City of Banning

Community Development Department

NOTICE OF INTENT (NOI) TO ADOPT A MITIGATED NEGATIVE DECLARATION (MND) AND NOTICE OF PUBLIC HEARING FOR CONSIDERATION OF DESIGN REVIEW 22-7003 AND TENTATIVE PARCEL MAP 38437, FOR THE CONSTRUCTION AND OPERATION OF A 118,786 SQUARE FOOT WAREHOUSE BUILDING OF WHICH 10,000 SQUARE FEET IS DESIGNATED FOR OFFICE SPACE ACROSS TWO FLOORS ON 6.45 GROSS ACRES OF LAND LOCATED ON THE NORTHEAST OF CORNER OF WEST LINCOLN STREET AND SOUTH 4TH STREET.

NOI (MND) 30-day comment period: opens March 10, 2023, and closes April 9, 2023.

NOTICE IS HEREBY GIVEN of a public hearing before the City of Banning Planning Commission, to be held on Wednesday, May 3, 2023, at 6:30 p.m. in the Council Chambers, City Hall, 99 East Ramsey Street, Banning, California, to consider an Initial Study/Mitigated Negative Declaration, Design Review 22-7003 for the construction and operation of a 118,786 square foot warehouse building of which 10,000 square feet is designated for office space across two floors on 6.45 gross acres of land located on the northeast corner of West Lincoln Street and South 4th Street (APN's 540-210-009 and 540-210-020). The Community Development Department has determined, on the basis of the Initial Study, that the project will not have a significant effect on the environment with implementation of recommended mitigation measures. In accordance with the disclosure requirements of CEQA Guidelines Section 15072(g)(5), the Project site is not listed as a hazardous property as designated under Section 65962.5 of the Government Code.

To observe and participate in the online video portion of the meeting, through your personal computer or device, follow this link:

https://us02web.zoom.us/j/89561454841?pwd=QmhOcDYzb0t0NDYvejZhNUo0R01LZz09

Meeting ID: 895 6145 4841
Passcode: 092220
Dial in: +1 669 900 9128 US

To observe the live meeting through your personal computer, but not participate with video or oral comments, you may use your computer or smart phone to enter the following or click on the link: https://banninglive.viebit.com or on the Banning Government Channel on Cable Television

Information regarding the Initial Study/Mitigated Negative Declaration can be obtained by contacting the City's Community Development Department at (951) 922-3125, or by visiting the following link: https://banningca.gov/Archive.aspx?AMID=60&Type=&ADID=

All parties interested in speaking either in support of or in opposition to this item are invited to attend the hearing by accessing the videoconference or by sending their written comments by email to scalderon@banningca.us or by mail to the Community Development Department, Planning Division, City of Banning at 99 E. Ramsey Street, Banning, California, 92220.

If you challenge any decision regarding the above proposal in court, you may be limited to raising only those issues you or someone else raised in written correspondence delivered to the Planning Commission Recording Secretary prior to, at, or during the time the Planning Commission makes

its recommendation on the proposal; or, you or someone else raised at the public hearing or in written correspondence delivered to the hearing body at, or prior to, the hearing (California Government Code, Section 65009).

BY ORDER OF THE COMMUNITY DEVELOPMENT DIRECTOR OF THE CITY OF BANNING, CALIFORNIA

Adam Rush, M.A., AICP
Community Development Director

Dated: March 7, 2020
Publish: March 10, 2020

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a potentially significant impact as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Energy
☐ Geology/Soils	☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials
☐ Hydrology/Water Quality	☐ Land Use/Planning	☐ Mineral Resources
☐ Noise	☐ Population/Housing	☐ Public Services
☐ Recreation	☐ Transportation	☐ Tribal Cultural Resources
☐ Utilities/Service Systems	☐ Wildfire	☐ Mandatory Findings of Significance

DETERMINATION (TO BE COMPLETED BY THE LEAD AGENCY)

On the basis of the initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

☐ I find that the amended project has previously been analyzed as part of an earlier CEQA document. Minor additions and/or clarifications are needed to make the previous documentation adequate to cover the project which are documented in this ADDENDUM to the earlier CEQA document (CEQA § 15

Signature: Adam B. Rush, M.A., AICP Date: 3/7/2023

Adam Rush, Community Development Director

INITIAL STUDY/
MITIGATED NEGATIVE DECLARATION

FIRST LINCOLN INDUSTRIAL PROJECT

BANNING, RIVERSIDE COUNTY, CALIFORNIA

DR 22-7003, TPM 22-4001, ENV 22-1504

Prepared for:

City of Banning
99 E. Ramsey Street
Banning, California 92220
(951) 922-3131
Contact: Adam Rush, Community Development Director

Prepared by:

LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
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(951) 781-9310
LSA Project No. FRT2201

LSA

February 2023

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1.0 INTRODUCTION

This Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared to evaluate the potential environmental effects of the First Lincoln Industrial Project (project) proposed by First Industrial Realty Trust, Inc. (project applicant) in the City of Banning.

Section 1.0 of this Initial Study describes the purpose, environmental authorization, the intended uses of the Initial Study, documents incorporated by reference, and the processes and procedures governing the preparation of the environmental document. Pursuant to Section 15367 of the State of California *Guidelines for Implementation of the California Environmental Quality Act* (*CEQA Guidelines*), the City of Banning (City) is the Lead Agency under the California Environmental Quality Act (CEQA). The City has primary responsibility for compliance with CEQA and consideration of the First Lincoln Industrial Project (project or proposed project).

The Initial Study is organized as follows:

- **Section 1.0, Introduction,** provides a discussion of the Initial Study's purpose, intended uses, and public review process.
- **Section 2.0, Project Description,** provides a detailed description of the existing environmental setting and proposed project.
- **Section 3.0, Environmental Checklist,** includes a checklist and accompanying analyses of the project's effect on the environment. For each environmental issue, the analysis identifies the level of project's environmental impact.
- **Section 4.0, References,** details the references cited throughout the document.
- **Appendices** include the technical material prepared to support the analyses contained in the IS.

1.1 PURPOSE OF THE INITIAL STUDY

CEQA requires that the proposed project be reviewed to determine the environmental effects that would result if the project were approved and implemented. The City, as the Lead Agency, has the responsibility for preparing and adopting the associated environmental document prior to consideration of the proposed project. The City has the authority to make decisions regarding discretionary actions relating to implementation of the proposed project.

This Initial Study has been prepared in accordance with the relevant provisions of CEQA (California Public Resources Code Section 21000 et seq.); the *CEQA Guidelines,*[1] and the rules, regulations, and procedures for implementing CEQA as adopted by the City. The objective of the Initial Study is to inform City decision-makers, representatives of other affected/responsible agencies, the public, and interested parties of the potential environmental effects of the project.

[1] California Code of Regulations. Title 14, Chapter 3, Sections 15000 through 15387.

As established in *CEQA Guidelines* Section 15063(c), the purposes of an initial study are to:

- Provide the Lead Agency (City of Banning) with information to use as the basis for deciding whether to prepare an Environmental Impact Report (EIR), Negative Declaration (ND), or Mitigated Negative Declaration (MND);
- Enable an applicant or Lead Agency to modify a project, thus mitigating significant impacts before an EIR is prepared, and thereby enabling the project to qualify for an ND or MND;
- Assist in the preparation of an EIR, if one is required;
- Facilitate environmental assessment early in the design of a project;
- Provide a factual basis for finding in an ND or MND that a project will not have a significant effect on the environment;
- Eliminate unnecessary EIRs; and
- Determine if a previous EIR could be used to consider the environmental effects of the project.

1.2 INTENDED USE OF THIS INITIAL STUDY

The City formally initiated the environmental process for the proposed project with the preparation of this Initial Study. The Initial Study screens out those impacts that would be less than significant and do not warrant mitigation, while identifying those issues that require mitigation to reduce impacts to less than significant levels. As identified in the following analyses, project impacts related to various environmental issues either do not occur, are less than significant (when measured against established significance thresholds),or have been rendered less than significant through implementation of mitigation measures. Based on these analytical conclusions, this Initial Study supports adoption of an MND for the proposed project.

CEQA[2] permits the incorporation by reference of all or portions of other documents that are generally available to the public. The Initial Study has been prepared utilizing information from City planning and environmental documents, technical studies specifically prepared for the project, and other publicly available data. The documents utilized in the Initial Study are identified in Section 4.0 and are hereby incorporated by reference. These documents are available for review at the City of Banning Community Development Department, Planning Division.

1.3 PUBLIC REVIEW OF THE INITIAL STUDY

The Initial Study and a Notice of Intent (NOI) to adopt an MND will be distributed to responsible and trustee agencies, other affected agencies, and other parties for a 30-day public review period. Written comments regarding this Initial Study should be addressed to:

[2] *CEQA Guidelines* Section 15150.

Adam Rush, Community Development Director
City of Banning
Community Development Department, Planning Division
99 E. Ramsey Street
Banning, California 92220
(951) 922-3128 / arush@banningca.gov

After the 30-day public review period, comments raised during the public review period will be considered and addressed prior to adoption of the MND by the City.

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2.0 PROJECT DESCRIPTION

The project includes development of an approximately 118,786-square-foot warehouse building, of which 10,000 square feet would be designated office space across two levels. The following identifies the project location and existing environmental and regulatory setting and describes the proposed project.

2.1 PROJECT LOCATION AND SETTING

The project site is located in the southern portion of the City of Banning, in western Riverside County, California. The project site is located in Section 9 of Township 3 South, Range 1 East of the San Bernardino Baseline and Meridian, as depicted on the U.S. Geological Survey (USGS) 7.5-minute series *Beaumont, California* quadrangle (2000). Specifically, the center of the project site is at latitude 33°55'20.74" N and longitude -116°52'48.43" W at an elevation of approximately 2,317 feet above mean sea level and consists of two parcels (Assessor's Parcel Numbers [APNs] 540-210-009 and -020).

The project site is approximately 6.45 gross acres (6.17 net acres) and is bounded by Lincoln Street/State Route 243 (SR-243) to the south, the Gilman Home Stormwater Channel to the west, the Union Pacific Railroad and Interstate 10 (I-10) to the north, and light industrial uses to the east. Single-family homes are located approximately 550 feet north of the project site boundary across the Union Pacific Railroad and I-10. Industrial uses are located across the street from the project site immediately south of Lincoln Street/SR-243, and multi-family residential uses are located farther south approximately 595 feet from the project site boundary. Finally, the project is in Compatibility Zone D (Primary Traffic Patterns and Runway Buffer Area) of the [*Banning Municipal Airport*] *Riverside County Airport Land Use Compatibility Plan* (ALUCP).[3] Figure 1: Regional and Project Location and Figure 2: Existing Setting (all Section 2.0 figures provided at the end of this section) depict the location of the project site on a regional and local scale.

The project site was previously utilized for the production of dried fruit as early as the 1930s and contained an orchard on the western portion of the site and associated commercial buildings on the eastern portion of the site.[4] The orchard was removed by 1953, and the associated commercial buildings were removed by 1967.[5] The project site is vacant with remnant asphalt of the previously-vacated 4th Street along the western boundary of the site. Additionally, the site contains three light-weight steel sub-transmission utility poles along the southern site boundary and seven eucalyptus trees in the northern portion of the site. The site is dominated by scattered non-native, ruderal vegetation.[6] Figure 3: Site Photographs includes photographs of the project site and surrounding land uses.

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3 *Riverside County Airport Land Use Comp*atibility Plan. Volume 1 Policy Document. Chapter 3, FV. Banning M Airport. Riverside County Airport Land Use Commission. October 14, 2004, Amended January 2012.

4 Weis Environmental. Phase I Environmental Site Assessment, Northeast Corner of W Lincoln Street and 4th Street, Banning, California 92220. Page 15 and Appendix E (Historical Resources). November 30, 2021.

5 Ibid.

6 Ruderal vegetation consists of species (often invasive) that are first to colonize disturbed lands.

2.2 LAND USE

The project site has an Industrial land use and zoning designation. Table 2.2.A summarizes the project site and surrounding land uses, General Plan designations, and zoning designations.

Table 2.2.A: Surrounding Land Uses

Direction	Existing Land Use	General Plan Designation	Zoning Designation
Project Site	Vacant	Industrial (I)	Industrial (I)
North	Railroad, Interstate 10, commercial and residential uses north of Interstate 10	Public Facilities – Railroad/Interstate	Public Facilities – Railroad/Interstate
East	Commercial/industrial warehouse	Industrial (I)	Industrial (I)
South	Commercial/industrial warehouses and residential uses farther south	Industrial (I)	Industrial (I)
West	Vacant land and Commercial/industrial warehouse	Industrial (I)	Industrial (I)

Sources: City of Banning, State of California. *General Plan Land Use and Zoning*. Prepared by Willdan Engineering. June 14, 2021.

The City's General Plan Land Use Element and Chapter 17.12, Section 17.12.010 (B)(5) of the City's Zoning Code indicate the Industrial (I) land use district includes industrial parks and freestanding industrial users. Examples of permitted uses include light and medium intensity manufacturing operations, warehousing and distribution, ministorage, and associated offices. Commercial recreation facilities, auto storage, and repair is also allowed. Retail uses ancillary to the industrial use are also appropriate.[7] The specific proposed warehouse use is speculative but would be subject to conditions of approval in order to be developed in a manner consistent with the existing Industrial (I) land use district as a 118,786-square-foot warehouse building.

2.3 PROJECT DESCRIPTION

The proposed 118,786-square-foot warehouse building would include 25 freight truck loading docks and employee and trailer parking as well as associated improvements; it would not include cold storage/refrigeration operations. Individual project components are described below. The conceptual site plan is presented as Figure 4: Conceptual Site Plan.

2.3.1 Facility and Site Design

The proposed project would consist of a modern industrial building up to 50 feet in height at its tallest parapet, as shown in Figure 5: Building Elevations. The industrial building would contain 10,000 square feet of office space and approximately 108,786 square feet of warehouse space. The building's design would be comprised of tempered glazed aluminum and painted concrete. The southeast and southwest corners of the building where the offices are proposed would contain parapets with glass façades, which would provide visual relief and varied massing.

[7] City of Banning. *General Plan. Chapter III: Community Development, Land Use Element.* Page III-7. Adopted January 31, 2006.

Design elements of the proposed project include landscaped setbacks and street trees along the site perimeter and on-site trees throughout the parking areas and internal drive aisles. The project would include a retaining wall along the northern boundary of the site up to 11 feet tall generally in the northwestern portion of the site and taper down in height to 7 feet in the northeastern corner of the site. The retaining wall would then proceed south along the eastern site boundary for approximately 200 feet where it would taper down to grade level. Additionally, the project includes tubular steel fencing and masonry pilasters along the entire perimeter of the site to be constructed pursuant to Section 17.24.080 (Fences, Walls, and Hedges) of the City Municipal Code.

Light poles would be installed throughout the surface parking lot and along on-site pedestrian pathways. The warehouse building would have security lighting located on the building façades. Additionally, streetlights would be installed along the Project frontage of Lincoln Street/SR-243. All Project lighting would be installed in accordance with Section 17.24.100 (Lighting) of the City Municipal Code, which requires light shielding, functional and aesthetic design, and compatibility with surrounding uses.

2.3.2 Site Access

Access to the project site consists of an asphalt driveway[8] along the western project site boundary blocked by a locked gate off Lincoln Street/SR-243. In the existing condition, vehicular and pedestrian access to the site is restricted due to the locked gate and the lack of pedestrian facilities along Lincoln Street/SR-243.

Proposed vehicle and pedestrian access to the project site would be provided by two ingress/egress driveways off Lincoln Street/SR-243 and associated frontage improvements that would include sidewalks, street trees, and lighting. The existing asphalt driveway would be demolished, and the proposed western driveway off Lincoln Street/SR-243 would be constructed approximately 48 feet wide with a center median dividing the ingress and egress routes near the southwestern corner of the project site. The proposed eastern driveway off Lincoln Street/SR-243 would be constructed approximately 40 feet wide near the southeastern corner of the project site. It is anticipated that passenger vehicles would enter and exit at either driveway and freight trucks would enter and exit at the eastern driveway. An on-site drive aisle a minimum of 35 feet wide encircling the proposed warehouse building would connect the two driveways and would facilitate internal access to freight loading docks proposed on the north side of the warehouse, passenger vehicle parking proposed on the south side of the warehouse, and the office space respectively on the southeast and southwest corners of the warehouse. Additionally, the on-site drive aisle would serve as an emergency fire lane to ensure adequate access for first responders to an emergency.

Entrances and exits to and from parking and loading facilities would be marked with appropriate directional signage, and all site access points and driveway aprons are designed and would be constructed to adequate widths for public safety pursuant to the California Fire Code and City Municipal Code Section 8.16.020.

[8] The asphalt driveway is a remnant feature from the City vacating 4th Street under a prior action.

2.3.3 Transit, Pedestrian, and Bicycle Connectivity

The project site is accessible from nearby public bus stops near the San Gorgonio Avenue/W. Ramsey Street intersection approximately 0.4-mile northeast of the site and the San Gorgonio Avenue/W. Westward Avenue intersection approximately 0.45 mile south of the site, respectively, as well as via other amenities such as Class III bikeways along nearby major corridors. Pedestrian access to the project site would occur via curb and sidewalks to be constructed and/or improved along the project frontage of Lincoln Street/SR-243.

2.3.4 Landscaping

The City requires a minimum 15 percent of the parking area to be landscaped, and the project includes approximately 32,563 square feet of landscaping, which equates to approximately 12 percent of the site. The project would incorporate landscape through a combination of accent plantings/ groundcovers, hedges, and trees along the site perimeter and include additional trees throughout the parking area and along the internal drive aisles. Enhanced landscaping would be installed throughout the project site pursuant to Chapter 17.32 (Landscaping) of the City Municipal Code, which requires the applicant to incorporate a variety of plant materials with an emphasis on drought-tolerant species compatible with the scale of adjacent structures, streets, and public spaces. Proposed landscaping would complement existing natural and manmade features, including the dominant landscaping of surrounding areas (Figure 6: Conceptual Landscape Plan details the project landscape design).

2.3.5 Drainage

The majority of the project site consists of pervious surface area. Currently, storm water generally sheet flows in a southerly direction, drains offsite onto Lincoln Street/SR-243, and flows downslope to the east where it enters the municipal storm drain system at the northwest and southwest corners of W Lincoln Street/SR-243 and S. San Gorgonio Avenue. The proposed project is expected to maintain the existing drainage pattern. Upon development of the site, all on-site storm water would be captured on site in accordance with Colorado River Basin Regional Water Quality Control Board *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities,* Order No. 2009-0009-DWQ, National Pollutant Discharge Elimination System Permit No. CAS000002, as amended by Order Nos. 2010-0014-DWQ and 2012-0006-DWQ (Construction General Permit), also known as the Municipal Separate Storm Sewer System or MS4 permit. The General Permit is supplemented by NPDES Permit No. CAS617002 and Order No. R7-2013-0011 for discharges within the Whitewater River Watershed. The runoff from the site would drain to multiple on-site surface storm drains along the drive aisle and parking areas before draining to an underground bioretention system proposed in the passenger vehicle parking area south of the proposed warehouse building. Discharged storm water would be conveyed offsite into an improved gutter along the project frontage from where it would flow east to the municipal storm drain system at the Lincoln Street/SR-243 and S. San Gorgonio Avenue intersection at volumes that do not exceed the existing, pre-developed condition.

2.3.6 Infrastructure and Off-site Improvements

The project would dedicate approximately 15 feet of right of way along the southern project site frontage and widen Lincoln Street/SR-243 to the ultimate 55-foot half width in accordance with the

City's General Plan designation for a major highway or arterial highway. Lincoln Street/SR-243 would be improved with curb, gutter, sidewalk, landscaping, streetlights, and trees along the project site frontage. The project would also interconnect to existing sewer, water, gas, and telecommunications utilities within the Lincoln Street/SR-243 right-of-way.

2.3.7 Construction

Construction activities include removal of existing on-site vegetation, including seven eucalyptus trees. Construction would also include excavation, grading, paving, construction of the warehouse building and parking areas, and the installation of lighting, landscaping, and utility connections. During grading, on-site soils would be excavated and recompacted in accordance with the 2022 California Building Code (CBC) to accommodate the proposed industrial building and parking areas.

Construction parking and staging areas would occur on site. Construction hours would conform to City standards (Chapter 8.44, Noise and Section 18.09.200, Timing of Operations of the City Municipal Code) and be limited to 7:00 a.m. to 6:00 p.m., Monday through Friday and 7:00 a.m. to 6:00 p.m. on Saturday. According to the project conceptual grading plans, excavation, compaction, and rough grading activities would result in approximately 29,000 cubic yards of exported soil (cut) and 9,000 cubic yards of imported structural soil (fill). During project construction, it is possible there would be temporary lane closures and/or detours necessary along Lincoln Street/SR-243.

Construction of the project is anticipated to commence in 2023 and be completed in 2024, resulting in a total construction duration of approximately 12 months. Construction equipment anticipated to be used includes rubber-tired dozers, tractors/loaders/backhoes, excavators, graders, scrapers, cranes, forklifts, generators, welders, air compressors, and paving equipment.

2.4 METHODOLOGY

The environmental analysis in this IS/MND provides an environmental review of the project pursuant to CEQA. The details of this proposed project, off-site improvements, and associated actions have been characterized in this section and are also addressed in detail throughout Section 3.0 of this IS/MND. If the project is approved, the proposed development would be allowed without further discretionary approval, under the condition that the development complies with the City's regulations and project-specific mitigation measures (which would also be imposed as Conditions of Approval) and other Conditions of Approval.

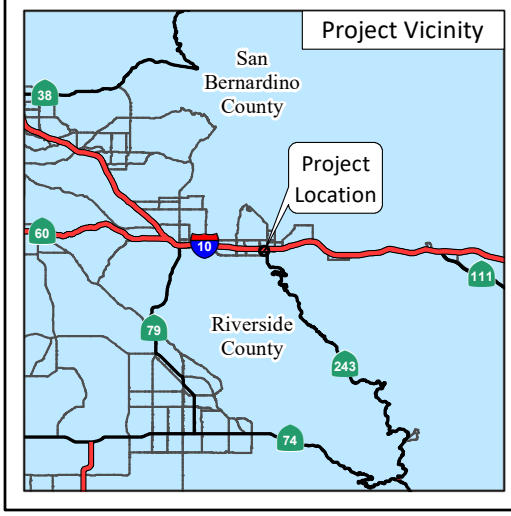
2.5 PROJECT APPROVALS

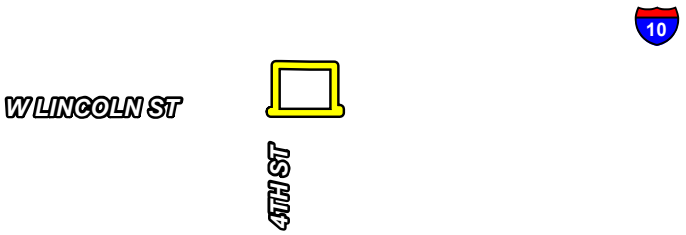
The City of Banning is the Lead Agency as set forth in *CEQA Guidelines* Section 21067 and is expected to use this IS/MND in consideration of the proposed First Lincoln Industrial Project and associated actions. These actions may include, but are not limited to, the following:

- Design Review – DR 22-7003;
- Tentative Parcel Map – TPM 22-4001; and
- Environmental Assessment – ENV 22-1504.

The project may require approvals from other regulatory agencies, listed as follows:

- State Water Resources Control Board: Applicant must submit a Notice of Intent to comply with the General Construction Activity National Pollutant Discharge Elimination (NPDES) Permit;
- Colorado River Basin Regional Water Quality Control Board: Applicant must submit a Storm Water Pollution Prevention Plan (SWPPP);
- Riverside County Airport Land Use Commission;
- California Department of Transportation (Caltrans) encroachment permit; and
- Utility Providers: Connection permits.





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LSA

LEGEND

Project Location

FIGURE 1

N

0 1000 2000
FEET

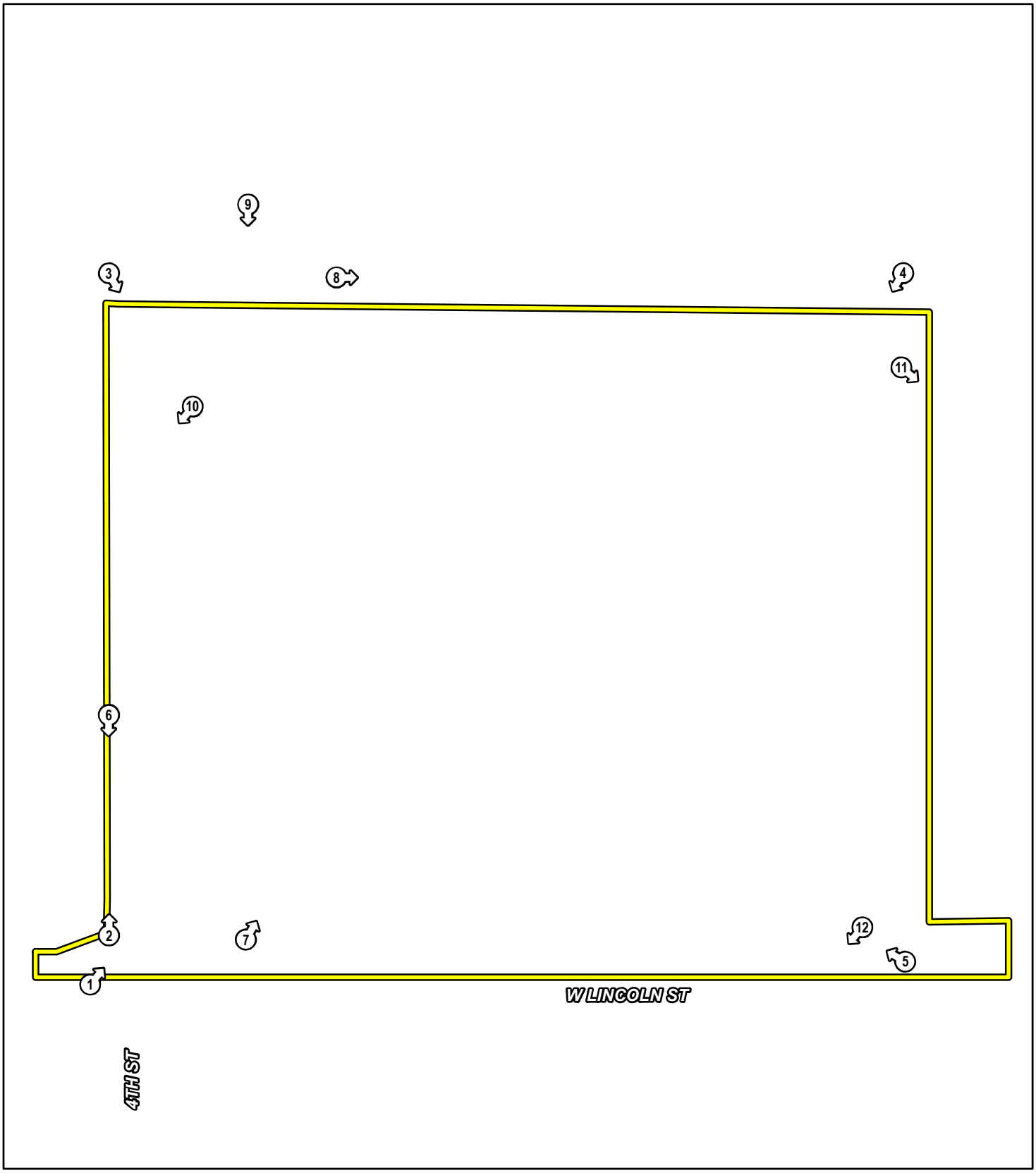
SOURCE: USGS 7.5' Quad - *Beaumont* (1988) and *Cabazon* (1988), CA

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First Lincoln Industrial Project

Regional and Project Location

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LSA

LEGEND

Project Site

Photo Location

FIGURE 2

N

0 50 100

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SOURCE: Nearmap (1/15/2022)

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First Lincoln Industrial Project

Project Setting

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1. View of the Site from the southwest.



2. View looking north from the southwest corner of the Site.



3. View of the Site from the northwest.



4. View of the Site from the northeast.



5. View of the Site from the southeast.



6. Trash and debris along asphalt paved road (western Site boundary).

LSA

FIGURE 3

First Lincoln Industrial Project

Site Photographs

SOURCE: : Weis Environmental. Phase I Environmental Site Assessment: Northeast Corner of W Lincoln Street and 4th Street, Banning, California 92220. Appendix F: Photographs. November 30, 2021.

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7. Utility related placard.



8. Northern adjoining property.



9. Petroleum pipeline placard (appears to be off-Site to the north).



10. Western adjacent property.



11. Eastern adjacent property.



12. Southern adjacent W Lincoln Street and commercial buildings.

LSA

FIGURE 3

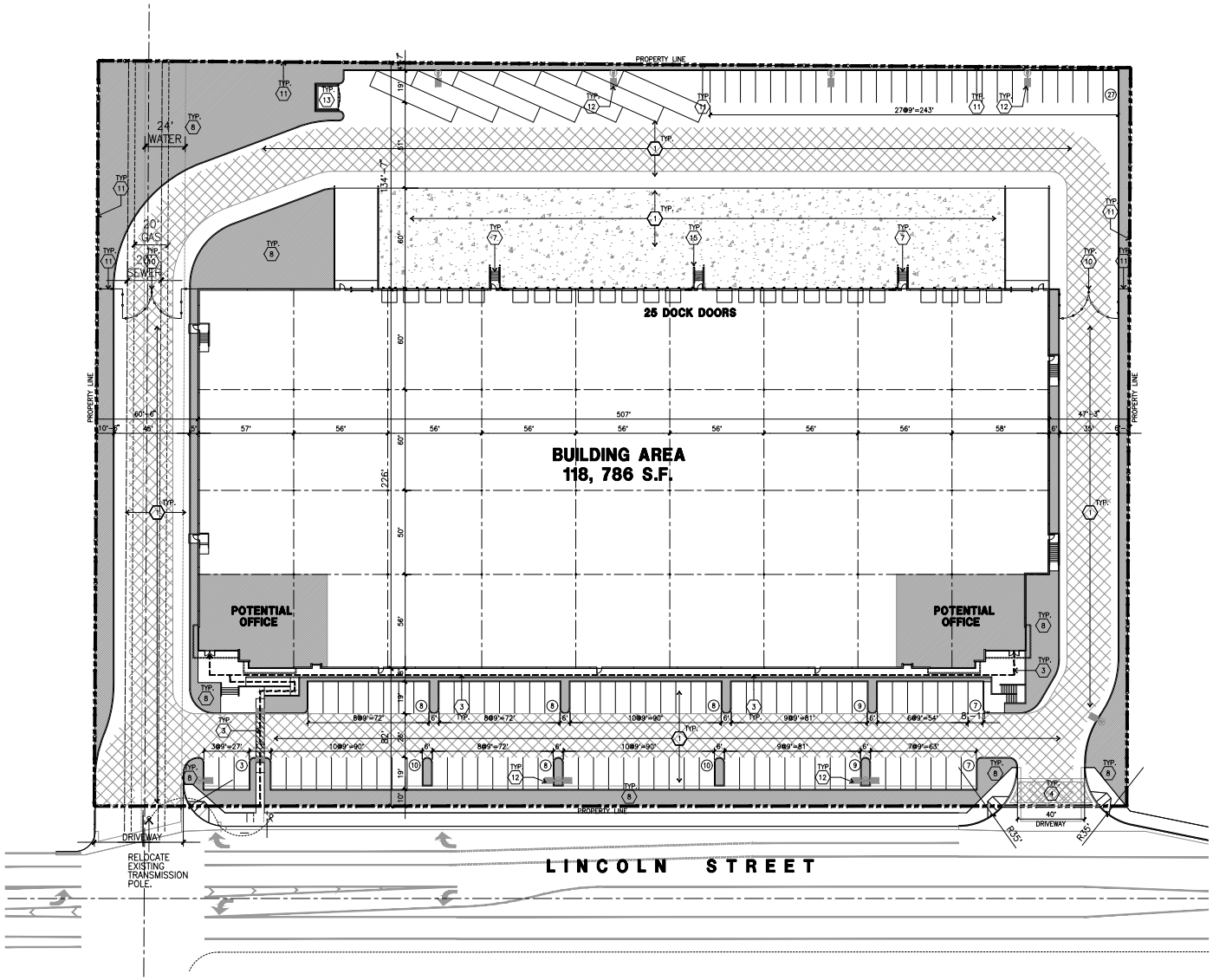
SOURCE: : Weis Environmental. Phase I Environmental Site Assessment:
Northeast Corner of W Lincoln Street and 4th Street, Banning, California 92220.
Appendix F: Photographs. November 30, 2021.

First Lincoln Industrial Project

Site Photographs

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FIGURE 4

N

0 50 100

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Source: HPA Architecture

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First Lincoln Industrial Project

Conceptual Site Plan

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LSA

FIGURE 5

First Lincoln Industrial Project

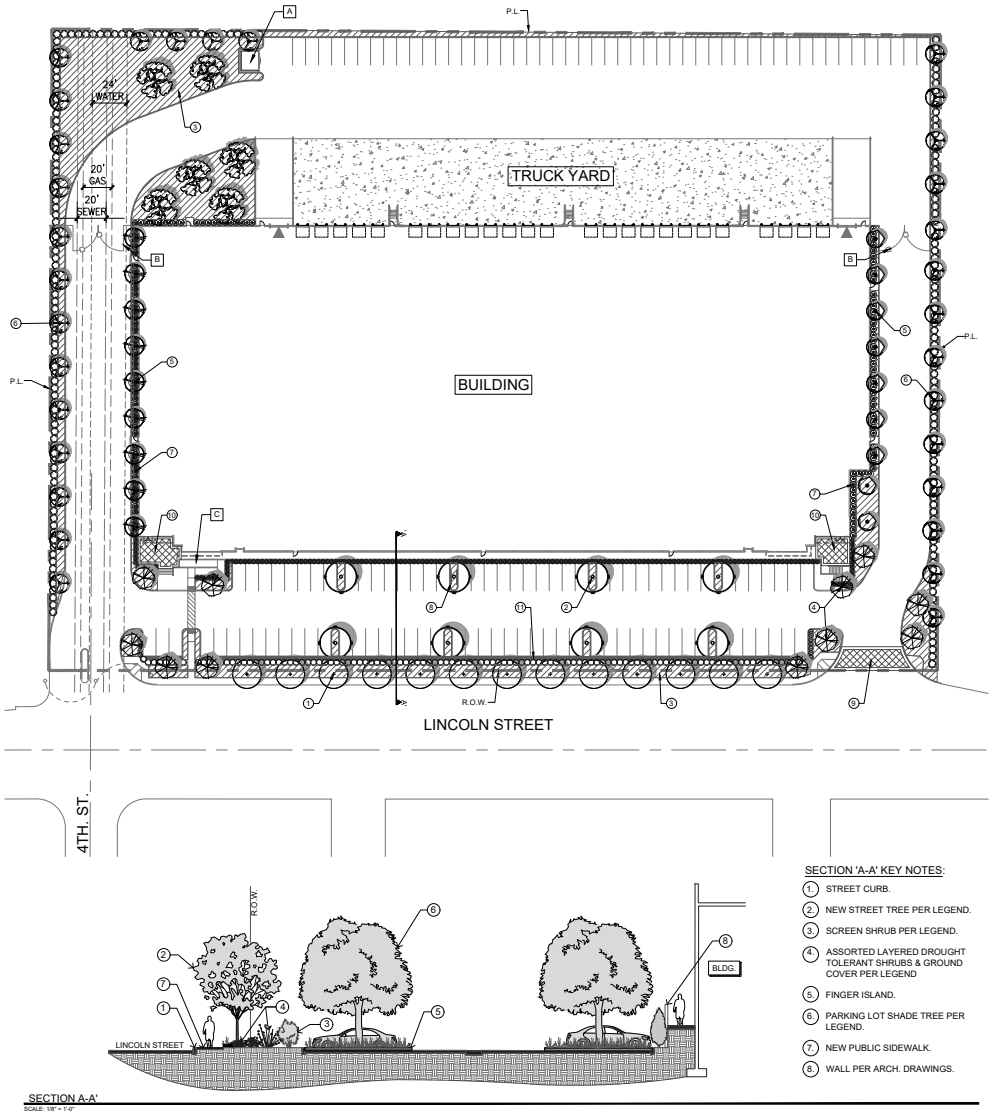
Building Elevations

NO SCALE

Source: HPA Architecture

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PLANTING LEGEND

TREES			
SYMBOL	TREE NAME	QTY.	WUCOLS
	PROPOSED STREET TREE ALONG LINCOLN STREET PLATANUS X ACERIFOLIA 'BLOODGOOD', LONDON PLANE TREE 24" BOX SIZE	13	M
	FLOWERING ACCENT TREES AT BUILDING ENTRIES CERCIDIUM X 'DESERT MUSEUM', BLUE PALO VERDE 36" BOX SIZE	11	L
	PARKING LOT SHADE TREE PROSOPIS CHILENSIS, THORNLESS CHILEAN MESQUITE 24" BOX SIZE	8	L
	EVERGREEN SCREEN TREE QUERCUS ILEX, HOLLY OAK 15 GAL. SIZE @ 30' O.C. SPACING	31	L
	VERTICAL GROWING TREE ALONG BUILDING GEIJERA PARVIFLORA, AUSTRALIAN WILLOW 15 GAL. SIZE	9	M
	VERTICAL GROWING TREE ALONG BUILDING TRISTANIA CONFERTA, BRISBANE BOX 15 GAL. SIZE	9	M
	QUERCUS AGRIFOLIA, SOUTHER LIVE OAK 15 GAL. SIZE	6	L

SHRUBS- SHRUBS SHALL CONSIST OF THE FOLLOWING:

SYMBOL	SHRUB NAME	WUCOLS
	HETEROMELES ARBUTIFOLIA, TOYOON 5 GAL. SIZE	L
	LEUCOPHYLLUM FRUTESCENS, TEXAS RANGER 5 GAL. SIZE	L
	WESTRINGIA FRUTICOSA, COAST ROSEMARY 5 GAL. SIZE	L
	ROSMARINUS 'TUSCAN BLUE', ROSEMARY SHRUB 5 GAL. SIZE	L
	PRUNUS CAROLINA 'COMPACTA', CAROLINA CHERRY 5 GAL. SIZE	L
	LIGUSTRUM TEXANUM, TEXAS PRIVET 5 GAL. SIZE	M

GROUND COVER AND SHRUB MASSES - GROUND COVER AND SHRUB MASSES SHALL BE CHOSEN FROM THE FOLLOWING:

SYMBOL	GROUND COVER/SHRUB MASS NAME	WUCOLS
	ALOE 'BLUE ELF', BLUE ELF ALOE 1 GAL. SIZE @ 18" O.C.	L
	ALOE BARBARENSIS, YELLOW ALOE 5 GAL. SIZE @ 24" O.C.	L
	CISTUS 'SUNSET', CREEPING ROCKROSE 5 GAL. SIZE @ 42" O.C.	L
	DIETES BICOLOR, FORTNIGHT LILY 1 GAL. SIZE @ 30" O.C.	M
	ENCELIA CALIFORNICA, BUSH SUNFLOWER 1 GAL. SIZE @ 36" O.C.	L
	HESPERALOE PARVIFLORA, RED YUCCA 5 GAL. SIZE @ 36" O.C.	L
	LEYMUS C. 'CANYON PRINCE', BLUE RYE GRASS 1 GAL. SIZE @ 36" O.C.	L
	MULHENBERGIA DUBIA, PINE MUHLY 1 GAL. SIZE @ 30" O.C.	L
	MUHLENBERGIA RIGENS, DEER GRASS 5 GAL. SIZE @ 42" O.C.	L
	SENECIO MANDRALISCAEA, BLUE CHALK STICKS 1 GAL. SIZE @ 24" O.C.	L
	ROSMARINUS O. 'PROSTRATUS', CREEPING ROSEMARY 1 GAL. SIZE @ 30" O.C.	L
	SALVIA CLEVELANDII 'ALLEN CHICKERING', CLEVELAND SAGE 5 GAL. SIZE @ 48" O.C.	L
	VERBENNA 'DE LA MINA', PURPLE VERBENNA 1 GAL. SIZE @ 24" O.C.	

