATER
☐ TRUCK BROKE DOWN ☐ SLOW PLACING ☐ ARRIVED EARLY
OTHER EXPLAIN

Received by and terms agreed to X Coast Drilling

INSPECTOR

County of Ventura

WELL PERMIT APPLICATION

800 South Victoria Avenue, Ventura CA 93009

Permit No. 4951

NAME OF WELL OWNER	OWNER MAILING ADDRESS (STREET, CITY, ZIP)	
BROOME RANCHES	1 CARYLE DR, OXNARD, CA 93033	
OWNER TELEPHONE NUMBER	**NAME OF WELL DRILLER**	**LICENSE NUMBER**
(805) 488-5333	BARBOUR WELL SURVEYING CORP	627325

I hereby agree to comply with all regulations pertaining to well construction, repair, modification and destruction. Within 30 days of completion of work, I will furnish the Ventura County Public Works Agency, Water Resources and Engineering Department, Water Resources Division with a complete and accurate log of the well. Any modification of this permit requires approval by the Director. Call (805) 654-2907 or 654-2904. ***When signed by the Director of Public Works, this application is a permit.***

Applicant's Signature [signature] **Date** 6/7/01

☐ Owner ☒ Driller ☐ Consultant (List Firm and Phone Number) (805) 482-4988

Estimated Dates of Work: Start 6/11/01 Completion 6/30/01 FAX: (805) 987-6538

TYPE OF WORK (Check)	USE (Check)	EQUIPMENT (Check)	WELL DEPTH	PROPOSED CASING
Water Supply Well ☐	Public ☐ Domestic ☐	Air Rotary ☐	580 FEET	Steel ☐
Repair or Modification ☒	Agricultural ☒	Mud Rotary ☐	DIAMETER WELL BORE	PVC 304 ☐
Destruction ☐	LUFT Invest/Clean-up ☐	Hollow Stem ☐	10" INCHES	Other STAINLESS STEEL ☒
Monitoring (No. ____) ☐	Site Assess/Leak Detect ☐	Cable Tool ☐		Diameter 8"
Borehole (No. ____) ☐	Other ____ ☐	Other WORKOVER ☒		Wall or Gage .148

PROPOSED SEALING ZONE(s)	SEALING MATERIAL (Check)	PERFORATIONS OR SCREEN
From ____ to ____ Ft with ____	Neat Cement ☐ Bentonite Chips ☐	From 460 to 580 Ft
From ____ to ____ Ft with ____	Cement Grout ☐ Concrete ☐	From ____ to ____ Ft
From ____ to ____ Ft with ____	(10 Sack/Yd³ Mix) (6 Sack/Yd³ Mix)	From ____ to ____ Ft

FOR OFFICE USE

Permit Start Date 6/8/01 $ 475.00 Fee Paid On 6/8/01 Receipt No. 4943

Expiration Date 12/8/01 **Date Sealed** ____ **Inspector's Signature** ____

Disposition of Application: ☒ Approved with conditions below ☐ Denied

Agency: ☐ GMA ☒ UWCD ☐ City ____ ☐ Other ____

Permit conditioned and checked by Glen Luscombe **Date** 6/8/01

CONDITIONS FOR WELL REPAIR:

1. All work must be performed by a well contractor licensed by the State of California, and registered with Ventura County.

2. The Contractor shall retain all discharges within the drilling site. No fluids shall drain offsite to flood control channels, creeks, rivers, sewers or any watercourses.

3. A completed well log on a California Department of Water Resources (DWR) Drillers Report Form shall be submitted to this department within 30 days of well completion. Mail to: County of Ventura - Public Works Agency, Water Resources and Engineering Department, 800 South Victoria Avenue Ventura, CA. 93009-1600

Public Works Director Larry Tanouye **Date** 6/8/01

Permit 4951

3N 22W 7 P1

PWA-98-000003A (Rev 12/00)

County of Ventura

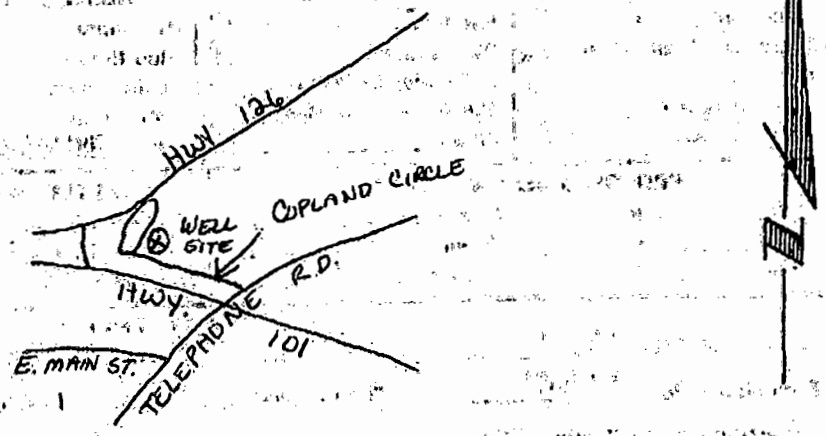
WELL PERMIT APPLICATION

800 South Victoria Avenue, Ventura CA 93009

Permit No. 4951

LOCATION

INDICATE BELOW THE **EXACT LOCATION** OF WELL WITH RESPECT TO THE FOLLOWING ITEMS: PROPERTY LINES, WATER BODIES OR WATER COURSES, DRAINAGE PATTERN, ROADS, EXISTING WELLS, SEWERS AND PRIVATE SEWAGE DISPOSAL SYSTEMS. **INCLUDE DIMENSIONS.** LIST ASSESSOR'S PARCEL NUMBER AND THOMAS BROS. GUIDE NUMBER.