NOTE: ALL SHRUB PLANTING AREAS TO RECEIVE A 3" LAYER OF SHREDDED FINE WOOD MULCH.

SECTION 'A-A' KEY NOTES:

1. STREET CURB.
2. NEW STREET TREE PER LEGEND.
3. SCREEN SHRUB PER LEGEND.
4. ASSORTED LAYERED DROUGHT TOLERANT SHRUBS & GROUND COVER PER LEGEND
5. FINGER ISLAND.
6. PARKING LOT SHADE TREE PER LEGEND.
7. NEW PUBLIC SIDEWALK.
8. WALL PER ARCH. DRAWINGS.

DESIGN KEY NOTES:

1. NEW STREET TREE PER LEGEND.
2. PROPOSED NEW PARKING LOT SHADE TREE PER LEGEND.
3. DROUGHT TOLERANT SHRUBS AND GROUND COVER PER LEGEND.
4. NEW FLOWERING ACCENT TREES AT KEY FOCAL AREAS SUCH AS DRIVEWAY AND BUILDING ENTRIES.
5. VERTICAL GROWING TREE PER LEGEND.
6. EVERGREEN SCREEN TREE PER LEGEND.
7. SCREEN SHRUB PLANTING.
8. ALL TREES WITHIN 6 FT. OF HARDSCAPE OR BUILDINGS SHALL BE INSTALLED WITH LINEAR ROOT CONTROL BARRIER FROM DEEP ROOT CORPORATION (OR APPROVED SUBSTITUTION). ROOT BARRIER LENGTH SHALL BE 16 FEET MIN. CENTERED ON TREE TRUNK. ROOT BARRIER SHALL BE PLACED IN A LINEAR INSTALLATION ADJACENT TO HARDSCAPE PER MANUF. SPECIFICATIONS AND NOT ENCIRCLING ROOTBALL. ROOT CONTROL BARRIER DEPTH SHALL B 18 INCHES MIN. ADJACENT TO FLATWORK AND 24 INCHES. MIN. ADJACENT TO CURBS.
9. ENHANCED PAVING AT VEHICULAR DRIVEWAY CONSISTING OF INTEGRAL COLORED CONCRETE WITH MEDIUM ETCH FINISH.
10. ENHANCED PAVING AT MAIN ENTRY CONSISTING OF INTEGRAL COLORED CONCRETE WITH MEDIUM ETCH FINISH.
11. ALLOW FOR 24" CLEARANCE FROM BACK OF CURB TO SHRUB. PROVIDE MULCH BETWEEN BACK OF CURB AND SHRUB.

REFERENCE KEY NOTES:

- A. TRASH ENCLOSURE PER ARCH. PLANS. VINES TRAINED TO WALL PER PLANTING PALETTE.
- B. VEHICULAR GATE PER ARCH. PLANS.
- C. RAMP PER CIVIL PRELIMINARY PLANS.

GENERAL NOTES:

- SLOPES GREATER THAN 3:1 SHALL BE STABILIZED WITH EROSION CONTROL GROUND COVER PER LEGEND, AND MULCH MATERIAL WITH 'BINDER' MATERIAL SHALL BE APPLIED FOR EROSION CONTROL.
- ROCK RIP-RAP MATERIAL SHALL BE INSTALLED WHERE DRAIN LINES CONNECT TO INFILTRATION AREAS.
- ALL UTILITY EQUIPMENT SUCH AS BACKFLOW UNITS, FIRE DETECTOR CHECKS, FIRE CHECK VALVE, AND AIR CONDITIONING UNITS WILL BE SCREENED WITH EVERGREEN PLANT MATERIAL ONCE FINAL LOCATIONS HAVE BEEN DETERMINED.

CONCEPTUAL PLAN NOTE:

THIS IS A CONCEPTUAL LANDSCAPE PLAN. IT IS BASED ON PRELIMINARY INFORMATION WHICH IS NOT FULLY VERIFIED AND MAY BE INCOMPLETE. IT IS MEANT AS A COMPARATIVE AID IN EXAMINING ALTERNATE DEVELOPMENT STRATEGIES AND ANY QUANTITIES INDICATED ARE SUBJECT TO REVISION AS MORE RELIABLE INFORMATION BECOMES AVAILABLE.

IRRIGATION NOTE:

THE PROJECT WILL BE EQUIPPED WITH A LOW FLOW IRRIGATION SYSTEM CONSISTING OF ET WEATHER BASED SMART CONTROLLER, LOW FLOW ROTORS, BUBBLER AND/ OR DRIP SYSTEMS USED THROUGHOUT. THE IRRIGATION WATER EFFICIENCY WILL MEET OR SURPASS THE CURRENT STATE MANDATED AB-1881 WATER ORDINANCE.

WUCOLS PLANT FACTOR

THIS PROJECT IS LOCATED IN 'WUCOLS' REGION 4-SOUTH INLAND'.

H = HIGH WATER NEEDS
M = MODERATE WATER NEEDS
L = LOW WATER NEEDS
VL= VERY LOW WATER NEEDS

LSA

FIGURE 6

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Source: HPA Architecture

First Lincoln Industrial Project

Conceptual Landscape Plan

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3.0 ENVIRONMENTAL CHECKLIST FORM

1. Project Title:

First Lincoln Industrial Project

2. Lead Agency Name and Address:

City of Banning
99 E. Ramsey Street
Banning, California 92220

3. Contact Person and Phone Number:

Adam Rush, Community Development Director
(951) 922-3131
arush@banningca.gov

4. Project Location:

The project is located in the southern portion of the City of Banning, in western Riverside County, California. The project site is located in Section 9 of Township 3 South, Range 1 East of the San Bernardino Baseline and Meridian, as depicted on the U.S. Geological Survey (USGS) 7.5-minute series *Beaumont, California* quadrangle (2000). Specifically, the center of the project site is at latitude 33°55'20.74" N and longitude -116°52'48.43" W at an elevation of approximately 2,317 feet above mean sea level and consists of two parcels (Assessor's Parcel Numbers [APNs] 540-210-009 and -020). Figure 1: Regional and Project Location and Figure 2: Existing Setting depict the location of the project site on a regional and local scale.

5. Project Sponsor's Name and Address:

First Industrial Realty Trust, Inc.
898 N. Pacific Coast Highway, Suite 175
El Segundo, California 90245

6. General Plan Designation:

The General Plan land use designation for the project site is Industrial.

7. Zoning:

The project site is zoned Industrial.

8. Description of Project:

The project includes development of an approximately 118,786-square-foot warehouse building, of which 10,000 square feet would be designated office space across two levels, on approximately 6.45 gross acres (6.17 net acres). The project also includes 25 freight truck loading docks and employee and trailer parking; it does not include cold storage/refrigeration operations. Proposed vehicle and pedestrian access to the project site would be provided by two ingress/egress

driveways off W. Lincoln Avenue and associated frontage improvements that would include sidewalks, street trees, and lighting. The project would also dedicate approximately 15 feet of right of way along the southern project site frontage and widen W. Lincoln Avenue to the ultimate 55-foot half width in accordance with the City's General Plan designation for a major highway or arterial highway. The conceptual site plan is presented as Figure 4. The project is more fully described in Section 2.0 of this Initial Study.

9. Surrounding Land Uses and Setting:

The 6.45-acre project site is currently vacant and is bound by Lincoln Street/SR-243 to the south, the Gilman Home Stormwater Channel to the west, the Union Pacific Railroad and I-10 to the north, and light industrial uses to the east. Industrial uses are located immediately south of Lincoln Street/SR-243 between the project site and the nearest residential uses (multi-family homes). Single-family homes are located approximately 550 feet north of the project site boundary across the Union Pacific Railroad and I-10, and multi-family residential uses are located farther south approximately 595 feet from the project site boundary and are separated from the site by industrial uses. Refer to Figure 2 for the existing setting of the site and surroundings and to Figure 3 for photographs of the project site and surrounding land uses.

10. Public agencies whose approval is required (e.g., permits, financial approval, or participation agreement):

The City of Banning is the Lead Agency as set forth in *CEQA Guidelines* Section 21067 and is expected to use this Initial Study/Mitigated Negative Declaration (IS/MND) in consideration of the proposed First Lincoln Industrial Project and associated actions. These actions may include, but are not limited to, the following:

- Design Review – DR 22-7003;
- Tentative Parcel Map – TPM 22-4001; and
- Environmental Assessment – ENV 22-1504.

The project may require approvals from other regulatory agencies, listed as follows:

- State Water Resources Control Board: Applicant must submit a Notice of Intent to comply with the General Construction Activity National Pollutant Discharge Elimination (NPDES) Permit;
- Colorado River Basin Regional Water Quality Control Board: Applicant must submit a Storm Water Pollution Prevention Plan (SWPPP);
- Riverside County Airport Land Use Commission;
- California Department of Transportation (Caltrans) encroachment permit; and
- Utility Providers: Connection permits.

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3.1? If so, has consultation begun?

Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code Section 21083.3.2.) Information may also be available from the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code Section 21082.3(c) contains provisions specific to confidentiality.

Chapter 532, Statutes of 2014 (i.e., Assembly Bill 52), requires Lead Agencies evaluate a project's potential to affect "tribal cultural resources." Such resources include "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe that are eligible for inclusion in the California Register of Historical Resources or included in a local register of historical resources." Assembly Bill (AB) 52 also gives Lead Agencies the discretion to determine, supported by substantial evidence, whether a resource qualifies as a "tribal cultural resource."

On November 17, 2022, the City of Banning notified local tribal governments in writing of the proposed project pursuant to AB 52 pertaining to tribal cultural resources consultation. The consultation process is discussed in Section 3.18 – Tribal Cultural Resources of this Initial Study.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a potentially significant impact as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Energy
☐ Geology/Soils	☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials
☐ Hydrology/Water Quality	☐ Land Use/Planning	☐ Mineral Resources
☐ Noise	☐ Population/Housing	☐ Public Services
☐ Recreation	☐ Transportation	☐ Tribal Cultural Resources
☐ Utilities/Service Systems	☐ Wildfire	☐ Mandatory Findings of Significance

DETERMINATION (TO BE COMPLETED BY THE LEAD AGENCY)

On the basis of the initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

☐ I find that the amended project has previously been analyzed as part of an earlier CEQA document. Minor additions and/or clarifications are needed to make the previous documentation adequate to cover the project which are documented in this ADDENDUM to the earlier CEQA document (CEQA § 15164.)

Signature:_____ Date:_____

Adam Rush, Community Development Director

3.1 AESTHETICS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☒	☐
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☒	☐	☐

3.1.1 Impact Analysis

a. Would the project have a substantial adverse effect on a scenic vista?

Less than Significant Impact. Scenic vistas are generally defined as publicly-accessible viewpoints that provide expansive or panoramic views of scenic resources. The project site and the City of Banning are located in a valley situated approximately 1.2 miles south of the foothills of the San Bernardino Mountains and approximately 0.8-mile northwest of the foothills of the San Jacinto Mountains. Both mountain ranges, along with their foothills rising from the valley floor, constitute the most prominent scenic vistas in the vicinity of the project site and the City of Banning. Two of the highest peaks in southern California are visible from the project site. San Gorgonio Mountain in the San Bernardino Mountains, the highest peak in southern California (11,503 feet), is approximately 13 miles north of the project site and is visible from nearly all vantage points within the project site. San Jacinto Peak in the San Jacinto Mountains (10,834 feet) is approximately 13 miles southeast of the project site and is partially visible from the site. However, the City has not designated these mountain ranges or foothills as scenic vistas.

The project site topography is relatively flat, and there are no City-designated scenic vistas located on the project site. From the project site, partially obstructed views of the San Bernardino Mountains are available as one looks in a north and northeast direction. Partially obstructed views of the San Jacinto Mountains are available as one looks to the southwest and southeast from the project site across vacant properties south of Lincoln Street/SR-243. Although these scenic resources are partially visible from the project site, open and direct views are mostly obstructed by mature trees, utility lines, and industrial development within the project vicinity.

The proposed project is consistent with the General Plan land use designation of Industrial (I) and would be designed and constructed in accordance with the City's Industrial zoning district, which has

a development standard to limit building height at 50 feet above grade.[9] The proposed project includes development of a modern industrial building up to 50 feet tall at the parapets. The building's design would be comprised of tempered glazed aluminum and painted concrete. The southeast and southwest corners of the building where the offices are proposed would contain parapets with glass façades, which would provide visual relief and varied massing. Figure 5 details the on-site building elevations. Furthermore, the project would incorporate an 82-foot building setback from the property line and would dedicate 15 feet of right-of-way (ROW) with curb, gutter, sidewalk, landscaping, and streetlight improvements along Lincoln Street/SR-243. A perimeter 35-foot-wide minimum emergency fire lane would surround the warehouse building on all sides and create additional property line setbacks from the warehouse to improve the horizontal line of site from surrounding properties and reduce visual obstructions in the area.

Development of the proposed project in accordance with the Industrial (I) land use designation and Industrial zoning district and at the height and setback distances detailed above would ensure scenic vistas would not be adversely affected. Therefore, the project would have a **less than significant** impact on scenic vistas and mitigation is not required.

b. Would the project substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a State scenic highway?

Less than Significant Impact. The California Department of Transportation (Caltrans) Scenic Highway Program identifies the segment of Lincoln Street/SR-243 (immediately south of the project site) between the I-10 and the segment of SR-243 (approximately 0.6 mile southeast of the project site) as an Eligible State Scenic Highway and the segment of SR-243 (approximately 0.6 mile southeast of the project site) and SR-74 as an Officially Designated State Scenic Highway.[10] Although there are designated State scenic highways adjacent to the project site, the project site and vicinity do not contain scenic resources such as trees, rock outcroppings, or historic buildings. Therefore, development of the project would not substantially damage scenic resources within view from SR-243 south of the project site. Impacts to scenic resources within a State scenic highway would be **less than significant** and no mitigation measures are required.

c. In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would it conflict with applicable zoning and other regulations governing scenic quality?

Less than Significant Impact. As of July 1, 2021, the United States Census Bureau estimated the City's population to be 30,273 persons and the City's land area to be approximately 23.24 square miles.[11]

9 City of Banning Municipal Code. Chapter 17.12 (Commercial and Industrial Districts), Table 17.12.030-Commercial and Industrial Development Standards.

10 Caltrans. *State Scenic Highway Map* https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways (accessed August 25, 2022).

11 United States Census Bureau. *QuickFacts, Banning City, California.* https://www.census.gov/quickfacts/fact/table/banningcitycalifornia,US/PST045221 (accessed August 25, 2022).

The project is located in an area with at least 1,000 persons per square mile and therefore meets the definition of *Urbanized Area* under Section 15387 of the *CEQA Guidelines*.

In its existing condition, the project site consists of vacant land covered with ruderal[12] vegetation. During construction, the presence of construction vehicles and equipment could temporarily affect the visual quality of the project site by removal of vegetation, heavy equipment use, and the presence of other visible general construction activity. The presence of construction equipment and vehicles would be temporary and would cease once construction is complete. Due to the temporary nature of construction activities, impacts to visual character of the site and its surroundings would be **less than significant** during construction.

The City of Banning General Plan Land Use and Zoning Map designates the site and adjacent properties to the east, south, and west as Industrial (I), and the Union Pacific Railroad and I-10 to the north as Public Facilities- Railroad/Interstate. According to the City's General Plan Land Use and Zoning Map, industrial, commercial, and/or public facility uses are envisioned along Lincoln Street/SR-243 in proximity to the project site, and development of the site in accordance with the existing zoning (Industrial) would be consistent with the development and visual character of the area.

The proposed project would be designed and constructed in conformance with the requirements of Chapter 17.12 (Commercial and Industrial Districts) and Chapter 17.32 (Landscaping Standards) of the City Municipal Code, which establishes development standards to ensure a high-quality development compatible with the surrounding community, the General Plan land use designation, and zoning district in which the project is located.

The proposed project would be subject to the City's Design Review process, which provides for the review of the physical improvements to the site, including the overall scale of the buildings, setbacks, massing, design, and landscape. The Design Review of the proposed project ensures compatibility and compliance with City Design Guidelines set forth in the City's Municipal Code to ensure a high-quality development compatible with the surrounding community, the General Plan land use designation, and zoning district. Since the proposed project would be consistent with the development standards set forth by the City's Zoning Ordinance and it has undergone the required Design Review, the proposed project would not conflict with applicable zoning or other regulations governing scenic quality. Impacts would be **less than significant,** and mitigation is not required.

d. Would the project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?

Less than Significant with Mitigation Incorporated. Currently, there are no sources of light and glare on the project site. Sources of light and glare in the project area include street lighting and vehicle lighting on adjacent roadways. Lincoln Street/SR-243 to the south and I-10 to the north are heavily lit and well-traveled by vehicles. There are also industrial light sources adjacent to the east, south, and

[12] Ruderal vegetation consists of species (often invasive) that are first to colonize disturbed lands.

west of the project site. Light-sensitive uses near the project site include residential uses approximately 580 feet to the south.

Development of the project site would introduce new sources of light into the project area. Light poles would be installed throughout the surface parking lot and along on-site pedestrian pathways. The warehouse building would have security lighting located on the building façades and functional lighting at the loading docks, which face north toward the railroad and I-10. Freight trucks would include head, tail, and auxiliary lights during nighttime operations.

On-site trucking operations (e.g., driving, loading/unloading, and parking) would be screened from adjacent uses to the north, west, and east by a retaining wall up to 11 feet tall in the northwestern portion of the site and would taper down in height to 7 feet in the northeastern corner of the site. The retaining wall would then proceed south along the eastern site boundary for approximately 200 feet where it would taper down to grade level (refer to Figure 4). Street lighting associated with the proposed project would be consistent with City standards.

All lighting on the project site would comply with Section 17.24.100 (Lighting) of the City Municipal Code, which requires light shielding, functional and aesthetic design, and compatibility with surrounding uses. The purpose of these lighting standards is to minimize light pollution, glare, and spillover, conserve energy resources, and curtail the degradation of the nighttime visual environment.

The Mt. Palomar Observatory is located at 35899 Canfield Road, Palomar Mountain, approximately 39 miles south of the project site. The observatory requires dark nighttime sky with minimal amount of lighting glare generated by development to operate. Without lighting requirements set forth by each jurisdiction around the Mt. Palomar Observatory, increased light pollution from existing and new development would degrade the dark sky needed to operate the observatory. The proposed project, in complying with the Banning Municipal Code pertaining to lighting requirements for development, would ensure its cumulative contribution of light pollution into the sky is minimized, allowing for continued operation of Mt. Palomar Observatory.

The project site is located within the airport influence area of the Banning Municipal Airport and Compatibility Zone D of the [*Banning Municipal Airport*] *Riverside County Airport Land Use Compatibility Plan* (ALUCP). The ALUCP is developed to promote compatible land uses adjacent to airfields. Accordingly, the Riverside ALUC issued application number ZAP1048BA22, which requested conditions be implemented to prevent potential light and glare hazards on aviation as prescribed in **Mitigation Measure (MM) HAZ-1** and **MM HAZ-2** (refer to Section 3.9, Threshold E).[13]

New development in the City of Banning could result in glare based on the types of façades and windows used in design. The City's Design Review process includes consideration of material composition and colors to reduce potential for substantial glare from the proposed development, which does not include building façades or reflective windows that are expected to generate or contribute to existing glare within the project area and City.

[13] Riverside County Airport Land Use Commission. *Airport Land Use Commission (ALUC) Development Review – Director's Determination, File No. ZAP1048BA22).* November 28, 2022 (Appendix H).

Compliance with Section 17.24.100 (Lighting) of the City Municipal Code, review of the project design during Design Review, and implementation of **MM HAZ-1** and **MM HAZ-2** would ensure the proposed project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. Therefore, impacts from light and glare would be **less than significant with mitigation incorporated**.

3.2 AGRICULTURE AND FORESTRY RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

3.2.1 Impact Analysis

a. Would the project convert Prime Farmland, Unique Farmland, Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. The Farmland Mapping and Monitoring Program (FMMP)[14] designates the project site as "Other Land." Neither the site nor adjacent properties are designated as Prime Farmland, Unique

[14] California Department of Conservation. *California Important Farmland Finder.* https://maps.conservation.ca.gov/DLRP/CIFF/ (accessed August 23, 2022).

Farmland, or Farmland of Statewide Importance. Therefore, **no impact** to farmland would occur, and no mitigation is required.

b. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The project site is zoned Industrial and is not zoned for agricultural use. The project site is not under a Williamson Act contract. According to the Banning General Plan, there are two Williamson Act contracts in the northern portions of the City and one Williamson Act contract in the southerly portion of the City's Sphere of Influence (SOI).[15] Implementation of the proposed project would therefore not conflict with existing zoning for agricultural use or conflict with a Williamson Act contract. **No impact** would occur, and no mitigation is required.

c. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

No Impact. As detailed in Table 2.2.A, neither the project site nor adjacent lands are zoned for forest land or Timberland Production. Therefore, there is no potential for the project to conflict with existing zoning for forest land or land zoned for Timberland Production. **No impact** would occur, and no mitigation is required.

d. Would the project result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The project site and adjacent land are not occupied by forest resources. Implementation of the proposed project would not result in the loss or conversion of forest land to non-forest land. **No impact** would occur to forest land, and no mitigation is required.

e. Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?

No Impact. Although the project site was previously utilized for dried fruit production as early as the 1930s and contained an orchard on the western portion of the site and associated buildings on the eastern portion of the site,[16] the orchard was removed by 1953, and the associated buildings were removed by 1967.[17] The project site currently vacant and contains disturbed, ruderal vegetation. No farmland or forest land occur on site or on adjacent land. Therefore, implementation of the proposed project would not involve other changes in the existing environment which could result in the conversion of farmland to non-agricultural use, or conversion of forest land to non-forest use. **No impact** would occur and no mitigation is required.

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15 City of Banning. *City of Banning General Plan.* Chapter IV. Environmental Resources. Page IV-22. Adopted January 31, 2006.

16 Weis Environmental. *Phase I Environmental Site Assessment, Northeast Corner of W Lincoln Street and 4th Street, Banning, California 92220.* Page 15 and Appendix E (Historical Resources). November 30, 2021.

17 *Ibid*.

3.3 AIR QUALITY

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

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b. 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?	☐	☐	☒	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

3.3.1 Impact Analysis

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less than Significant Impact. The current regional air quality plan is the Final 2022 Air Quality Management Plan (AQMP) adopted by the South Coast Air Quality Management District (SCAQMD) on December 2, 2022.[18] The 2022 AQMP incorporates current scientific, technological, and planning assumptions and updated air pollution emission inventory methodologies for various air pollution source categories. The 2022 AQMP addresses new and changing Federal requirements, implements new technology measures to reduce air pollution, and continues the SCAQMD legacy of developing economically sound and flexible regulatory compliance approaches for the South Coast Air Basin (Basin).

The Basin is currently a federal and State nonattainment area for particulate matter less than 10 microns in size (PM_{10}), particulate matter less than 2.5 microns in size ($PM_{2.5}$), and ozone (O_3). The AQMP proposes attainment demonstration of the federal $PM_{2.5}$ standards through a more focused control of sulfur oxides (SOx), directly-emitted $PM_{2.5}$, nitrogen oxides (NOx), and volatile organic compounds (VOC).

The AQMP uses the assumptions and projections of local planning agencies to determine control strategies for regional compliance status. Since the AQMP is based on the local General Plan, projects that are deemed consistent with the General Plan are found to be consistent with the AQMP. The proposed project would include 118,786 sf of industrial warehouse building, which is consistent with the Industrial (I) land use and zoning designation. The proposed project would not house more than 1,000 persons, occupy more than 40 acres of land, or encompass more than 650,000 square feet of

[18] South Coast Air Quality Management District. *Final 2022 Air Quality Management Plan*. December 2022.

floor area. Thus, the proposed project would not be defined as a regionally significant project under CEQA; therefore, it does not meet SCAG's Intergovernmental Review criteria.

In addition, the AQMP uses the assumptions and projections of local planning agencies to determine control strategies for regional compliance status. Since the AQMP is based on the local General Plan, projects that are deemed consistent with the General Plan are found to be consistent with the AQMP.

The City's General Plan is consistent with the SCAG Regional Comprehensive Plan Guidelines and the SCAQMD AQMP. Pursuant to the methodology provided in Chapter 12 of the 1993 SCAQMD *CEQA Air Quality Handbook*,[19] consistency for project development proposals that differ from the land use designation assumed within the 2022 AQMP is affirmed when a project: (1) does not increase the frequency or severity of an air quality standards violation or cause a new violation; and (2) is consistent with the growth assumptions in the AQMP. Consistency review is presented below:

1. The project would result in short-term construction and long-term pollutant emissions that are below the CEQA significance emissions thresholds established in the SCAQMD's *CEQA Air Quality Handbook*, as demonstrated in Section 3.3 (Threshold B), below. Therefore, the project would not result in an increase in the frequency or severity of any air quality standards violation and would not cause a new air quality standard violation.

2. The *CEQA Air Quality Handbook* indicates that consistency with AQMP growth assumptions must be analyzed for new or amended General Plan elements, Specific Plans, and significant projects. As identified above, the proposed project would not require a change to the General Plan land use designation or the current zoning and would be consistent with the City's General Plan and Zoning Ordinance. In addition, the proposed project would not be defined as a regionally significant project under CEQA.

Based on the consistency analysis presented above, the proposed project would be consistent with the SCAQMD Final 2022 AQMP. Impacts would be **less than significant,** and mitigation is not required.

b. Would the project 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?

Less than Significant Impact. The SCAQMD's *CEQA Air Quality Handbook* establishes suggested significance thresholds based on the volume of pollution emitted. According to the *Handbook*, any project in the Basin with daily emissions that exceed any of the following thresholds generally is considered as having individually and cumulatively significant air quality impacts:

- 55 lbs. per day of VOC (volatile organic compounds) (75 lbs./day during construction);
- 55 lbs. per day of NO_x (oxides of nitrogen) (100 lbs./day during construction);
- 550 lbs. per day of CO (carbon monoxide) (550 lbs./day during construction);

[19] South Coast Air Quality Management District. *CEQA Air Quality Handbook.* Chapter 12. 1993.

- 150 lbs. per day of PM_{10} (particulate matter with a diameter of 10 microns or smaller) (150 lbs./day during construction)

- 55 lbs. per day of $PM_{2.5}$ (particulate matter with a diameter of 2.5 microns or smaller) (55 lbs./day during construction); and

- 150 lbs. per day of SO_x (oxides of sulfur) (150 lbs./day during construction).

The Basin is currently designated nonattainment for the federal and State standards for O_3 and $PM_{2.5}$. In addition, the Basin is in nonattainment for the PM_{10} standard. The Basin's nonattainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of an ambient air quality standard. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

In developing thresholds of significance for air pollutants, SCAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Therefore, additional analysis to assess cumulative impacts is not necessary. The following analysis assesses the potential project-level air quality impacts associated with construction and operation of the proposed project.

The proposed project would generate short-term and long-term emissions of air pollutants, respectively, during construction and operation of the proposed warehouse. These emissions are summarized below based on the California Emissions Estimator Model, Version 2020.4.0 (CalEEMod) output prepared for the Air Quality, Greenhouse Gas Emissions, and Energy Impact Analysis Memorandum[20] prepared for the proposed project and included in Appendix A.

***Short-term Construction Emissions*.** Short-term emissions would result from construction-related activities such as excavation and grading, machinery and equipment emissions, vehicle emissions from construction employees,[21] etc. Emissions during site preparation, grading, and construction activities would vary as construction activity levels change. Air pollutant emission sources during project construction would include:

- Exhaust gas and particulate emissions generated by construction equipment engines;

[20] LSA Associates, Inc. *Air Quality, Greenhouse Gas, and Energy Impact Analysis Memorandum for the Proposed First Lincoln Logistics Warehouse Project in Banning, California.* October 2022. (Appendix A)

[21] This analysis assumes an average construction worker trip length of 14.7 miles one-way per default values in CalEEMod.

- Fugitive dust from soil disturbance during site preparation, grading, and excavation activities; and

- Volatile organic compounds that evaporate during site paving and architectural coating (e.g., painting of new structures).

The construction analysis includes estimating the construction equipment that would be used during each construction phase, the hours of use for that construction equipment, the quantities of earth and debris to be moved, and on-road vehicle trips (worker, soil hauling, and vendor trips). CalEEMod defaults are assumed for the construction activities, off-road equipment, and on-road construction fleet mix and trip lengths. Construction is expected to start in mid-2023 and end in mid-2024, which was included in CalEEMod. In addition, according to the project conceptual grading plans, the project is expected to result in approximately 29,000 cubic yards of exported soil and 9,000 cubic yards of imported structural soil, for a total of 20,000 net cubic yards of exported soil, which was included in CalEEMod.

Table 3.3.A identifies the maximum daily emissions associated with construction activities and indicates no criteria pollutant emission thresholds would be exceeded from construction of the proposed project.

Table 3.3.A: Short-Term Regional Construction Emissions

Construction Phase	Total Regional Pollutant Emissions, lbs/day							
	VOC	NO_X	CO	SO_X	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Site Preparation	3	28	19	<1	9	1	5	1
Grading	2	34	20	<1	6	<1	2	<1
Building Construction	2	16	21	<1	2	<1	<1	<1
Architectural Coating	58	1	3	<1	<1	<1	<1	<1
Paving	1	10	15	<1	<1	<1	<1	<1
Peak Daily	**60**	**34**	**24**	**<1**	**10**		**6**	
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**		**55**	
Emissions Exceed Threshold?	**No**	**No**	**No**	**No**	**No**		**No**	

Source: Table J. *Air Quality, Greenhouse Gas, and Energy Impact Analysis Memorandum for the proposed First Lincoln Logistics Warehouse Project in Banning, California*.. LSA Associates, Inc. October 2022. (Appendix A).
Note: These estimates assume the Building Construction and Architectural Coating phases would occur simultaneously and reflect control of fugitive dust required by SCAQMD Rule 403. The values shown are the maximum summer or winter daily emissions results from the California Emissions Estimator Model.

CO = carbon monoxide
lbs/day = pounds per day
NOx = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
SCAQMD = South Coast Air Quality Management District
SOx = sulfur oxides
VOC = volatile organic compounds

The construction calculations prepared for the project assume that dust control measures (watering a minimum of two times daily consistent with SCAQMD Rule 403) would be employed to reduce emissions of fugitive dust during site grading. Furthermore, all construction would need

to comply with SCAQMD Rule 403 regarding the emission of fugitive dust. Table 3.3.A lists total construction emissions (i.e., fugitive dust emissions and construction equipment exhausts) that have incorporated the following Rule 403 measures that would be implemented to significantly reduce PM_{10} emissions from construction:

- Water active sites at least twice daily (locations where grading is to occur would be thoroughly watered prior to earthmoving).
- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 2 feet (0.6 meter) of freeboard (vertical space between the top of the load and the top of the trailer) in accordance with the requirements of California Vehicle Code Section 23114.
- Reduce traffic speeds on all unpaved roads to 15 miles per hour or less.

As detailed in Table 3.3.A, emissions generated during project construction would not exceed SCAQMD thresholds for regional construction emissions. Therefore, construction of the proposed project would not result in a cumulatively considerable increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State ambient air quality standard (AAQS) and impacts would be **less than significant**. No mitigation is required.

Long-term Operational Emissions. The proposed project would result in an incremental increase in the generation of regional air pollution during operation of the proposed warehouse. Long-term air pollutant emission impacts are those associated with mobile sources (e.g., vehicle trips), energy sources (e.g., electricity and natural gas) and area sources (e.g., architectural coatings and the use of landscape maintenance equipment) related to the proposed project.

PM_{10} emissions result from running exhaust, tire and brake wear, and the entrainment of dust into the atmosphere from vehicles traveling on paved roadways. Entrainment of PM_{10} occurs when vehicle tires pulverize small rocks and pavement and the vehicle wakes generate airborne dust. The contribution of tire and brake wear is small compared to the other PM emission processes. Gasoline-powered engines have small rates of particulate matter emissions compared with diesel-powered vehicles. Based on the Traffic Analysis[22] prepared for the project (Appendix M), the proposed project would generate a total of 203 vehicle trips and 71 truck trips, which was accounted for in the CalEEMod analysis.

Energy source emissions result from activities in buildings for which natural gas are used. The quantity of emissions is the product of usage intensity (i.e., the amount of natural gas) and the emission factor of the fuel source. Major sources of energy demand include building mechanical systems, such as heating and air conditioning, lighting, and plug-in electronics, such as computers. Greater building or appliance efficiency reduces the amount of energy for a given activity and thus lowers the resultant emissions. The emission factor is determined by the fuel source, with cleaner energy sources, like renewable energy, producing fewer emissions than conventional sources.

[22] Stantec. *First Lincoln Logistics Project- Traffic Analysis - DRAFT.* November 11, 2022 (Appendix M).

Typically, area source emissions consist of direct sources of air emissions located at the project site, including architectural coatings and the use of landscape maintenance equipment. Area source emissions associated with the project would include emissions from the use of landscaping equipment and the use of consumer products.

Emission estimates for operation of the project were calculated using CalEEMod and are shown in Table 3.3.B, below. The peak daily emissions associated with project operations are identified in Table 3.3.B for VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$.

Table 3.3.B: Long Term Regional Operational Emissions

Source	Pollutant Emissions, lbs/day					
	VOC	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Area Source Emissions	3	<1	<1	0	<1	<1
Energy Source Emissions	<1	<1	<1	<1	<1	<1
Mobile Source Emissions	1	2	16	<1	4	1
Warehouse Equipment Emissions	<1	5	6	<1	<1	<1
Total Project Emissions	**4**	**7**	**22**	**<1**	**4**	**1**
SCAQMD Significance Threshold	**55**	**55**	**550**	**150**	**150**	**55**
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Table L. *Air Quality, Greenhouse Gas, and Energy Impact Analysis Memorandum for the proposed First Lincoln Logistics Warehouse Project in Banning, California.* LSA Associates, Inc. October 2022. (Appendix A).

CO = carbon monoxide
lbs/day = pounds per day
NOx = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SOx = sulfur oxides
VOC = Volatile organic compounds

As shown in Table 3.3.B, operation of the proposed warehouse would not exceed the SCAQMD daily emission thresholds for any criteria pollutant. Therefore, operation of the proposed project would not result in a cumulatively considerable increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State AAQS and impacts would be **less than significant**. No mitigation is required.

Long-Term Microscale (CO Hot Spot) Analysis. Vehicular trips associated with the proposed project would contribute to congestion at intersections and along roadway segments in the vicinity of the proposed project site. Localized air quality impacts would occur when emissions from vehicular traffic increase as a result of the proposed project. The primary mobile-source pollutant of local concern is CO, a direct function of vehicle idling time and, thus, of traffic flow conditions. CO transport is extremely limited; under normal meteorological conditions, it disperses rapidly with distance from the source. However, under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthful levels, affecting local sensitive receptors (e.g., residents, schoolchildren, the elderly, and hospital patients).

Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes. In areas with high ambient

background CO concentrations, modeling is recommended to determine a project's effect on local CO levels.

An assessment of project-related impacts on localized ambient air quality requires that future ambient air quality levels be projected. Existing CO concentrations in the immediate project vicinity are not available. Ambient CO levels monitored at the Palm Springs Monitoring Station located FS-590 Racquet Club Avenue (the nearest monitoring station to the project site), showed a highest recorded 1-hour concentration of 1.3 ppm (the State standard is 20 ppm) and a highest 8-hour concentration of 0.7 ppm (the State standard is 9 ppm) from 2019 to 2021, the period for which the most recent data is available. The highest CO concentrations would normally occur during peak traffic hours; hence, CO impacts calculated under peak traffic conditions represent a worst-case analysis. Reduced speeds and vehicular congestion at intersections result in increased CO emissions.