Assessor's Parcel Number 0 7 9 - 0 - 2 4 0 - 0 3 5 Thomas Bros. Guide P. 492-A4

FOR OFFICE USE

0 2 N 2 2 W 0 7 P 0 1 S	6 2 4 3	4 9 5 1
STATE WELL NUMBER	QUAD NUMBER	PERMIT NUMBER

PWA-88-0000039 (Rev. 12/90)

Michael Baker
INTERNATIONAL

We Make a Difference

MEMORANDUM

To: The Groves, LLC **JN:** 133749

From: Kevin Gustorf, P.E., Michael Baker International

Date: June 16, 2015
August 4, 2015 (update)

Subject: Water System Hydraulic Evaluation and Supply Requirements for The Grove Specific Plan (Vesting Tentative Tract No. 5626) in the City of Ventura

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Introduction

The Groves, LLC (developer) is proposing to construct a new residential development in the City of San Buenaventura (City, or Ventura) referred to as 'The Grove Specific Plan" (Project, or The Grove). The Project site is located north of Telephone Road, east of Highway 101, and south of Highway 126, and will consist of 59 single-family homes, up to 191 townhouse/apartment units, a 1,000 square foot clubhouse, and 4.92 acres of parks/trails constructed on a 25.37 acre parcel. See Attachment 1 for the Site Plan and Utility Plan. The project is being developed on a property that has an existing water well that is not part of the City's water system that serves current agricultural business. The Project is proposed to be served from the City's domestic water distribution system and is expected to generate additional water usage, which will have an impact on the City's water system. The purpose of this analysis is to quantify the expected addition of water demand for the Project and utilize the City's existing hydraulic model to determine if the City's existing distribution system can accommodate the proposed Project while meeting the requirements of the water system criteria established in the City's 2011 Water Master Plan (WMP).

Background

As part of the City's 2011 WMP, Michael Baker International (formerly RBF Consulting) prepared a calibrated hydraulic model for the City's domestic water distribution system. The existing water

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demands were allocated to the model based on the water consumption data. The Project parcel was vacant at the time of the preparation of the 2011 WMP. According to the developer, records indicate that State Well No. 02122W07P01S serves the existing use, and the past 10-year well production average has been 59.36 acre-feet per year for the on-site irrigation. It is noted that the existing on-site well was redeveloped in March 2015 and pump tests indicate the well can produce a flowrate of 220 gpm. The well is currently equipped with a 25hP submersible pump designed to operate at a flowrate of 150 gpm. For the purpose of this analysis, any new water demand introduced as part of the Project will be treated as a direct addition to the City's existing water demands. The proposed Project will be served from the City's 330 Pressure Zone.

In addition, the City maintains a database of projects, known as "Planning Projects" that are in various phases of the planning process. The database includes all projects from those that are in construction to those that are in the conceptual phase, which includes The Grove, identified as Project "PROJ-00723". All Planning Projects as identified by the City as of December 31, 2012 have been incorporated into this hydraulic model analysis.

Demand Estimates

The expected addition of water demand for the Project will be a result of the construction of 59 single-family homes, up to 191 townhouse/apartment units, a 1,000 square foot clubhouse, and 4.92 acres of parks/trails. The demand estimates for the Project were calculated using the water demand factors from the Comprehensive Water Resources Report (CWRR).

Water demand factors allow for the estimation of water demands for new developments based the land use type, area, and number of dwelling units (DU). Water demand factors also account for water loss and are generally considered to be conservative. These factors, taken directly from the CWRR, are listed in Table 1. It should be noted that these factors correspond to average day demand.

Table 1: Water Demand Factors[1]

	Water Demand Factor Classification	Water Demand Factor
Residential	Residential (0-8 du/ac)	370 gpd/du
	Residential (9-20 du/ac)	250 gpd/du
	Residential (21+ du/ac)	250 gpd/du
Non-Residential	Commercial/Retail/Industrial/Hotel Public/Institutional	265 gpd/ksf
	Hospital/Assisted Living	545 gpd/bed
	Park/Landscape/Irrigation	2,000 gpd/acre

[1] Source: Table 3-3 of the Comprehensive Water Resources Report, prepared by Michael Baker International (formerly RBF Consulting)

The residential portion of the project demands consist of the single family use and townhouse/apartment use, which were classified in the "Residential (9-20 du/ac)" and Residential (21+ du/ac) land use categories respectively, both with water demand planning factors of 250 gallons per day per dwelling unit (gpd/DU). Multiplying the water demand planning factors by the total number of dwelling units results in a total residential average day demand of 43.40 gpm, or 70.01 acre-feet per year (AFY). This calculation is illustrated in Table 2.

Table 2: Estimated Average Day Residential Water Demand

Area (Ac)	Unit Type	No. Units	Density (DU/ac)	Water Demand Factor Classification	Demand Factor (gpd/DU)	Avg Day Demand (gpd)	Avg Day Demand (gpm)	Avg Day Demand (AFY)
5.44	Single Family	59	10.8	Residential (9-20 du/ac)	250	14,750	10.24	16.52
7.80	Townhouse/ Apartment	191	24.5	Residential (21+ du/ac)	250	47,750	33.16	53.49
					Totals	**62,500**	**43.40**	**70.01**

The non-residential portion of the project demands consist of the clubhouse, which was classified in the "Commercial/Retail/Industrial/Hotel" land use category, and the parks/trails, which were classified in the "Parks/Landscape/Irrigation" land use category, with water demand planning factors of 265 gallons per day per thousand square feet (gpd/ksf) and 2,000 gallons per day per acre (gpd/ac), respectively. Multiplying the water demand planning factors by the total clubhouse

and parks/trails area results in a total non-residential average day demand of 7.02 gpm, or 11.32 acre-feet per year. This calculation is illustrated in Table 3.

Table 3: Estimated Average Day Non-residential Water Demand

Land Use Type	Water Demand Factor Classification	Quantity	Unit	Demand Factor	Unit	Avg Day Demand (gpd)	Avg Day Demand (gpm)	Avg Day Demand (AFY)
Clubhouse	Commercial/ Retail/ Industrial/Hotel	1,000	SF	265	gpd/ksf	265	0.18	0.30
Parks/Trails	Park/Landscape/ Irrigation	4.92	ac	2,000	gpd/ac	9,840	6.83	11.02
					Totals	**10,105**	**7.02**	**11.32**

Water demand peaking factors were then applied to the total average day demand of 50.42 gpm to translate this value to a maximum day demand and peak hour demand, which are considered the critical demand conditions for this hydraulic analysis. Maximum day demand represents the highest demand day of the year, while the peak hour demand represents the hour of highest demand during a maximum day demand based on the demand diurnal patterns, which represent demand variations throughout the day. Based on the peaking factors from the 2011 WMP of 1.52 for maximum day demand and 3.97 for peak hour demand, demand totals of 76.64 gpm and 200.17 gpm have been calculated for maximum day and peak hour demand, respectively. It should be noted that the peak hour condition is simulated in the hydraulic model over an extended period simulation (EPS) during a maximum day, and may not match the calculated peak hour values exactly. It should also be noted that the peak demand period for the entire City system, 330 Zone, or The Grove, may not correspond to the same time during the day. See Table 4 for a summary of the separate demand conditions.

Table 4: Demand Summary Based on Water Demand Planning Factors[1]

Demand Condition	Peaking Factor	Demand (gpm)	Demand (AFY)
Average Day	N/A	50.42	81.33
Maximum Day	1.52 x Average Day	76.64	N/A
Peak Hour	3.97 x Average Day	200.17	N/A

[1] Adapted Table III-2 from the City of San Buenaventura Water Master Plan, March 2011, prepared by Michael Baker International (formerly RBF Consulting)

[2] Note: Actual demand under EPS simulation may vary slightly due to diurnal patterns.

Fire Flow Requirements

The City's domestic water distribution system must be capable of providing the maximum day demand plus the required fire flow for The Grove. Since all residential units will have a fire sprinkler system, the required fire flow would be a combination of flow for the sprinkler system and flow at the adjacent hydrant(s); however, since the required fire sprinkler demands were unknown at the time of the this evaluation, the required fire flow utilized for the purpose of this analysis assumes a non-sprinklered building. The information of the largest structure, which is one of the apartment complexes, is listed in Table 5.

Table 5: Building Information

Construction Type	Type V-B
Largest Individual Total Building Floor Area (ft^2)	36,000
Sprinklered?	Yes [1]

[1] Since sprinkler demands are unknown at this time, the building is assumed to not be sprinklered for the purposes of this analysis.

With a building construction of Type V-B and fire flow calculation area of 36,000 square feet, Appendix B of the 2010 California Fire Code (CFC) requires a flow of 5,000 gpm with duration of four (4) hours at a residual pressure of 20 psi. The fire flow requirements are summarized in Table 6. It should be noted that the provision of an approved fire sprinkler system may allow for a reduction in total fire flow required.

Table 6: Fire Flow Requirements[1]

Hydrant Flow (gpm)[2]	5,000
Duration (hours)	4
Residual Pressure (psi)	20

[1] Per Appendix B of the 2010 California Fire Code
[2] For a non-sprinklered building.

It should be noted that fire sprinkler system pressure requirements for the on-site private system were not included as part of this analysis. Reported pressure results correspond to the City's system pressures upstream of any meters and/or backflow prevention devices.

Hydraulic Model Evaluation

The City's existing hydraulic model has been used for this hydraulic model evaluation, which examines the impacts to the City's system that would be caused by the additional demand from The Grove project. The City's existing system has been evaluated under maximum day demand 24-hour duration extended period simulations (EPS), which simulates a variation in demand up to the peak hour demand (PHD), and has also been evaluated under a fire flow scenario occurring over the peak hour demand. The criteria used for this evaluation are per the City's 2011 WMP, except as otherwise noted, and are summarized herein. The evaluation criteria, evaluation procedure, and hydraulic model results are discussed in the following sections.

Pressure, Velocity, and Peaking Factor Criteria

Recommended Service Pressures (psi)

Minimum	40
Maximum	150
Fire Flow	20

Notes:

1. Service pressures above 80 psi require a pressure regulator as stated in the Uniform Plumbing Code.
2. Services pressures above 150 psi require special approval and either individual pressure regulators or a regulating station on the main line.

Pipeline Velocity Criteria (fps)

Peak Hour Demand [1]	10
Maximum Day Demand plus Fire Flow	15
Minimum	1

[1] With a maximum friction loss of 10 ft/1,000 ft.

Water Demand Peaking Factors

Demand Condition	Peaking Factor
Maximum Day	1.52 x Average Day
Peak Hour [1]	3.97 x Average Day

[1] Actual peak hour factors for individual nodes are per the assigned diurnal in the hydraulic model.

Storage Criteria

In October 2014, the City of Ventura amended the water tank/reservoir storage criteria of the 2008 Engineering Standards and 2011 Water Master Plan to adopt the following:

- Operational Storage: Maximum Daily Demand for 7 hrs (24-hr continuous pumping)
  Maximum Daily Demand for 21.3 hrs (9-hr off-peak pumping)
- Emergency Storage: Maximum Daily Demand for 8 hrs
- Fire Storage: Largest fire flow requirement in pressure zone for the specified duration

A copy of this Amendment is included in Attachment 2.

Hydraulic Model Analysis

The Grove project is located at the northern end of the 330 Zone, which serves the southern-central areas of the City's distribution system. The current water supply sources for the 330 Zone include the following:

- 330 Booster Pump Station
- Golf Course Booster Pump Station
- Petit PRV (Emergency)
- Telegraph and Mills Upper PRV (Emergency)

Supply is taken from the 330 Zone by the following facilities:

- Mariano Booster Pump Station
- Bailey Booster Pump Station
- Main and Mills PRV (Emergency)
- Palma PRV

Storage for the 330 Zone is provided by the following water storage tanks:

- Bailey Reservoir

The Project water utility plan (See Attachment 1) indicates that the Project will receive water service from two connection points: one to the existing 12-inch waterline in Thille Street, and one to the existing 12-inch waterline in Telephone Road. In order to make these connections, it will be necessary to extend the existing City waterlines to the Project parcel. This was accomplished in the model by adding three junctions (J2342, J2340, and J2338) and three pipes (L6473, L6469, and L6471). The model junctions J2342 and J2340 were used to simulate the proposed Project demand. The demand variation at these junctions is based on the "PATN33" diurnal pattern, which

is used throughout the model. This diurnal pattern is based on actual meter data from a master meter for a large residential apartment complex performed as part of the 2011 WMP. This diurnal pattern has two peaks, one occurring in the morning at 7:00 AM, and a second peak later in the evening at 7:00 PM, and is expected to be an accurate representation of demand fluctuations for The Grove. See Attachment 3 for the assigned diurnal pattern. For the purpose of the fire flow analysis, the required fire flow was split equally between junctions J2342 and J2340.