The proposed project is expected to generate 203 average daily trips, with 20 trips occurring in the AM peak hour and 21 trips occurring in the PM peak hour. The CO concentrations are not expected to significantly increase as a result of the proposed project. Therefore, given the extremely low level of CO concentrations in the project area and the lack of traffic impacts at any intersections, project-related vehicles are not expected to result in CO concentrations exceeding the State or federal CO standards. No CO hot spots would occur and the project would not result in any project-related impacts on CO concentrations. As such, impacts would be **less than significant**. No mitigation is required.

c. Would the project expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact. SCAQMD published its *Final Localized Significance Threshold Methodology* in June 2003 and updated it in July 2008,[23] recommending that all air quality analyses include an assessment of both construction and operational impacts on the air quality of nearby sensitive receptors.[24] Localized significance thresholds (LSTs) represent the maximum emissions from a project site of up to 5 acres that are not expected to result in an exceedance of the National Ambient Air Quality Standards (NAAQS) or California Ambient Air Quality Standards (CAAQS) for CO, NO_2, PM_{10} and $PM_{2.5}$. LSTs are based on the ambient concentrations of that pollutant within the project Source Receptor Area (SRA) and the distance to the nearest sensitive receptor. For the project site, the appropriate SRA is the Banning Airport area (SRA 29). Sensitive receptors include residences, schools, hospitals, and similar uses that are sensitive to adverse air quality. The nearest sensitive receptors in proximity to the project site are two single-family homes to the north of I-10 and the Union Pacific

[23] South Coast Air Quality Management District. *Final Localized Significance Thresholds Methodology*. June 2003, Revised July 2008.

[24] According to the South Coast Air Quality Management District's *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning* (May 6, 2005), sensitive receptors (individuals) are those segments of a population such as children, athletes, elderly, and sick that are more susceptible to the effects of air pollution than the population at large. Land uses where sensitive receptors are most likely to spend time include schools and schoolyards, parks and playgrounds, day care centers, nursing homes, hospitals, and residential communities (Pp. G-6).

Railroad, along Sout[h] 3rd Street approximately 550 feet north of the project site boundary.[25] Industrial uses are located across the street from the project immediately south of Lincoln Street/SR-243, and multi-family homes are located farther south approximately 595 feet from the project site boundary. The SCAQMD provides LST screening tables for 25, 50, 100, 200, and 500-meter source-receptor distances. As identified, the nearby sensitive receptors are located approximately 550 feet (168 meters) from the project site boundary. Therefore, LSTs for the 168-meter distance were derived by interpolation.

The LST screening table lookup methodology was created for projects up to 5 acres in size. The project site is approximately 6.45 acres. However, per SCAQMD LST surveys, the typical maximum daily disturbed area for a site of this size would be 4 acres. Therefore, the 4-acre LSTs at a 168-meter distance were used for the LST analysis. Tables 3.3.C and 3.3.D show the results of the LST analysis during project construction and operation, respectively.

Table 3.3.C indicates the on-site construction emissions would not exceed the LSTs for the nearby residences. Therefore, the construction of the project would not result in a locally significant air quality impact.

Table 3.3.C: Construction Localized Impact Analysis

On-site Emissions Sources	Pollutant Emissions (lbs/day)			
	NO_x	CO	PM_{10}	$PM_{2.5}$
Construction Equipment	28	18	10	6
LST	**370**	**7,933**	**147**	**41**
Emissions Exceed Threshold?	**No**	**No**	**No**	**No**

Source: Table K. *Air Quality, Greenhouse Gas, and Energy Impact Analysis Memorandum for the proposed First Lincoln Logistics Warehouse Project in Banning, California.* LSA Associates, Inc. October 2022. (Appendix A).
Note: Source Receptor Area: Banning Airport area (SRA 29), 4 acres, 168 meters (550 feet) distance
CO = carbon monoxide
lbs/day = pounds per day
LST = local significance threshold
NOx = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

By design, the localized impacts analysis only includes on-site sources; however, the CalEEMod outputs do not separate on-site and off-site emissions for mobile sources. For a worst-case scenario assessment, the emissions detailed in Table 3.3.D assume all area source emissions would occur on site, all of the energy source emissions would occur off site at the utility power stations, and 5 percent of the project-related new mobile sources, which is an estimate of the amount of project-related on-site vehicle travel, would occur on site. Considering the total trip length included in CalEEMod, the 5 percent assumption is conservative. Table 3.3.D indicates the localized operational emissions would not exceed the LSTs on site and at nearby residences.

[25] This distance is measured from the closest area on-site where emissions would occur to the closest sensitive receptor.

Tables 3.3.B and 3.3.D identify the on-site construction and operational emissions of CO, NO_x, PM_{10}, and $PM_{2.5}$, respectively, and demonstrate that all concentrations of pollutants would be below the SCAQMD thresholds of significance for construction and operation of the project. Therefore, both short-term (i.e., construction) and long-term (i.e., operational) LST air quality impacts would be **less than significant**. No mitigation is required.

According to the California Air Resources Board (CARB), air pollution studies have shown that diesel exhaust and other cancer-causing chemicals emitted from cars and trucks are responsible for much of the overall cancer risk from airborne toxics in California and also have shown an association

Table 3.3.D: Long-Term Operational Localized Impacts Analysis

Emissions Sources	Pollutant Emissions (lbs/day)			
	NO_x	**CO**	**PM_{10}**	**$PM_{2.5}$**
On-site Emissions	5	7	<1	<1
LST	**370**	**7,933**	**36**	**10**
Emissions Exceed Threshold?	**No**	**No**	**No**	**No**

Source: Table M. *Air Quality, Greenhouse Gas, and Energy Impact Analysis Memorandum for the proposed First Lincoln Logistics Warehouse Project in Banning, California.* LSA Associates, Inc. October 2022. (Appendix A).
Note: Source Receptor Area: Banning Airport area (SRA 29), 4 acres, 550 meters (168 feet) distance; on site traffic 5 percent of total.
CO = carbon monoxide
lbs/day = pounds per day
LST = localized significance threshold
NOx = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

between both respiratory and other non-cancerous health effects and proximity to high-traffic roadways. Accordingly, the project is subject to a site-specific Health Risk Assessment (HRA)[26] (Appendix B) to estimate the increased health risk levels for people living and/or working near the site from generation of toxic air contaminants (TACs). The majority of the estimated health risks from TACs are attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines (diesel particulate matter [DPM]).

In accordance with SCAQMD guidance, health risk is considered significant under the following conditions:

- Cancer risk at a nearby receptor location (i.e., area where persons reside, work, or attend school—not including streets or sidewalks) is greater than 10 cases per 1 million persons over a period of 30 years for adults and 9 years for children.

[26] LSA Associates, Inc. *Health Risk Assessment, First Lincoln Logistics Warehouse Project, Banning, California.* October 2022. (Appendix B).

- The cumulative increase in total chronic Hazard Index[27] or total acute Hazard Index[28] for any target organ system would exceed 1.0 at any receptor location.

Table 3.3.E details the carcinogenic and chronic health risks from operation of the proposed project. The residential risk incorporates both the risk for a child living in a nearby residence for 9 years (the standard period of time for child risk) and an adult living in a nearby residence for 30 years (considered a conservative period of time for an individual to live in any one residence). The worker risk incorporates the risk to an adult working for 25 years (considered a conservative period of time for an individual to work in any one place).

Table 3.3.E: Health Risk Levels for Existing Residents from Operation of the Project

Location	Maximum Cancer Risk	Maximum Non-cancer Chronic Risk (Hazard Index)	Maximum Non-cancer Acute Risk (Hazard Index)
Peak Residential MEI Risk Levels	0.039 in 1 million	0.000010	0.000021
Peak Worker MEI Risk Levels	0.016 in 1 million	0.000047	0.000031
SCAQMD Significance Threshold	**10 in 1 million**	**1.0**	**1.0**
Significant?	**No**	**No**	**No**

Source: LSA Associates, Inc. *Health Risk Assessment, First Lincoln Logistics Warehouse Project, Banning, California.* Table B. October 2022. (Appendix B).
SCAQMD = South Coast Air Quality Management District

As indicated in Table 3.3.E, the maximum cancer risk for the residential maximum exposed individual (MEI) would be 0.39 in 1 million and the maximum cancer risk for the worker MEI would be 0.016 in 1 million, less than the threshold of 10 in 1 million. The chronic and acute health risks from operation of the proposed project also are shown in Table 3.3.E and indicate the hazard index for each of these risks is below the threshold of 1.0.

As detailed in the project-specific HRA (Appendix B), all health risk levels to nearby residents and workers from project-related emissions of TAC from operation of the proposed project would be below SCAQMD's HRA thresholds. Impacts to sensitive receptors from TACs would be **less than significant,** and mitigation is not required.

d. Would the Project result in other emissions (such as those leading to odors adversely affecting a substantial number of people?

Less than Significant Impact. Project construction would generate limited odors over the short term, mainly from fumes emanating from gasoline and diesel-powered construction equipment and

[27] Chronic Hazard Index is the ratio of the estimated long-term level of exposure to a TAC for a potential maximum exposed individual to its chronic reference exposure level. The chronic Hazard Index calculations include multipathway consideration, when applicable.

[28] Acute Hazard Index is the ratio of the estimated maximum 1-hour concentration of a TAC for a potential maximum exposed individual to its acute reference exposure level.

architectural coating, asphalt laying, and paving activities. These odors would be temporary and are expected to be isolated to the immediate vicinity of the construction site.

SCAQMD Rule 402 regarding nuisances states: "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property." Pursuant to SCAQMD Rule 403, fugitive dust must be controlled so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. Additionally, Title 13, Section 2449(d)(D) of the California Code of Regulations requires operators of off-road vehicles (i.e., self-propelled diesel-fueled vehicles 25 horsepower and up that were not designed to be driven on road) to limit vehicle idling to five minutes or less.

SCAQMD Rules 402 and 403, and Title 13, Section 2449(d)(D) of the California Code of Regulations require the project applicant to implement standard control measures to limit fugitive dust and construction equipment emissions. These temporary emissions are expected to be isolated to the immediate vicinity of the construction site. Therefore, operation of fueled equipment during construction would not adversely affect a substantial number of people.

The painting of buildings and structures or the installation of asphalt surfaces may also create odors. SCAQMD Rule 1113 outlines standards for paint applications, while Rule 1108 identifies standards regarding the application of asphalt. Adherence to the standards identified in these SCAQMD rules is required for all construction projects in the City to reduce emissions and objectionable odors impacts.

Land uses generally associated with long-term objectionable odors include agricultural uses, wastewater treatment plants, food-processing plants, chemical plants, composting operations, refineries, landfills, dairies, and fiberglass molding facilities. The proposed project would be a light industrial warehouse development. During project operation, freight trucks entering/exiting and loading/unloading at the site, as well as temporary storage of typical solid waste (refuse) would be required to comply with the SCAQMD's and CARB's regulations pertaining to particulate filter requirements, idle time limits, smoke opacity, greenhouse gas emissions, and NO_x emissions standards.[29] Furthermore, project-generated refuse would be stored in covered containers and removed at regular intervals in compliance with the City's solid waste regulations.

Compliance with mandated regulatory policies designed to reduce emissions from construction equipment and materials and medium and heavy-duty freight vehicles, in conjunction with removal of solid waste (refuse) at regular intervals, would ensure the project would not involve short-term or long-term emissions or sources of odors that could affect a substantial number of people. Impacts would be **less than significant**. Mitigation is not required.

[29] South Coast Air Quality Management District. *Regulations & Other Commitments.* https://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/facility-based-mobile-source-measures/regs-commitments#Trucks%20-%20Existing%20State (accessed April 9, 2020).

3.4 BIOLOGICAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☒	☐	☐

3.4.1 Impact Analysis

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

Less than Significant with Mitigation Incorporated. Biological resources on the project site were evaluated in the Biological Assessment Report[30] (Appendix C) to ensure the proposed project is consistent with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) and to analyze potential impacts to candidate, sensitive, and special-status species and associated habitat.

The project site is located within the boundaries of the MSHCP and is mapped within a MSHCP Burrowing Owl Survey Area and Narrow Endemic Plant Species Survey Area. Accordingly, the project

[30] BLUE Consulting Group. *Biological Assessment Report for the West Lincoln Street 2-Lot Redevelopment Project City of Banning.* January 28, 2022. (Appendix C).

site was subject to a reconnaissance-level biological resources assessment survey on November 11, 2021 in addition to a burrowing owl habitat suitability assessment survey and floristic botanical field survey in accordance with the MSHCP requirements (Appendix C).

The reconnaissance-level biological resources assessment survey indicates the project site is substantially disturbed and no longer supports native habitats. Accordingly, no sensitive species were observed on the project site during the field survey, and no sensitive species are expected to occur on-site due to the site's disturbed environmental conditions.[31] Additionally, the reconnaissance survey indicates the project site does not contain any sensitive habitats, including any United States Fish and Wildlife Service (USFWS) designated Critical Habitat for any federally-listed species, and development of the site would not result in any loss or adverse modification of Critical Habitat.[32]

A burrowing owl habitat suitability assessment was conducted on November 11, 2021 in accordance with MSHCP protocol.[33] No evidence of burrowing owl was identified on the project site, and the site does not contain habitat suitable to support this species. Although burrowing owl was considered absent, the project site contains suitable foraging habitat.[34] Therefore, there is potential for this species to occupy the site prior to development of the project, and mitigation is required to ensure that significant impacts to burrowing owl do not occur. **Mitigation Measure (MM) BIO-1** has been identified to address potential impacts to burrowing owls.

MM BIO-1: Within 30 days prior to the commencement of ground disturbance activities, a pre-construction burrowing owl survey shall be conducted by a qualified biologist. The results of the single one-day survey shall be submitted to the City for review prior to commencement of any ground disturbance activities on the project site. If burrowing owl are not detected during the pre-construction survey, no further mitigation is required.

If burrowing owl are detected during the pre-construction survey or during construction activities at the project site, a burrowing owl protection and relocation plan shall be prepared by a qualified biologist and submitted to the California Department of Fish and Wildlife (CDFW) and United States Fish and Wildlife Service (USFWS) for review and approval. The applicant shall submit evidence to the City that required and applicable provisions of the burrowing owl protection and relocation program have been satisfied prior to the start of any on-site ground disturbance activity.

As stated previously, the project site is substantially disturbed and is dominated by non-native invasive plant species. Accordingly, the floristic botanical plant survey conducted on November 11, 2021 yielded no evidence of any Narrow Endemic Plant Species identified by the MSHCP with potential to occur on the project site, such as Marvin's onion (*Allium marvinii*) and Many-stemmed dudleya

31 *Ibid.* Page 8.
32 *Ibid.*
33 *Ibid.* Page 7.
34 *Ibid.*

(*Dudleya multicaulis*). The entire site has been disturbed, and the habitat conditions required by these species are no longer present within the site.[35]

Implementation of the proposed project would not have a substantial direct or indirect adverse effect, through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or USFWS. Due to the mobile nature of burrowing owls, there is a potential this species may occupy the site prior to ground disturbance. Implementation of **Mitigation Measure BIO-1** would ensure that impacts to burrowing owl are avoided or reduced in accordance with the MSHCP and that impacts to candidate, sensitive, or special-status species would be **less than significant with mitigation incorporated.**

b. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less than Significant Impact. The reconnaissance-level biological resources assessment survey determined that the project site is substantially disturbed and does not contain any sensitive habitats.[36] The MSHCP, Section 6.1.2, requires the assessment of impacts to riparian habitats, riverine areas, and vernal pools, including focused surveys for sensitive riparian species when suitable habitat is present. The reconnaissance-level biological resources assessment survey indicates the project site does not contain any natural or man-made features that support any aquatic resources, stream-dependent wildlife resources, or riparian habitats, riverine areas, and/or vernal pools.[37] Therefore, focused surveys for plant and animal species associated with riparian habitat are not required.

Implementation of the proposed project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans (i.e., MSHCP), policies, regulations, or by the California Department Fish and Wildlife or U.S. Fish and Wildlife Service. Impacts would be **less than significant,** and mitigation is not required.

c. Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than Significant Impact. As stated previously, the reconnaissance-level biological resources assessment survey indicates the project site does not contain any natural or man-made features that support any aquatic resources, stream-dependent wildlife resources, or riparian habitats, riverine areas, and/or vernal pools.[38] The western boundary of the project site abuts a concrete Riverside County Flood Control storm water channel (Gilman Home Stormwater Channel) that captures all upstream flows west of the project site and directs flow away from the project site to the south.

35 *Ibid.* Page 6.
36 *Ibid.* Page 8.
37 *Ibid.* Page 7.
38 *Ibid.*

However, the Gilman Home Stormwater Channel is constructed of concrete and does not support riparian vegetation.

The project site does not include any federally protected wetlands or any drainage features, ponded areas, wetlands, or riparian habitat subject to jurisdiction by the CDFW, U.S. Army Corps of Engineers (USACE), and/or Regional Water Quality Control Board (RWQCB).[39] Therefore, neither Clean Water Act (CWA) Sections 404 and 401 permits nor a CDFW streambed alteration agreement are required for the project. Impacts on federally protected wetlands would be **less than significant**, and no mitigation is required.

d. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less than Significant with Mitigation Incorporated. The project would not affect wildlife movement or nursery sites because the site is located within an urbanized area, separated from native habitat by development and roadways accompanied by substantial human activity. Additionally, the project site is not located within a recognized USFWS, CDFW, or City wildlife corridor and the reconnaissance-level biological resources assessment survey indicates the project site does not support habitat required for wildlife movement or nursery sites.[40] Potential for nesting birds to occupy the site would be mitigated through implementation of **Mitigation Measure (MM) BIO-2.**

MM BIO-2: Site preparation activities (ground disturbance, construction activities, staging equipment, and/or removal of trees and vegetation) for the project shall be avoided, to the greatest extent possible, during the nesting season of potentially occurring native and migratory bird species (February 1 through August 31).

If site-preparation activities are proposed during the nesting/breeding season, the project Applicant shall retain a qualified biologist to conduct a pre-activity field survey within three days prior to the start of any ground disturbance activity to determine if active nests of species protected by the Migratory Bird Treaty Act or the California Fish and Game Code are present in the construction zone.

If active nests are not identified within the construction zone, construction may be conducted during the nesting/breeding season. However, if active nests are located during the pre-activity field survey, the biologist shall immediately establish a conservative avoidance buffer surrounding the nest based on their best professional judgement and experience. The biologist shall monitor the nest at the onset of project activities, and at the onset of any changes in such project activities (e.g., increase in number or type of equipment, change in equipment usage, etc.) to determine the efficacy of the buffer. If the biologist determines that such project activities may be causing an adverse reaction, the biologist shall adjust the buffer accordingly or implement alternative avoidance and minimization measures, such as redirecting or rescheduling construction or erecting sound barriers. All work within these buffers

[39] *Ibid.*
[40] *Ibid.* Page 8.

shall be halted until the nesting effort is finished (i.e., the juveniles are surviving independent from the nest). The onsite qualified biologist shall review and verify compliance with these nesting avoidance buffers and shall verify the nesting effort has finished. Work can resume within these avoidance areas when no other active nests are found. Upon completion of the survey and nesting bird monitoring, a report shall be prepared and submitted to City for mitigation monitoring compliance record keeping.

Through implementation of **Mitigation Measure BIO-2**, impacts to native resident or migratory fish or wildlife species, established native resident or migratory wildlife corridors, and native wildlife nursery sites would be reduced to **less than significant with mitigation incorporated**.

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less than Significant Impact. Development of the project would involve the removal of 7 eucalyptus trees located within the northern portion of the site. These trees appear to have occupied the project site since 1967; therefore, tree removal is subject to management pursuant to Section 17.32.060 (Removal or destruction of trees) of the City's Municipal Code. Additionally, the Biological Assessment Report conducted for the project site indicated there were no sensitive biological resources observed or expected to occur on site.[41] Therefore, through mandatory compliance with City Municipal Code Section 17.32.060, the project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. Impacts would be **less than significant,** and mitigation is not required.

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?

Less Than Significant with Mitigation Incorporated. The project site is located within the MSHCP; therefore, it is subject to applicable provisions of the MSHCP as specified in Section 3.4 (Thresholds A, B, C, and D) above. The project is required to comply with establishing the MSHCP mitigation fee. Also, the MSHCP provides for the assembly of a Conservation Area consisting of Core Areas and Linkages for the conservation of covered species. The Conservation Area is to be assembled from portions of the MSHCP Criteria Area, which consist of quarter-section (i.e., approximately 160-acre) Criteria Cells, each with specific criteria for the species conservation within that Cell. The project site is not within the MSHCP Criteria Area; therefore, no Cell or Criteria analysis is required. Additionally, the project site is not located within a Public/Quasi-Public Conserved Land or adjacent to a Conservation Area; therefore, the project is not subject to an evaluation of potential edge effects pursuant to MSHCP Section 6.1.4 pertaining to the Urban/Wildlands interface.[42]

41 *Ibid.*

42 *Ibid.* Page 5.

As discussed in this section, implementation of **Mitigation Measures BIO-1** and **BIO-2** would ensure the proposed project would not conflict with or obstruct implementation of the MSHCP. Furthermore, as required for all development projects in the City, the project applicant shall pay applicable MSHCP Local Development Mitigation fees as established and implemented by the City at the rates in force at the time grading permits are issued. Impacts from potential conflict with the MSHCP would be **less than significant with mitigation incorporated.**

3.5 CULTURAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☒	☐	☐
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

3.5.1 Impact Analysis

a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

Less than Significant with Mitigation Incorporated. Section 15064.5(b) of the *CEQA Guidelines* states that "a project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." The site is undeveloped and vacant and was subject to cultural resources investigation comprising review of previously recorded archaeological sites on or near the property obtained from the Eastern Information Center (EIC) at the University of California, Riverside (UCR), archival research, and an intensive pedestrian survey of the project site completed on November 16, 2021(Appendix D).[43]

Review of previous records search data identified 81 resources documented within a 0.5-mile radius of the project site, one of which (RIV-8228, fragmented foundation remains) is located on the project site. RIV-8228 was recorded by LSA Associates, Inc. (LSA) in 2007 and consisted of a concrete pad lined by a small concrete cobble retaining wall and disconnected concrete steps. Further research conducted by Brian F. Smith and Associates (BSFA) as part of the *Phase I Cultural Resources Assessment* (Appendix D) determined the fragmented foundation remains were part of a structure associated with the E.L. Robertson's fruit drying station that occupied the project site from 1910 until 1967.[44] Additionally, the records search identified one historic site (RIV-3444H, a historic trash scatter and two foundations) located adjacent to the north/northeast boundary of the project site. Archival research conducted by BSFA determined historic site RIV-3444H is associated with the railroad located north of the project site. Other historic resources documented within a 0.5-mile of the project site include structures, foundations/structure pads, a flood control channel canal, a highway trail, and a site consisting of foundation/structure pads, walls/fences, trash scatters, and a water conveyance system. In addition, one resource within the project vicinity is a single prehistoric isolate.

[43] Brian F. Smith and Associates, Inc. (BFSA). *A Phase I Cultural Resources Assessment for the Lincoln and 4th Project, City of Banning, California.* Pages 4.0-1 through 4.0-13. May 18, 2022 (Appendix D).

[44] Historic aerial photographs of the project site show the structures on the property were removed sometime between 1962 and 1967.

An intensive pedestrian survey of the project site conducted on November 16, 2021 confirmed the presence of site RIV-8228, consisting of fragmented remnants of a 15 by 20-foot rock and mortar lined foundation, in the southwestern corner of the project site. The poured concrete steps previously identified in site RIV-8228 were not located during the pedestrian survey. However, the pedestrian survey found paved asphalt associated with the 4th Street alignment along the western boundary of project site. Finally, no component of the adjacent historic site (RIV-3444H) was located within the project site during the pedestrian survey. Upon review of historic aerials, BFSA determined the road alignment and foundation remnants are older than 50 years and are associated with the historic use of the project site. However, these resources do not qualify as significant resources under CEQA because they no longer possess the level of integrity[45] necessary to qualify for the California Register of Historical Resources (CPHR). Nevertheless, given the presence of historic resources and documented historical development on the project site, there is potential for cultural resources to be encountered during project construction. Therefore, the City prescribes the following mitigation measures to ensure the protection of cultural resources during project construction.

MM CUL-1: **Native American Treatment Agreement.** Prior to the issuance of grading permits, the applicant shall enter into a Tribal Monitoring Agreement with the Morongo Band of Mission Indians for the project. The Tribal Monitor shall be on-site during all ground-disturbing activities (including, but not limited to, clearing, grubbing, tree and bush removal, grading, trenching, fence post placement and removal, construction excavation, excavation for all utility and irrigation lines, and landscaping phases of any kind). The Tribal Monitor shall have the authority to temporarily divert, redirect or halt the ground-disturbing activities to allow identification, evaluation, and potential recovery of cultural resources.

MM CUL-2: **Retention of Archaeologist.** Prior to any ground-disturbing activities (including, but not limited to, clearing, grubbing, tree and bush removal, grading, trenching, fence post replacement and removal, construction excavation, excavation for all utility and irrigation lines, and landscaping phases of any kind) and prior to the issuance of grading permits, the Applicant shall retain a qualified archaeologist who meets U.S. Secretary of the Interior Standards (SOI). The archaeologist shall be present during all ground-disturbing activities to identify any known or suspected archaeological and/or cultural resources. The archaeologist will conduct a Cultural Resource Sensitivity Training, in conjunction with the Tribe[s] Tribal Historic Preservation Officer (THPO) and/or designated Tribal Representative. The training session will focus on what the archaeological and tribal cultural resources that may be encountered during ground-disturbing activities, and the procedures to be followed in such an event.

MM CUL-3: **Cultural Resource Management Plan.** Prior to any ground-disturbing activities the project archaeologist shall develop a Cultural Resource Management Plan (CRMP) and/or Archaeological Monitoring and Treatment Plan (AMTP) to address the details, timing and responsibility of all archaeological and cultural resource activities that

[45] The 4th Street realignment has been paved and neglected, and the limited remains of the fruit drying operation is not the work of a master builder or architect and is unlikely to provide any further research potential.

occur on the project site. This Plan shall be written in consultation with the consulting Tribe[s] and shall include the following: approved Mitigation Measures (MM)/Conditions of Approval (COA), contact information for all pertinent parties, parties' responsibilities, procedures for each MM or COA, and an overview of the project schedule.

MM CUL-4: **Pre-Grade Meeting.** The retained qualified archeologist and Consulting Tribe[s] representative shall attend the pre-grade meeting with the grading contractors to explain and coordinate the requirements of the monitoring plan.

MM CUL-5: **On-site Monitoring.** During all ground-disturbing activities the qualified archaeologist and the Native American monitor shall be on site full-time. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and any discoveries of Tribal Cultural Resources as defined in California Public Resources Code Section 21074. Archaeological and Native American monitoring will be discontinued when the depth of grading and soil conditions no longer retain the potential to contain cultural deposits. The qualified archaeologist, in consultation with the Native American monitor, shall be responsible for determining the duration and frequency of monitoring.

MM CUL-6: **Inadvertent Discovery of Cultural Resources.** In the event that previously unidentified cultural resources are unearthed during construction, the qualified archaeologist and the Native American monitor shall have the authority to temporarily divert and/or temporarily halt ground disturbance operation in the area of discovery to allow for the evaluation of potentially significant cultural resources. Isolates and clearly non-significant deposits shall be minimally documented in the field and collected so the monitored grading can proceed. 2 If a potentially significant cultural resource(s) is discovered, work shall stop within 60-feet of the discovery and an Environmentally Sensitive Area (ESA) physical demarcation/barrier constructed. All work shall be diverted away from the vicinity of the find, so that the find can be evaluated by the qualified archaeologist and Tribal Monitor[s]. The archaeologist shall notify the Lead Agency and consulting Tribe[s] of said discovery. The qualified archaeologist, in consultation with the Lead Agency, the consulting Tribe[s] and the Native American monitor, shall determine the significance of the discovered resource. A recommendation for the Tribal Cultural Resource's treatment and disposition shall be made by the qualified archaeologist in consultation with the Tribe[s] and the Native American monitor[s] and be submitted to the Lead Agency for review and approval. Below are the possible treatment and dispositions of significant cultural resources in order of CEQAs preference:

A. Full avoidance.

B. If avoidance is not feasible, preservation in place.

C. If preservation in place is not feasible, all items shall be reburied in an area away from any future impacts and reside in a permanent conservation easement or Deed Restriction.

D. If all other options have been proven to be infeasible, data recovery through excavation and curated in a Curation Facility that meets the Federal Curation Standards (CFR s79.1).

MM CUL-7: **Inadvertent Discovery of Human Remains**. The Morongo Band of Mission Indians requests the following specific conditions to be imposed in order to protect Native American human remains and/or cremations. **No photographs are to be taken except by the coroner, with written approval by the consulting Tribe[s].**

A. Should human remains and/or cremations be encountered on the surface or during any and all ground-disturbing activities (i.e. clearing, grubbing, tree and bush removal, grading, trenching, fence post placement and removal, construction excavation, excavation for all water supply, electrical, and irrigation lines, and landscaping phases of any kind), work in the immediate vicinity of the discovery shall immediately stop within 100-feet of the discovery. The area shall be protected, project personnel/observers restricted. The County Coroner is to be contacted within 24 hours of discovery. The County Coroner has 48 hours to come to his/her determination pursuant to State and Safety Code §7050.5. and Public Resources Code (PRC) § 5097.98.

B. In the event that the human remains and/or cremations are identified as Native American, the Coroner shall notify the Native American Heritage Commission within 24 hours of determination pursuant to subdivision (c) of HSC §7050.5.

C. The Native American Heritage Commission shall immediately notify the person or persons it believes to be the Most Likely Descendant (MLD). The MLD has 48 hours, upon being granted access to the Project site, to inspect the site of discovery and make their recommendation for final treatment and disposition, with appropriate dignity, of the remains and all associated grave goods pursuant to PRC §5097.98.

D. If the Morongo Band of Mission Indians has been named the Most Likely Descendant (MLD), the Tribe may wish to rebury the human remains and/or cremation and sacred 3 items in their place of discovery with no further disturbance and reside in perpetuity. The place(s) of reburial will not be disclosed by any party and is exempt from the California Public Records Act (California Government Code § 6254[r]). Reburial location of human remains and/or cremations will be determined by the Tribes Most Likely Descendant (MLD), the landowner, and the City Planning Department.

MM CUL-8: **Final Report:** The final report[s] created as a part of the project (AMTP, isolate records, site records, survey reports, testing reports, etc.) shall be submitted to the Lead Agency and Consulting Tribe[s] for review and comment. After approval from all parties, the final reports are to be submitted to the Eastern Information Center, and the Consulting Tribe[s].

Through implementation of **Mitigation Measures CUL-1** through **CUL-8**, consulting Native American tribes (i.e., Morongo Band of Mission Indians) would have the opportunity to participate in the management of unanticipated encounters with cultural resources, which would be treated in accordance with CEQA Guidelines (Section 15064.5). Therefore, impacts to historic resources defined in *CEQA Guidelines* Section 15064.5 would be reduced to **less than significant with mitigation incorporated**.

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Less than Significant with Mitigation Incorporated. As stated in Section 3.5 (Threshold A) above, the project site was subject to a cultural resources investigation comprising archival research, review of records search data at the EIC, and an intensive pedestrian survey of the project site (Appendix D).

The records search indicated one historic site (RIV-8228, fragmented foundation remains) is documented on the project site, one historic site (RIV-3444H, a historic trash scatter and two foundations) is documented adjacent to the north/northeast boundary of the project site, and 79 additional resource sites are documented within a 0.5-mile radius of the project site. An intensive pedestrian survey of the project site conducted on November 16, 2021 confirmed the presence of historic-period resource (RIV-8228), but did not identify any prehistoric archaeological resources on site.

In accordance with State law, the project would be required to comply with Title 14, California Code of Regulations (CCR) *§ 15064.5* and [California] Public Resources Code (PRC) *§ 21083.2 California Environmental Quality Act-Archeological Resources,* which enable the City to require the project applicant to make reasonable effort to preserve or mitigate impacts to any affected significant or unique archaeological resource. Penal Code *§ 622 Destruction of Sites,* establishes as a misdemeanor the willful injury, disfiguration, defacement, or destruction of any object or thing of archaeological or historical interest or value, whether situated on private or public lands. California *Administrative Code, Title 14, Section 4307* states that no person shall remove, injure, deface or destroy any object of paleontological, archaeological, or historical interest or value. Furthermore, California Code of Regulations Section 1427 recognizes that California's archaeological resources need to be preserved and that every person, not the owner thereof, who willfully injures, disfigures, defaces, or destroys any object or thing of archaeological or historical interest or value, whether situated on private lands or within any public park or place, is guilty of a misdemeanor.

As discussed in Section 3.5 (Threshold A) above, none of the archaeological resources identified on the project site meet the criteria for "historical resources" as defined in *CEQA Guidelines* Section 15064.5(a). Therefore, the cultural resource value of RIV-8228 has been realized by its recordation (refer to Appendix D), and impacts to this resource would be **less than significant**. Nevertheless, the proposed project must comply with all applicable regulations protecting archaeological resources, including unanticipated discoveries of such resources. Accordingly, the City prescribes **Mitigation Measures CUL-1** thought **CUL-8** to ensure the protection of cultural resources during project construction. With implementation of **Mitigation Measures CUL-1** through **CUL-8**, consulting Native American tribes (i.e., Morongo Band of Mission Indians) would have the opportunity to participate in the management of unanticipated encounters with cultural resources, which would be treated in

accordance with CEQA Guidelines (Section 15064.5), and impacts to archaeological resources pursuant to §15064.5 therefore would be reduced to **less than significant with mitigation incorporated**.

c. Would the project disturb any human remains, including those interred outside of formal cemeteries?

Less than Significant with Mitigation Incorporated. In the event that human remains are encountered during proposed project grading, the proper authorities would be notified, and standard procedures for the respectful handling of human remains during earthmoving activities would be followed in accordance with State law.

Consistent with the requirement of California Code of Regulations (CCR) Section 15064.5(e), if human remains are encountered, work within 25 feet of the discovery shall be redirected and the Riverside County Coroner notified immediately. State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has determined origin and disposition pursuant to PRC Section 5097.98. If the remains are determined to be Native American, the County Coroner shall notify the Native American Heritage Commission (NAHC), which shall determine and notify a Most Likely Descendant (MLD). With the permission of the property owner, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. Consistent with CCR Section 15064.5(d), if the remains are determined to be Native American and an MLD is notified, the City of Banning shall consult with the MLD as identified by the NAHC to develop an agreement for treatment and disposition of the remains. Compliance with State law and implementation of **Mitigation Measure CUL-7** would ensure human remains would be protected if remains are discovered on the site during project construction activities. Impacts would be reduced to **less than significant with mitigation incorporated**.

3.6 ENERGY

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	☐	☐	☒	☐
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

3.6.1 Impact Analysis

a. Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less than Significant Impact. The proposed project would increase the demand for electricity, natural gas, and gasoline. The project's consumption of energy during construction and operation is discussed below.

Construction. The anticipated construction schedule assumes that the proposed project would be built over approximately 12 months. The proposed project would require site preparation, grading, building construction, paving, and architectural coating during construction.

Construction of the proposed project would require energy for the manufacture and transportation of building materials and for preparation of the site for grading activities and building construction. Petroleum fuels (e.g., diesel and gasoline) would be the primary sources of energy for these activities.

Construction activities are not anticipated to result in an inefficient use of energy because gasoline and diesel fuel would be supplied by construction contractors who would conserve the use of their supplies to minimize their costs on the proposed project. Energy usage on the project site during construction would be temporary in nature and would be relatively small in comparison to the State's available energy sources. Therefore, construction energy impacts would **be less than significant**, and no mitigation would be required.

Operation. Energy use includes both direct and indirect sources of emissions. Direct sources of emissions include on-site natural gas usage for heating, while indirect sources include electricity generated by off-site power plants. Natural gas use in CalEEMod is measured in units of a thousand British thermal units (kBTU) per year; however, this analysis converts the results to natural gas in units of therms. Electricity use in CalEEMod is measured in kilowatt hours (kWh) per year.

CalEEMod divides building electricity and natural gas use into uses that are subject to Title 24 standards and those that are not. For electricity, Title 24 uses include the major building envelope

systems covered by Part 6 (California Energy Code) of Title 24 (e.g., space heating, space cooling, water heating, and ventilation). Non-Title 24 uses include all other end uses (e.g., appliances, electronics, and other miscellaneous plug-in uses). Because some lighting is not considered as part of the building envelope energy budget, CalEEMod considers lighting as a separate electricity use category.

For natural gas, uses are likewise categorized as Title 24 or non-Title 24. Title 24 uses include building heating and hot water end uses. Non-Title 24 natural gas uses include appliances.

Table 3.6.A shows the estimated potential increased electricity, natural gas, gasoline, and diesel demand associated with the proposed project. The electricity and natural gas rates are from the CalEEMod analysis, while the gasoline and diesel rates are based on the traffic analysis in conjunction with United States Department of Transportation (DOT) fuel efficiency data.

Table 3.6.A: Estimated Annual Energy Use from Project Operation

Land Use	Electricity Use (kWh/year)	Natural Gas (kBTU/year)	Gasoline (gallons per year)	Diesel (gallons per year)
Industrial	320,865	238,760	71,187	40,496

Source: Table P. *Air Quality, Greenhouse Gas, and Energy Impact Analysis Memorandum for the proposed First Lincoln Logistics Warehouse Project in Banning, California.* LSA Associates, Inc. October 2022. (Appendix A).
kWh = kilowatt hours
kBTU = thousand British thermal units

As shown in Table 3.6.A, the estimated potential increased electricity demand associated with the proposed project is 320,865 kWh per year. In 2019, California consumed approximately 277,750 gigawatt hours (GWh) or 277,750,000,000 kWh. Of this total, Riverside County consumed 16,857.9 GWh or 16,857,930,966 kWh.[46] Therefore, electricity demand associated with the proposed project would be approximately less than 0.01 percent of Riverside County's total electricity demand.

Also shown in Table 3.6.A, the estimated potential increased natural gas demand associated with the proposed project is 238,760 kBTU per year or 2,388 therms.[47] In 2019, California consumed approximately 12,571,000,000 therms, while Riverside County consumed 436.9 million therms (436,941,555 therms). Therefore, operation of the proposed project would negligibly increase the annual natural gas consumption in Riverside County by less than 0.01 percent.

Furthermore, the proposed project would result in energy usage associated with gasoline and diesel to fuel project-related trips. The average fuel economy for light-duty vehicles (automobiles, pickups, vans, and sport utility vehicles) in the United States has steadily increased, from about 14.9 miles per gallon (mpg) in 1980 to 22.9 mpg in 2020. The average fuel economy for heavy-

[46] California Energy Commission (CEC). n.d. Electricity Consumption by County. Website: www.ecdms.energy.ca.gov/elecbycounty.aspx (accessed October 2022).

[47] CEC. n.d. Gas Consumption by County. Website: ecdms.energy.ca.gov/gasbycounty.aspx (accessed October 2022).

duty trucks in the United States has also steadily increased, from 5.7 mpg in 2013 to a projected 8.0 mpg in 2021.[48]

Using the United States Environmental Protection Agency (EPA) gasoline fuel economy estimates for 2020, the California diesel fuel economy estimates for 2021, and the traffic data from the project traffic analyses, the proposed project would result in the annual consumption of 71,187 gallons of gasoline and 40,496 gallons of diesel fuel. In 2019, vehicles in California consumed approximately 15.6 billion gallons of gasoline and 3.8 billion gallons of diesel fuel.[49] Therefore, gasoline and diesel demand generated by vehicle trips associated with the proposed project would be a minimal fraction of gasoline and diesel fuel consumption in California and, by extension, in Riverside County.

In addition, vehicles associated with trips to and from the project site would be subject to fuel economy and efficiency standards, which are applicable throughout the State. As such, the fuel efficiency of vehicles associated with project operations would increase throughout the life of the proposed project. Therefore, implementation of the proposed project would not result in a substantial increase in transportation-related energy uses.

As described above, the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of fuel or energy and would incorporate renewable energy or energy efficiency measures into building design, equipment uses, and transportation. Impacts would be **less than significant**, and no mitigation measures would be necessary.

b. Would the project conflict with or obstruct a State or local plan for renewable energy or energy efficiency?

Less than Significant Impact. As indicated above, energy usage on the project site during construction would be temporary in nature. In addition, energy usage associated with operation of the proposed project would be relatively small in comparison to the State's available energy sources and energy impacts would be negligible at the regional level. Because California's energy conservation planning actions are conducted at a regional level, and because the project's total impacts to regional energy supplies would be minor, the proposed project would not conflict with California's energy conservation plans as described in the CEC's 2022 Integrated Energy Policy Report Update. In addition, the proposed project would comply with Title 24 and CALGreen standards. Thus, as shown above, the proposed project would avoid or reduce the inefficient, wasteful, and unnecessary consumption of energy and would not result in any irreversible or irretrievable commitments of energy. Therefore, the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. Impacts would be **less than significant**, and no mitigation measures would be necessary.

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48 CEC. 2015. Medium and Heavy-Duty Truck Prices and Fuel Economy 2013–2026. Website: efiling.energy.ca.gov/getdocument.aspx?tn=206180 (accessed October 2022).

49 CEC. n.d. California Gasoline Data, Facts, and Statistics. Website: www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-gasoline-data-facts-and-statistics (accessed October 2022).

3.7 GEOLOGY AND SOILS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii. Strong seismic ground shaking?	☐	☐	☒	☐
iii. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv. Landslides?	☐	☐	☒	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

The analysis and discussion presented in this section is based, in part, on the Geotechnical Investigation, Proposed Warehouse, NEC Lincoln Avenue and 4th Street, Banning, California[50] (Geotechnical Investigation, Appendix E).

3.7.1 Impact Analysis

a. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Less than Significant. The project site is not located within an Earthquake Fault Zone as defined by the State of California in the Alquist-Priolo Earthquake Fault Zone Act of 1972 or as defined by the

[50] Southern California Geotechnical. *Geotechnical Investigation Proposed Warehouse, NEC Lincoln Avenue and 4th Street, Banning, California.* December 17, 2021 (Appendix E).

City's General Plan.[51] In addition, there is no evidence of any faults or faulting activity on the project site.[52] The risk of ground rupture due to fault displacement beneath the site is low. Impacts would be **less than significant.** Mitigation is not required.

ii. Strong seismic ground shaking?

Less than Significant. The project site is located within a seismically active region, with a number of faults traversing or in proximity to the city, including the Banning, Gandy Ranch, San Gorgonio Pass, and San Andreas Faults. The nearest active fault in proximity to the project site is the San Gorgonio Pass Fault approximately 1.1 miles to the north.[53]

Due to the presence of active and inferred faults in proximity to the project site, the project site is expected to experience occasionally moderate to severe ground-shaking, as well as some background shaking from other seismically active areas of the southern California region. The extent of ground-shaking associated with an earthquake is dependent upon the size of the earthquake and the geologic material of the underlying area. Construction and development of the project would be required to comply with applicable provisions of the California Building Code (CBC). State law requires the design and construction of new structures to comply with current CBC requirements, which address general geologic, seismic (including ground shaking), and soil constraints for new buildings. Accordingly, design and construction of the proposed project would be required to adhere to 2022 CBC requirements to reduce any potential impacts from seismic related activity.

Chapter 15.08 (Construction Codes) and Chapter 18.06 (Grading Application Requirements) of the City Municipal Code incorporate design and construction standards of the applicable CBC. Prior to the issuance of a grading permit, the project applicant would be required to submit detailed grading plans and a site-specific geotechnical investigation of the project prepared in conformance the current CBC and applicable City standards.

Standard Conditions: The following Standard Conditions (Chapter 15.08 and Chapter 18.06 of the City Municipal Code, CBC, and project-specific geotechnical recommendations) are regulatory requirements implemented as a routine action by the City to reduce the risk of loss, injury, or death from seismic activity.

Standard Condition GEO-1: Prior to issuance of grading and/or building permits, the project applicant shall provide evidence to the City of Banning (City) for review and approval that proposed structures, features, and facilities have been designed and would be constructed in conformance with applicable provisions of the 2022 edition of the California Building Code (CBC) or the most current edition of the CBC in effect at the

51 City of Banning. *City of Banning General Plan.* Chapter V. Environmental Hazards. Exhibit V-3. Adopted January 31, 2006.

52 Southern California Geotechnical. *Geotechnical Investigation Proposed Warehouse, NEC Lincoln Avenue and 4th Street, Banning, California.* Page 9. December 17, 2021 (Appendix E).

53 City of Banning. *City of Banning General Plan.* Chapter V. Environmental Hazards. Exhibit V-3. Adopted January 31, 2006.

time the applicant's development application is deemed complete by the City.

Additionally, the project applicant shall provide evidence to the City that the recommendations cited in the site-specific geotechnical investigation are incorporated into project plans and/or implemented as deemed appropriate by the City. Geotechnical recommendations may include, but are not limited to, removal of existing vegetation and any other surface and subsurface improvements that would not remain in place for use with the new development. Remedial earthwork, overexcavation, and ground improvement shall occur to depths specified in the geotechnical investigation to provide a sufficient layer of engineered fill or densified soil beneath the structural footings/foundations, as well as proper surface and subsurface drainage devices and erosion control. Retaining wall parameters shall be in accordance with the geotechnical investigation to protect against lateral spreading and landslides. Construction of concrete structures in contact with subgrade soils determined to be corrosive shall include measures to protect concrete, steel, and other metals. Verification testing must be performed periodically at random intervals and locations to confirm that the compressible soils have been sufficiently densified. The structural engineer must determine the ultimate thickness and reinforcement of the building floor slabs based on the imposed slab loading.

As necessary, the City may require additional studies and/or engineering protocols to meet its requirements. This measure shall be implemented to the satisfaction of the City Director of Building and Safety or designee.

Upon implementation of **Standard Condition GEO-1**, post-construction differential movements of shallow foundations designed and constructed in accordance with applicable provisions of the 2022 edition of the CBC and measures identified in a project-specific geotechnical investigation are expected to occur within the CBC tolerable limits of post-construction static and differential settlements of 1.0 and 0.5 inches, respectively. Impacts from seismic ground-shaking would be **less than significant.** Mitigation is not required.

iii. Seismic-related ground failure, including liquefaction?

Less than Significant. Liquefaction occurs when loose, unconsolidated, water-laden soils are subject to shaking, causing the soils to lose cohesion. A relatively shallow groundwater table (within approximately 50 feet below ground surface) or completely saturated soil conditions in conjunction with a source of ground shaking, such as an earthquake, may facilitate soil mass distortion such as liquefaction. The City's General Plan indicates the project site is located within a zone of moderate

liquefication susceptibility.[54] However, according to the project-specific geotechnical investigation, the California Department of Water Resources indicates groundwater levels are approximately 500 feet below the ground surface at a monitoring well located 0.28 mile of the project site.[55] Additionally, the subsurface conditions encountered on the project site during the project-specific geotechnical investigation, including dense older alluvial soils and lack of groundwater within 50 feet of the ground surface, indicate the soils underlying the project site have a low susceptibility to liquefication.[56]

Pursuant to Chapter 18.06 (Grading Application Requirements) of the City's Municipal Code, the project applicant would be required to prepare and submit detailed grading plans for the site prior to the issuance of grading permits. Implementation of **Standard Condition GEO-1** (compliance with the current edition of the CBC and recommendations in the project-specific Geotechnical Investigation (Appendix E) would ensure development under the proposed project would be protected from seismic-related ground failure, including liquefaction. Impacts would be **less than significant,** and mitigation is not required.

iv. Landslides?

Less than Significant. A landslide generally occurs on relatively steep slopes and/or on slopes underlain by weak materials. Factors that contribute to slope failure include slope height and steepness, shear strength and orientation of weak layers in the underlying geologic units, and pore water pressures. The project site is flat with no potential for landslides. Any retaining walls proposed on site shall be designed and constructed pursuant to the recommendations of the project-specific Geotechnical Investigation (refer to **Standard Condition GEO-1**) to protect against lateral spreading and landslides. Additionally, any retaining walls greater than 6 feet tall shall be designed for seismic lateral earth pressures pursuant to applicable provisions of the CBC. Accordingly, the flat-lying topography of the project site and compliance with **Standard Condition GEO-1** ensures the likelihood of landslides or lateral spreading is **less than significant.** Mitigation is not required**.**

b. Would the project result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact. The project site is occupied by Gorgonio gravely loamy fine sand (GmD) with 2 to 15 percent slopes.[57]

Development on the project site would convert a majority of existing permeable surfaces to paved surfaces, which would generally reduce the potential for soil erosion from the site. However, earthwork activities as part of the construction process would expose soils to the potential for soil erosion or loss of topsoil. Short-term erosion effects during the construction phase would be prevented through required grading permits and implementation of a Storm Water Pollution

54 *Ibid*. Exhibit V-4.

55 Southern California Geotechnical. *Geotechnical Investigation Proposed Warehouse, NEC Lincoln Avenue and 4th Street, Banning, California.* Page 6. December 17, 2021 (Appendix E).

56 *Ibid.* Page 11.

57 United States Department of Agriculture, Natural Resources Conservation Service. *Web Soil Survey.* https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm (accessed August 24, 2022).

Prevention Plan (SWPPP) and incorporation of best management practices (BMPs) intended to reduce soil erosion.[58] Refer to Section 3.10 (Threshold A) for additional information.

Compliance with storm water regulations include minimizing storm water contact with potential pollutants by providing covers and secondary containment for construction materials, designating areas away from storm drain systems for storing equipment and materials, and implementing good housekeeping practices at the construction site. Prior to the issuance of a grading permit, the project applicant would be required to prepare and submit site-specific, detailed grading plans to the City in accordance with Chapter 18.15 (Erosion and Sediment Control) of the City Municipal Code to minimize soil erosion, runoff, and water waste.

Operation of the project would be subject to a Water Quality Management Plan (WQMP), which incorporates measures to capture excess storm water runoff and prevent soil erosion to downstream water courses from the conversion of permeable surfaces to impermeable surfaces pursuant to Chapter 18.06 (Grading Application Requirements) of the City Municipal Code.

The SWPPP and WQMP would identify BMP measures to treat and/or limit the entry of contaminants into the storm drain system. The WQMP is required to be incorporated by reference or attached to a project's SWPPP as the Post-Construction Management Plan. Adherence to the BMPs contained in the SWPPP and WQMP would ensure that impacts related to soil erosion would remain **less than significant.** No mitigation is required.

c. Would the project be located on a geologic unit or soil that is unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Less than Significant Impact. The project site is mostly flat and surrounded by urban development. There is no evidence of landslides and/or slope instabilities on the project site. As detailed in Section 3.7(Threshold A)(iii) and (iv) above, the project site is not located in an area considered susceptible to liquefaction or landslides. As required under **Standard Condition GEO-1,** any retaining walls proposed at the site shall be designed and constructed pursuant to the recommendations of the Geotechnical Investigation (Appendix E), including the use of appropriate drainage equipment and select backfill to achieve an adequate soil-footing coefficient of friction.

The soils underlying the project site, which may become moist during storm events or irrigating landscaping, would be overexcavated and recompacted to achieve foundation design tolerances and reduce any potential for dry sand settlement or hydro-consolidation when additional loads are imposed on those soils by the proposed on-site structures.[59] Shrinkage, bulking, and subsidence are primarily dependent upon the degree of soil compaction achieved during construction. The degree to which fill soils are compacted and variations in the in-situ density of existing soils will influence earth volume changes. Shrinkage should be expected as soil is removed and replaced as compacted fill. The anticipated maximum total settlement is expected to be less than 1 and 0.5 inches with a differential

[58] Pursuant to the National Pollutant Discharge Elimination System (NPDES) program and Chapter 18.15 (Erosion and Sediment Control) of the City Municipal Code.

[59] Southern California Geotechnical. *Geotechnical Investigation Proposed Warehouse, NEC Lincoln Avenue and 4th Street, Banning, California.* Page 11. December 17, 2021 (Appendix E).

settlement of approximately 1 inch in a 30-foot span.[60] Accordingly, the project would incorporate **Standard Condition GEO-1**, which requires proper engineering design, verification testing periodically performed at random intervals and locations to confirm that the compressible soils have been sufficiently densified, and construction in conformance with current CBC standards and the recommendations outlined in the project-specific Geotechnical Investigation (Appendix E) to ensure a sufficient layer of engineered fill or densified soil is prepared beneath any proposed structural footings/foundations.

The project site features flat topography without significant nearby slopes or hills, and would be developed in accordance with **Standard Condition GEO-1.** Therefore, potential impacts from landslides, slope instabilities, liquefaction, subsidence, and/or soil collapse are **less than significant.** Mitigation is not required.

d. Would the project be located on expansive soil, as defined in Table 1-B of the Uniform Building Code, creating substantial direct or indirect risks to life or property?

Less than Significant Impact. Expansive soils generally have a substantial amount of clay particles, which can give up water (shrink) or absorb water (swell). The change in the volume exerts stress on buildings and other loads placed on these soils. The amount and types of clay present in the soil influence the extent or range of the shrink/swell. The occurrence of clayey soils is often associated with geologic units having marginal stability. Expansive soils can be widely dispersed, and they can occur along hillside areas as well as low-lying alluvial basins.

Soils on the project site have a very low expansion potential.[61] Pursuant to **Standard Condition GEO-1**, the proposed project would be designed and developed in accordance with the applicable CBC requirements and also would implement recommended measures identified in the project-specific geotechnical report prepared for the project (Appendix E). With such design features and geotechnical recommendations in place, implementation of the proposed project would not create substantial direct or indirect risks to life or property due to expansive soils. Impacts would be **less than significant,** and mitigation is not required.

e. Would the project Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. The project would connect to the municipal wastewater collection system along Lincoln Street/SR-243, and no septic systems are proposed. The project would not use septic systems or alternative wastewater disposal systems, so there would be **no impact** relative to septic system or alternative wastewater disposal systems. Mitigation is not required.

60 *Ibid*. Page 18.
61 *Ibid*. Page 12.

f. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less than Significant with Mitigation Incorporated. The Paleontological Assessment[62] (Appendix F) conducted for the project site included a review of underlying geology, paleontological literature, and fossil locality records in the project area. According to the project-specific Paleontological Assessment, the majority of the project site is underlain by young alluvial-fan deposits (Qyf) ranging in age from Holocene to late Pleistocene (present day to approximately 120,000 years ago).[63] The southern portion of the project site is underlain by old alluvial-fan sediments (Qof) ranging in age from late to middle Pleistocene (approximately 11,700 to 780,000 years ago).[64] Generally, Holocene sediments are too young to yield paleontological resources, but they are likely underlain by Pleistocene sediments, which have yielded significant paleontological resources elsewhere in San Bernardino, Riverside, Los Angeles, and Orange Counties. Pleistocene sediments in southern California are well documented and know to contain paleontological resources associated with Columbian mammoth (*Mammuthus columbi),* Pacific mastodon (*Mammut pacificus),* Sabertooth cat (*Smilodon fatalis),* Ancient horse (*Equus* sp.), and many other Pleistocene megafauna.[65] According to the record search review, the nearest fossil locality yielded from Pleistocene-aged sediment was identified between 5 and 6 miles west to northwest of the project site and consisted of a specimen belonging to an extinct species of bison (*Bison antiquus)*.[66]

Based on the Society of Vertebrate Paleontology (SVP) 2010 guidelines, the area of the project site containing young alluvial fan deposits is considered to have a low potential to yield significant paleontological resources. The southern portion of the project site containing old alluvial fan deposits is considered to have an undetermined potential to yield significant paleontological resources due the age of the sediments and documented potential to yield vertebrate fossils in the region.[67]

In accordance with State law, the project would be required to comply with California Administrative Code, Title 14, Section 4307, which states that no person shall remove, injure, deface or destroy any object of paleontological, archaeological, or historical interest or value. Although no fossil localities were identified within the project site or vicinity, it is possible that unanticipated paleontological resources might be encountered if excavation activities reach Pleistocene-age sediments below the ground surface during project construction. The proposed project must comply with all applicable regulations protecting paleontological resources and would be conditioned to cease excavation or construction activities if paleontological resources are identified during execution through **Mitigation Measure (MM) GEO-1**.

MM GEO-1: Prior to issuance of grading permits, the City shall verify a Paleontological Resource Impact Mitigation Plan is prepared by a qualified paleontologist to be implemented

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62 Brian F. Smith and Associates, Inc. (BSFA) *Paleontological Assessment for the Lincoln and 4th Street Project, City of Banning, County of Riverside, APNs 540-210-009 and -020.* January 18, 2022. (Appendix F).

63 *Ibid.* Page 4.

64 *Ibid.*

65 *Ibid.* Page 6.

66 *Ibid.* Page 6.

67 *Ibid.* Page 7.

during ground-disturbing activities. Implementation of the Paleontological Resource Impact Mitigation Plan shall include (but not be limited to) the following:

- Review of project-specific geotechnical report data, with particular regard to location and depth of earthmoving and the rock unit(s) encountered;
- A monitoring schedule indicating part-time "spot check" to verify deposits of paleontological potential. Part-time monitoring of deposits with paleontological potential shall occur based on the observed geological conditions; adjustments to the intensity and appropriateness of monitoring shall be at the discretion of the qualified paleontologist;
- Development of a formal agreement between the project applicant and an appropriate repository for the final disposition and permanent storage and maintenance of any fossil collections and associated data;
- The construction schedule, term/schedule of on-site paleontological monitor(s) and the extent of areas and activities to be monitored;
- Authority of paleontological monitor(s) to temporarily redirect construction activity in the vicinity of any paleontological discovery;
- Procedures for the evaluation and option to recover large fossil specimens and for the evaluation, recovery, and processing of small fossil specimens;
- Fossil specimen preparation, identification to the lowest taxonomic level possible, curation, and cataloging; and
- A report of findings.

The paleontologist shall be equipped to record and salvage fossil resources that may be unearthed during construction. The paleontologist shall temporarily halt or divert construction equipment within a radius of 50 feet to allow recording and removal of the unearthed resources. Any fossils found shall be offered for curation at a curation facility approved by the City. A report of findings, including, when appropriate, an itemized inventory of recovered specimens and a discussion of their significance, shall be prepared upon completion of the steps outlined above. The report and inventory, when submitted to and approved by the appropriate lead agency, shall signify completion of the program to mitigate impacts on paleontological resources. This measure shall be implemented to the satisfaction of the City's Community Development Director or designee.

With implementation of **Mitigation Measure GEO-1,** any paleontological resources encountered during ground disturbing activities would be managed pursuant to State law and SVP protocols to ensure impacts would be reduced to **less than significant with mitigation incorporated.**

3.8 GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

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

3.8.1 Impact Analysis

a. Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than Significant Impact. *State CEQA Guidelines* Section 15064(b) provides that the "determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data," and further states that an "ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting."

Appendix G of the *State CEQA Guidelines* includes significance thresholds for GHG emissions. A project would normally have a significant effect on the environment if it would do either of the following:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Currently, there is no Statewide GHG emissions threshold that has been used to determine the potential GHG emissions impacts of a project. Threshold methodology and thresholds are still being developed and revised by air districts in California.

To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, SCAQMD convened a GHG CEQA Significance Threshold Working Group (Working Group) in 2008. This Working Group proposed a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency. The applicable tier for this project is Tier 3, which states that if GHG emissions are less than 3,000 metric tons (MT) CO_2e per year, project-level and cumulative GHG emissions would be less than significant. However, this threshold was developed to meet the 2020 GHG emissions goals.

To be consistent with State goals detailed in Senate Bill (SB) 32, Executive Order (EO) B-30-15, and EO S-3-05 to reduce GHG emissions by 40 percent below 1990 levels by 2030, a scaled screening GHG

threshold can be developed for an assumed opening year of 2024. Though the SCAQMD has not published a quantified threshold beyond 2020, a threshold of 2,520 MT CO_2e per year would be the appropriate scaled GHG threshold for the opening year of 2024 based on the GHG reduction goals of SB 32 and EO B-30-15.

Construction and operation of the proposed project would generate GHG emissions, with the majority of energy consumption (and associated generation of GHG emissions) occurring during the project's operation.

Overall, the following activities associated with the proposed project could directly or indirectly contribute to the generation of GHG emissions.

Construction GHG Emissions. Construction activities associated with maximum buildout would produce combustion emissions from various sources. During construction, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically use fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO_2, CH_4, and N_2O. Furthermore, CH_4 is emitted during the fueling of heavy equipment. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change. Table 3.8.A lists the total GHG emissions for each phase of construction and that the total GHG emissions for construction of the proposed project would be 578 MT CO_2e.

The SCAQMD does not provide a separate GHG significance threshold for construction emissions, rather their guidance specifies that construction emissions should be amortized over 30 years (a typical project lifetime), added to the project operational emissions, and that total compared to the GHG significance threshold. Table 3.8.A shows that the 30-year amortized GHG emissions would be 19 MT CO_2e per year.

Table 3.8.A: Construction Greenhouse Gas Emissions

Construction Phase	Total Emissions per Phase (MT)			Total Emissions per Phase (MT CO_2e)
	CO_2	CH_4	N_2O	
Site Preparation	17	<1	<1	18
Grading	99	<1	<1	103
Building Construction	414	<1	<1	419
Architectural Coating	2	<1	<1	2
Paving	35	<1	<1	35
Total Emissions for the Entire Construction Process				**578**
Total Construction Emissions Amortized over 30 Years				**19**

Source: Table N. *Air Quality, Greenhouse Gas, and Energy Impact Analysis Memorandum for the proposed First Lincoln Logistics Warehouse Project in Banning, California.* LSA Associates, Inc. October 2022. (Appendix A).

CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
MT CO_2e = metric tons of carbon dioxide equivalent
MT = metric tons
N_2O = nitrous oxide

Operational GHG Emissions. Long-term GHG emissions are typically generated from mobile sources (e.g., cars, trucks and buses), area sources (e.g., maintenance activities and landscaping),

indirect emissions from sources associated with energy consumption, waste sources (land filling and waste disposal), and water sources (water supply and conveyance, treatment, and distribution). Mobile-source GHG emissions would include project-generated vehicle and truck trips to and from the project. Area-source emissions would be associated with activities such as landscaping and maintenance on the project site. Waste source emissions generated by the proposed project include energy generated by land filling and other methods of disposal related to transporting and managing project generated waste.

As described above, this analysis evaluates potential operational emissions associated with the proposed project. Operational GHG emissions were estimated using CalEEMod and the results are presented in Table 3.8.B.

Table 3.8.B: Long Term Operational GHG Emissions

Source	Pollutant Emissions (MT per year)					
	Bio-CO_2	NBio-CO_2	Total CO_2	CH_4	N_2O	CO_2e
Construction Emissions Amortized over 30 Years						19
Operational Emissions						
Area	0	<1	<1	<1	0	<1
Energy	0	70	70	<1	<1	70
Mobile	0	627	627	<1	<1	635
Offroad	0	93	93	<1	0	94
Waste	23	0	23	1	0	56
Water	9	63	72	<1	<1	101
Total Project Emissions	**32**	**853**	**885**	**1**	**<1**	**976**
SCAQMD Post-2020-Adjusted Tier 3 Threshold						**2,520**
Exceeds?						**No**

Source: Table O. *Air Quality, Greenhouse Gas, and Energy Impact Analysis Memorandum for the proposed First Lincoln Logistics Warehouse Project in Banning, California.* LSA Associates, Inc. October 2022. (Appendix A).
Bio-CO_2 = biologically generated CO_2 CO_2e = carbon dioxide equivalent
CH_4 = methane N_2O = nitrous oxide
CO_2 = carbon dioxide NBio-CO_2 = non-biologically generated CO_2

As shown in Table 3.8.B, the project would generate 976 metric tons of CO_2e per year. This is less than SCAQMD's threshold of 3,000 MT CO_2e per year and less than the post-2020-adjusted Tier 3 threshold of 2,520 MT CO_2e per year (Refer to Appendix A). Therefore, project-level and cumulative GHG emissions would be **less than significant,** and mitigation is not required.

b. Would the project conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

Less than Significant Impact. The City of Banning does not have an adopted climate action plan; therefore, the proposed project was analyzed for consistency with the goals of the 2017 Scoping Plan, EO B-30-15, SB 32, and AB 197.

EO B-30-15 added the immediate target of reducing GHG emissions to 40 percent below 1990 levels by 2030. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reduction target of at least 40 percent below 1990 levels by 2030 contained in EO B-30-15.

CARB released the 2017 Scoping Plan to reflect the 2030 target set by EO B-30-15 and codified by SB 32.[68] SB 32 builds on AB 32 and keeps us on the path toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels. The companion bill to SB 32, AB 197, provides additional direction to CARB related to the adoption of strategies to reduce GHG emissions. Additional direction in AB 197 that is intended to provide easier public access to air emission data collected by the CARB was posted in December 2016.

The Draft 2022 Scoping Plan Update[69] assesses progress toward the statutory 2030 target, while laying out a path to achieving carbon neutrality no later than 2045. The 2022 Scoping Plan Update focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities.

As identified above, the 2017 Scoping Plan contains GHG reduction measures that work towards reducing GHG emissions, consistent with the targets set by EO B-30-15 and codified by SB 32 and AB 197. The measures applicable to the proposed project include energy efficiency measures, water conservation and efficiency measures, and transportation and motor vehicle measures, as discussed below.

Energy efficient measures are intended to maximize energy efficiency building and appliance standards, pursue additional efficiency efforts including new technologies and new policy and implementation mechanisms, and pursue comparable investment in energy efficiency from all retail providers of electricity in California. In addition, these measures are designed to expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings. The proposed project would be required to comply with the latest Title 24 standards of the CCR, established by the CEC, regarding energy conservation and green building standards.

Water conservation and efficiency measures are intended to continue efficiency programs and use cleaner energy sources to move and treat water. Increasing the efficiency of water transport and reducing water use would reduce GHG emissions. As noted above, the proposed project would be required to comply with the latest Title 24 standards of the CCR, which includes a variety of different measures, including reduction of wastewater and water use. Therefore, the proposed project would not conflict with any of the water conservation and efficiency measures.

The goal of transportation and motor vehicle measures is to develop regional GHG emissions reduction targets for passenger vehicles. The second phase of Pavley standards would reduce GHG emissions from new cars by 34 percent from 2016 levels by 2025, resulting in a 3 percent decrease in average vehicle emissions for all vehicles by 2020. Vehicles traveling to the project site would comply with the Pavley II (LEV III) Advanced Clean Cars Program. Therefore, the proposed project would not conflict with the identified transportation and motor vehicle measures.

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68 California Air Resources Board (CARB). 2017. *California's 2017 Climate Change Scoping Plan*. November.

69 CARB. 2021. op. cit.

As such, the proposed project would comply with existing State regulations adopted to achieve the overall GHG emissions reduction goals identified in the 2017 Scoping Plan, EO B-30-15, SB 32, and AB 197 and would be consistent with applicable plans and programs designed to reduce GHG emissions. Therefore, the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, impacts would be **less than significant,** and mitigation is not required.

3.9 HAZARDS AND HAZARDOUS MATERIALS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☒	☐	☐
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

3.9.1 Impact Analysis

a. Would the project create a significant hazard to the public through the routine transport, use, or disposal of hazardous materials?

Less than Significant Impact. Construction of the project has the potential to create a hazard to the public or environment through the routine transportation, use, and disposal of construction-related hazardous materials such as fuels, oils, solvents, and other materials. Potential hazardous materials such as fuel, paint products, lubricants, solvents, and cleaning products may be used and/or stored on site during construction of the proposed project. These materials are typical of materials delivered to construction sites. Due to the relatively small scale of proposed development (a 118,786-square-foot warehouse building on 6.17 net acres), only limited quantities of these materials are expected to be used during construction, and therefore they are not considered hazardous to the public at large.

The temporary transport, use, or disposal of fuels, lubricants, paints, and other hazardous materials related to construction would not pose a significant hazard to the public or environment unless the materials were accidently spilled or released into the environment. The transport, use, and storage of hazardous materials during construction would be regulated by the Riverside County Fire Department

and the California Occupational Safety and Health Administration. Additionally, the United States Department of Transportation Office of Hazardous Materials Safety prescribes strict regulations for the safe transportation of hazardous materials by truck and rail on State highways and rail lines, as described in Title 49 of the *Code of Federal Regulations* and implemented by Title 13 of the CCR.

Industrial operations and maintenance on the project site would require relatively small amounts of hazardous materials, such as chemicals associated with heating and cooling systems, fuel for landscape equipment, solvents, cleaning products, pesticides/fertilizers, and other similar chemicals. These materials are substantially similar to warehouse chemicals and solvents already in wide use throughout the City and in the vicinity of the site.

As is the case during construction, the transport, use, and storage of hazardous materials during project occupation would be regulated by the Riverside County Fire Department and the California Occupational Safety and Health Administration. Additionally, transport of hazardous materials by truck and rail on State highways and rail lines are regulated by the United States Department of Transportation Office of Hazardous Materials Safety as described above.

Worker health and safety is regulated at the federal level by the U.S. Department of Labor, Occupational Safety and Health Administration. The Federal Occupational Safety and Health Act of 1970 authorizes states to establish their own safety and health programs with OSHA approval. Worker health and safety protections in California are regulated by the California Department of Industrial Relations (DIR). The DIR includes the Division of Occupational Safety and Health, which acts to protect workers from safety hazards through its California Occupational Safety and Health Administration (Cal/OSHA) program and provides consultant assistance to employers. California standards for workers dealing with hazardous materials are contained in CCR Title 8 and include practices for all industries (General Industrial Safety Orders), and specific practices for construction, and other industries. Workers at hazardous waste sites (or workers who may be exposed to hazardous wastes that might be encountered during excavation of contaminated soils) must receive specialized training and medical supervision according to the Hazardous Waste Operations and Emergency Response regulations.[70] Additional regulations have been developed for construction workers potentially exposed to lead[71] and asbestos.[72]

Cal/OSHA enforcement units conduct on-site evaluations and issue notices of violation to enforce necessary improvements to health and safety practices. The routine transport, use, and disposal of hazardous materials at the project site during construction and operation would be performed in accordance with the requirements of CCR Title 8, which would minimize potential health hazards for construction workers, landscapers, maintenance personnel, and employees. As such, impacts would be **less than significant,** and mitigation is not required.

[70] California Code of Regulations, Title 8 5192.
[71] California Code of Regulations, Title 8 Section 1532.1.
[72] California Code of Regulations, Title 8, Section 1529.

b. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less than Significant Impact. The site was utilized for dried fruit production through the 1940s and has been left vacant since the 1960s as surrounding properties were developed with industrial uses and associated infrastructure.[73]

A Phase I Environmental Site Assessment (ESA) was prepared for the proposed project in accordance with the American Society for Testing and Materials (ASTM) International Standard E1527-2013 for the purposes of identifying recognized environmental conditions or historical recognized environmental conditions[74] on the project site (Appendix G). The Phase I ESA includes federal, State, and local records reviews (up to a one-mile radius), interviews with persons occupying [and adjacent to] the project site, and an on-site inspection of the properties comprising the project site. According to the Phase I ESA, no recognized environmental conditions, historical recognized environmental conditions, or controlled recognized environmental conditions occur on the project site, nor do any such environmental conditions which are determined to occur within one mile of the project site pose a substantial environmental hazard to the project site or its occupants.[75]

As stated above, the project-specific Phase I ESA did not identify any hazardous materials or recognized environmental conditions on the project site. Any hazardous materials utilized during construction and operation of the project would be regulated by the Riverside County Fire Department and the California Occupational Safety and Health Administration to ensure impacts from reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment during construction and operation remain **less than significant**. Mitigation is not required.

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73 Brian F. Smith and Associates, Inc. (BFSA). *A Phase I Cultural Resources Assessment for the Lincoln and 4th Project, City of Banning, California.* Page 2.0-30. May 18, 2022. (Appendix D).

74 "Recognized environmental condition" 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 that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimis* are not recognized environmental conditions. "Historical Recognized environmental condition" means an environmental condition which in the past would have been considered a *recognized environmental condition*, but which may or may not be considered a *recognized environmental condition* currently. If a past release of any *hazardous substances* or *petroleum products* has occurred in connection with the *property*, with such remediation accepted by the responsible regulatory agency (for example, as evidenced by the issuance of a case closed letter or equivalent), this condition shall be considered a *historical recognized environmental condition*.

75 Weis Environmental. *Phase I Environmental Site Assessment, Northeast Corner of W. Lincoln Street and 4th Street, Banning, California 92220.* Page 22 of 27. November 30, 2021. (Appendix G).

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school?

Less than Significant Impact. There are no existing or planned schools within a 0.25-mile radius of the project site.[76] However, the nearest school in proximity to the project site is Banning High School at 100 W. Westward Avenue, approximately 0.27 mile south of the project site. As detailed in response to Section 3.9 (Threshold A), the transport, use, and storage of hazardous materials during construction, operation, and occupation of the proposed warehouse would be regulated by the Riverside County Fire Department and the California Occupational Safety and Health Administration. The United States Department of Transportation Office of Hazardous Materials Safety prescribes strict regulations for the safe transportation of hazardous materials by truck and rail on State highways and rail lines.

Some common hazardous materials (e.g., fuels, lubricants, pesticides, warehouse products, etc.) would be used at the project site during construction and operational activities. As detailed in Section 3.9 (Threshold A and Threshold B), the project site does not include any activities or materials that constitute a Recognized Environmental Condition that could represent a significant risk to public health or safety from construction and operation of the site. Development of the site for industrial uses would include materials substantially similar to warehouse chemicals and solvents already in wide use throughout the City and in the vicinity of the site.

Since no schools are located or proposed within 0.25 mile of the project site, and any transport of hazardous materials associated with construction of the proposed project would be in accordance with applicable regulatory policy, impacts related to an accidental release of hazardous materials or emissions of hazardous substances within one-quarter mile of an existing or proposed school would be **less than significant.** No mitigation is required.

d. Would the project be located on a site which is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. Hazardous materials sites compiled pursuant to Government Code Section 65962.5 are listed on the "Cortese List" (named after the Legislator who authored the legislation that enacted it), which is maintained by the California DTSC.[77] The project site is not on any list of hazardous material

[76] Banning Unified School District. *Schools*. https://www.banning.k12.ca.us/apps/pages/index.jsp?uREC_ID=2137086&type=d&pREC_ID=2161523 (accessed August 30, 2022).

[77] California Department of Toxic Substances Control. *Hazardous Waste and Substances Site List (Cortese).* 2022. https://www.envirostor.dtsc.ca.gov/public/search.asp?page=3&cmd=search&business_name=&main_street_name=&city=&zip=&county=&status=ACT%2CBKLG%2CCOM&branch=&site_type=CSITES%2CFUDS&npl=&funding=&reporttitle=HAZARDOUS+WASTE+AND+SUBSTANCES+SITE+LIST+%28CORTESE%29&reporttype=CORTESE&federal_superfund=&state_response=&voluntary_cleanup=&school_cleanup=&operating=&post_closure=&non_operating=&corrective_action=&tiered_permit=&evaluation=&spec_prog=&national_priority_list=&senate=&congress=&assembly=&critical_pol=&business_type=&case_type=&searchtype=&hwmp_site_type=&cleanup_type=&ocieerp=&hwmp=False&permitted=&pc_permitted=&inspections=&complaints=&censustract=&cesdecile=&school_district=&orderby=city (accessed August 30, 2022).

sites compiled pursuant to Government Code Section 65962.5. Therefore, **no impact** would occur. Mitigation is not required.

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

Less than Significant with Mitigation Incorporated. The project site is located within Compatibility Zone D (Primary Traffic Patterns and Runway Buffer Area) of the [*Banning Municipal Airport*] *Riverside County Airport Land Use Compatibility Plan* (ALUCP).[78] The ALUCP is developed to promote compatible land uses adjacent to airfields. As indicated in Appendix D of the ALUCP, the proposed project as an industrial warehouse is a compatible land use in proximity to the Banning Municipal Airport.

The project was presented to the Riverside County Airport Land Use Commission (ALUC) because the ALUCP is not consistent with the City's General Plan, and the project is within the airport influence area of the Banning Municipal Airport. The Riverside ALUC issued application number ZAP1048BA22. As detailed in Table 3.9.A, the project proposes a land use compatible with ALUCP Compatibility Zone D (Primary Traffic Patterns and Runway Buffer Area).

Additionally, the Riverside ALUC recommended the project be reviewed by the Federal Aviation Administration (FAA) due to its proximity to the runway. Part 77, Subpart B of the FAA requires notification to the FAA of any proposed construction or alteration having a height greater than an imaginary surface extending 100 feet outward and 1 foot upward (slope of 100:1) for a distance of 20,000 feet from nearest point of any runway more than 3,200 feet in actual length, and also requires FAA notification for construction of any object taller than 200 feet.[79] The project site is located as close as 6,098 feet west of the Banning Municipal Airport Runway 8-26, which is 2,119 feet above mean sea level (AMSL) at its westerly terminus. Accordingly, structures exceeding 2,180 feet AMSL measured at top of roof (equal to a slope of 100:1 in relation to the distance to the nearest runway) would be subject to Federal Aviation Administration Obstruction Evaluation Service (FAA OES) review. The project was submitted to the FAA for OES review via Form 7460-1 since the site's finished floor elevation is 2,328 feet AMSL, and the proposed building height is 55 feet, for a top point elevation of 2,383 feet AMSL.