The City's existing hydraulic model has been used to run an EPS under maximum day demand, which includes peak hour demand, under existing conditions to establish a baseline set of system pressures and internal pipeline velocities for the 330 Zone. These baseline results have been compared to the post-Project results to determine the sensitivity of the City's system to changes in demand at the location of the Project. Subsequent EPS simulations were run under maximum day demand with The Grove and maximum day demand with The Grove plus the required fire flow of 5,000 gpm for a duration of 4 hours from 6:00 AM to 10:00 AM with the system wide peak hour demand occurring at 7:00 AM. An additional set of scenarios have been evaluated that includes all Planning Projects to determine if any deficiencies will be ultimately created at buildout of the currently identified Planning Projects (as of December 31, 2012). A summary of the model scenarios is listed in Table 7.

Table 7: Model Scenario Summary

Scenario No.	Description
1	Existing MDD
2	Existing MDD + The Grove MDD
3	Existing MDD + The Grove MDD + Fire Flow @ The Grove
4	Existing MDD + All Planning Projects (12/31/12) MDD
5	Existing MDD + All Planning Projects MDD + Fire Flow @ The Grove

MDD = Maximum Day Demand

Tables 8 and 9 include model results for elements at or immediately adjacent to The Grove as well as any elements within the 330 Zone identified as critical based on evaluation criteria. See Attachment 4 for an exhibit showing the locations and IDs of the nodes and pipes adjacent to the Project.

Table 8: Hydraulic Model Results - Junctions

Node	Pressure Zone	Elev (ft)	Static Press (psi)	Ex MDD		Ex MDD + The Grove		Ex MDD + The Grove + Fire Flow		Ex MDD + All Planning Projects		Ex MDD + All Planning Projects + Fire Flow	
				Min Pressure (psi)	Min Head (ft)	Min Pressure (psi)	Min Head (ft)	Min Pressure (psi)	Min Head (ft)	Min Pressure (psi)	Min Head (ft)	Min Pressure (psi)	Min Head (ft)
LOCAL JUNCTIONS													
J2338	330	150.19	77.8	67.9	307	66.9	305	49.6	265	66.1	303	45.6	255
J2340	330	150.19	77.8	67.9	307	66.9	305	48.7	262	66.1	303	44.6	253
J2342	330	169.69	69.4	62.6	314	61.7	312	42.0	267	60.2	309	38.8	259
J4829	330	142.00	81.4	70.2	304	69.4	302	53.6	266	68.8	301	49.4	256
J4947	330	147.51	79.0	68.7	306	67.7	304	50.9	265	67.0	302	46.8	256
J4949	330	168.57	69.9	62.9	314	62.2	312	47.7	279	60.6	308	44.4	271
J4975	330	176.61	66.4	59.6	314	58.8	312	43.6	277	57.2	309	40.4	270
J4977	330	181.11	64.5	57.7	314	56.9	313	41.8	277	55.4	309	38.5	270
J4979	330	177.86	65.9	59.1	314	58.3	312	41.8	274	56.7	309	38.6	267
J4981	330	174.77	67.2	60.4	314	59.6	312	42.9	274	58.0	309	39.7	266
J4983	330	169.69	69.4	62.6	314	61.8	312	43.9	271	60.2	309	40.7	264
J4985	330	170.71	69.0	62.1	314	61.3	312	43.6	271	59.7	309	40.4	264
J4987	330	179.17	65.3	58.5	314	57.7	312	40.3	272	56.1	309	37.1	265
J4989	330	186.45	62.1	55.3	314	54.5	312	37.4	273	52.9	309	34.2	265
J4991	330	183.34	63.5	56.7	314	55.9	312	39.0	273	54.3	309	35.7	266
J5015	330	188.92	61.1	54.3	314	53.4	312	36.3	273	51.9	309	33.0	265
J5017	330	170.77	68.9	62.1	314	61.3	312	45.1	275	59.7	309	41.9	267
330 ZONE CRITICAL JUNCTIONS													
J5235	330	219.62	47.8	42.1	317	41.6	316	32.1	294	40.0	312	29.3	287
J5301	330	228.68	43.9	37.1	314	36.9	314	32.3	303	33.4	306	29.4	297
J5303	330	241.67	38.2	31.6	314	31.3	314	26.8	303	27.9	306	23.9	297
J5305	330	225.89	45.1	38.6	315	38.3	314	33.9	304	35.1	307	31.1	298
J5377	330	221.30	47.1	42.1	318	41.8	318	37.9	309	39.4	312	35.6	303
J5379	330	219.92	47.7	42.7	318	42.4	318	38.5	309	40.0	312	36.2	303
J5405	330	234.16	41.5	36.3	318	36.1	317	32.1	308	33.4	311	29.8	303
J5407	330	238.36	39.7	33.7	316	33.5	316	29.2	306	30.4	309	26.6	300
J5409	330	221.13	47.1	42.0	318	41.7	317	37.7	308	39.2	312	35.4	303
J5411	330	222.61	46.5	41.3	318	41.1	317	37.1	308	38.5	312	34.8	303
J5415	330	219.89	47.7	42.5	318	42.2	317	38.2	308	39.7	311	35.9	303

Note: Shaded cells indicate elements that did not meet the evaluation criteria.

Table 9: Hydraulic Model Results – Pipes

ID	Diameter (in)	Length (ft)	Ex MDD		Ex MDD + The Grove		Ex MDD + The Grove + Fire Flow		Ex MDD + All Planning Projects		Ex MDD + All Planning Projects + Fire Flow	
			Max Flow (gpm)	Max Velocity (fps)	Max Flow (gpm)	Max Velocity (fps)	Max Flow (gpm)	Max Velocity (fps)	Max Flow (gpm)	Max Velocity (fps)	Max Flow (gpm)	Max Velocity (fps)
LOCAL PIPES												
L6056	12	444	1,308	3.7	1,211	3.4	1,023	2.9	1,091	3.1	986	2.8
L6058	12	216	1,364	3.9	1,266	3.6	1,047	3.0	1,123	3.2	1,010	2.9
L6084	12	677	359	1.0	339	1.0	889	2.5	329	0.9	823	2.3
L6086	12	414	438	1.2	459	1.3	360	1.0	450	1.3	421	1.2
L6088	12	389	372	1.1	441	1.3	1,867	5.3	435	1.2	1,872	5.3
L6090	12	353	212	0.6	239	0.7	852	2.4	235	0.7	857	2.4
L6092	12	351	48	0.1	164	0.5	1,851	5.3	165	0.5	1,850	5.3
L6094	12	140	39	0.1	28	0.1	825	2.3	28	0.1	825	2.3
L6096	12	441	34	0.1	58	0.2	871	2.5	57	0.2	872	2.5
L6098	12	642	45	0.1	72	0.2	627	1.8	72	0.2	628	1.8
L6100	12	188	134	0.4	175	0.5	989	2.8	174	0.5	990	2.8
L6102	12	423	156	0.4	197	0.6	1,011	2.9	196	0.6	1,011	2.9
L6126	10	780	16	0.1	30	0.1	288	1.2	29	0.1	289	1.2
L6128	10	247	31	0.1	44	0.2	303	1.2	44	0.2	303	1.2
L6130	12	446	146	0.4	112	0.3	1,016	2.9	108	0.3	1,011	2.9
L6134	12	733	92	0.3	92	0.3	1,165	3.3	97	0.3	1,160	3.3
L6469	12	1,478	1,364	3.9	1,422	4.0	2,004	5.7	1,246	3.5	2,132	6.1
L6471	12	170	0	0.0	157	0.4	2,657	7.5	157	0.4	2,657	7.5
L6473	12	328	0	0.0	157	0.4	2,657	7.5	157	0.4	2,657	7.5
330 ZONE CRITICAL PIPES												
L9740	12	9	3,829	10.9	3,889	11.0	4,745	13.5	4,223	12.0	5,037	14.3
L9744	12	10	3,829	10.9	3,889	11.0	4,745	13.5	4,223	12.0	5,037	14.3
L9746	12	10	4,648	13.2	4,718	13.4	5,713	16.2	5,135	14.6	6,173	17.5
L9748	12	10	5,119	14.5	5,206	14.8	6,457	18.3	5,699	16.2	6,911	19.6
L9964	6	7	1,030	11.7	1,029	11.7	1,028	11.7	1,028	11.7	1,025	11.6
L9966	6	13	1,030	11.7	1,029	11.7	1,028	11.7	1,028	11.7	1,025	11.6

Note: Shaded cells indicate elements that did not meet the evaluation criteria.

Based on the hydraulic model results, all pressures were found to be acceptable within the immediate Project area under all of the evaluated scenarios. Pressures below the minimum criteria were identified among a series of eleven junctions (model IDs J5235, J5301, J5303, J5305, J5377, J5379, J5405, J5407, J5409, J5411, and J5415) located at the north-central area of the 330 Zone at the pressure zone boundary at Walcott Avenue and near the intersection of Telephone Road and Johnson Drive. The addition of the Project demands did not create any new pressure deficiencies, although existing deficiencies were slightly worsened. These junctions are located at relatively high elevations for the 330 Zone, which is evident from their static pressures that range from approximately 38 to 48 psi. Five of these junctions (model IDs J5301, J5303, J5305, J5405, and J5407) were identified as already being deficient under existing conditions; however, the remaining six (model IDs J5235, J5377, J5379, J5409, J5411, and J5415) will eventually become deficient after all Planning Projects are built. Under the fire flow scenario, all 330 Zone service pressures remained above the required 20 psi. Overall, the additional Project decreased 330 Zone pressures a maximum of 0.6 psi and decreased local pressures by a max of 1.1 psi. With all Planning Projects in place, the local pressures decreased a maximum of approximately 2.4 psi.

Based on the hydraulic model results, all pipeline internal velocities were found to be acceptable within the immediate Project area under all of the evaluated scenarios, with a maximum velocity of approximately 8 feet per second under fire flow conditions. The Grove is served off of a 12-inch looped system within the 330 Zone. Overall the additional demand had a minor impact on pipe velocities, increasing by a maximum of 0.4 feet per second, and did not create any new deficiencies, although existing deficiencies were slightly worsened. With all Planning Projects in place, the velocities increase by a maximum of approximately 1.7 feet per second. All six pipes that were identified as deficient are located at the suction sides of the Mariano Booster Pump Station and Bailey Pump Station. Velocities at or directly adjacent to pump stations are typically higher than normal system velocities, and are not expected to be a concern.

The additional demand of the Project will also require a nominal increase in operational and emergency reservoir storage equal to 68,975 gallons for 24-hour continuous pumping, or 134,731 gallons for 9-hour off-peak pumping. A summary of the storage requirements is provided in Table 10.

Table 10: Storage Requirements

Max Day Demand (gpm)	Max Day Demand (gpd)	Operational Storage			Emergency Storage (gpd)	Total Storage Req'd		
		Max Day Demand for 7 hrs[1] (gpd)	OR	Max Day Demand for 21.3 hrs[2] (gpd)		Max Day Demand for 7 hrs[1] (gpd)	OR	Max Day Demand for 21.3 hrs[2] (gpd)
76.64	110,360	32,188		97,944	36,787	68,975		134,731

[1] 24-hour continuous pumping.