The FAA reviewed the project and determined the project would not result in a hazard to air navigation provided the project applicant files an FAA Form 7460-2, Notice of Actual Construction or Alteration within 5 days after the construction reaches its greatest height. Furthermore, the Riverside ALUC requested the following conditions be implemented, as prescribed below through **Mitigation Measure (MM) HAZ-1** through **HAZ-5**, to ensure the proposed project would not exceed obstruction standards and would not be a hazard to air navigation**.**[80]

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78 *Riverside County Airport Land Use Compatibility Plan. Volume 1 Policy Document.* Chapter 3, FV. Banning M Airport. Riverside County Airport Land Use Commission. October 14, 2004, Amended January 2012.

79 *Ibid.* Appendix B.

80 Riverside County Airport Land Use Commission. *Airport Land Use Commission (ALUC) Development Review – Director's Determination, File No. ZAP1048BA22).* November 28, 2022 (Appendix H).

Table 3.9.A: Compatibility Criteria for Land Use Actions

Zone	Locations	Maximum Densities / Intensities					Additional Criteria	
		Residential (d.u./ac)[1]	Other Uses (people/acre)[2]			Required Open Land[3]	Prohibited Uses[4]	Other Development Conditions[5]
			Average[6]	Single Acre[7]	With Bonus[8]			
D	Primary Traffic Patterns and Runway Buffer Area	1. ≤0.2 (average parcel size ≥5.0 ac.) or[13] 2. ≥5.0 (average parcel size ≤0.2 ac.	100	300	390	10%	• Highly noise-sensitive outdoor nonresidential uses[10] • Hazards to flight[9]	• Airspace review required for objects >70 feet tall[11] • Children's schools, hospitals, nursing homes discouraged[12] • Deed notice required

Source: Table 2A. *Riverside County Airport Land Use Compatibility Plan. Volume 1 Policy Document.* Chapter 2, Countywide Policies. Riverside County Airport Land Use Commission. October 14, 2004

1 Residential development must not contain more than the indicated number of dwelling units (excluding secondary units) per gross acre. Clustering of units is encouraged. See Policy 4.2.5 for limitations. Gross acreage includes the property at issue plus a share of adjacent roads and any adjacent, permanently dedicated, open lands. Mixed-use development in which residential uses are proposed to be located in conjunction with nonresidential uses in the same or adjoining buildings on the same site shall be treated as nonresidential development. See Policy 3.1.3(d).

2 Usage intensity calculations shall include all people (e.g., employees, customers/visitors, etc.) who may be on the property at a single point in time, whether indoors or outside.

3 Open land requirements are intended to be applied with respect to an entire zone. This is typically accomplished as part of a community general plan or a specific plan, but may also apply to large (10 acres or more) development projects. See Policy 4.2.4 for definition of open land.

4 The uses listed here are ones that are explicitly prohibited regardless of whether they meet the intensity criteria. In addition to these explicitly prohibited uses, other uses will normally not be permitted in the respective compatibility zones because they do not meet the usage intensity criteria.

5 As part of certain real estate transactions involving residential property within any compatibility zone (that is, anywhere within an airport influence area), information regarding airport proximity and the existence of aircraft overflights must be disclosed. This requirement is set by state law. See Policy 4.4.2 for details. Easement dedication and deed notice requirements indicated for specific compatibility zones apply only to new development and to reuse if discretionary approval is required.

6 The total number of people permitted on a project site at any time, except rare special events, must not exceed the indicated usage intensity times the gross acreage of the site. Rare special events are ones (such as an air show at the airport) for which a facility is not designed and normally not used and for which extra safety precautions can be taken as appropriate.

7 Clustering of nonresidential development is permitted. However, no single acre of a project site shall exceed the indicated number of people per acre. See Policy 4.2.5 for details.

8 An intensity bonus may be allowed if the building design includes features intended to reduce risks to occupants in the event of an aircraft collision with the building. See Policy 4.2.6 for details.

9 Hazards to flight include physical (e.g., tall objects), visual, and electronic forms of interference with the safety of aircraft operations. Land use development that may cause the attraction of birds to increase is also prohibited. See Policy 4.3.7

10 Examples of highly noise-sensitive outdoor nonresidential uses that should be prohibited include amphitheaters and drive-in theaters. Caution should be exercised with respect to uses such as poultry farms and nature preserves.

11 This height criterion is for general guidance. Shorter objects normally will not be airspace obstructions unless situated at a ground elevation well above that of the airport. Taller objects may be acceptable if determined not be obstructions. See Policies 4.3.3 and 4.3.4.

12 Discouraged uses should generally not be permitted unless no feasible alternative is available.

13 Two options are provided for residential densities in Compatibility Zone D. Option (1) has a density limit of 0.2 dwelling units per acre (i.e., an average parcel size of at least 5.0 gross acres). Option (2) requires that the density be greater than 5.0 dwelling units per acre (i.e., an average parcel size less than 0.2 gross acres). The choice between these two options is at the discretion of the local land use jurisdiction. See Table 2B for explanation of rationale. All other criteria for Zone D apply to both options.

d.u./ac = dwelling units per acre

MM HAZ-1: Any increase in building area or change in use that differs from what was previously evaluated by the Airport Land Use Commission (ALUC) (108,786 square feet of warehouse area, 5,000 square feet of office area, and 5,000 square feet of second floor office mezzanine area) shall require an amended review by the ALUC. Furthermore, the maximum height of the proposed structures to top point shall not exceed 55 feet above ground level, and the maximum elevation at the top of the structures shall not exceed 2,383 feet above mean sea level. The maximum height and top point elevation specified above shall not be amended without further review by the ALUC and the Federal Aviation Administration (FAA); provided, however, that reduction in structure height or elevation shall not require further review by the ALUC. Additionally, temporary construction equipment used during actual construction of the structures shall not exceed 55 feet in height and a maximum elevation of 2,383 feet above mean sea level, unless separate notice is provided to the FAA through the Form 7460-1 process.

If marking and/or lighting for aviation safety are accomplished on a voluntary basis, such marking and/or lighting (if any) shall be installed in accordance with FAA Advisory Circular 70/7460-1 L Change 2 and shall be maintained in accordance therewith for the life of the project. Furthermore, any outdoor lighting installed shall be hooded or shielded to prevent either the spillage of lumens or reflection into the sky. Outdoor lighting shall be downward facing.

MM HAZ-2: The following uses shall be prohibited:

a. Any use which would direct a steady light or flashing light of red, white, green, or amber colors associated with airport operations toward an aircraft engaged in an initial straight climb following takeoff or toward an aircraft engaged in a straight final approach toward a landing at an airport, other than an FAA-approved navigational signal light or visual approach slope indicator.

b. Any use which would cause sunlight to be reflected towards an aircraft engaged in an initial straight climb following takeoff or towards an aircraft engaged in a straight final approach towards a landing at an airport.

c. Any use which would generate smoke or water vapor or which would attract large concentrations of birds, or which may otherwise affect safe air navigation within the area. (Such uses include landscaping utilizing water features, aquaculture, outdoor production of cereal grains, sunflower, and row crops, composting operations, wastewater management facilities, artificial marshes, trash transfer stations that are open on one or more sides, recycling centers containing putrescible wastes, construction and demolition debris facilities, fly ash disposal, and incinerators.)

d. Any use which would generate electrical interference that may be detrimental to the operation of aircraft and/or aircraft instrumentation.

e. Highly noise-sensitive outdoor nonresidential uses.

f. Any use which results in a hazard to flight, including physical (e.g., tall objects), visual, and electronic forms of interference with the safety of aircraft operations.

MM HAZ-3: A Riverside County Airport Land Use Commission-approved "Notice of Airport in Vicinity" shall be provided to all prospective purchasers and occupants of the property and be recorded as a deed notice. In the event that the Office of the Riverside County Assessor-Clerk-Recorder declines to record said notice, the text of the notice shall be included on the Environmental Constraint Sheet (ECS) of the final parcel map, if an ECS is otherwise required.

MM HAZ-4: Any proposed stormwater basins or facilities shall be designed and maintained to provide for a maximum 48-hour detention period following the design storm and remain totally dry between rainfalls. Vegetation in and around the basins that would provide food or cover for birds would be incompatible with airport operations and shall not be utilized in project landscaping. Trees shall be spaced to prevent large expanses of contiguous canopy, when mature. Landscaping in and around the basin(s) shall not include trees or shrubs that produce seeds, fruits, or berries.

Landscaping in the stormwater basin, if not rip-rap, should be in accordance with the guidance provided in ALUC "LANDSCAPING NEAR AIRPORTS" brochure, and the "AIRPORTS, WILDLIFE AND STORMWATER MANAGEMENT" brochure, which list acceptable plants from Riverside County Landscaping Guide or other alternative landscaping as may be recommended by a qualified wildlife hazard biologist.

A notice sign shall be permanently affixed to the stormwater basin with the following language: "There is an airport nearby. This stormwater basin is designed to hold stormwater for only 48 hours and not attract birds. Proper maintenance is necessary to avoid bird strikes". The sign shall also include the name, telephone number or other contact information of the person or entity responsible to monitor the stormwater basin.

MM HAZ-5: Within five (5) days after construction of the structure reaches its greatest height, FAA Form 7460-2 (Part II), Notice of Actual Construction or Alteration, shall be completed by the project proponent or his/her designee and e-filed with the Federal Aviation Administration. This requirement is also applicable in the event the project is abandoned or a decision is made not to construct the applicable structure.

Through implementation of **Mitigation Measure (MM) HAZ-1** through **HAZ-5,** the proposed project would be consistent with the ALUCP.[81] The ALUCP takes into account safety hazards and proposed land uses in close proximity to operations of the Banning Municipal Airport and the potential for injury to residents or people working in such areas. Since the project is consistent with the ALUCP, impacts

[81] Riverside County Airport Land Use Commission. *Airport Land Use Commission (ALUC) Development Review – Director's Determination, File No. ZAP1048BA22).* November 28, 2022 (Appendix H).

related to airport hazards for people residing or working on the project site would be **less than significant with mitigation incorporated.**

f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than Significant Impact.

Construction. Construction activities that may temporarily restrict vehicular traffic would be required to implement appropriate measures to facilitate the passage of persons and vehicles through/around any required road closures. Typical City requirements include prior notification of any lane or road closures with sufficient signage before and during any closures, flag crews with radio communication when necessary to coordinate traffic flow, etc. The project applicant would be required to comply with these requirements, which would maintain emergency access and allow for evacuation if needed during construction activities. Compliance with these requirements would ensure that short-term impacts related to construction-period emergency access are **less than significant.** Mitigation is not required.

Operation. Access to and from the project site is available via W. Lincoln Avenue. Implementation of the proposed project would increase the number of trucks operating near the site and would generate an increase in the amount and volume of traffic on local and regional roadway networks. In accordance with the California Fire Code, the project applicant is required to design, construct, and maintain structures, roadways, and facilities to maintain appropriate emergency/evacuation access to and from the project site as codified in Chapter 8.16 (Fire Protection Code) of the City Municipal Code.

Entrances and exits to and from parking and loading facilities would be marked with appropriate directional signage. All site access points and driveway aprons are designed and would be constructed to adequate widths for public safety pursuant to City Municipal Code Chapter 8.16 (Fire Protection Code). Off site, the project includes dedication of approximately 15 feet of right of way along the southern project site frontage and would widen Lincoln Street/SR-243 to the ultimate 55-foot half width in accordance with the City's General Plan designation for a major highway or arterial highway. The applicant would install curb, gutter, sidewalk, landscaping, streetlights, and trees along the Lincoln Street/SR-243 frontage.

These improvements would be subject to compliance with the City Municipal Code sections specified above and would be reviewed by the Riverside County Fire Department and Banning Police Department through the City's general development review process. Proper site design and compliance with standard and emergency City access requirements would allow for evacuation if necessary during ongoing warehouse operations. This would ensure that long-term impacts related to this issue are **less than significant.** Mitigation is not required.

g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

Less than Significant Impact. The project site is surrounded by urban development and is not within a Very High Fire Hazard Severity Zone (VHFHSZ) in the Local Responsibility Area (LRA); therefore, the

risk of a wildfire event affecting the site is low.[82] The project would be required to comply with applicable provisions of the 2022 CBC and California Fire Code, City Municipal Code Chapter 8.16 (Fire Protection Code), and the Wildland Fire Hazards Element of the City's General Plan.

Prior to final plan check approval, the City of Banning, in coordination with the Riverside County Fire Department, would review the project site plan to ensure adequate design features such as ignition-resistant construction, emergency evacuation, and access for first responders are implemented to reduce exposure of people and structures to wildfires. Through compliance with fire codes and the City's General Plan, the proposed project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. Impacts would be **less than significant,** and mitigation is not required.

[82] California Department of Forestry and Fire Protection (CAL FIRE). *Fire and Resource Assessment Program (FRAP).* https://egis.fire.ca.gov/FHSZ/ (accessed August 24, 2022).

3.10 HYDROLOGY AND WATER QUALITY

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☒	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☐	☒	☐
i. Result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv. Impede or redirect flood flows?	☐	☐	☒	☐
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

3.10.1 Impact Analysis

a. Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less than Significant Impact.

Construction. During construction activities, excavated soil would be exposed and there would be an increased potential for soil erosion and sedimentation compared to existing conditions. In addition, chemicals, liquid products, petroleum products (e.g., paints, solvents, and fuels), and concrete-related waste may be spilled or leaked and have the potential to be transported via storm water runoff into receiving waters.

Construction of the proposed project would disturb greater than one acre of land and is therefore subject to the requirements of the State Water Resources Control Board's National Pollution Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit or CGP), as specified in **Standard Condition HYD-1**. The Construction General Permit requires the preparation of a Storm Water Pollution Prevention Plan (SWPPP) and implementation of construction BMPs during construction activities. Construction BMPs would include, but not be limited to, erosion

and sediment control, designed to minimize erosion and retain sediment on site, and good housekeeping practices to prevent spills, leaks, and discharge of construction debris and waste into Smith Creek and downstream receiving waters.

The proposed project is also required to comply with the provisions of the City of Banning Ordinance No. 1388 and Ordinance No. 1415 (Municipal Code Chapter 13.24 and Chapter 18.15), as specified in **Standard Condition HYD-2**, which requires the preparation and implementation of an Erosion and Sediment Control Plan during project construction to minimize the transport of soil into streets, storm drains, and drainage ways.

In compliance with the Construction General Permit and City Municipal Code, the Construction Contractor would be required to prepare a SWPPP and an Erosion Control Plan, respectively, and implement Construction BMPs detailed in the SWPPP and Erosion Control Plan during construction activities. Because construction BMPs would target pollutants of concern in stormwater runoff, adherence to **Standard Conditions HYD-1** and **HYD-2** would ensure that construction of the proposed project would not violate water quality standards or degrade surface water quality. Therefore, impacts associated with the violation of surface water quality standards and waste discharge requirements would be **less than significant**. No mitigation is required.

According to the Geotechnical Investigation (Appendix E) prepared for the project, no groundwater was encountered on the project site during activities for exploratory borings drilled to a 50-foot depth.[83] The nearest monitoring well is located approximately 1,500 feet southeast of the project site and has a recorded groundwater depth of approximately 500 feet below ground surface.[84] The depth of excavation during project construction would reach a depth of approximately 8 feet below ground surface.[85] Based on the depth of groundwater underlying the project site and depth of excavation during construction, dewatering activities during project construction are not anticipated to occur. Storm water that may infiltrate soil during construction would not be expected to affect groundwater quality because of the depth to groundwater on the project site and low infiltration rates of on-site soils.[86] Therefore, impacts associated with the violation of groundwater quality standards and waste discharge requirements would be **less than significant**. No mitigation is required.

In conclusion, construction of the project would comply with the requirements of the CGP and City Municipal Code in accordance with **Standard Condition HYD-1** and **HYD-2**, including the preparation of an SWPPP and Erosion and Sediment Control Plans and implementation of Construction BMPs to target and reduce pollutants of concern in storm water runoff. Compliance with regulatory requirements would ensure that impacts related to violation of any water quality

83 Southern California Geotechnical. *Geotechnical Investigation, Proposed Warehouse, NEC Lincoln Avenue and 4th Street, Banning, California*. Page 6. December 17, 2021 (Appendix E).

84 *Ibid.*

85 *Ibid.* Page 14.

86 Southern California Geotechnical. *Results of Infiltration Testing, Proposed Warehouse, NEC Lincoln Avenue and 4th Street, Banning, California.* Page 4. December 17, 2021 (Appendix I).

standards or waste discharge requirements (WDRs) and degradation of surface or groundwater quality during construction would be **less than significant**. No mitigation is required.

Operation. During operation, potential pollutants of concern include sediments, bacteria, heavy metals, nutrients, trash and debris, and oil and grease. The 6.5-acre project site is currently vacant. The proposed project would develop an industrial facility, including a warehouse, surface parking lot and drive aisles that would total approximately 5.5 acres or approximately 90 percent of the project site. The remaining 1-acre (10 percent) of the project site would include landscaping and remain pervious.

To address potential water contaminants during project operations from the addition of 5.5 acres of development and associated impervious surfaces, the project would be required to comply with the requirements of the Colorado River Regional Water Quality Control Board (RWQCB) Waste Discharge Requirement for Discharges from the Municipal Separate Storm Sewer System (MS4) within the Whitewater River Watershed (Order No. R7-2013-0011, NPDES No. CAS617002) (Whitewater River MS4 Permit), on which the City of Banning is co-permittee. The Whitewater River MS4 Permit requires new development or redevelopment, including industrial developments 100,000 square feet or greater, to prepare a Final Water Quality Management Plan (WQMP) in accordance with the *Whitewater River Region WQMP Guidance Document*. As specified in **Standard Condition HYD-3**, a Final WQMP would be developed for the proposed project. The Final WQMP would specify the Site Design, Source Control, Low Impact Development (LID), and Treatment Control BMPs that would be implemented to capture, treat, and reduce pollutants of concern in storm water runoff. Site Design BMPs are storm water management strategies that emphasize conservation and use of existing site features to reduce the amount of runoff and pollutant loading generated from a site. Source Control BMPs are preventative measures that are implemented to prevent the introduction of pollutants into storm water. LID BMPs mimic a project site's natural hydrology by using design measures that capture, filter, store, evaporate, detain, and infiltrate runoff rather than allowing runoff to flow directly to piped or impervious storm drains. Treatment Control BMPs are structural BMPs designed to treat and reduce pollutants in storm water runoff prior to releasing it to receiving waters.

A *Preliminary Water Quality Management Plan* (PWQMP) has been prepared for the proposed project, which details the proposed project's approach to managing stormwater.[87] Although the City of Banning requires on-site retention of stormwater, on-site infiltration is not feasible due to the low infiltration rate of existing soils.[88] Therefore, the proposed project would rely on bioretention facilities to meet the goals of the Whitewater River MS4 Permit as described below.

In the post project condition, the project site would be subdivided into three Drainage Management Areas (DMA A, B, and C) to collect and manage storm water runoff and direct it to the exiting municipal storm drain system. DMA A is the largest collection area (3.9 acres) and is located in the northern, eastern, and southeastern portions of the project site; DMA B is 0.6 acre

87 Stantec. *Draft Preliminary Water Quality Management Plan for First Lincoln Logistics.* May 18, 2022, revised February 8, 2023 (Appendix J).

88 Southern California Geotechnical. *Results of Infiltration Testing, Proposed Warehouse, NEC Lincoln Avenue and 4th Street, Banning, California.* Page 4. December 17, 2021 (Appendix I).

and is located along the western portion of the site; and DMA C is 1.6 acres and is located along the southwestern portion of the site. Stormwater runoff from DMA A would be captured by inlets and channeled within conduits to a modular wetland biofiltration system located in the southeast corner of the project site. The modular wetland biofiltration system would filter debris and sediment and treat pollutants of concern prior to discharge to the underground detention facility along the south side of the project site. Runoff from DMA B and DMA C would be captured by inlets and two biofiltration systems (with underdrains) on the west and south side of the project site respectively. The biofiltration systems would treat stormwater before it is discharged into the underground detention facility. Stormwater would be discharged into Lincoln Street from the underground detention facility and would then be conveyed east by the roadbed and discharged onto San Gorgonio Avenue, where it would be captured by existing catch basins and through the existing storm drain system and discharged to Smith Creek. A wet well and pumping system would be designed to regulate the outflow of the underground detention facility to pre-project conditions in accordance with the MS4 permit. As noted above, landscaping around the perimeter of the project site would capture and infiltrate a small percentage (approximately 10%) of post project stormwater runoff.

According to the *Whitewater River Region WQMP Guidance Document*, "Projects required to retain Urban Runoff on-site in conformance with local ordinance are considered to have met the measurable goal" for on-site treatment of pollutants of concern if 100% of the project's "treatment control BMP requirement" is met.[89] The PWQMP details how the proposed BMPs would address 100% of the project's "treatment control BMP requirement"; therefore, the project would meet the measurable goal for on-site treatment of stormwater runoff and be consistent with the requirements of the Whitewater River Region WQMP Guidance Document. [90]

As specified in **Standard Condition HYD-4**, The proposed project would also be required to comply with Municipal Code Chapter 13.24, which requires development projects to retain all stormwater on-site for rainfall events up to and including the 100 year -3 hour duration event and ensure that post-development peak urban discharge rates do not exceed pre-development peak urban runoff discharge rates. According to the PWQMP, the proposed project is unable to meet the City's requirement to retain stormwater runoff for the 100 year – 3 hour storm event due to poor infiltration of on-site soils and vertical site constraints.[91] Therefore, the project proponent is seeking a waiver from the City's Public Works Department to establish that the project is able to meet NPDES goals and provisions without retaining stormwater runoff for the 100 year – 3 hour event by designing the outflow pump for the underground detention basin to ensure that the existing outflow rates do not exceed existing condition flow rates for the 2-year, 10-year, and 100-year storms. The *Preliminary Hydrology Report* prepared for the project (Appendix K) evaluated the project for the 2 year- 24 hour and 10 year -24 hour rainfall events, in accordance with the *Whitewater River Region WQMP Guidance Document* and the 100 year – 3 hour rainfall event, in

89 Stantec. *Draft Preliminary Water Quality Management Plan for First Lincoln Logistics*. Page 1-23. May 18, 2022, revised February 8, 2023 (Appendix J).

90 *Ibid.* Pages 1-19 through 1-23; Tables 4, 5, and 6.

91 Stantec 2022. First Lincoln Logistics - Entitlement Review - 18014001 – 185 – Lincoln and 4th – Hydrology Report – Waiver Request of City Ordinance for retention of 100-year, 3-hour storm volume.

accordance with City Ordinance No. 1415, [92] and determined the volume differential between the pre-project and post-project conditions for the 10 year – 24 hour storm event represented the largest mitigation storm volume and is considered the prevailing storm event.[93] Therefore, the stormwater system would be designed to contain the volumes for the 10 year -24 hour rainfall events, which is consistent with the *Whitewater River Region WQMP Guidance Document*. In addition, proposed BMPs would ensure pollutants of concern would be removed from stormwater prior to discharging onto Lincoln Street and into downstream receiving waters. Therefore, with implementation of **Standard Condition HYD-4**, which requires preparation of a Final Hydrology Report to ensure that the proposed project includes LID features and BMPs that meet the intent of Chapter 13.24 of the city's municipal code.

As previously discussed, a majority of the project site would be covered with impervious surface. The project site plan includes some landscaping to promote infiltration. However, given the percentage of impervious surface and the low permeability of the soils, stormwater infiltration would be minimal. A majority of the surface flow would be directed to biofiltration and detention basins and then conveyed to surface streets and the municipal storm drain system. Furthermore, consistent with the Whitewater River MS4 Permit and City Municipal Code, the proposed project would be required to implement BMPs to treat stormwater before it could reach groundwater.

With implementation of **Standard Condition HYD-3**, requiring the preparation of a Final WQMP in compliance with the Whitewater River MS4 Permit and **Standard Condition HYD-4**, requiring the preparation of a Final Hydrology Report that ensures stormwater runoff is retained in compliance with City Ordinance No. 1415 (Municipal Code Chapter 13.24 (Stormwater Management System)), impacts associated with a violation of water quality standards or waste discharge requirements or a substantial degradation of surface or groundwater quality would be **less than significant,** and no mitigation is required.

Standard Conditions: The following Standard Conditions are regulatory requirements implemented as a routine action by the City to ensure compliance with the requirements of the City, the CGP, and the MS4 Permit.

Standard Condition HYD-1: **Construction General Permit.** Prior to commencement of construction activities, the applicant shall obtain coverage under the *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Construction General Permit), NPDES No. CAS000002, Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ, or any other subsequent permit. This shall include submission of Permit Registration Documents (PRDs), including permit application fees, a Notice of Intent (NOI), a risk assessment, a site plan, a Storm Water Pollution Prevention Plan (SWPPP), a signed certification statement, and any other

92 Stantec Consulting, Inc. *Preliminary Hydrology Report*. Section 3.1. November 18, 2022 (Appendix K).

93 *Ibid.* Table 1.

compliance-related documents required by the permit, to the State Water Resources Control Board via the Stormwater Multiple Application and Report Tracking System (SMARTS). Construction activities shall not commence until a Waste Discharge Identification Number (WDID) is obtained for the Project from the SMARTS and provided to the Director of the City of Banning Public Works Department, or designee, to demonstrate that coverage under the Construction General Permit has been obtained. Project construction shall comply with all applicable requirements specified in the Construction General Permit, including but not limited to, preparation of an SWPPP and implementation of construction site Best Management Practices (BMPs) to address all construction-related activities, equipment, and materials that have the potential to impact water quality for the appropriate risk level identified for the Project. The SWPPP shall identify the sources of pollutants that may affect the quality of storm water and shall include BMPs (e.g., Sediment Control, Erosion Control, and Good Housekeeping BMPs) to control the pollutants in storm water runoff. Upon completion of construction activities and stabilization of the Project site, a Notice of Termination shall be submitted via SMARTS.

Standard Condition HYD-2: In compliance with City of Banning Ordinance No. 1388 Grading, Erosion, and Sediment Control, the project applicant shall submit a grading plan and erosion control plan to the Director of the City of Banning Public Works Department, or designee, for review and approval prior to issuance of a grading permit.

Standard Condition HYD-3: Prior to the issuance of a grading permit, the project applicant shall submit a Final Water Quality Management Plan (Final WQMP) to the City of Banning (City) for review and approval. The Final WQMP shall specify the Best Management Practices (BMPs) to be incorporated into the Project design to target pollutants of concern in stormwater runoff from the Project site and the necessary operation and maintenance activity for each BMP. The Director of the City of Banning Works Department, or designee, shall ensure that the BMPs specified in the Final WQMP are incorporated into the final Project design. The proposed BMPs specified in the Final WQMP shall be incorporated into the grading and development plans submitted to the City for review and approval. Periodic maintenance of any required BMPs and landscaped areas during project occupancy and operation shall be in accordance with the schedule outlined in the Final WQMP.

Standard Condition HYD-4: Prior to the issuance of a grading permit, the project applicant shall submit a Final Hydrology Report to the City of Banning (City) for review and approval to demonstrate that the proposed bioretention and detention facilities meet the City's on-site stormwater retention requirements specified in the Whitewater River MS4 Permit and Chapter 13.24 of the City of Banning Municipal Code.

b. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less than Significant Impact. The project site is located within the boundary of the Coachella Valley Groundwater Basin, which is divided into four subbasins: the Indio Subbasin, Mission Creek Subbasin, San Gorgonio Pass Subbasin, and Desert Hot Springs Subbasin. The project site is located within the boundary of the San Gorgonio Pass Subbasin.

Construction. According to the Geotechnical Investigation (Appendix E) prepared for the project, no groundwater was encountered during on-site boring as deep as 50 feet.[94] Furthermore, past well monitoring (December 2005) for the nearest monitoring well located approximately 1,500 feet southeast of the site recorded groundwater depths approximately 500 feet below ground surface. Two percolation tests were also performed at the project site to determine the infiltration rates of the on-site soils. The infiltration rate of the soils on the project site ranged from 0.2 inch per hour to 0.8 inch per hour.[95] Based on the depth to groundwater and infiltration rates on the project site, dewatering activities are not anticipated to occur during project construction activities. Therefore, construction impacts related to a decrease in groundwater supplies or interference with groundwater recharge in a manner that may impede sustainable groundwater management would be **less than significant**, and no mitigation is required.

Operation. Development of the project would increase impervious surface area by approximately 5.55 acres, which would decrease on-site infiltration. As described in Threshold A above, on-site soils have low infiltration rates and the depth of groundwater is anticipated to be approximately 500 feet below ground surface. Therefore, the project site is not a significant source of groundwater recharge. As such, development of the project would not significantly change the amount of stormwater that infiltrates as compared to existing conditions. Therefore, the project would not interfere substantially with groundwater recharge.

The City of Banning's potable and non-potable water is supplied through groundwater sources. Therefore, it is expected that the project would rely on existing groundwater entitlements to serve the project's water needs. According to the City's *2020 Urban Water Management Plan* (UWMP), the City projects it will have adequate supply to meet demand for the City's water service area

94 Southern California Geotechnical. Geotechnical Investigation, Proposed Warehouse, NEC Lincoln Avenue and 4th Street, Banning, California. Page 6. December 17, 2021 (Appendix E).

95 Southern California Geotechnical. *Results of Infiltration Testing, Proposed Warehouse, NEC Lincoln Avenue and 4th Street, Banning, California.* Page 4. December 17, 2021 (Appendix I).

through the year 2045 under Normal Year, Single-Dry Year, and Multiple-Dry Year conditions.[96] The UWMP models each scenario based on the land use and zoning designations of the City and County. The project would be developed in accordance with the City's Industrial land use and zoning designation for the project site. As such, water demand generated from the proposed project is already accounted for in the water (groundwater) supply and demand scenarios determined by the City's UWMP. Therefore, the proposed project would not cause a substantial decrease in the City's groundwater supply. Therefore, impacts related to depletion of groundwater supplies or interference with groundwater recharge in a manner that may impede sustainable groundwater management would be **less than significant**, and no mitigation would be required.

c. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i. Result in substantial erosion or siltation on- or off-site;

Less than Significant Impact.

Construction. During construction activities, soil would be exposed and disturbed, drainage patterns would be temporarily altered during grading and other construction activities, and there would be an increased potential for soil erosion and siltation compared to existing conditions. Additionally, during a storm event, soil erosion and siltation could occur at an accelerated rate. As discussed above under Threshold A, the project applicant would be required to obtain a CGP, which requires the preparation of an SWPPP (**Standard Condition HYD-1**) and prepare an Erosion and Sediment Control Plan pursuant to City of Banning Ordinance No. 1388 (**Standard Condition HYD-2**). The SWPPP and Erosion and Sediment Control Plans would detail Erosion Control and Sediment Control BMPs to be implemented during project construction to minimize erosion and retain sediment on site. With compliance with the requirements of the CGP and City Ordinance No. 1388, including implementation of construction BMPs, construction impacts related to on- or off-site erosion or siltation would be **less than significant**, and no mitigation is required.

Operation. Currently, the project site is undeveloped and consists only of pervious surfaces. Development of the proposed project would increase impervious surface by approximately 5.5 acres, which would not be prone to on-site erosion or siltation because there would be no exposed soil. The remaining 1-acre (10 percent) of the project site would include landscaping and remain pervious. These areas would include vegetation and landscaping that would stabilize the soil and promote infiltration and thereby minimize on-site erosion and siltation. Therefore, on-site erosion and siltation impacts would be minimal.

Development of the project site would increase impervious surfaces, which can increase the volume and rate of stormwater runoff entering downstream receiving waters, which could increase downstream erosion and siltation. However, as detailed in Threshold A, 100 % of stormwater flows would be collected on-site and conveyed to an underground detention system before being discharged onto Lincoln Street. A pump station would control the discharge rate and

[96] City of Banning. *2020 Urban Water Management Plan.* Page 7-13. May 2021.

velocity of stormwater from the underground detention system to ensure that the volume of stormwater discharge is similar to pre-project conditions. Therefore, there would be no increase in erosion and siltation on- or off-site. With implementation of **Standard Conditions HYD-3** and **HYD-4**, which require the project to comply with the requirements of the Whitewater River Watershed MS4 Permit and Chapter 13.24 of the City of Banning Municipal Code to reduce storm water runoff from the project site, operation impacts related to substantial on- or off-site erosion or siltation would be **less than significant**, and no mitigation is required.

ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

and

iv. Impede or redirect flood flows?

Less than Significant Impact.

Construction. According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) No. 06065C0817G (August 28, 2008),[97] the project site is not located within a 100-year floodplain and is in Zone X. Zone X areas are defined by FEMA as areas of minimal flood hazard, which are the areas outside of the Special Flood Hazard Area and higher than the elevation of the 0.2 percent annual chance flood. Therefore, construction of the project would not impede or redirect flood flows.

As discussed above under Threshold A, project construction would comply with the requirements of the Construction General Permit and the City of Banning Municipal Code and would include the preparation and implementation of a SWPPP (**Standard Condition HYD-1)**. The SWPPP would specify construction BMPs to control and direct on-site surface runoff to ensure that stormwater runoff from the construction site does not exceed the capacity of the stormwater drainage system. With implementation of a SWPPP and associated BMPs (**Standard Condition HYD-1)**, construction impacts related to a substantial increase in the rate or amount of surface runoff that would result in on- or off-site flooding would be **less than significant**, and no mitigation is required.

Operation. Currently, the project site is undeveloped and consists of only pervious surfaces. As stated in Response to Threshold C (i) above, development of the proposed project would increase impervious surface area by approximately 5.5 acres, which would increase stormwater runoff and could potentially result in flooding. However, as discussed above, the project site is not located within a 100-year floodplain and therefore would not impede or redirect flood flows. Additionally, the proposed on-site storm drain facilities and LID BMPs (two bioretention facilities, underground detention system, modular wetland biofiltration system, and pump system) would capture and discharge 100 percent of the stormwater runoff into the existing municipal storm drain facilities. The proposed drainage facilities and BMPs designed to accommodate stormwater runoff would

[97] Federal Emergency Management Agency. *National Flood Insurance Program, Flood Insurance Rate Map, Riverside County, California and Incorporated Areas.* Panel 817 of 3805. Panel Number 06065C0817G. August 28, 2008.

be appropriately sized so that on- or off-site flooding would not occur. In addition, as specified in **Standard Condition HYD-4**, a Final Hydrology Study would be prepared based on final project plans and would be approved by the City. The Final Hydrology Study would confirm that there is sufficient capacity in the downstream drainage systems to accommodate any increase in storm runoff from the project site.

With implementation of LID BMPs and **Standard Condition HYD-4** requiring a Final Hydrology Study to confirm proposed and existing storm drain facilities have sufficient capacity to accommodate stormwater runoff from the project site, impacts related to on- or off-site flooding from an increase in surface runoff would be **less than significant**, and no mitigation is required.

iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

Less than Significant Impact.

Construction. As discussed above under Threshold A, project construction would comply with the requirements of the Construction General Permit and the City of Banning Municipal Code and would include the preparation and implementation of a SWPPP and Erosion and Sediment Control Plan (**Standard Conditions HYD-1** and **HYD-2**). The SWPPP and Erosion and Sediment Control Plan would specify construction BMPs to control and direct on-site surface runoff to ensure that stormwater runoff from the construction site does not exceed the capacity of the stormwater drainage system and does not discharge polluted runoff during construction activities. With implementation **Standard Conditions HYD-1** and **HYD-2**, construction impacts related to exceeding the capacity of the stormwater drainage system or additional polluted runoff would be **less than significant**, and no mitigation is required.

Operation. As discussed in Threshold A above, stormwater would be directed to a modular wetland biofiltration system, on-site bioretention facilities, an underground detention basin, which have been appropriately sized to retain and release stormwater runoff so that excess runoff does not exceed the capacity of the existing stormwater system. Additionally, implementation of BMPs to reduce pollutants of concern in stormwater runoff in compliance with the Whitewater River MS4 permit and Chapter 13.24 of the City of Banning Municipal Code (**Standard Condition HYD-3)** would ensure the proposed project would result in less-than-significant impacts related to discharge of polluted runoff during project operations. Therefore, operational impacts related to creation or contribution of storm water runoff that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff would be **less than significant**, and no mitigation is required.

d. In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

Less than Significant Impact. The project site is approximately 55 miles northeast of the Pacific Ocean and is not located within a tsunami hazard zone.[98] Based on the distance from the Pacific Ocean, the project site would not be susceptible to impacts associated with a tsunami.

Seiches are waves that are created in an enclosed body of water such as a bay, lake, or harbor and go up and down or oscillate and do not progress forward like standard ocean waves. Seiches are also referred to as standing waves and are triggered by strong winds, changes in atmospheric pressure, earthquakes, tsunamis, or tidal influence. The height and frequency of seiches are determined by the strength of the triggering factor(s) and the size of the basin. The project site is not adjacent to or near any closed bodies of water. The nearest large body of water to the project site is the Perris Reservoir, located approximately 16.5 miles southwest of the site. Therefore, the project site would not be susceptible to impacts associated with a seiche.

FEMA designates the majority of the project site as Flood Zone X (Other Areas).[99] A small portion of the project site along the western boundary is located within Flood Zone X (Other Flood Areas).[100] Zone X is not considered a high flood hazard area. During construction, BMPs would be implemented to ensure that during a rain event, pollutants would be retained on site and be prevented from reaching downstream receiving waters (**Standard Conditions HYD-1** and **HYD-2**). During operations, the project would include BMPs to reduce pollutants of concern in stormwater runoff (a modular wetland biofiltration system, on-site bioretention facilities, and an underground detention basin) in compliance with the Whitewater River MS4 permit and Chapter 13.24 of the City of Banning Municipal Code (**Standard Condition HYD-3).** Additionally, BMPs would be sized to retain and release stormwater runoff so that excess runoff does not exceed the capacity of the existing stormwater system (**Standard Condition HYD-4**), which would reduce the chance of flooding that could release pollutants to downstream receiving waters. Therefore, the chance of project inundation, resulting in the release of pollutants to downstream receiving waters would be low.

Based on project design and the distance of the project site from the Pacific Ocean and closed bodies of water, implementation of the project would not result in a flood hazard, tsunami, or seiche, risking release of pollutants due to project site inundation. Impacts would be **less than significant**, and no mitigation measures are required.

98 California Department of Conservation. *California Tsunami Maps and Data.* https://www.conservation.ca.gov/cgs/tsunami/maps (accessed December 8, 2022).

99 Flood Zone X (other areas) are areas outside the 0.2 percent annual chance (500-year) flood and areas protected by levees from 1 percent annual chance (100-year) flood.

100 Flood Zone X (other flood areas) correspond to areas between the limits of the 0.2 percent annual chance (500-year) flood and areas of 1 percent annual chance (100-year) flood. No base flood elevations or depths have been determined.

e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less than Significant Impact. The project site is within the jurisdiction of the Colorado River RWQCB. The Colorado River RWQCB adopted a Basin Plan that designates beneficial uses for all surface and groundwater within its jurisdiction and establishes the water quality objectives and standards necessary to protect those beneficial uses. The proposed project would comply with existing Whitewater River Watershed MS4 Permit requirements and would implement construction and operational BMPs to reduce pollutants of concern in storm water runoff. Compliance with regulatory requirements would ensure that the proposed project would not degrade or alter water quality, causing the receiving waters to exceed the water quality objectives, or impair the beneficial use of receiving waters. As such, the proposed project would not result in water quality impacts that would conflict with the Colorado River RWQCB Water Quality Control Plan for the Colorado River Basin Region (Basin Plan). Construction and operational impacts related to a conflict with the Basin Plan would be **less than significant** and no mitigation is required.

The Sustainable Groundwater Management Act (SGMA), which was enacted in September 2014, requires governments and water agencies of high- and medium-priority basins to halt overdraft of groundwater basins. The SGMA requires the formation of local Groundwater Sustainability Agencies (GSAs), which are required to adopt Groundwater Sustainability Plans to manage the sustainability of the groundwater basins. The project site is located in the Coachella Valley Groundwater Basin, San Gorgonio Pass Subbasin, which the California Department of Water Resources designates as a medium priority basin. The San Gorgonio Pass Subbasin has three GSAs and all three work together to produce one Groundwater Sustainability Plan. The various water agencies that overlie the subbasin include the Desert Water Agency, Mission Springs Water District, Cabazon Water District, the City of Banning, the Banning Heights Mutual Water Company, and the San Gorgonio Pass Water Agency.

The San Gorgonio Pass Subbasin Groundwater Sustainability Plan was finalized in January 2022. The plan indicates that although the Subbasin experienced a decline of a portion of its stored groundwater in the recent prolonged drought period, the aquifers within the Subbasin contain a substantial amount of water in storage. This extensive storage volume has lessened the effects of water level declines during the hydrologic cycle's extended drought periods, providing a buffer against extreme fluctuations in recharge supplies that are dependent on rainfall and mountain runoff each year. The main goal of the Subbasin is to maintain the trend of cyclical water table variations that provide long-term groundwater storage, with the understanding that water levels would fluctuate based on the season, hydrologic cycle, and changing groundwater demands within the subbasin.

The Groundwater Sustainability Plan identifies various projects and management actions to support implementation efforts of the Groundwater Sustainability Plan. These projects include municipal water conservation, stormwater capture, and additional imported water spreading and new pipelines at various spreading basins and storage units. Management actions include implementation of an Action Plan if groundwater levels fall below minimum thresholds, implementation of well head requirements, investigation of issues regarding water quality and unexpected water pumping, imposing fees on pumpers to encourage reduced pumping and conservation, groundwater pumping allocation, and groundwater basin adjudication.

The proposed project would increase water use, which would be obtained from groundwater. However, as previously discussed, there are adequate water supplies from groundwater sources during normal, dry year, and multiple dry year demands to serve the proposed project's needs. Additionally, the City of Banning Public Works Department, which supplies municipal water, ensures that sufficient water supplies (from non-groundwater sources) are available so that groundwater overdraft does not occur. The proposed project would not require dewatering activities during construction as construction depth would not reach the current groundwater level underlying the project site. As previously discussed, the additional impervious surface areas that would result from proposed project construction would not substantially decrease infiltration compared to existing conditions because infiltration rates of existing soils are low and therefore there is only minimal infiltration in the existing condition. For these reasons, the proposed project would not conflict with or obstruct the implementation of a sustainable groundwater management plan. Therefore, construction and operational impacts related to conflict with, or obstruction of water quality control plans or sustainable groundwater management plans would be **less than significant**, and no mitigation is required.

3.11 LAND USE AND PLANNING

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Physically divide an established community?	☐	☐	☐	☒
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

3.11.1 Impact Analysis

a. Would the project physically divide an established community?

No Impact. The physical division of an established community typically refers to the construction of a physical feature (such as an interstate or railroad tracks) or removal of a means of access (such as a local road or bridge) that would impair mobility within an existing community, or between a community and outlying area. For instance, the construction of an interstate highway or railroad track through an existing community may constrain travel from one side of the community to another; similarly, such construction may also impair travel to areas outside the community.

The project site is bounded by W. Lincoln Street/SR-243 to the south, the Gilman Home Stormwater Channel to the west, the Union Pacific Railroad and I-10 to the north, and light industrial uses to the east. Industrial uses are located immediately south of Lincoln Street/SR-243 between the project site and the nearest residential uses (multi-family homes). Properties to the west across the Gilman Home Stormwater Channel are developed with industrial uses, while properties across the Union Pacific Railroad and I-10 to the north are partially vacant and partially developed with commercial uses, beyond which residential uses occur. Under existing conditions, the railroad, I-10 already create a physical barrier between the residential uses to the north and the project site, while W. Lincoln Street/SR-243 and commercial/industrial uses already create a physical barrier between the residential uses to the south and the project site (Figure 2). Therefore, **no impact** would occur to an established community in the project site vicinity from implementation of the proposed project. Mitigation is not required.

b. Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Less than Significant Impact. The project is proposed in an area of the City with an Industrial (I) land use and zoning designation. The City General Plan and Chapter 17.12, Section 17.12.010 (B)(5) of the City's Zoning Code indicate the Industrial (I) land use district includes industrial parks and freestanding industrial users and has a maximum FAR of 0.60.[101] Examples of permitted uses include light and medium intensity manufacturing operations, warehousing and distribution, ministorage,

[101] City of Banning, Municipal Code. Table 17.12.030.

and associated offices. Commercial recreation facilities, auto storage, and repair is also allowed. Retail uses ancillary to the industrial use are also appropriate.[102]

The project includes development of a 118,786-square foot speculative warehouse building, of which approximately 10,000 square feet would be office space, with an FAR of approximately 0.43. Therefore, the proposed project is consistent with the types of land uses anticipated in the City's General Plan and Zoning Code. As detailed throughout this Initial Study, the project is consistent with the 2022 AQMP, and impacts to the environment resulting from the proposed project are subject to applicable mitigation and local, State, and/or federal regulations, which would render the project consistent with the Riverside County Airport Land Use Compatibility Plan (ALUCP) and Colorado River Basin RWQCB Basin Plan. Therefore, impacts related to conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect are **less than significant**. No additional mitigation is required.

[102] City of Banning. *General Plan. Chapter III: Community Development, Land Use Element.* Page III-7. Adopted January 31, 2006.

3.12 MINERAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☒	☐
b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☒	☐

3.12.1 Impact Analysis

a. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?

and

b. Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plans?

Less than Significant Impact. The project site is located within Mineral Resource Zone 3 (MRZ-3),[103] which is defined as an area where the available geologic information indicates that mineral deposits are inferred to exist; however, the significance of the deposit is undetermined.[104] No known mineral extraction has occurred historically or is currently conducted on the site or immediate vicinity.

The project site is vacant and surrounded by industrial uses and the Union Pacific Railroad to the north. The City of Banning General Plan Land Use and Zoning Map designates the project site as Industrial.[105] Table 2.2.A: Surrounding Land Uses summarizes the existing surrounding land uses, General Plan land use designations, and zoning designations of properties in proximity to the project site. Mineral resources extraction is not a use compatible with the existing on-site and surrounding land uses, nor is the site sufficient in size or location to support productive or cost-effective mineral extraction. Implementation of the proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State. Therefore, impacts from the loss of available mineral resources would be **less than significant**. Mitigation is not required.

[103] City of Banning. *City of Banning General Plan.* Chapter IV. Environmental Resources. Exhibit IV-8. Adopted January 31, 2006.

[104] California Department of Conservation State Mining and Geology Board. *Guidelines for Classification and Designation of Mineral Lands.* http://www.conservation.ca.gov/smgb/guidelines/documents/classdesig.pdf (accessed August 23, 2022).

[105] City of Banning. *General Plan Land Use and Zoning Map*. Amended June 2021.

3.13 NOISE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:				
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b. Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

3.13.1 Impact Analysis

a. Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

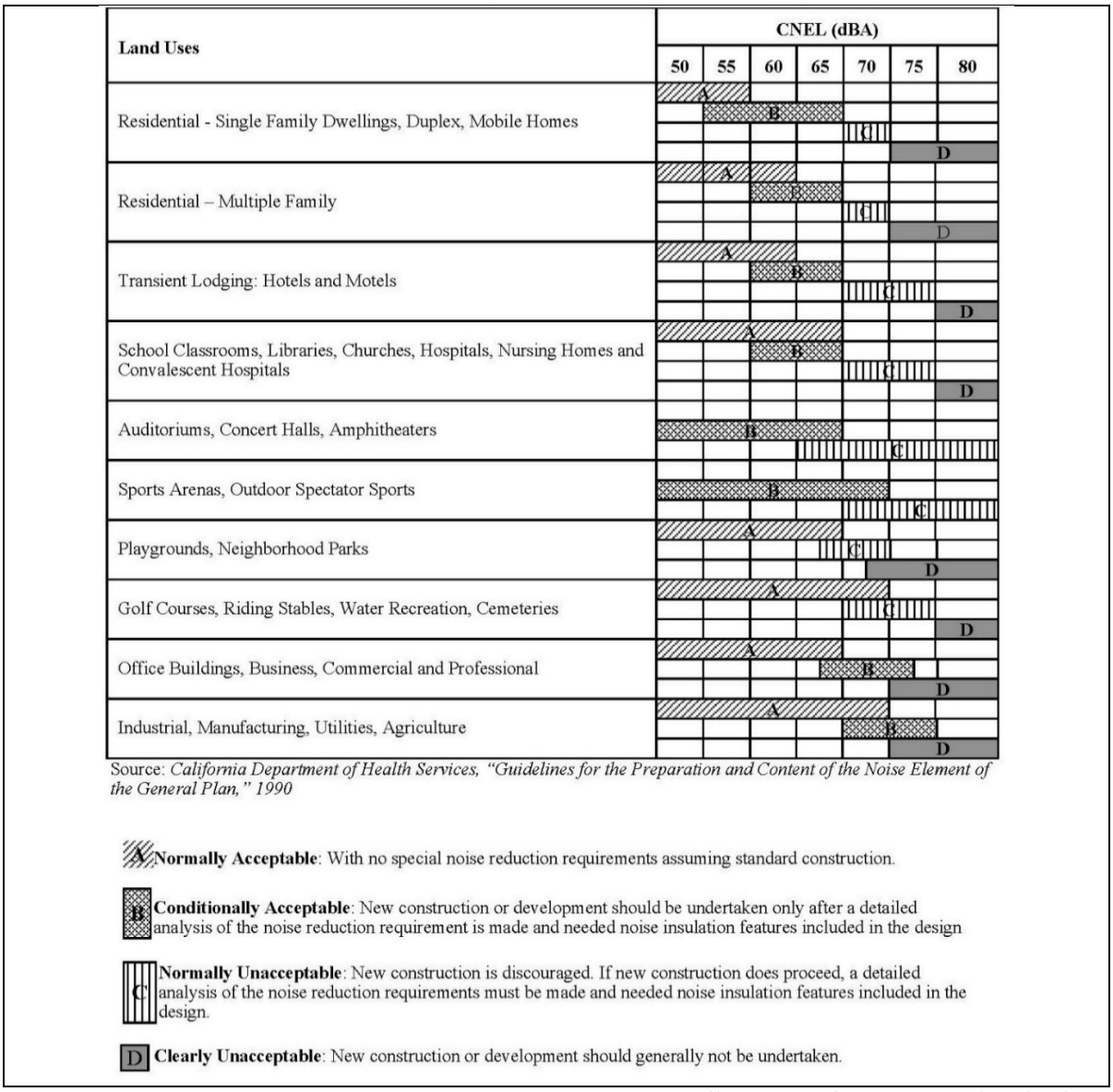
Less than Significant Impact. Chapter V, Environmental Hazards, of the City's General Plan contains the Noise Element that has established allowable exterior ambient noise levels for various land uses, which are summarized in the City's land use compatibility categories for community noise environments shown in Table 3.13.A.

Sections 8.44.070 and 8.44.080 of the City's Municipal Code have established exterior maximum noise levels for residential and non-residential (commercial and industrial) uses. Table 3.13.B shows the City's exterior maximum noise levels.

Section 8.44.090(E) of the City's Municipal Code permits construction activities to exceed the maximum noise levels between the hours of 7:00 a.m. and 6:00 p.m., as shown in Table 3.13.B. However, the City prohibits construction activities to exceed 55 dBA for more than 15 minutes per hour as measured in the interior of the nearest occupied residence or school.

Section 8.44.090(E) of the City's Municipal Code prohibits the operation of any machinery, equipment, device, pump, fan, compressor, air conditioning apparatus, or similar mechanical device that would cause the noise level at the property line of the property upon which the equipment or machinery is operated to exceed the base ambient noise level by 5 dBA.

Table 3.13.A: Land Use Compatibility for Community Noise Environments



Land Uses	CNEL (dBA)						
	50	55	60	65	70	75	80
Residential - Single Family Dwellings, Duplex, Mobile Homes	A	B	B	B	C	D	D
Residential – Multiple Family	A	A	B	B	C	D	D
Transient Lodging: Hotels and Motels	A	A	B	B	C	C	D
School Classrooms, Libraries, Churches, Hospitals, Nursing Homes and Convalescent Hospitals	A	A	B	B	C	C	D
Auditoriums, Concert Halls, Amphitheaters	B	B	B	B	C	C	C
Sports Arenas, Outdoor Spectator Sports	B	B	B	B	B	C	C
Playgrounds, Neighborhood Parks	A	A	A	C	C	D	D
Golf Courses, Riding Stables, Water Recreation, Cemeteries	A	A	A	A	C	C	D
Office Buildings, Business, Commercial and Professional	A	A	A	A	B	D	D
Industrial, Manufacturing, Utilities, Agriculture	A	A	A	A	B	B	D

Source: *California Department of Health Services, "Guidelines for the Preparation and Content of the Noise Element of the General Plan," 1990*

A **Normally Acceptable**: With no special noise reduction requirements assuming standard construction.

B **Conditionally Acceptable**: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirement is made and needed noise insulation features included in the design

C **Normally Unacceptable**: New construction is discouraged. If new construction does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

D **Clearly Unacceptable**: New construction or development should generally not be undertaken.

Source: City of Banning. General Plan Noise Element. January 31, 2006. Website: http://banning.ca.us/DocumentCenter/View/665/GP-Ch-V-Environmental-Hazards?bidId=

Table 3.13.B: City of Banning Maximum Noise Level Standards

Zone Use	Time	Base Ambient Noise Level (dBA)	L_{25}[1] (15 min)	L_8[2] (5 min)	L_2[3] (1 min)	L_{max}[4]
Residential	10:00 PM to 7:00 AM	45	50	55	60	65
	7:00 AM to 10:00 PM	55	60	65	70	75
Industrial and Commercial	Anytime	75	--	--	--	--

Source: City of Banning. Municipal Code. February 18, 2022.
[1] The exterior noise standard for a cumulative period of 15 minutes in any hour.
[2] The exterior noise standard for a cumulative period of 5 minutes in any hour.
[3] The exterior noise standard for a cumulative period of 1 minute in any hour.
[4] The exterior maximum nose level that is not permitted.
dBA = A-weighted decibel
L_{max} = maximum instantaneous noise level
min = minute/minutes

Finally, a barely perceptible noise increase of 3 dBA or more in excess of standards established in the local general plan or noise ordinance is considered potentially significant.

The following analysis is based on a project-specific Noise and Vibration Impact Analysis (Appendix L). Two short-term (20-minute) and four long-term (24-hour) ambient noise level measurements were conducted between September 13 and 14, 2022, as detailed in Tables 3.13.C and 3.13.D to establish baseline conditions.

Table 3.13.C: Short-Term Ambient Noise Level Measurements

Monitor No.	Location[1]	Date	Start Time	Noise Level (dBA)			Noise Source(s)
				L_{eq}	L_{max}	L_{min}	
ST-1	Located in the northeast corner of the project site border a warehouse facility.	7/13/22	11:15 a.m.	60.8	67.3	55.6	Traffic on I-10. Faint traffic on Lincoln Street. Faint HVAC noise from nearby warehouse.
ST-2	Located north of the building entrance on 300 W Lincoln Street, Banning, 92220.	7/13/22	11:43 a.m.	65.3	78.9	55.2	Traffic Lincoln Street.

Source: LSA Associates, Inc. *First Lincoln Industrial Project Noise and Vibration Impact Analysis Memorandum.* Table G. October 2022 (Appendix L).
[1] Monitoring locations are depicted in Figure 3 of the *First Lincoln Industrial Project Noise and Vibration Impact Analysis Memorandum.* (Appendix L).
dBA = A-weighted decibel
L_{eq} = equivalent continuous sound level
L_{max} = maximum measured sound level
L_{min} = minimum measured sound level

Table 3.13.D: Long-Term Ambient Noise Monitoring Results

Monitor No.	Location	Noise Level (dBA)					Noise Sources
		Daytime		Nighttime		CNEL	
		L_{eq}	L_{max}	L_{eq}	L_{max}		
LT-1	Located in an alleyway behind 69 South 3rd Street, Banning. On a powerline pole.	65.1–69.7	76.0–80.6	64.1–67.8	71.5–79.9	73.4	Light traffic noise along Livingston Street.
LT-2	Located at the southeast corner of the project site near a powerline pole adjacent to Lincoln Street.	62.0–69.0	81.1–86.9	57.4–66.0	77.7–84.4	69.8	Traffic noise along Lincoln Street.
LT-3	Located just south of 380 4th Street, Banning. On a pole adjacent to Barbour Avenue.	55.6–60.5	67.0–74.4	53.8–58.5	66.3–75.1	63.1	Traffic on Barbour Avenue.
LT-4	Located in front of 545 South San Gorgonio Avenue, Banning. Just past the sidewalk near the northeast power pole.	64.7–68.9	77.1–84.0	60.9–67.0	71.8–82.5	71.4	Traffic on South San Gorgonio Avenue.

Source: LSA Associates, Inc. *First Lincoln Industrial Project Noise and Vibration Impact Analysis Memorandum*. Table H. October 2022 (Appendix L).
Note: Long-term (24-hour) noise level measurements were conducted from September 13, 2022, to September 14, 2022.
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = foot/feet
L_{eq} = equivalent continuous sound level
L_{max} = maximum instantaneous noise level

Temporary (Construction) Noise. Noise increases from the proposed project would be generated on a short-term basis during temporary construction activities. Noise impacts associated with construction activity are a function of the noise generated by the type of equipment used, the location and sensitivity of nearby land uses, and the timing and duration of the noise-generating activities. Two types of short-term noise impacts would occur during project construction. The first type would be from construction crew commutes and the transport of construction equipment and materials to the project site and would incrementally raise noise levels on roadways leading to the site. The pieces of construction equipment for construction activities would move on site, would remain for the duration of each construction phase, and would not add to the daily traffic volume in the project vicinity. Although there would be a relatively high single-event noise exposure potential causing intermittent noise nuisance (passing trucks at 50 feet would generate up to a maximum of 84 dBA), the effect on longer-term ambient noise levels would be small because the number of daily construction-related vehicle trips is small compared to existing daily traffic volume on Lincoln Street and 8th Street. The building construction phase would generate the most trips out of all of the construction phases, at 164 trips per day based on the California Emissions Estimator Model (CalEEMod) (Version 2020.4.0) results contained in Attachment B of the *First Lincoln Industrial Project Air Quality, Greenhouse Gas Emissions, and Energy Impact Analysis Memorandum*[106] (Appendix A). Roadways that would be used to access the project site are Lincoln Street and 8th Street. Based on Table 3.13.G, Lincoln Street and 8th Street have estimated existing daily traffic volumes of 9,000 and 7,900, respectively, near the

[106] LSA Associates, Inc. 2022. *Air Quality, Greenhouse Gas, and Energy Impact Analysis Memorandum for the Proposed First Lincoln Logistics Warehouse Project in Banning, California.* October.

project site. Based on the information above, construction-related traffic would increase noise by up to 0.1 dBA. A noise level increase of less than 3 dBA would not be perceptible to the human ear in an outdoor environment. Therefore, no short-term, construction-related impacts associated with worker commutes and transport of construction equipment and material to the project site would occur.

The second type of short-term noise impact is related noise generated from construction activities. Construction is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. The proposed project anticipates site preparation, grading, building construction, paving, and architectural coating phases of construction. These various sequential phases change the character of the noise generated on a project site. Therefore, the noise levels vary as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. The FHWA Highway Construction Noise Handbook[107] provides L_{max} recommended for noise impact assessments for typical construction equipment based on a distance of 50 feet between the equipment and a noise receptor.

Table 3.13.E lists the anticipated construction equipment for each construction phase based on the CalEEMod (Version 2020.4.0) results contained in Attachment B of the First Lincoln Industrial Project Air Quality, Greenhouse Gas Emissions, and Energy Impact Analysis Memorandum[108] (Appendix A). Table 3.13.E shows the combined noise level at 50 feet from all of the equipment in each phase as well as the L_{eq} noise level for each equipment at 50 feet based on the quantity, reference instantaneous maximum (L_{max}) noise level at 50 feet, and the acoustical usage factor. As shown in Table 3.13.E, construction noise levels would reach up to 87.6 L_{eq} at a distance of 50 feet.

Table 3.13.F shows the calculated interior noise levels generated from project construction activities during the noisiest construction phase at the closest residential buildings surrounding the project site. The interior noise level was calculated based on the calculated exterior construction noise level and an exterior-to-interior noise reduction of 20 dBA.[109] As shown in Table 3.13.F, the closest residential buildings surrounding the project site would be exposed to interior construction noise levels of up to 45.5 dBA L_{eq}. This noise level would not exceed the City's construction noise standard of 55 dBA for more than 15 minutes per hour. Therefore, construction noise impacts would be **less than significant**. Mitigation is not required.

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107 Federal Highway Administration. *Highway Construction Noise Handbook. Roadway Construction Noise Model*, FHWA-HEP-06-015. DOT-VNTSC-FHWA-06-02. NTIS No. PB2006-109012. August 2006.

108 LSA Associates, Inc. 2022. *Air Quality, Greenhouse Gas, and Energy Impact Analysis Memorandum for the Proposed First Lincoln Logistics Warehouse Project in Banning, California*. October.

109 Federal Highway Administration. *Highway Traffic Noise: Analysis and Abatement Guidance*, FHWA HEP-10-025. December 2011. Website: https://www.fhwa.dot.gov/environment/noise/regulations_and_guidance/analysis_and_abatement_guidance/revguidance.pdf.

Table 3.13.E: Summary of Construction Phase, Equipment, and Noise Levels

Construction Phase	Construction Equipment	Quantity	Reference Noise Level at 50 ft (dBA L_{max})	Acoustical Usage Factor[1] (%)	Noise Level at 50 ft (dBA L_{eq})	Combined Noise Level at 50 ft (dBA L_{eq})
Site Preparation	Bulldozers	3	85	40	85.8	87.3
	Front-End Loaders	4	80	40	82.0	
Grading	Excavator	1	85	40	81.0	87.0
	Grader	1	85	40	81.0	
	Bulldozer	1	85	40	81.0	
	Front-End Loaders	3	80	40	80.8	
Building Construction	Crane	1	85	16	77.0	86.5
	Forklifts	3	85	20	82.8	
	Generator	1	82	50	79.0	
	Front-End Loaders	3	80	40	80.8	
	Welders	1	73	40	69.0	
Paving	Pavers	2	85	50	85.0	87.6
	Paving Equipment	2	85	20	81.0	
	Rollers	2	85	20	81.0	
Architectural Coating	Air Compressors	1	80	40	76.0	76.0

Source: LSA Associates, Inc. *First Lincoln Industrial Project Noise and Vibration Impact Analysis Memorandum*. Table K. October 2022 (Appendix L).

[1] The acoustical usage factor is the percentage of time during a construction noise operation that a piece of construction equipment operates at full power.

dBA = A-weighted decibels
ft = foot/feet
L_{eq} = equivalent continuous sound level
L_{max} = maximum instantaneous noise level

Table 3.13.F: Construction Noise Level

Land Use	Direction	Reference Noise Level at 50 ft (dBA L_{eq})	Distance[1] (ft)	Distance Attenuation (dBA)	Noise Level (dBA L_{eq})	
					Exterior	Interior[4]
Residence (69 South 3rd Street)	North	87.6	635	22.1	65.5	45.5
Residence (545 South San Gorgonio Avenue)	Southeast	87.6	885	25.0	62.6[2]	42.6
Residence (Windscape Village)	South	87.6	680	22.7	64.9[3]	44.9
Residence (430 Barbour Avenue)	Southwest	87.6	850	24.6	63.0[2]	43.0

Source: LSA Associates, Inc. *First Lincoln Industrial Project Noise and Vibration Impact Analysis Memorandum*. Table L. October 2022 (Appendix L).

[1] Distance from the active construction area near the center of the project site to the receptor building structure.

[2] Construction noise level would be lower when factoring in partial shielding from the existing intervene industrial buildings south of the project site.

[3] Construction noise level would be lower when factoring in shielding from the existing intervene industrial buildings south of the project site.

[4] The interior noise level was calculated based on the calculated exterior construction noise level and an exterior-to-interior noise reduction of 20 dBA (FHWA 2011).

dBA = A-weighted decibels
ft = foot/feet
L_{eq} = equivalent continuous sound level

Additionally, implementation of **Standard Condition NOI-1** would limit project construction activities to the City's permitted hours of construction (between the hours of 7:00 a.m. and 6:00 p.m.) pursuant to Section 8.44.090(E) of the City's Municipal Code to ensure construction noise would not be generated during the more sensitive nighttime hours.

Standard Condition NOI-1: The construction contractor shall limit construction activities to between the hours of 7:00 a.m. and 6:00 p.m. pursuant to Section 8.44.090(E) of the City's Municipal Code.

Permanent (Operational) Noise. Long-term noise associated with the project would be generated from vehicle traffic entering and exiting the site and on-site stationary sources, such as truck delivery and loading/unloading activities. These mobile and stationary operational noise sources are analyzed separately in relation to the ambient noise environment because the City's applicable noise standards are different for mobile versus stationary noise sources. Whereas mobile noise sources such as vehicle traffic are measured as CNEL, stationary noise sources such as truck loading/unloading, parking lot activities, and heating ventilation air conditioning are measured as L_{max} and L_{eq}. Additionally, anticipating the timing of noise events (continuous versus intermittent) would be speculative, as they differ for the various stationary noise sources. However, reasonable assumptions are made as specified for each noise source described below in order to combine the stationary noise levels anticipated to be generated by the proposed project and compare them to the ambient noise environment in terms of L_{eq}.[110]

Mobile Noise. Noise levels from vehicle traffic (including employee passenger vehicles and freight trucks) entering and exiting the site are analyzed along roadway segments in the project vicinity using the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (1977; FHWA RD-77-108). The existing and future (2035) average daily traffic (ADT) volumes were obtained from the Rancho San Gorgonio Specific Plan Traffic Impact Analysis[111]. The standard vehicle mix for Southern California roadways was used for traffic on these roadway segments under the without project scenario. Under the with project scenario, the projected traffic volumes include the project-related traffic volumes from the from the Proposed Traffic Study Scope of Work for First Lincoln Logistics Warehouse on Lincoln Street at 4th Street in the City of Banning Memorandum[112] (Appendix N) and the adjusted vehicle mix based on the proposed project's vehicle mix. Tables 3.13.G and 3.13.H summarize the existing and future (2035) traffic noise levels without and with the project along roadways in the project vicinity. These noise levels represent the worst-case scenario, which assumes that no shielding is provided between the traffic and the location where the noise contours are drawn.

110 The L_{eq} noise level is provided to describe operatonal noise levels for a longer period of time (compared to the instantaneous maximum noise level, L_{max}) and compare them to the City's noise standards and measured ambient noise levels.

111 Kunzman Associates, Inc. *Rancho San Gorgonio Specific Plan Traffic Impact Analysis*. April 20, 2016.

112 Stantec. *Proposed Traffic Study Scope of Work for First Lincoln Logistics Warehouse on Lincoln Street at 4th Street in the City of Banning Memorandum*. May 6, 2022 (Appendix N).

Table 3.13.G: Existing Traffic Noise Levels Without and With Project

	Without Project Traffic Conditions					With Project Traffic Conditions					
Roadway Segment	ADT	Centerline to 70 dBA CNEL (feet)	Centerline to 65 dBA CNEL (feet)	Centerline to 60 dBA CNEL (feet)	CNEL (dBA) 50 feet from Centerline of Outermost Lane	ADT	Centerline to 70 dBA CNEL (feet)	Centerline to 65 dBA CNEL (feet)	Centerline to 60 dBA CNEL (feet)	CNEL (dBA) 50 feet from Centerline of Outermost Lane	Increase from Baseline Conditions
Lincoln Street Between 8th Street and San Gorgonio Avenue	9,000	< 50	75	155	65.1	9,203	< 50	84	174	65.9	0.8
8th Street North of Lincoln Street	7,900	< 50	< 50	95	61.8	8,103	< 50	56	112	62.9	1.1

Source: LSA Associates, Inc. *First Lincoln Industrial Project Noise and Vibration Impact Analysis Memorandum.* Table P. October 2022. (Appendix L).
Note: Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.
ADT = average daily traffic dBA = A-weighted decibels
CNEL = Community Noise Equivalent Level

Table 3.13.H: Future (2035) Traffic Noise Levels Without and With Project

	Without Project Traffic Conditions					With Project Traffic Conditions					
Roadway Segment	ADT	Centerline to 70 dBA CNEL (feet)	Centerline to 65 dBA CNEL (feet)	Centerline to 60 dBA CNEL (feet)	CNEL (dBA) 50 feet from Centerline of Outermost Lane	ADT	Centerline to 70 dBA CNEL (feet)	Centerline to 65 dBA CNEL (feet)	Centerline to 60 dBA CNEL (feet)	CNEL (dBA) 50 feet from Centerline of Outermost Lane	Increase from Baseline Conditions
Lincoln Street Between 8th Street and San Gorgonio Avenue	15,100	< 50	103	218	67.4	15,303	56	110	234	67.8	0.4
8th Street North of Lincoln Street	9,300	< 50	< 50	105	62.5	9,503	< 50	60	121	63.4	0.9

Source: LSA Associates, Inc. *First Lincoln Industrial Project Noise and Vibration Impact Analysis Memorandum. Table Q. October 2022.* (Appendix L).
Note: Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.
ADT = average daily traffic dBA = A-weighted decibels
CNEL = Community Noise Equivalent Level

As detailed in Tables 3.13.G and 3.13.H, project-related traffic would increase ambient noise in the project vicinity by up to 1.1 dBA (8th Street North of Lincoln Street). Noise level increases less than 3 dBA would not be perceptible to the human ear in an outdoor environment. Therefore, noise impacts from project-related traffic on off-site sensitive receptors would be **less than significant**. Mitigation is not required.

Stationary Noise. Delivery trucks/truck loading and unloading activities, automobile and truck parking activities, and heating, ventilation, and air conditioning (HVAC) equipment associated with the project would potentially affect the existing off-site sensitive land uses. The following provides a detailed noise analysis and discussion of each stationary noise source.

Truck Delivery and Truck Loading/Unloading Activities: Truck delivery and truck loading/unloading activities for the proposed project would take place on the north side of the proposed warehouse building. These activities would take place both during daytime and nighttime hours. Noise levels generated from these activities include truck movement, docking at loading dock doors, backup alarms, air brakes, idling, and loading and unloading activities. These activities would result in a maximum noise similar to noise readings from truck delivery and truck loading and unloading activities for other projects, which would generate a noise level of 75 dBA L_{max} at 50 feet based on measurements conducted by LSA. Although a typical truck-unloading process takes an average of 15–20 minutes, this maximum noise level occurs in a much shorter period of time (less than 5 minutes). It is estimated that there would be up to 4 truck deliveries and truck loading/unloading activities during daytime hours and up to 3 truck deliveries and truck loading/unloading activities during nighttime hours based on the project trip generation from the Proposed Traffic Study Scope of Work for First Lincoln Logistics Warehouse on Lincoln Street at 4th Street in the City of Banning Memorandum[113] (Appendix N). With each truck generating the maximum noise level for a cumulative period of 5 minutes in any hour, trucks during daytime hours would generate the maximum noise level for a cumulative period of 20 minutes in any hour and trucks during nighttime hours would generate the maximum noise level for a cumulative period of 15 minutes in any hour, which would be 70.2 dBA L_{eq} and 69.0 dBA L_{eq} at 50 ft, respectively.

The proposed industrial building would shield the residential property lines to the southeast, south, and southwest and the industrial property line to the south from truck delivery and truck loading/unloading activities. The noise level reduction calculation provided by the proposed industrial building is provided in Attachment E of the First Lincoln Industrial Project Noise and Vibration Impact Analysis (Appendix L).

Parking Lot Activity: The proposed project would include surface parking for automobiles and trucks. Noise generated from parking lot activities would include noise generated by vehicles traveling at slow speeds, engine start-up noise, car door slams, car horns, car alarms, and tire squeals. Representative parking activities would generate approximately 60 to 70 dBA L_{max} at 50 feet based on measurements conducted by LSA. It is estimated that there would be parking activities for up to 18 automobiles and 4 trucks during daytime hours and 5 automobiles and

[113] Stantec. *Proposed Traffic Study Scope of Work for First Lincoln Logistics Warehouse on Lincoln Street at 4th Street in the City of Banning Memorandum*. May 6, 2022 (Appendix N).

3 trucks during nighttime hours based on the project trip generation from the Proposed Traffic Study Scope of Work for First Lincoln Logistics Warehouse on Lincoln Street at 4th Street in the City of Banning Memorandum[114] (Appendix N). It is estimated that automobile parking activities would generate the maximum noise level for a cumulative period of 5 minutes in any hour during daytime hours and the maximum noise level for a cumulative period of 2 minutes in any hour during nighttime hours based on the number of automobiles during daytime and nighttime hours, which would be 59.2 dBA L_{eq} and 55.2 dBA L_{eq} at 50 ft, respectively. Also, it is estimated that truck parking activities would generate the maximum noise level for a cumulative period of 1 minute in any hour during daytime and nighttime hours based on the number of trucks during daytime and nighttime hours, which would be 52.2 dBA L_{eq} at 50 ft.

The proposed industrial building would shield the residential property lines to the southeast, south, and southwest and the industrial property line to the south from truck parking activities. The noise level reduction calculation provided by the proposed industrial building is provided in Attachment E of the Noise and Vibration Impact Analysis (Appendix L).

Heating-Ventilation-Air Conditioning (HVAC): The proposed project would include up to two rooftop HVAC units with parapets at the southwest and southeast corners of the building for the office portion of the warehouse (a total of four rooftop HVAC units). The HVAC equipment could operate 24 hours per day. Each rooftop HVAC unit would generate a noise level of 56.4 dBA L_{eq} at a distance of 50 ft. Each group of two HVAC units operating simultaneously at each location would generate a noise level of 59.4 dBA L_{eq} at a distance of 50 ft.

Stationary Noise Impacts Summary. Tables 3.13.I and 3.13.J shows the daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) individual stationary noise source, respectively, from truck delivery and truck loading and unloading activities, automobile and truck parking activities, and rooftop HVAC equipment at the residential and industrial use areas as well as the distance attenuation, noise reduction from shielding, and the combined stationary noise level at each property line.

Table 3.13.I shows that the closest residential property line to the north, southeast, south, and southwest would have a combined daytime stationary noise level of 48.5, 39.0, 42.5, and 39.9 dBA L_{eq}, respectively. Maximum instantaneous noise levels at the closest residential property line to the north, southeast, south, and southwest would reach 52.5, 45.6, 48.9, and 46.6 dBA L_{max}, respectively. These noise levels would not exceed the City's exterior daytime 30-minute (L_{50}) and instantaneous maximum (L_{max}) noise standards of 55 dBA and 75 dBA, respectively, for residential land uses.

In addition, Table 3.13.I shows that the combined stationary daytime noise levels are 63.1, 56.5, and 45.9 dBA L_{eq} at the closest industrial property line to the east, south, and west, respectively. Maximum instantaneous noise levels at the closest residential property line to the north, southeast, and south would reach 67.0, 65.4, and 49.7 dBA L_{max}, respectively. These

[114] Ibid.