[2] 9-hour off-peak pumping.

Known Hydraulic Issues in the 330 Zone

The hydraulic calculations and analyses performed as part of the 2011 WMP had previously identified the eleven low pressure junctions that were identified as deficient under this analysis. Potential solutions were evaluated for these areas in the 2011 WMP; however, it was determined that shifting the zone boundary between the 330 and 430 Zones was not practical due to the limited nature of the deficiencies. No recommendations were made regarding these locations in the 2011 WMP.

The 330 Zone reservoir storage was determined to be deficient by 4.11 MG in the existing condition in the 2011 WMP. It was also determined that pump capacity is not available to utilize excess storage of the 210 Zone. It was recommended to proceed with two Capital Improvement Projects to develop two new groundwater wells with back-up power to mitigate the 330 Zone reservoir storage deficiency.

Additional Hydraulic Considerations

This hydraulic evaluation examines the impacts of The Grove specifically on the City's domestic water distribution system; however, the on-site system (anything including or downstream of a meter and/or backflow prevention device, if provided) has been specifically excluded from this evaluation. It should be understood that the pressures reported in this analysis be taken as the pressure in the City's system at ground elevation. Additional headlosses through backflow prevention devices (typically around 10 pounds per square inch (psi), although this value will vary based on the make, size, and flow of the backflow preventer) and on-site piping must be taken into account by others. The water pressure will also decrease for each building story at an amount of roughly 5.2 psi per story (assuming 12 feet per floor). Michael Baker International does not assume responsibility for any private on-site piping.

Hydraulic Evaluation Conclusion and Recommendations

The proposed Grove project consists of 59 single-family homes, up to 191 townhouse/apartment units, a 1,000 square foot clubhouse, and 4.92 acres of parks/trails, which is expected to produce an average day demand of 50.42 gpm, maximum day demand of 76.64 gpm, and peak hour demand of 200.17 gpm. While the Project was evaluated with a fire flow of 5,000 gpm for a non-sprinklered building since the fire sprinkler system demand was not available, it is understood that all residential units will be equipped with fire sprinkler systems, which may allow for a reduction in fire flow required. Ultimately, the fire flow requirement is subject to the approval of the local fire authority.

Hydraulic model results indicated that the City's existing domestic water distribution system has available capacity to support the increased water demand of The Grove and is able to meet the required fire flow without introducing any new pressure or pipeline velocity deficiencies under current conditions. There are a few locations within the 330 Zone where the minimum pressure is not met; however, those deficiencies existed prior to the proposed Project, although these deficiencies are expected to slightly worsen. Under the build out of all Planning Projects, six additional junctions will become deficient. These deficient junctions represent two separate locations at the north-central area of the 330 Zone at the pressure zone boundary at Walcott Avenue and near the intersection of Telephone Road and Johnson Drive.

The hydraulic model results for the 330 Zone as a result of the addition of the proposed Grove project are as follows:

- Local pressures will decrease by a maximum of approximately 1.1 psi during maximum day demand, with all local pressures remaining above 53 psi.
- At Planning Project build out, local pressures are expected to decrease approximately 2.4 psi, with all local pressures remaining above 51 psi.
- Under maximum day demand plus fire flow conditions, all local pressures remained above 36 psi.
- At Planning Project build out under maximum day demand plus fire flow condition, all local pressures remained above 33 psi.
- The current deficient pressures in the 330 Zone will decrease by a maximum of approximately 0.6 psi, although they are expected to ultimately decrease by a maximum of approximately 3.7 psi under maximum day demand at Planning Project build out.
- Local pipeline velocities will increase by a maximum of approximately 0.4 feet per second under maximum day demand conditions.
- At Planning Project build out, local pipeline velocities are expected to increase by a maximum of approximately 0.7 feet per second.

- Local pipeline velocities remain under 7.5 feet per second during a fire flow condition.
- The additional demand of the Project will require an increase in reservoir storage in the 330 Zone of 68,975 gallons (for 24-hour continuous pumping) or 134,731 gallons (for 9-hour off-peak pumping); however, current CIP projects for two new wells will help to mitigate this deficiency.

Water Supply Required

This Project is projected to require an annual water supply of 81.33 AFY to meet the projected water demand requirements.

Attachments:

Attachment 1: Site Plan and Water Utility Plan
Attachment 2: Amendment No. 2, Engineering Design Standards – July 2008, City of Ventura
Attachment 3: Diurnal Curve
Attachment 4: Model Pipe and Junction IDs

cc: Susan Rungren, P.E., Ventura Water
Shaida Stuffler, P.E., City of Ventura
File