Table 3.13.I: Daytime Stationary Noise Levels

Land Use	Direction	Noise Source	Reference Noise Level at 50 ft (dBA L_{max})	Reference Noise Level at 50 ft (dBA L_{eq})	Distance from Source to Receptor (ft)	Distance Attenuation (dBA)	Shielding[2] (dBA)	Noise Level (dBA L_{max})	Noise Level (dBA L_{eq})	Combined Noise Level (dBA L_{eq})
Residence (69 South 3rd Street)	North	Truck Delivery[1]	75	70.2	670	22.5	0	52.5	47.7	48.5
		Auto Parking Activities	70	59.2	600	21.6	0	48.4	37.6	
		Truck Parking Activities	70	52.2	595	21.5	0	48.5	30.7	
		HVAC (southwest)	--	59.4	925	25.3	0	--	34.1	
		HVAC (southeast)	--	59.4	925	25.3	0	--	34.1	
Industrial (201 West Lincoln Street)	East	Truck Delivery[1]	75	70.2	125	8.0	0	67.0	62.2	63.1
		Auto Parking Activities	70	59.2	85	4.6	0	65.4	54.6	
		Truck Parking Activities	70	52.2	335	16.5	0	53.5	35.7	
		HVAC (southwest)	--	59.4	570	21.1	0	--	38.3	
		HVAC (southeast)	--	59.4	145	9.2	0	--	50.2	
Residence (545 South San Gorgonio Avenue)	Southeast	Truck Delivery[1]	75	70.2	1,005	26.1	17	31.9	27.1	39.0
		Auto Parking Activities	70	59.2	830	24.4	0	45.6	34.8	
		Truck Parking Activities	70	52.2	1,225	27.8	16	26.2	8.4	
		HVAC (southwest)	--	59.4	1,220	27.7	0	--	31.7	
		HVAC (southeast)	--	59.4	870	24.8	0	--	34.6	
Industrial (368 West Lincoln Street)	South	Truck Delivery[1]	75	70.2	385	17.7	17	40.3	35.5	56.5
		Auto Parking Activities	70	59.2	85	4.6	0	65.4	54.6	
		Truck Parking Activities	70	52.2	490	19.8	16	34.2	16.4	
		HVAC (southwest)	--	59.4	170	10.6	0	--	48.8	
		HVAC (southeast)	--	59.4	170	10.6	0	--	48.8	
Residence (Windscape Village)	South	Truck Delivery[1]	75	70.2	855	24.7	17	33.3	28.5	42.5
		Auto Parking Activities	70	59.2	565	21.1	0	48.9	38.1	
		Truck Parking Activities	70	52.2	645	22.2	16	28.2	10.4	
		HVAC (southwest)	--	59.4	645	22.2	0	--	37.2	
		HVAC (southeast)	--	59.4	645	22.2	0	--	37.2	
Residence (430 Barbour Avenue)	Southwest	Truck Delivery[1]	75	70.2	1,050	26.4	17	31.6	26.8	39.9
		Auto Parking Activities	70	59.2	740	23.4	0	46.6	35.8	
		Truck Parking Activities	70	52.2	1,165	27.3	16	26.7	8.9	
		HVAC (southwest)	--	59.4	825	24.3	0	--	35.1	
		HVAC (southeast)	--	59.4	970	25.8	0	--	33.6	

Table 3.13.I: Daytime Stationary Noise Levels

Land Use	Direction	Noise Source	Reference Noise Level at 50 ft (dBA L_{max})	Reference Noise Level at 50 ft (dBA L_{eq})	Distance from Source to Receptor (ft)	Distance Attenuation (dBA)	Shielding[2] (dBA)	Noise Level (dBA L_{max})	Noise Level (dBA L_{eq})	Combined Noise Level (dBA L_{eq})
Industrial (679 West Lincoln Street)	West	Truck Delivery[1]	75	70.2	925	25.3	0	49.7	44.9	45.9
		Auto Parking Activities	70	59.2	845	24.6	0	45.4	34.6	
		Truck Parking Activities	70	52.2	940	25.5	0	44.5	26.7	
		HVAC (southwest)	--	59.4	845	24.6	0	--	34.8	
		HVAC (southeast)	--	59.4	1,270	28.1	0	--	31.3	

Source: LSA Associates, Inc. *First Lincoln Industrial Project Noise and Vibration Impact Analysis Memorandum*. Table R. October 2022. (Appendix L).

[1] Truck delivery and truck loading and unloading activities.

[2] The calculated noise reduction from the proposed 45 ft high warehouse buildings is provided in Attachment E of the *Noise and Vibration Impact Analysis Memorandum* (Appendix L).

dBA = A-weighted decibels

ft = feet

HVAC = heating, ventilation, and air conditioning

L_{eq} = equivalent continuous sound level

L_{max} = maximum instantaneous noise level

Table 3.13.J: Nighttime Stationary Noise Levels

Land Use	Direction	Noise Source	Reference Noise Level at 50 ft (dBA L_{max})	Reference Noise Level at 50 ft (dBA L_{eq})	Distance from Source to Receptor (ft)	Distance Attenuation (dBA)	Shielding[2] (dBA)	Noise Level (dBA L_{max})	Noise Level (dBA L_{eq})	Combined Noise Level (dBA L_{eq})
Residence (69 South 3rd Street)	North	Truck Delivery[1]	75	69.0	670	22.5	0	52.5	46.5	47.3
		Auto Parking Activities	70	55.2	600	21.6	0	48.4	33.6	
		Truck Parking Activities	70	52.2	595	21.5	0	48.5	30.7	
		HVAC (southwest)	--	59.4	925	25.3	0	--	34.1	
		HVAC (southeast)	--	59.4	925	25.3	0	--	34.1	
Industrial (201 West Lincoln Street)	East	Truck Delivery[1]	75	69.0	125	8.0	0	67.0	61.0	61.7
		Auto Parking Activities	70	55.2	85	4.6	0	65.4	50.6	
		Truck Parking Activities	70	52.2	335	16.5	0	53.5	35.7	
		HVAC (southwest)	--	59.4	570	21.1	0	--	38.3	
		HVAC (southeast)	--	59.4	145	9.2	0	--	50.2	
Residence (545 South San Gorgonio Avenue)	Southeast	Truck Delivery[1]	75	69.0	1,005	26.1	17	31.9	25.9	37.8
		Auto Parking Activities	70	55.2	830	24.4	0	45.6	30.8	
		Truck Parking Activities	70	52.2	1,225	27.8	16	26.2	8.4	
		HVAC (southwest)	--	59.4	1,220	27.7	0	--	31.7	
		HVAC (southeast)	--	59.4	870	24.8	0	--	34.6	
Industrial (368 West Lincoln Street)	South	Truck Delivery[1]	75	69.0	385	17.7	17	40.3	34.3	54.3
		Auto Parking Activities	70	55.2	85	4.6	0	65.4	50.6	
		Truck Parking Activities	70	52.2	490	19.8	16	34.2	16.4	
		HVAC (southwest)	--	59.4	170	10.6	0	--	48.8	
		HVAC (southeast)	--	59.4	170	10.6	0	--	48.8	
Residence (Windscape Village)	South	Truck Delivery[1]	75	69.0	855	24.7	17	33.3	27.3	41.3
		Auto Parking Activities	70	55.2	565	21.1	0	48.9	34.1	
		Truck Parking Activities	70	52.2	645	22.2	16	28.2	10.4	
		HVAC (southwest)	--	59.4	645	22.2	0	--	37.2	
		HVAC (southeast)	--	59.4	645	22.2	0	--	37.2	
Residence (430 Barbour Avenue)	Southwest	Truck Delivery[1]	75	69.0	1,050	26.4	17	31.6	25.6	38.7
		Auto Parking Activities	70	55.2	740	23.4	0	46.6	31.8	
		Truck Parking Activities	70	52.2	1,165	27.3	16	26.7	8.9	
		HVAC (southwest)	--	59.4	825	24.3	0	--	35.1	
		HVAC (southeast)	--	59.4	970	25.8	0	--	33.6	

Table 3.13.J: Nighttime Stationary Noise Levels

Land Use	Direction	Noise Source	Reference Noise Level at 50 ft (dBA L_{max})	Reference Noise Level at 50 ft (dBA L_{eq})	Distance from Source to Receptor (ft)	Distance Attenuation (dBA)	Shielding[2] (dBA)	Noise Level (dBA L_{max})	Noise Level (dBA L_{eq})	Combined Noise Level (dBA L_{eq})
Industrial (679 West Lincoln Street)	West	Truck Delivery[1]	75	69.0	925	25.3	0	49.7	43.7	44.7
		Auto Parking Activities	70	55.2	845	24.6	0	45.4	30.6	
		Truck Parking Activities	70	52.2	940	25.5	0	44.5	26.7	
		HVAC (southwest)	--	59.4	845	24.6	0	--	34.8	
		HVAC (southeast)	--	59.4	1,270	28.1	0	--	31.3	

Source: LSA Associates, Inc. *First Lincoln Industrial Project Noise and Vibration Impact Analysis Memorandum*. Table S. October 2022. (Appendix L).

[1] Truck delivery and truck loading and unloading activities.

[2] The calculated noise reduction from the proposed 45 ft high warehouse buildings is provided in Attachment E of the *Noise and Vibration Impact Analysis Memorandum* (Appendix L).

dBA = A-weighted decibels

ft = feet

HVAC = heating, ventilation, and air conditioning

L_{eq} = equivalent continuous sound level

L_{max} = maximum instantaneous noise level

noise levels would not exceed the City's exterior daytime anytime noise standard of 75 dBA for industrial uses.

Table 3.13.J shows that the closest residential property line to the north, southeast, south, and southwest would have a combined nighttime stationary noise level of 47.3, 37.7, 41.3, and 38.7 dBA L_{eq}, respectively. The nighttime maximum instantaneous noise level at the closest residential property line to the north, southeast, south, and southwest would be the same noise levels during the daytime. These noise levels would not exceed the City's exterior nighttime 30-minute (L_{50}) and instantaneous maximum (L_{max}) noise standards of 45 dBA and 65 dBA, respectively, for residential land uses except for the residences to the north. Although noise levels at the closest residential property line to the north would exceed the City's exterior nighttime 30-minute (L_{50}) noise standard of 45 dBA, the lowest nighttime ambient noise level in this area represented by LT-1 is 64.1 dBA L_{eq} and would increase ambient noise levels by 0.1 dBA. A noise level increase of less than 3 dBA would not be perceptible to the human ear in an outdoor environment. It should be noted that nighttime noise levels generated from the operations of the project would be masked by traffic noise on I-10.

In addition, Table 3.13.J shows that the combined stationary nighttime noise levels are 61.7, 54.3, and 44.7 dBA L_{eq} at the closest industrial property line to the east, south, and west, respectively. The nighttime maximum instantaneous noise level at the closest industrial property line to the north, southeast, and south would be the same noise levels during the daytime. These noise levels would not exceed the City's exterior daytime anytime noise standard of 75 dBA for industrial uses.

The analysis above is based on a project-specific Noise and Vibration Impact Analysis (Appendix L). The analysis included short-term and long-term ambient noise measurements conducted in the project area and examined how short-term construction and long-term operational noise generated from the proposed project would affect the surrounding land uses based on existing baseline conditions. As detailed above, the project would not result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance. Therefore, noise impacts from project operations would be **less than significant**. Mitigation is not required.

b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Less than Significant Impact. The following analysis is based on a project-specific Noise and Vibration Impact Analysis (Appendix L).

Groundborne noise is typically assessed at locations where there is no airborne noise path, or for buildings with substantial sound insulation such as a recording studio. For typical buildings, the interior airborne noise levels are often higher than the groundborne noise levels. Therefore, the main focus of the discussion/analysis is groundborne vibration. Since the City does not have vibration standards, the vibration standards included in the FTA *Transit Noise and Vibration Impact Assessment*

Manual[115] were used in this analysis. Table 3.13.K provides the criteria for assessing the potential for interference or annoyance from vibration levels in a building, while Table 3.13.L lists the potential vibration building damage criteria associated with construction activities.

Table 3.13.K: Interpretation of Vibration Criteria for Detailed Analysis

Land Use	Max L_v (VdB)[1]	Description of Use
Workshop	90	Vibration that is distinctly felt. Appropriate for workshops and similar areas not as sensitive to vibration.
Office	84	Vibration that can be felt. Appropriate for offices and similar areas not as sensitive to vibration.
Residential Day	78	Vibration that is barely felt. Adequate for computer equipment and low-power optical microscopes (up to 20X).
Residential Night and Operating Rooms	72	Vibration is not felt, but ground-borne noise may be audible inside quiet rooms. Suitable for medium-power microscopes (100X) and other equipment of low sensitivity.

Source: *Federal Transit Administration. Transit Noise and Vibration Impact Assessment Manual. FTA Report No. 0123.* September 2018. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf.

[1] As measured in 1/3-octave bands of frequency over the frequency range 8 to 80 Hz.

FTA = Federal Transit Administration
Hz = hertz
L_v = vibration velocity in decibels
Max = maximum
VdB = vibration velocity decibels

Table 3.13.L: Construction Vibration Damage Criteria

Building Category	PPV (in/sec)	Approximate L_V (VdB)[1]
Reinforced concrete, steel, or timber (no plaster)	0.50	102
Engineered concrete and masonry (no plaster)	0.30	98
Non-engineered timber and masonry buildings	0.20	94
Buildings extremely susceptible to vibration damage	0.12	90

Source: *Federal Transit Administration. Transit Noise and Vibration Impact Assessment Manual. FTA Report No. 0123*. September 2018. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf

[1] RMS vibration velocity in decibels (VdB) is 1 µin/sec.

µin/sec = microinches per second
FTA = Federal Transit Administration
in/sec = inches per second
L_v = vibration velocity in decibels
PPV = peak particle velocity
RMS = root-mean-square
VdB = vibration velocity decibels

[115] Federal Transit Administration (FTA). *Transit Noise and Vibration Impact Assessment Manual. FTA Report No. 0123.* September 2018. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf.

Construction Vibration. Table 3.13.M shows the reference vibration levels at a distance of 25 feet for each type of standard construction equipment from the Transit Noise and Vibration Impact Assessment Manual[116]. Project construction is expected to require the use of large bulldozers and loaded trucks, which would generate ground-borne vibration levels of up to 87 VdB (0.089 PPV [in/sec]) and 86 VdB (0.076 PPV [in/sec]), respectively, when measured at 25 ft.

Table 3.13.M: Vibration Source Amplitudes for Construction Equipment

Equipment	Reference PPV/L_V at 25 ft	
	PPV (in/sec)	L_V (VdB)[1]
Pile Driver (Impact), Typical	0.644	104
Pile Driver (Sonic), Typical	0.170	93
Vibratory Roller	0.210	94
Hoe Ram	0.089	87
Large Bulldozer	**0.089**	**87**
Caisson Drilling	0.089	87
Loaded Trucks[2]	**0.076**	**86**
Jackhammer	0.035	79
Small Bulldozer[2]	0.003	58

Source: Federal Transit Administration. *Transit Noise and Vibration Impact Assessment Manual. FTA Report No. 0123.* September 2018. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf

Note: Equipment shown in **bold** is expected to be used on site.

[1] RMS vibration velocity in decibels (VdB) is 1 µin/sec.

[2] Rubber tire equipment.

µin/sec = micro-inches per second
ft = foot/feet
FTA = Federal Transit Administration
in/sec = inches per second
L_V = velocity in decibels
PPV = peak particle velocity
RMS = root-mean-square
VdB = vibration velocity decibels

The greatest vibration levels are anticipated to occur during the site preparation and grading phase. All other phases are expected to result in lower vibration levels. The distance to the nearest buildings for vibration impact analysis is measured between the nearest off-site buildings and the project boundary (assuming the construction equipment would be used at or near the project boundary) because vibration impacts normally occur within the buildings.

Table 3.13.N lists the projected vibration levels from various construction equipment expected to be used on the project site in the active construction area to the nearest buildings in the project vicinity. Similarly, Table 3.13.O lists the projected vibration levels from various construction equipment expected to be used on the project site at the project construction boundary to the nearest buildings in the project vicinity.

[116] Federal Transit Administration (FTA). *Transit Noise and Vibration Impact Assessment Manual. FTA Report No. 0123.* Table 7-4. September 2018. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf

Table 3.13.N: Potential Construction Vibration Annoyance

Land Use	Direction	Equipment/ Activity	Reference Vibration Level (VdB) at 25 ft	Distance to Structure (ft)[1]	Vibration Level (VdB)
Residence (69 South 3rd Street)	North	Large bulldozers	87	635	45
		Loaded trucks	86	635	44
Industrial (201 West Lincoln Street)	East	Large bulldozers	87	160	63
		Loaded trucks	86	160	62
Residence (545 South San Gorgonio Avenue)	Southeast	Large bulldozers	87	885	41
		Loaded trucks	86	885	40
Industrial (368 West Lincoln Street)	South	Large bulldozers	87	175	62
		Loaded trucks	86	175	61
Residence (Windscape Village)	South	Large bulldozers	87	680	44
		Loaded trucks	86	680	43
Residence (430 Barbour Avenue)	Southwest	Large bulldozers	87	850	41
		Loaded trucks	86	850	40
Industrial (679 West Lincoln Street)	West	Large bulldozers	87	940	40
		Loaded trucks	86	940	39

Source: LSA Associates, Inc. *First Lincoln Industrial Project Noise and Vibration Impact Analysis Memorandum*. Table N. October 2022. (Appendix L).
Note: The FTA-recommended annoyance threshold of 84 VdB for offices (and other similar areas) and 78 VdB for residential homes was used to assess potential construction vibration annoyance.
[1] Distance from the active construction area near the center of the project site to the receptor building structure.
ft = foot/feet
FTA = Federal Transit Administration
VdB = vibration velocity decibels

Table 3.13.O: Potential Construction Vibration Damage

Land Use	Direction	Equipment/ Activity	Reference Vibration Level at 25 ft	Distance to Structure (ft)[1]	Vibration Level
			PPV (in/sec)		PPV (in/sec)
Residence (69 South 3rd Street)	North	Large bulldozers	0.089	550	0.001
		Loaded trucks	0.076	550	0.001
Industrial (201 West Lincoln Street)	East	Large bulldozers	0.089	115	0.009
		Loaded trucks	0.076	115	0.008
Residence (545 South San Gorgonio Avenue)	Southeast	Large bulldozers	0.089	795	0.000
		Loaded trucks	0.076	795	0.000
Industrial (368 West Lincoln Street)	South	Large bulldozers	0.089	90	0.013
		Loaded trucks	0.076	90	0.011
Residence (Windscape Village)	South	Large bulldozers	0.089	595	0.001
		Loaded trucks	0.076	595	0.001
Residence (430 Barbour Avenue)	Southwest	Large bulldozers	0.089	755	0.001
		Loaded trucks	0.076	755	0.000
Industrial (679 West Lincoln Street)	West	Large bulldozers	0.089	855	0.000
		Loaded trucks	0.076	855	0.000

Source: LSA Associates, Inc. *First Lincoln Industrial Project Noise and Vibration Impact Analysis Memorandum*. Table O. October 2022. (Appendix L).
Note: The FTA-recommended building damage threshold is 0.20 PPV [in/sec]) at the receiving non-engineered timber and masonry building.
[1] Distance from the project construction boundary to the building structure.
ft = foot/feet
FTA = Federal Transit Administration
in/sec = inches per second
PPV = peak particle velocity
VdB = vibration velocity decibels

As shown in Table 3.13.N, the closest industrial and residential building east and north of the project site approximately 160 feet and 635 feet from the active project construction area near the center of the project and would be subjected to a vibration level of up to 63 VdB and 45 VdB, respectively. These vibration levels would not result in community annoyance because they would not exceed the FTA community annoyance threshold of 84 VdB for uses that are not as sensitive to vibration and 78 VdB for daytime residences. Other building structures that surround the project site would experience lower vibration levels because they are farther away.

As shown in Table 3.13.O, the industrial and residential buildings to the east and north of the project site are approximately 115 feet and 550 feet from the project construction boundary and would be subjected to a vibration level of up to 0.009 PPV (in/sec) and 0.001 PPV (in/sec), respectively. These vibration levels would not result in building damage because industrial and residential building would be constructed equivalent to or better than non-engineered timber and masonry and vibration levels would not exceed the FTA vibration damage threshold of 0.20 PPV (in/sec). Other building structures that surround the project site would be subjected to lower vibration levels because they are farther away and would be constructed equivalent to or better than non-engineered timber and masonry. Therefore, construction vibration impacts would be **less than significant**. Mitigation is not required.

Operational Vibration. Operations of the proposed project would not generate vibration. In addition, vibration generated from project-related traffic on the adjacent roadways (Lincoln Street and 8th Street) is not expected to be substantial for on-road vehicles because the rubber tires and suspension systems of on-road vehicles provide vibration isolation. Therefore, vibration generated from project-related operations and traffic on the adjacent roadways would be **less than significant.** Mitigation is not required.

c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels

Less than Significant Impact. The nearest airport to the project site is Banning Municipal Airport, which is 1.2 miles east of the project site. Based on the Riverside County Airport Land Use Compatibility Plan (ALUC 2004) and the General Plan Noise Element, the project site is within ALUC's Compatibility Zone D and within the 55 CNEL airport noise contour. Industrial uses are normally acceptable up to 70 dBA CNEL based on the City's Land Use Compatibility for Community Noise Environments shown in Table 3.13.A. In addition, there are no private airstrips within the vicinity of the project site. Therefore, the project would not expose people working in the project area to excessive airport-related noise levels. Impacts would be **less than significant.** Mitigation is not required.

3.14 POPULATION AND HOUSING

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

3.14.1 Impact Analysis

a. Would the project induce substantial unplanned population growth in an area, either directly (e.g., new homes and businesses) or indirectly (e.g., extension of roads and infrastructure)?

Less than Significant Impact. *CEQA Guidelines* Section 15126.2[d] identifies a project as growth inducing if it fosters economic or population growth, or the construction of additional housing either directly or indirectly in the surrounding environment. New employees from commercial or industrial development and new population from residential development represent direct forms of growth, which have a secondary effect of expanding the size of local markets and inducing additional economic activity in the area.

Under CEQA, growth inducement is not considered necessarily detrimental, beneficial, or of little significance to the environment. Typically, the growth-inducing potential of a project would be considered substantial if it fosters growth or a concentration of population in excess of what is assumed in pertinent master plans, land use plans, or in projections made by regional planning agencies (e.g., SCAG).

The project is proposed in an area of the City with an Industrial (I) land use and zoning designation. The City General Plan and Chapter 17.12 of the City Zoning Code indicates the Industrial (I) land use and zoning designation allows uses such as light and medium intensity manufacturing operations, warehousing and distribution, mini-storage, associated offices, commercial facilities, auto storage and repair services, and ancillary retail uses.[117]

As detailed in Section 3.11 above, the proposed project is consistent with the City General Plan and Zoning Code through development of a 118,786 square foot warehouse building, of which approximately 10,000 square feet would be office space. Based on the Institute of Transportation

[117] City of Banning. *City of Banning General Plan.* Chapter III. Community Development. Page III-7. Adopted January 31, 2006..

Engineers (ITE) *Trip Generation* (11th Edition) rates for Land Use 150 – "Warehousing," the proposed project would generate approximately 41 employees.[118]

Although the potential exists for the proposed project to result in population growth through employment opportunities, the project is consistent with the General Plan land use designation and Zoning Code for the site. Therefore, population increase as a result of the proposed project is not considered substantial or unplanned. The proposed project would have a **less than significant** impact to the environment from population growth. Mitigation is not required.

b. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact. The project site is vacant (undeveloped). Housing does not exist on the site; therefore, implementation of the proposed project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. **No impact** would occur, and no mitigation is required.

[118] Average 1.71 daily vehicle trips per 1,000 square feet gross floor area and average 5.05 daily vehicle trips per employee. 1.71 ÷ 5.05 = 0.34 employee per 1,000 square feet gross floor area. 0.34 × 118.786 = 41 employees.

3.15 PUBLIC SERVICES AND FACILITIES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i. Fire protection?	☐	☐	☒	☐
ii. Police protection?	☐	☐	☒	☐
iii. Schools?	☐	☐	☐	☒
iv. Parks?	☐	☐	☒	☐
v. Other public facilities?	☐	☐	☒	☐

3.15.1 Impact Analysis

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

i. Fire protection?

Less than Significant Impact. The Riverside County Fire Department (RCFD) provides fire protection, fire prevention, and emergency services to the project site through a contract with the City of Banning. The City of Banning is served by one RCFD fire station within its jurisdiction. Additionally, two fire engines are staffed for emergency response in Banning, one of which is located at RCFD Station 89 in Banning, and the other fire engine is located at RCFD Station 20 in Beaumont. RCFD Station 89 located at 172 N. Murray St. approximately 0.5 mile to the northeast is the closest station to the project site. Each fire engine is staffed with 3 personnel, and response capabilities include full range fire suppression, medical response with paramedic capability, HazMat response, and rescue.[119] Average travel time between RCFD Station 89 and the project site is 2 minutes. Through compliance with California Vehicle Code 21806(A)(1), which requires all vehicles to yield to emergency vehicles, the proposed project is not expected to reduce the RCFD's response times.

Operation of the proposed warehouse may incrementally increase the demand for fire protection services through generation of 41 employees[120] working at the site, but not to the degree that the

[119] City of Banning. *Fire and Rescue.* http://www.banning.ca.us/344/Fire-and-Rescue (accessed August 24, 2022).

[120] Average 1.71 daily vehicle trips per 1,000 square feet gross floor area and average 5.05 daily vehicle trips per employee. 1.71 ÷ 5.05 = 0.34 employee per 1,000 square feet gross floor area. 0.34 × 118.786 = 41 employees.

existing fire station within the City could not meet demand. As detailed in Section 3.11, the project is consistent with the City's planned growth on the project site, in accordance with the existing land use and zoning designation, set forth by the City's General Plan and Zoning Code. Additionally, through the execution of mutual aid agreements maintained with neighboring jurisdictions, the City would have the additional firefighting support of nearby fire departments and districts to provide assistance during major emergencies.

Project design features incorporated into the structural design and layout of the proposed warehouse would limit service demand increases. For example, the applicant must coordinate with the RFCD during the development review process to identify and mitigate any fire hazards and ensure adequate emergency water flow, fire-resistant design and materials, early warning systems and evacuation routes, and emergency access entries from W. Lincoln Steet. To further offset incremental impacts to existing and future RCFD service, the project applicant would be required to pay Development Impact Fees (DIFs) to the RCFD for fire service as a condition of project approval in accordance with Section 15.68.010 of the Banning Municipal Code. The DIFs paid to the RCFD would increase the capital funding available to develop new fire stations as needed to facilitate adequate service by the RCFD. The proposed project would also be designed in compliance with the current California Fire Code as adopted by the City of Banning through Municipal Code Chapter 8.16. The California Fire Code provides guidelines on fire hydrant size and outlet locations, building sprinkler system requirements, fire water flow requirements, building fire load occupancy requirements, vegetative clearance requirements around buildings, fire resistant construction materials, and adequate circulation clearance for fire apparatus.

Prior to approval of final building permits, the City of Banning and RCFD representatives would review the project plans to ensure that development on the site would occur in compliance of the California Fire Code and Municipal Code Chapter 8.16. With payment of the DIFs and development of the proposed project in compliance with the applicable regulations, the project would not preclude existing fire stations from meeting the increased incremental demand for fire protection services in addition to RCFD's existing service capacity.

Any future construction of new or expansion of existing fire protection facilities would be subject to project-level environmental review and site-specific mitigation as appropriate in order to ensure significant environmental impacts are avoided or mitigated at the time such development actions are proposed to or by the City. The proposed project, therefore, would not result in substantial adverse physical impacts associated with the provision of new or physically altered fire facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance standards. Impacts would be **less than significant,** and mitigation is not required.

ii. Police protection?

Less than Significant Impact. The City of Banning Police Department (BPD) headquarters is located at 125 E. Ramsey Steet, approximately 0.5-mile northeast of the project site. Implementation of the project would incrementally increase the demand for police services; however, the proposed warehouse could operate 24 hours per day, which would help reduce the overall potential for crime on the site. The project would incorporate Crime Prevention Through Environmental Design (CPTED)

features to keep service demand increases to a minimum. Such CPTED techniques would include, but not be limited to, surface drive aisle lighting, building façade lighting, low-lying landscaping designed to minimize opportunities for concealment, continued maintenance activities on the site, deadbolts/locks on building exterior doors, and perimeter retaining walls. The BPD employs CPTED principles during the development review process for new construction and offers CPTED inspection services free of charge to reduce the likelihood of criminal activity and create safer places for the community. Pursuant to Section 17.12.170 of the Banning Municipal Code, the project would implement lighting that follows the following guidance: lighting in commercial and industrial projects should be only the minimum required for safety and security; lighting should be integrated into the structure's architecture to the greatest extent possible; and all lighting fixtures shall not have a visible light source and must be shielded and directed downward to confine light spread within the project site boundaries.

An incremental increase in law enforcement calls to the project site could occur; however, such calls would be consistent to the types of calls the BPD responds to at similar industrial developments in the City and project vicinity. Additionally, the project site is an infill site surrounded by existing development and therefore is located in an area of the City already patrolled by the BPD. As detailed in Section 3.14 (Threshold A), implementation of the proposed project is consistent with planned growth within the City and would not induce substantial population growth in the City or region. Therefore, the project's increase in demand of new or expanded police services would be negligible. Additionally, through the execution of mutual aid agreements maintained with neighboring jurisdictions, the City would have additional police services to provide assistance during major emergencies.

Pursuant to Section 15.68.020 of the Banning Municipal Code, the project applicant would pay fees to be used for capital improvements to the BPD when required. The City monitors police staffing levels as part of the annual budgeting process to ensure that adequate police protection can continue even after new development projects are approved and constructed. Therefore, projections made by the BPD and the City ensure that adequate police protection would be maintained as development of the project occurs.

Any future construction of new or expansion of existing police protection facilities would be subject to project-level environmental review and site-specific mitigation as appropriate in order to ensure significant environmental impacts are avoided or mitigated at the time such development actions are proposed to or by the City. Since the project is proposed in accordance with the planned development of the site per the City General Plan and would result in a negligible increase in City population, the project would not degrade the BPD's performance to the point that a new facility or expansion of an existing facility, the construction of which could cause significant environmental impacts, would be needed. Impacts would be **less than significant,** and mitigation is not required.

iii. Schools?

No Impact. The project does not include housing; therefore, in the project would not result in a direct increase in the number of school-age students. California Government Code (Section 65995[b]) establishes the base amount of allowable developer fees imposed by school districts. These base amounts are commonly referred to as "Level 1 fees" and are subject to inflation adjustment every

two years. School districts are placed into a specific "level" based on school impact fee amounts that are imposed on the development. With the adoption of Senate Bill 50 and Proposition 1A in 1998, schools meeting certain criteria can now adopt Level 2 and 3 developer fees. The amount of fees that can be charged over the Level 1 amount is determined by the district's total facilities needs and the availability of State matching funds. If there is State facility funding available, districts are able to charge fees equal to 50 percent of their total facility costs, termed "Level 2" fees. If, however, there are no State funds available, "Level 3" fees may be imposed for the full cost of their facility needs.[121]

Per California Government Code, "The payment or satisfaction of a fee, charge, or other requirement levied or imposed … are hereby deemed to be full and complete mitigation of the impacts … on the provision of adequate school facilities." The project applicant would be required to pay these development fees in accordance with Government Code 65995 and Education Code 17620. Through payment of development fees, **no impacts** related to school services would occur. Mitigation is not required.

iv. Parks?

Less than Significant Impact. Please refer to Section 3.16 below.

v. Other public facilities?

Less than Significant Impact. Industrial warehouse uses would not typically generate substantial unplanned population growth in the City such that access to public facilities would be required or increased, including the City's library (Banning Library at 21 W. Nicolet Street). Even if the employees of the proposed project (41 employees)[122] would access public facilities, the projected increase in population (through employment generation) would be consistent with planned population growth in the City, as detailed in Section 3.11 (Land Use and Planning) and Section 3.14 (Population and Housing) above. This minimal increase in population would incrementally increase the need for a number of public services, such as libraries and City administrative facilities, as well as those listed above. In the same manner for those facilities, the project would be required to pay DIFs used to fund capital costs associated with constructing new public facility structures and purchasing equipment for new public facilities, including libraries.

Based on the information and analysis provided above, the incremental increase of employment by the project would not exceed anticipated population growth in the City or for the site and is not expected to result in the need to construct or expand other public facilities, including libraries. Therefore, impacts would be **less than significant,** and mitigation is not required.

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121 California State Legislature, Legislative Analyst's Office. *An Evaluation of the School Facility Fee Affordable Housing Assistance Programs*, January 2001. http://www.lao.ca.gov/2001/011701_school_facility_fee.html (accessed August 24, 2022).

122 Average 1.71 daily vehicle trips per 1,000 square feet gross floor area and average 5.05 daily vehicle trips per employee. 1.71 ÷ 5.05 = 0.34 employee per 1,000 square feet gross floor area. 0.34 × 118.786 = 41 employees.

3.16 RECREATION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

3.16.1 Impact Analysis

a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Less than Significant Impact. The City maintains a performance standard of 5 acres for every 1,000 residents.[123] Although the project-generated employees (41 employees) could elect to utilize the City's park facilities, the project would not involve the addition of any housing units that would permanently increase the City's population, and it is speculative to assume the number of employees who would reside in the City. The closest parks to the project site are Repplier Park Complex located at 201 W. George Street 1 mile to the north and Lions Park located at 955 S. Hargrave Street 1 mile to the southeast. These parks are open to the public, and the amenities include an Amphitheatre, aquatics center, tennis courts, baseball/softball fields, skate park, restrooms, playgrounds, gymnasium, picnic area, and open space. The project would be required to pay applicable development fees to offset impacts from deterioration to parks and recreation facilities in the City. Therefore, development of the project would not create a significant increase in the use of existing neighborhood, regional parks, or other recreational facilities. Impacts would be **less than significant,** and mitigation is not required.

b. Would the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Less than Significant Impact. The City of Banning has eight developed parks totaling just under 200 acres. The park facilities include one mini park, four neighborhood parks, one community park, one regional park, and one private park.[124] Population estimates from 2021 indicate the population of

[123] City of Banning. *City of Banning General Plan.* Chapter III. Community Development. Page III-96. Adopted January 31, 2006.

[124] City of Banning. City of Banning Parks and Recreation. http://banning.ca.us/97/Parks-Recreation (accessed August 23, 2022).

Banning was 30,273 residents.[125] Therefore, the current population to parkland ratio is 6.6 acres per 1,000 residents,[126] and the City achieves its target of 5.0 acres of parkland per 1,000 residents.

Since the project is consistent with City growth projections, as detailed in Section 3.11 (Land Use and Planning) and Section 3.14 (Population and Housing) above, it is not expected to require construction of new or expansion of existing park facilities. Impacts would be **less than significant,** and mitigation is not required.

[125] U.S. Census Bureau. Population Estimates, July 1, 2021 (V2021). https://www.census.gov/programs-surveys/popest/data/data-sets.html (accessed August 23, 2022).

[126] 200 acres of parkland ÷ 30,273 persons = 6.6 acres per 1,000 persons.

3.17 TRANSPORTATION AND TRAFFIC

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b. Conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b)?	☐	☐	☒	☐
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
d. Result in inadequate emergency access?	☐	☐	☒	☐

3.17.1 Impact Analysis

a. Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Less than Significant Impact. A Traffic Impact Analysis (TIA) is typically prepared to assess the impacts of traffic generated by a development project on the surrounding transportation network. TIAs serve as tools for the City to evaluate the effects specific development projects would have on the City's transportation infrastructure.

The City of Banning *Traffic Impact Analysis Guidelines for Local Transportation Analysis and Vehicle Miles Traveled Analysis* (dated September 2021) indicates any project that generates more than 50 AM or PM peak hour passenger car equivalent (PCE) trips is required to prepare a Traffic Impact Analysis (TIA) report for City review.[127] For projects anticipated to generate fewer than 50 peak hour trips, a traffic scoping agreement with trip generation generally is considered sufficient unless the City has specific concerns related to project access and interaction with adjacent intersections.

The project site is located north of Lincoln Street/SR-243, which is part of the State Highway System (SHS). Therefore, Caltrans is a responsible agency pursuant to *CEQA Guidelines § 21069* for reviewing the potential impacts of the proposed project and issuing a Caltrans Encroachment Permit to allow construction of improvements along the project frontage on Lincoln Street/SR-243. Caltrans reviewed the preliminary project improvements proposed along Lincoln Street/SR-243 and requested a site access evaluation be prepared for the project in addition to the traffic scoping agreement and trip generation memorandum.[128] Accordingly, a project-specific traffic analysis was prepared to include a

[127] City of Banning. *Traffic Impact Analysis Guidelines for Local Transportation Analysis and Vehicle Miles Traveled*. Page 3. October 2021.

[128] State of California, Department of Transportation (Caltrans). *First Lincoln Logistics -Lincoln Ave/4th Street*. October 11, 2022.

site access evaluation for the proposed project to demonstrate the project's consistency with Caltrans' requirements for improvements along Lincoln Street/SR-243.[129]

The *First Lincoln Logistics Project-Traffic Analysis* (Appendix M) prepared for the project indicates the project is anticipated to generate approximately 20 passenger vehicle and freight truck trips during the a.m. peak hour and 21 passenger vehicle and freight truck trips during the p.m. peak hour.[130] When freight truck trips are converted to PCE trips, the project is anticipated to generate approximately 24 PCE trips during the a.m. peak hour and 29 PCE trips during the p.m. peak hour.[131] Since the number of trips the project would generate is below the City's 50 peak hour trips threshold to prepare a Local Transportation Analysis, the addition of the proposed project traffic would not create any significant adverse impacts to nearby intersections.

Additionally, the traffic analysis prepared for the project conducted a queuing analysis for proposed roadway improvements along the southern project frontage on Lincoln Street/SR-243, which include a 150-foot-long eastbound left-turn pocket into the western driveway and an approximately 200-foot-long, 18-foot-wide, two-way left-turn lane at the eastern driveway. The queuing analysis determined the proposed turn lanes and driveways facilitating access to and from the project site would accommodate the estimated peak hour traffic generated by the project.[132]

To help reduce VMT in the project vicinity, public transit is provided via Banning Connect Transit System. The nearest bus stop is located at Banning High School approximately 0.45 mile southeast of the site and provides travel within the City of Banning via Route 6. Additionally, a bus stop is located at the Banning Police Department approximately 0.5-mile northeast of the site and provides travel within the City of Banning via Route 5 and to Cabazon via Route 1.[133] Development of the project site would not conflict with any program, plan, ordinance, or policy designed to promote or enhance the City's transit facilities. Rather, development of a modern industrial warehouse as proposed would promote the continued use of Routes 1, 5, and 6 by introducing employment opportunities onto a vacant and underutilized property in proximity to City bus stops consistent with the City's General Plan *Circulation Element.*[134] Additionally, the project would construct new curb and sidewalk along the entire roadway frontage of the project site to help fill in gaps in the City's sidewalk network pursuant to General Plan *Circulation Element* Goal 1, Policy 10. Finally, the project's conceptual striping plan[135] proposes an 8-foot bike lane on both sides of Lincoln Street/SR-243 to facilitate bicycle travel along major corridors within the City in accordance with General Plan *Circulation Element* Goal 1, Policies 6 and 25.