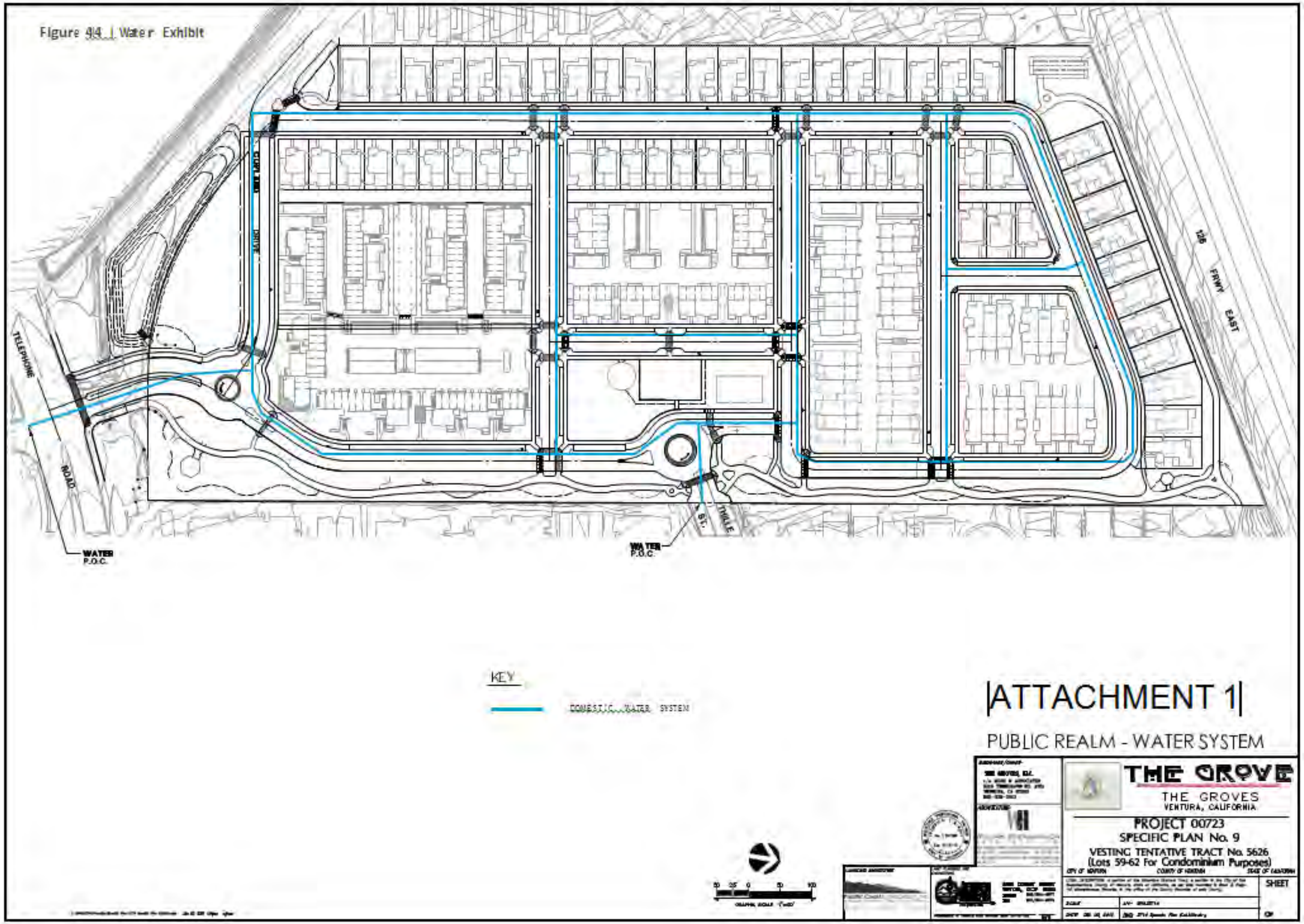
Figure 4/4 | Water Exhibit
TELEPHONE
ROAD
WATER P.O.C.
WATER P.O.C.
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TRAILE
126 FRWY EAST
KEY
DOMESTIC WATER SYSTEM
|ATTACHMENT 1|
PUBLIC REALM - WATER SYSTEM
THE GROVE
THE GROVES
VENTURA, CALIFORNIA
PROJECT 00723
SPECIFIC PLAN No. 9
VESTING TENTATIVE TRACT No. 5626
(Lots 59-62 For Condominium Purposes)
SHEET

Amendment No. 2
Engineering Design Standards - July 2008
City of Ventura

Approved by: _____ Io—0-1.,._

Rick Raives, Public Works Director Date

The Engineering Design Standards - July 2008 is hereby amended as follows:

Modify Section 10-5, Water Tanks/Reservoirs as follows:

Delete Sentence 2 in Paragraph 1:

Storage requirements for all new reservoirs equal to 100% of the maximum daily demand (operational storage) plus 75% of the maximum daily demand (emergency storage) plus the maximum required fire flow volume.

Replace with the following: .

Storage requirements for reservoirs shall be in accordance with the following criteria:

Operational Storage: Maximum Daily Demand for 7 hrs (24-hr continuous pumping)
Maximum Daily Demand for 21.3 hrs (9 hr off-peak pumping)

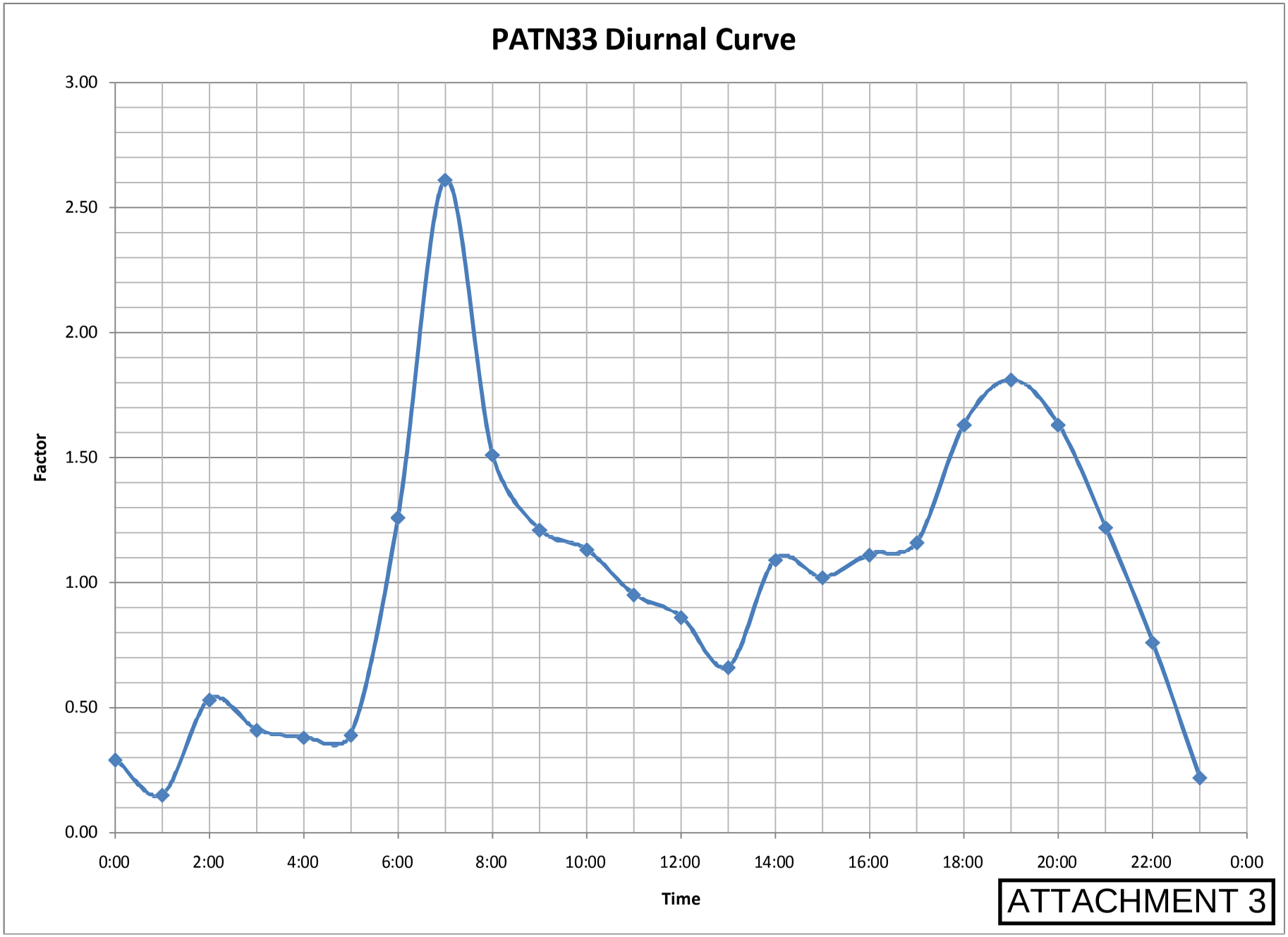
Emergency Storage: Maximum Daily Demand for 8 hrs

Fire Storage: Largest fire flow requirement in pressure zone for the specified duration

Add Item 28 to the list of reservoir design requirements:

28. Tank design shall include installation of a water circulation system, as approved by Ventura Water's General Manager.

ATTACHMENT 2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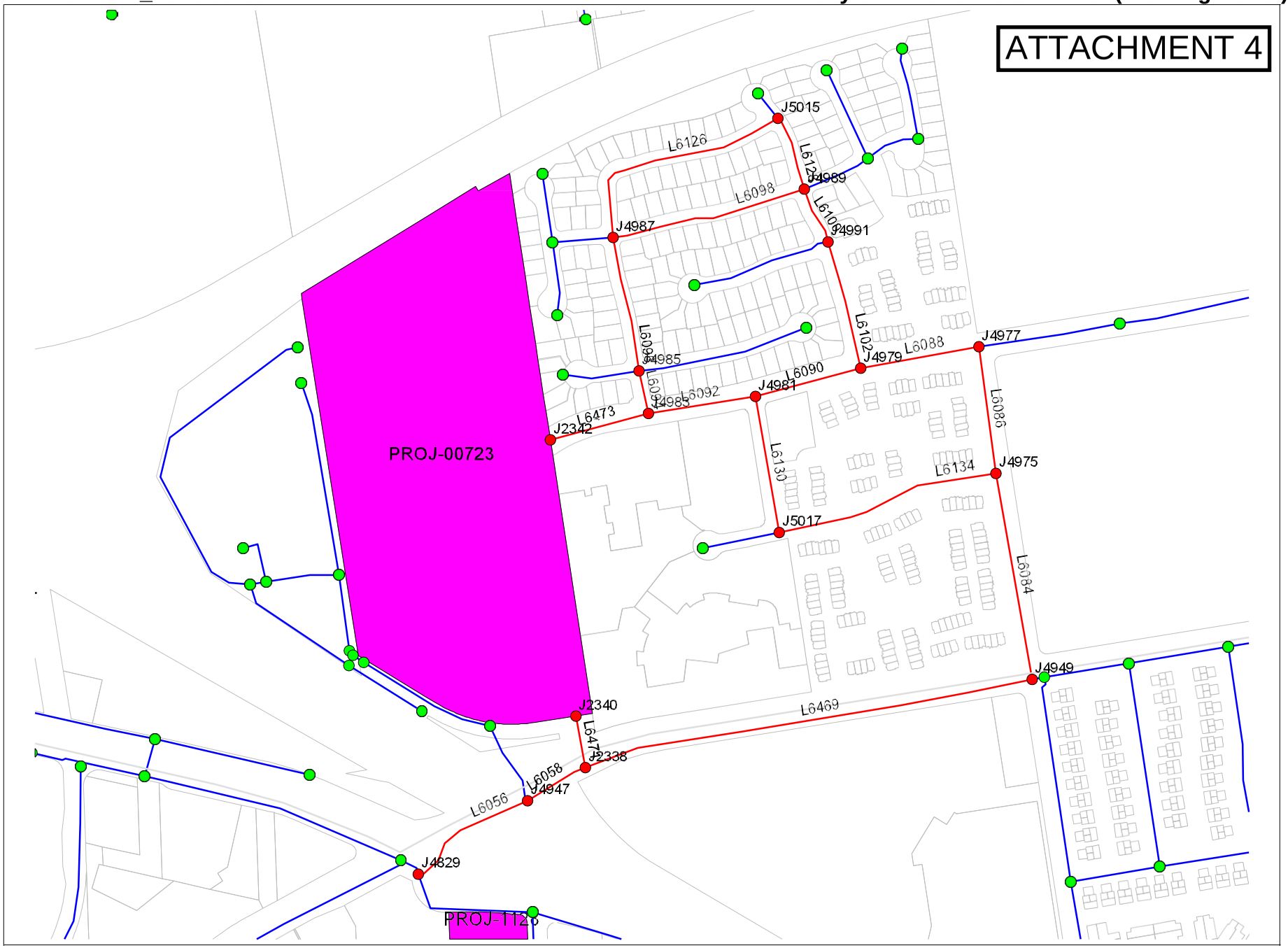
ATTACHMENT 3


ATTACHMENT 4
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PROJ-1120
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