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129 Stantec. *First Lincoln Logistics Project- Traffic Analysis - DRAFT.* November 11, 2022 (Appendix M).

130 *Ibid.* Table C-1.

131 Stantec. *Proposed Traffic Study Scope of Work for First Lincoln Logistics Warehouse on Lincoln Street at 4th Street in the City of Banning.* Table 1. May 6, 2022 (Appendix N).

132 Stantec. *First Lincoln Logistics Project- Traffic Analysis - DRAFT.* Pages 2 and 3. November 11, 2022 (Appendix M).

133 City of Banning, Banning Connect Transit System. *Passenger Prediction Map.* https://live.goswift.ly/banning/route/1/stop/11584 (accessed November 17, 2022).

134 City of Banning. *City of Banning General Plan, Chapter III Community Development, Circulation Element.* Page III-65. Adopted January 31, 2006. Amended March 26, 2013.

135 Stantec. *First Lincoln Logistics Project- Traffic Analysis - DRAFT.* Page B.2. November 11, 2022 (Appendix M).

The proposed project addresses several key issues and implements policies of the General Plan that reduce vehicle miles traveled without generating a substantial increase in vehicle trips in accordance with the City's *Traffic Impact Analysis Guidelines for Local Transportation Analysis and Vehicle Miles Traveled Analysis.* Additionally, the proposed improvements along the project frontage on Lincoln Street/SR-243 would be consistent with Caltrans' requirements for constructing improvements on this roadway. Therefore, the project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. Impacts would be **less than significant,** and mitigation is not required.

b. Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b)?

Less than Significant Impact. *CEQA Guidelines* Section 15064.3, subdivision (b) establishes "vehicle miles traveled" criteria in lieu of "level of service" (LOS) for analyzing transportation impacts and was signed into law as Senate Bill (SB) 743 in 2013. As detailed in Section 3.17 (Threshold A), the project would facilitate access to alternative, shared, and community transportation opportunities that satisfy key policies of the General Plan that reduce VMT without generating a substantial unanticipated increase in population or vehicle trips to the circulation network. The City of Banning *Traffic Impact Analysis Guidelines for Local Transportation Analysis and Vehicle Miles Traveled Analysis* established project-screening thresholds.[136] For example, projects that do not require a General Plan Amendment and generate less than 1,000 daily vehicle trips are determined not to cause a substantial increase in the total Citywide or regional VMT and therefore are presumed to have a less than significant impact on VMT.[137] The project is anticipated to generate only 53 daily PCE trips, which is below the 1,000 daily vehicle trips threshold established by the City.[138] Therefore, the project would have a **less than significant impact** on VMT and can be screened out from further VMT analysis. Mitigation is not required.

c. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less than Significant Impact. Roadway improvements in and around the project site would be designed and constructed to satisfy all City requirements for street widths, corner radii, intersection control, as well as incorporate design standards tailored specifically to site access requirements pursuant to Chapter 17.12, Article III (Commercial and Industrial Development Design Guidelines) of the City Municipal Code. Off site, the project would dedicate approximately 15 feet of right of way along the southern frontage and widen Lincoln Avenue/SR-243 to the ultimate half 55-foot half width in accordance with the City's General Plan designation for a major highway or arterial highway. The project would include installation of curb, gutter, sidewalk, landscaping, streetlights, and trees along the project site frontage of Lincoln Street/SR-243. Additionally, roadway improvements to Lincoln

136 City of Banning. *Traffic Impact Analysis Guidelines for Local Transportation Analysis and Vehicle Miles Traveled.* October 2021.

137 *Ibid.* Page 20.

138 Stantec. Proposed Traffic Study Scope of Work for First Lincoln Logistics Warehouse on Lincoln Street at 4th Street in the City of Banning. Table 1. May 6, 2022 (Appendix N).

Street/SR-243 would be constructed to comply with Caltrans' requirements for safe vehicular access to the project site.

The project would construct a 53-foot-wide western driveway along Lincoln Street/SR-243 with a 24-foot inbound and 24-foot outbound lane, separated by a 5-foot median island. The eastern driveway along Lincoln Street/SR-243 would be 40 feet wide with a 35-foot-wide radius curbs. According to the truck turning templates used in the Traffic Analysis (Appendix M), the proposed striping plan would allow trucks to safely access the eastbound left turn lanes on Lincoln Street/SR-243 into both project driveways. Additionally, trucks would be able to safely exit the project site onto Lincoln Street/SR-243 from only the eastern driveway. Accordingly, the eastern driveway would be the primary driveway used by trucks entering and exiting the project site and the western driveway would be signed to prohibit trucks from exiting the project site onto Lincoln Street/SR-243.[139]

The City, at final plan check, would ensure that all improvements associated with the project are consistent with City standards and requirements. Additionally, prior to issuing a Caltrans Encroachment Permit, Caltrans would ensure that all improvements associated with the project comply with Caltrans requirements for safe access to and from the project site. Adherence to applicable City and Caltrans' requirements would ensure the proposed development would not include any sharp curves or dangerous intersections. Therefore, no substantial increase in hazards due to a design feature would occur. Impacts are **less than significant,** and mitigation is not required.

Threshold D: Would the project result in inadequate emergency access?

Less than Significant Impact.

Construction. Construction activities that may temporarily restrict vehicular traffic would be required to implement appropriate measures to facilitate the passage of persons and vehicles through/around any required road closures. Typical City requirements include prior notification of any lane or road closures with sufficient signage before and during any closures, flag crews with radio communication when necessary to coordinate traffic flow, etc. The warehouse developer would be required to comply with these requirements, which would maintain emergency access and allow for evacuation if needed during construction activities. Compliance with these requirements would ensure that short-term impacts related to this issue are **less than significant.** Mitigation is not required.

Operation. Access to and from the project site would occur along Lincoln Street/SR-243. In accordance with the California Fire Code, the project applicant is required to design, construct, and maintain structures, roadways, and facilities to maintain appropriate emergency/evacuation access to and from the project site as codified in Division III (Development Standards) Chapter 17.28 (Parking and Loading Standards) of the City Municipal Code.

These improvements would be subject to compliance with the City Municipal Code sections specified above and would be reviewed by the Riverside County Fire Department/CalFire and the Banning Police Department through the City's general development review process. Proper site

[139] Stantec. *First Lincoln Logistics Project- Traffic Analysis - DRAFT.* Page 2. November 11, 2022 (Appendix M).

design and compliance with standard and emergency City access requirements would allow for evacuation if necessary during ongoing warehouse operations. This would ensure that long-term impacts related to this issue are **less than significant.** Mitigation is not required.

3.18 TRIBAL CULTURAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)? Or	☐	☒	☐	☐
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

3.18.1 Impact Analysis

a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)? Or

ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less than Significant with mitigation incorporated. The term "California Native American tribe" is defined as "a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the Native American Heritage Commission (NAHC)."

Chapter 532, Statutes of 2014 (i.e., Assembly Bill 52), requires Lead Agencies evaluate a project's potential to affect "tribal cultural resources." Such resources include "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe that

are eligible for inclusion in the California Register of Historical Resources or included in a local register of historical resources." Assembly Bill (AB) 52 also gives Lead Agencies the discretion to determine, supported by substantial evidence, whether a resource qualifies as a "tribal cultural resource."

CEQA defines a "historical resource" as a resource that meets one or more of the following criteria: (1) is listed in, or determined eligible for listing in, the California Register of Historical Resources (California Register); (2) is listed in a local register of historical resources as defined in PRC §5020.1(k); (3) is identified as significant in a historical resource survey meeting the requirements of PRC §5024.1(g); or (4) is determined to be a historical resource by a project's Lead Agency (PRC §21084.1 and *State CEQA Guidelines* §15064.5[a]).

"Local register of historical resources" means a list of properties officially designated or recognized as historically significant by a local government pursuant to a local ordinance or resolution.

A resource may be listed as a historical resource in the California Register of Historical Resources if it meets any of the following National Register of Historic Places criteria as defined in PRC §5024.1(C):

a. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

b. Is associated with the lives of persons important in our past.

c. 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.

d. Has yielded, or may be likely to yield, information important in prehistory or history.

A "substantial adverse change" to a historical resource, according to PRC §5020.1(q), "means demolition, destruction, relocation, or alteration such that the significance of a historical resource would be impaired."

CEQA Guidelines do not preclude identification of historical resources as defined in Public Resources Code Sections 5020.1(j) or 5024.1. Pursuant to *State CEQA Guidelines* Section 15064.5[c][4], if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the Initial Study, but they need not be considered further in the CEQA process. [140]

Per AB 52 (specifically California Public Resources Code 21080.3.1), Native American consultation is required upon request by interested California Native American tribes that have previously requested that the City provide them with notice of such projects.

[140] Pursuant to Section 21082.3(c) of the Public Resources Code, details on the nature, extent, and location of Tribal Cultural Resources identified by Native American Tribes shall remain confidential for the purposes of this analysis.

The City mailed notices of the proposed project to interested and potentially affiliated Native American tribes on November 17, 2022 pursuant to AB 52. Two Tribes responded with a request to review the cultural resources investigation attached to this Initial Study as Appendix D. The City did not receive additional requests for consultation.

i. As discussed previously in Cultural Resources Section 3.5 (Threshold A), there are no listed historic resources or any eligible for listing at the project site, and the site is currently vacant. Nonetheless, it is possible that previously undiscovered historical resources may be encountered at the project site. Results of the cultural resources investigation and tribal consultations are reflected in the impact discussion, and **Mitigation Measures CUL-1** through **CUL-8** contained in Cultural Resources Section 3.5 (Threshold A) would reduce impacts to tribal cultural resources to **less than significant with mitigation incorporated**.

ii. Assembly Bill 52 (AB 52), signed into law in 2014, amended CEQA and established new requirements for tribal notification and consultation. AB 52 applies to all projects for which a notice of preparation or notice of intent to adopt a negative declaration/mitigated negative declaration is issued after July 1, 2015. AB 52 also broadly defines a new resource category of tribal cultural resources and established a more robust process for meaningful consultation that includes:

- prescribed notification and response timelines;
- consultation on alternatives, resource identification, significance determinations, impact evaluation, and mitigation measures; and
- documentation of all consultation efforts to support CEQA findings.

AB 52 notification was initiated for this project as required for a notice of intent to adopt a negative declaration/mitigated negative declaration. In accordance with AB 52, the City sent letters of Notice to all Native American tribes on the distribution list of Native American tribes requesting consultation under AB 52, advising Design Review, Parcel Map and Environmental Assessment. Tribal consultations are being held as requested. Since AB 52 consultation is currently in progress by the Lead Agency, a site-specific cultural resources investigation was conducted, as requested by local tribes, at the project site. Results of the cultural resources investigation and tribal consultations are reflected in the impact discussion and Mitigation Measures contained in Cultural Resources Section 3.5 above. With **Mitigation Measures CUL-1** through **CUL-8** contained in Cultural Resources Section 3.5 (Threshold A) of this Initial Study, impacts to tribal cultural resources are considered reduced to **less than significant with mitigation incorporated.**

3.19 UTILITIES AND SERVICE SYSTEMS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

3.19.1 Impact Analysis

a. Would the project require or result in the relocation or construction of new or expanded water, drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which would cause significant environmental effects?

Less than Significant Impact. Construction and expansion of water, drainage, electric, gas, and telecommunications facilities is described in Section 2.3.7. The proposed warehouse facility would interconnect to existing utilities where available along the site frontage of Lincoln Street/SR-243.

The approval of drainage features and other utility improvements occurs through the building plan check process. As part of this process, all project-related drainage features and utility infrastructure would be required to comply with City Municipal Code Chapter 15.44 (Public Improvements), Chapter 18.09.160 (Protection of Utilities), as well as Colorado River Basin RWQCB standards. On-site project-related drainage features would be designed, installed, and maintained per City MS4 standards and the requirements identified in the Final WQMP (per **Standard Condition HYD-2**).

All proposed improvements and interconnection to drainage, electric power, water, and wastewater facilities would be installed simultaneously with finish grading activities and required project frontage improvements (curb, gutter, sidewalk, landscaping, streetlights, and trees) along Lincoln Street/SR-243. The areas of potential impact from drainage and utility infrastructure improvements are included in the analytical footprint of this Initial Study and associated technical studies, and impacts are mitigated where necessary to less than significant levels. As a result, interconnection to the existing utilities in the project vicinity would not result in substantial disturbance to native habitat or soils, or to the operation of existing roadways and utilities. There would be no significant environmental

effects specifically related to the installation of utility interconnections that are not encompassed within the project's construction and operational footprints, and therefore already identified, disclosed, and subject to all applicable mitigation measures, as well as local, State, and federal regulations, as part of this Initial Study. Therefore, impacts related to relocation of utilities would be **less than significant,** and mitigation is not required.

b. Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?

Less than Significant Impact. The City of Banning Public Works Department supplies water to the City and portions of unincorporated Riverside County located southwest of the City. The City's *2020 Urban Water Management Plan* (UWMP) indicates that the City uses local groundwater to supply potable and non-potable water within its jurisdictional boundary. The City produces groundwater from the Coachella Valley Groundwater Basin (Basin). Several large subbasins, the boundaries of which are generally defined by fault lines that restrict the lateral flow of water, underlie the Basin. The City is underlain by the San Gorgonio Pass Subbasin (SGP Subbasin) portion of the Basin, which is divided into water storage units. The City relies on five sources of groundwater storage supply units which are not totally independent from each other, and include the Beaumont, West Banning, Banning Bench, Banning Water Canyon, and Cabazon Storage Units.

The City also purchases State Water Project (SWP) water from the San Gorgonio Pass Water Agency (SGPWA). The SGPWA is one of 29 state water agencies that hold a SWP Water Supply Contract with the State Department of Water Resources (DWR). Water purchased from the SWP is recharged to the Beaumont Basin on SGPWA property. Although the City may expect variable reliability in availability of SWP water, such water is not its primary source of water, and short-term declines in SWP water availability would be offset by the City's substantial reserves of stored groundwater and would not affect the City's water supply.

On March 28, 2022, the California Governor issued Executive Order N-7-22, which encourages all Californians and water agencies to restrict water usage, and recommends urban water suppliers such as the City of Banning Public Works Department to implement stage 2 of its Water Shortage Contingency Plan. In response to state emergency drought orders, the City of Banning enacted stage 2 of its Water Shortage Contingency Plan, which went into effect on June 10, 2022.[141] Stage 2 of the City's Water Shortage Contingency Plan requires the following:

- All ratepayers limit any landscape irrigation to two days per week (June 1st through October 31st) and one day per week (November 1st through May 31st). Irrigation duration is restricted to 10 minutes per station per day (water-efficient devices are exempt).

- Landscape may only be watered between the hours of 8 p.m. and 10 a.m. when cooler temperatures minimize evaporation.

[141] City of Banning. *Water Conservation.* Making Water Conservation a Way of Life. http://www.banning.ca.us/451/Water-Conservation (accessed November 14, 2022).

- All ratepayers repair all leaks within 48 hours of notification by the City.
- Pools and spas must be covered to prevent evaporation.
- Car washing is only permitted with a bucket or a hose with shutoff valve or nozzle.
- All ratepayers not irrigate any landscaping during or within 72 hours following a rain event.
- The following activities are prohibited: washing sidewalks and driveways, excessive irrigation runoff, use of decorative water features such as fountains and ponds, and filling or refilling ornamental lakes and ponds (except to sustain aquatic life).

According to the City's 2020 UWMP, the City projects to have adequate supply to meet demand for the City's water service area through the year 2045 under Normal Year, Single-Dry Year, and Multiple-Dry Year conditions.[142] Additionally, the City would implement various stages of its Water Shortage Contingency Plan when necessary to reduce its water demand during Multiple-Dry Year conditions.[143] The UWMP models each scenario based on the land use and zoning designations of the City and County. As such, the proposed project is already accounted for in the water (groundwater) supply and demand scenarios determined by the City's UWMP. Therefore, sufficient water supplies would be available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years. Impacts would be **less than significant,** and mitigation is not required.

c. Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Less than Significant Impact. The City of Banning Public Works Department collects wastewater in the City and treats flows at the Banning Wastewater Reclamation Facility (WRF). The WRF intakes 2.0 million gallons/day (gpd) of wastewater and has a capacity of 3.5 million gpd.[144] An existing sewer line is located on Lincoln Street/SR-243 and would serve the project site.

According to the City's 2018 Integrated Master Plan, industrial uses generate 750 gpd per acre.[145] Based on this generation rate, the proposed project (6.17 net acres) would equate to an estimated 4,627.5 gallons per day. The amount of wastewater generated daily by the proposed project would equate to 0.29 percent[146] of the current surplus treatment capacity of the Banning WRF. Based on the existing daily treatment capacity surplus and inflow of the Banning WRF, the project would be adequately served by wastewater conveyance and disposal.

142 City of Banning. *2020 Urban Water Management Plan.* Page 7-13. May 2021.
143 *Ibid.* Page 7-13.
144 Email communication between Courtney Davis, LSA, Nathan Smith, City of Banning Deputy Director of Public Works Public Works Department, September 8, 2022.
145 City of Banning. *2018 Integrated Master Plan (IMP) Final Report*. Table 3.19, Wastewater Flow Factors. Page 3-28. March 2018. Revised October 2018.
146 4,627.5 gallons per day/1,600,000 gallon current Banning WRF surplus treatment capacity per day = 0.29 percent of current surplus treatment capacity.

As part of the project design, an internal wastewater distribution system would be developed on site; however, such installation would not result in any physical environmental effects beyond those that are analyzed in this environmental document. As part of the project's conditions of approval, the applicant would be required to provide sewer-loading calculations to the City to ensure the existing infrastructure in Lincoln Street/SR-243 is correctly sized to continue to provide adequate service to the project site. Any required improvements to the existing infrastructure would occur within City right-of-way as a condition of project approval; therefore, no additional physical impacts to the environment are expected. Additionally, the project applicant would be required to be pay Wastewater Facilities Development Impact Fees to the City prior to grading permit issuance pursuant to City Municipal Code Section 18.68.060. Impacts would be **less than significant,** and mitigation is not required.

d. Would the proposed project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Less than Significant Impact. Solid waste collection is a "demand-responsive" service, and current service levels can be expanded and funded through user fees. Solid waste generated by the proposed on-site uses would be collected and processed by Waste Management, after which non-recyclable material would be sent to one of three facilities in Riverside County, including Badlands Sanitary Landfill, El Sobrante Landfill, and Lamb Canyon Sanitary Landfill. The daily throughputs and remaining capacities at each landfill are as follows:

- Badlands Sanitary Landfill has a daily throughput of 5,000 tons with a remaining capacity of 7,800,000 cubic yards.[147]
- El Sobrante Landfill has a daily throughput of 16,054 tons with a remaining capacity of 143,977,170 cubic yards.[148]
- Lamb Canyon Sanitary Landfill has a daily throughput of 5,000 tons with a remaining capacity of 19,242,950 cubic yards.[149]

147 California Department of Resources Recycling and Recovery (CalRecycle). *Facility/Site Summary Details: Badlands Sanitary Landfill.* https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/2245?siteID=2367 (accessed November 15, 2022).

148 California Department of Resources Recycling and Recovery (CalRecycle). *Facility/Site Summary Details: El Sobrante Landfill.* https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/2280?siteID=2402 (accessed August 30, 2022).

149 California Department of Resources Recycling and Recovery (CalRecycle). *Facility/Site Summary Details: Lamb Canyon Sanitary Landfill.* https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/2246?siteID=2368 (accessed August 30, 2022).

Based on a generation rate of 6.7 pounds per employee per day (41 employees),[150] the project would generate 274.7 pounds of solid waste per day.[151] This amount is equivalent to as much as 0.0027 percent, 0.00085 percent, and 0.0027 percent of the daily throughput at Badlands Sanitary, El Sobrante, and Land Canyon Sanitary Landfills, respectively.[152] Therefore, these receiving landfills have adequate capacity to serve the proposed project. As adequate daily surplus capacity exists at the receiving landfills, and the project would comply with local and State waste reduction strategies (see discussion below), the project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure. Impacts would be **less than significant,** and mitigation is not required.

e. Would the project comply with federal, State, and local management reduction statutes and regulations related to solid waste?

Less than Significant Impact. Solid waste generated during project operation would be managed pursuant to the California Integrated Waste Management Act of 1989 (AB 939), which requires each city or county's source reduction and recycling element to include an implementation schedule demonstrating at least 50 percent diversion of solid waste from landfill disposal or transformation on and after January 1, 2000. In addition, construction waste would be subject to Part 11 of the Title 24 Building Energy Efficiency Standards (also referred to as the California Green Building Standards Code, or CALGreen), which requires a minimum of 65 percent of construction waste be diverted from landfills for reuse and/or recycling. Project compliance with the CALGreen Program is required as a matter of regulatory policy. The proposed project must comply with the City's waste disposal requirements as well as the California Green Building Code and, as such, would not conflict with any federal, State, or local regulations related to solid waste. Impacts would be **less than significant,** and mitigation is not required.

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150 California Department of Resources Recycling and Recovery (CalRecycle). California's 2019 Per Capita Disposal Rate Estimate. https://www.calrecycle.ca.gov/lgcentral/goalmeasure/disposalrate/mostrecent/ (accessed August 30, 2022).

151 6.7 pounds per employee per day × 41 employees = 274.7 pounds of solid waste per day.

152 274.7 pounds of solid waste per day ÷ 5,000 tons (10,000,000 pounds) daily surplus = 0.0027 percent; 274.7 pounds of solid waste per day ÷ 16,054 tons (32,108,000 pounds) daily surplus = 0.00085 percent; and 274.7 pounds of solid waste per day ÷ 5,000 tons (10,000,000 pounds) daily surplus = 0.0027 percent.

3.20 WILDFIRE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☒	☐
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

3.20.1 Impact Analysis

a. If located in or near State Responsibility Areas or lands classified as very high fire hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

Less than Significant Impact. According to the California Department of Forestry and Fire Protection (CALFIRE), the project site is not located within a wildfire State Responsibility Area, nor is the site classified as a Very High Fire Hazard Severity Zone (VHFHSZ).[153] The nearest VHFHSZ is located approximately 0.8-mile south of the site. The project is located in an area that is developed with local roads and regional highways that provide adequate access and departure from the area in the event of an emergency, such as a wildfire. The project is designed to comply with the current California Fire Code (2022 California Fire Code) standards for development for industrial uses, Banning Construction Code Standards, and standards as set forth by the Riverside County Fire Department (RCFD). Adequate emergency access points also are included in the design of the project. Therefore, the proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan within a VHFHSZ. Impacts are **less than significant,** and mitigation is not required.

b. If located in or near State Responsibility Areas or lands classified as very high fire hazard severity zones, would the project, due to slope and/or prevailing winds, expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Less than Significant Impact. As described above, the proposed project is not located within or near a wildfire State Responsibility Area, nor is the land classified as a VHFHSZ. The project site is

[153] California Department of Forestry and Fire Protection (CAL FIRE). *Fire and Resource Assessment Program (FRAP).* https://egis.fire.ca.gov/FHSZ/ (accessed August 24, 2022).

predominately flat and lacks significant slopes. Wildfires have the tendency for uncontrolled spread when the terrain is hilly or mountainous and not conducive to practicable firefighting capabilities. The likelihood of uncontrolled spread of a wildfire near or on the project site is relatively low since the surrounding topography is relatively flat and substantially developed.

Riverside County and Banning are subject to seasonal wind events including times during the fall when Santa Ana Wind conditions are prevalent. Santa Ana Wind conditions in the area of the proposed project typically blow from a northeast to southwest direction (an offshore flow). Wildfires have been recorded to occur in such Santa Ana Wind events sometimes leading to uncontrolled spread of wildfires. CALFIRE and the RCFD have taken these conditions and the locations of Fire Hazard Severity Zones into consideration when determining potential impacts associated with wildfire spread within the City of Banning and surrounding cities. If such a conflagration[154] driven by winds were to get out of control, the RCFD have procedures in place to respond to such an emergency and evacuate residents and employees as needed.[155]

Wind events can also result in smoke drift from nearby wildfires resulting in smoke settling in low-lying areas. The City is located in a valley between the San Bernardino Mountains and the San Jacinto Mountains; as such, the potential for smoke settlement from nearby wildfires is a possibility. Such smoke settlement would be temporary and would more than likely clear out within a couple days of when settlement commenced (based on weather conditions).

Overall, implementation of the proposed project would have a low probability of exposing occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope or prevailing winds. Impacts would be **less than significant.** Mitigation is not required.

c. If located in or near State Responsibility Areas or lands classified as very high fire hazard severity zones, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Less than Significant Impact. As described above, the proposed project is not located within or near a wildfire State Responsibility Area, nor is the land classified as a VHFHSZ. The project includes development of an industrial building, on-site utility infrastructure, surface parking lots, and off-site improvements to the project frontage and utility infrastructure. The project would not incorporate infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other non-existing utilities) that may exacerbate fire risk because all improvements would be implemented in an urbanized setting in accordance with the 2022 CBC, California Fire Code, and applicable local ordinances. Impacts would be **less than significant,** and mitigation is not required.

[154] Conflagration is an extensive fire that destroys a great deal of land or property.

[155] City of Banning. *City of Banning Emergency Operations Plan Part 1-Basic Plan*. Page 8-16. July 2007. http://banning.ca.us/DocumentCenter/View/2776/Banning-EOP---Final-Part-1---Rev-1212?bidId= (accessed August 25, 2022).

d. If located in or near State Responsibility Areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides as a result of runoff, post-fire slope instability, or drainage changes?

Less than Significant Impact. As described above, the proposed project is not located within or near a wildfire State Responsibility Area, nor is the land classified as a VHFHSZ. According to the Federal Emergency Management Administration (FEMA)[156], the majority of the project site is designated as Flood Zone X (Other Areas)[157] while a small portion of the project site along the western boundary is located within Flood Zone X (Other Flood Areas).[158] The Gilman Home Stormwater Channel adjacent to the western boundary of the project site is designated as Flood Zone A.[159]

A fire north of the project site could trigger increased downstream or downslope flooding toward the project site as a result of runoff, post-fire slope instability, or drainage changes. However, the I-10 freeway and railroad to the north of the project site would act as a barrier and reduce water flow to the project site. Additionally, increased downstream or downslope water flow north of the project site would be directed to the Gilman Home Stormwater Channel, reducing the potential for post-wildfire flooding risks on the project site. Finally, the project site is not located near bodies of water or enclosed water storage features which could result in tsunamis or seiches. Therefore, risks associated with runoff caused by post-fire slope instability or post-fire drainage change are low.

The project site is located on land that is relatively flat. The closest VHFHSZ to the project site is the foothills of the San Jacinto Mountains approximately 0.8-mile south of the site and 120 feet down gradient. Additionally, the land between the project site and the San Jacinto Mountains is developed with residential, public facility, and industrial uses. The distance, slope, and intervening uses between the project site and foothills of the San Jacinto Mountains precludes the project site from significant risks due to landslides caused by post-fire slope instability or post-fire drainage changes. Impacts would be **less than significant,** and mitigation is not required.

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156 Federal Emergency Management Administration (FEMA). *Flood Insurance Rate Map (FIRM)*. Panel 06065C0816G (effective August 28, 2008). https://msc.fema.gov/portal/search?AddressQuery=Banning#searchresultsanchor (accessed August 26, 2022).

157 Flood Zone X (other areas) are areas outside the 0.2 percent annual chance (500-year) flood and areas protected by levees from 1 percent annual chance (100-year) flood.

158 Flood Zone X (other flood areas) correspond to areas between the limits of the 0.2 percent annual chance (500-year) flood and areas of 1 percent annual chance (100-year) flood. No base flood elevations or depths have been determined.

159 Flood Zone A is a 100-year flood zone designation (1 percent chance of being equaled or exceeded during a given year) with no base flood elevations determined.

3.21 MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☒	☐
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

3.21.1 Impact Analysis

a. Would the project substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of major periods of California history or prehistory?

Less than Significant with Mitigation Incorporated. Implementation of **Mitigation Measures CUL-1** through **CUL-8**, and **Mitigation Measure GEO-1** would ensure that potential impacts to historic, archaeological, tribal, and paleontological sources that could be uncovered during construction activities would be reduced to a less than significant level. Implementation of **Mitigation Measure BIO-1** and **BIO-2** would ensure that potential impacts to rare, threatened, and/or endangered species are reduced to a less than significant level. Therefore, with the incorporation of mitigation measures, development of the proposed project would not: 1) degrade the quality of the environment; 2) substantially reduce the habitat of a fish or wildlife species; 3) cause a fish or wildlife species population to drop below self-sustaining levels; 4) threaten to eliminate a plant or animal community; 5) reduce the number or restrict the range of a rare or endangered plant or animal; or 6) eliminate important examples of the major periods of California history. This impact would be l**ess than significant with mitigation incorporated**.

b. Would the Project have possible environmental effects which are individually limited but cumulatively considerable?

Less Than Significant Impact. As presented in Sections 3.1 through 3.20, the project would have no impact, a less than significant impact, or a less than significant impact after mitigation with respect to all environmental issues (Refer to Appendix O for the Mitigation Monitoring and Reporting Program).

The proposed project is a 118,786-square-foot warehouse building, which is estimated to generate approximately 41 employees.[160] The proposed project is consistent with the General Plan land use designation of Industrial (I) and would be designed and constructed in accordance with the City's Industrial zoning district. Although the potential exists for the proposed project to result in population growth through employment opportunities, the project is consistent with the General Plan land use designation and Zoning Code for the site. Therefore, population increase as a result of the proposed project would not directly or indirectly induce growth in the City. Additionally, the project site is located within an urbanized area and would be connected to existing municipal roadways and utility infrastructure.

The proposed project is generally consistent with growth projections of the General Plan and goals and policies of SCAG's 2020 RTP/SCS. Accordingly, the project is designed to integrate within the City's and region's existing and proposed infrastructure framework, and cumulative overburdening of community infrastructure and service capacity is not expected to occur. Impacts specified throughout this Initial Study are considered project-specific in nature due to the limited scope of direct physical impacts to the environment. Consequently, the project along with other cumulative projects would result in a **less than significant** cumulative impact with respect to all environmental issues. Mitigation is not required.

c. Would the Project have environmental effects that would cause substantial adverse effects on humans either directly or indirectly?

Less than Significant Impact with Mitigation Incorporated. In general, impacts to human beings are associated with air quality, geology and soils, hazards and hazardous materials, hydrology and water quality, and noise. The South Coast Air Basin is currently designated as a non-attainment area for ozone, PM_{10}, and $PM_{2.5}$. Implementation of the proposed project would not contribute significant amounts of air pollutant emissions on either a short-term or long-term basis. Adherence to SCAQMD dust control measures would further reduce short-term construction air quality impacts, and no project-specific mitigation is required.

Chapter 15.08 (Construction Codes) and Chapter 18.06 (Grading Application Regulations) of the City Municipal Code incorporate design and construction standards of the applicable CBC. Prior to the issuance of a grading permit, the project applicant would be required to submit detailed grading plans and a site-specific geotechnical investigations of the project prepared in conformance the current CBC and applicable Banning standards and as codified in **Standard Condition GEO-1**. These regulations and

[160] Average 1.71 daily vehicle trips per 1,000 square feet gross floor area and average 5.05 daily vehicle trips per employee. 1.71 ÷ 5.05 = 0.34 employee per 1,000 square feet gross floor area. 0.34 × 118.786 = 41 employees.

conditions require implementation of the recommendations cited in the project-specific Geotechnical Investigation pursuant to the City Municipal Code.

The project-specific Phase I ESA (Appendix G) did not identify any hazardous materials or recognized environmental conditions on the project site. Any hazardous materials utilized during construction and operation of the project would be regulated by the Riverside County Fire Department and the California Occupational Safety and Health Administration. Additionally, the routine transport, use, and disposal of hazardous materials at the project site during construction and operation would be performed in accordance with the requirements of CCR Title 8, which would minimize potential health hazards for construction workers, landscapers, maintenance personnel, and employees.

The project site is located within Compatibility Zone D (Primary Traffic Patterns and Runway Buffer Area) of the [*Banning Municipal Airport*] *Riverside County Airport Land Use Compatibility Plan* (ALUCP).[161] The ALUCP takes into account safety hazards and proposed land uses in close proximity to operations of the Banning Municipal Airport and the potential for injury to residents or people working in such areas. The Riverside ALUC prescribed **Mitigation Measures HAZ-1** through **HAZ-5** to ensure the proposed project would be consistent with the ALUCP. Since the project is consistent with the ALUCP, employees on the project site would be protected from airport related hazards.

Compliance with construction- and operation-phase storm water requirements, as set forth in **Standard Conditions HYD-1** through **HYD-4**, would ensure post-development storm water runoff volume would not exceed the existing, pre-developed condition. Therefore, the project would not result in substantial erosion or siltation on or off site; substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site, or create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

With the best construction practices identified in Section 3.13, as set forth in **Standard Condition NOI-1** and pursuant to the City's Codes, the project would not result in a substantial increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance. With implementation of these standard conditions and mitigation measures, potential impacts on human beings would remain **less than significant with mitigation incorporated**.

[161] *Riverside County Airport Land Use Compatibility Plan. Volume 1 Policy Document.* Chapter 3, FV. Banning M Airport. Riverside County Airport Land Use Commission. October 14, 2004, Amended January 2012.

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APPENDIX A

AIR QUALITY, GREENHOUSE GAS, AND ENERGY IMPACT ANALYSIS

CARLSBAD
CLOVIS
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

MEMORANDUM

DATE: October 26, 2022

TO: Michael Goodwin, First Industrial, L.P.

FROM: Ronald Brugger, Senior Air Quality Specialist

SUBJECT: Air Quality, Greenhouse Gas Emissions, and Energy Impact Analysis Memorandum for the proposed First Lincoln Logistics Warehouse Project in Banning, California

INTRODUCTION

This air quality, greenhouse gas (GHG) emissions, and energy impact analysis for the proposed First Lincoln Logistics Warehouse Project in the southern portion of the City of Banning, in western Riverside County, California (project) has been prepared using methods and assumptions recommended in the South Coast Air Quality Management District's (SCAQMD) *CEQA Air Quality Handbook* (SCAQMD, 1993). This analysis includes a description of existing regulatory framework, an assessment of project operational air quality emissions, GHG emissions, and energy use. Measures to reduce or eliminate significant impacts are identified, where appropriate. All references used in this analysis are provided in Attachment A.

PROJECT LOCATION

The approximately 6.45 acres project site is located on the northeast corner of 4th Street and Lincoln Street/State Route 243, south of Interstate 10, in the City of Banning (City), Riverside County. Specifically, the center of the project site is at latitude 33°55'20.74" N and longitude -116°52'48.43" W at an elevation of approximately 2,317 feet above mean sea level and consists of two parcels (Assessor's Parcel Numbers [APNs] 0540-210-009 and -020). The project is in Compatibility Zone D (Primary Traffic Patterns and Runway Buffer Area) of the [*Banning Municipal Airport*] *Riverside County Airport Land Use Compatibility Plan* (ALUCP). Figure 1 shows the project location (all figures are in Attachment B).

PROJECT DESCRIPTION

The proposed project would construct a 118,786 square foot industrial warehouse building, of which 10,000 square feet would be designated office space across two levels. The project would include 25 freight truck loading docks and employee and trailer parking. Figure 2 shows the site plan. It is expected that construction of the project would start in mid-2023 and be completed in the spring of 2024, resulting in a total construction duration of approximately 10 months.

Sensitive Receptors and Land Uses in the Project Vicinity

Sensitive receptors include residences, schools, hospitals, and similar uses that are sensitive to air quality. The site is bounded by W. Lincoln Street/State Route 243 to the south, the Gilman Home Stormwater Channel to the west, the Union Pacific Railroad and Interstate 10 to the north, and light industrial uses to the east. The nearest sensitive receptors in proximity to the project site are two single-family homes to the north of I-10, along South 3rd Street approximately 550 feet north of the project site followed by multi-family homes located along Barbour Avenue approximately 580 feet south of the project site. Industrial uses are located immediately south of W. Lincoln Street/State Route 243 between the project site and the nearest residential uses. Figure 1 also shows these sensitive receptors.

REGIONAL CLIMATE AND AIR QUALITY

The project site is in the City of Banning, Riverside County, California, which is part of the South Coast Air Basin (Basin) and is under the jurisdiction of SCAQMD. This Basin includes all of Orange County and the non-desert portions of Los Angeles, San Bernardino, and Riverside Counties. Both the State of California (State) and the federal government have established health-based ambient air quality standards (AAQS) for seven air pollutants. As detailed in Table A, these pollutants include ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter less than 10 microns in size (PM_{10}), particulate matter less than 2.5 microns in size ($PM_{2.5}$), and lead. In addition, the State has set standards for sulfates, hydrogen sulfide (H_2S), vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Table B summarizes the most common health and environmental effects for each of the air pollutants for which there is a national and/or California AAQS, as well as for toxic air contaminants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety (by the United States Environmental Protection Agency [EPA]), these health effects would not occur unless the standards are exceeded by a large margin or for a prolonged period of time. State AAQS are typically more stringent than federal AAQS. Among the pollutants, O_3 and particulate matter ($PM_{2.5}$ and PM_{10}) are considered pollutants with regional effects, while the others have more localized effects.

The California Clean Air Act (CCAA) provides SCAQMD and other air districts with the authority to manage transportation activities at indirect sources. Indirect sources of pollution include any facility, building, structure, or installation, or combination thereof, that attracts or generates mobile-source emissions of any pollutant. In addition, area-source emissions that are generated when minor sources collectively emit a substantial amount of pollution are also managed by the local air districts. Examples of this would be the motor vehicles at an intersection, at a mall, and on highways. SCAQMD also regulates stationary sources of pollution throughout its jurisdictional area. The California Air Resources Board (CARB) regulates direct emissions from motor vehicles.

Table A: Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		National Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
O_3[8]	1-Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.070 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable Particulate Matter (PM_{10})[9]	24-Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter ($PM_{2.5}$)[9]	24-Hour	—	—	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3	15 µg/m^3	
CO	1-Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8-Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	—	
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
NO_2[10]	1-Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		0.053 ppm (100 µg/m^3)	Same as Primary Standard	
SO_2[11]	1-Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3-Hour	—		—	0.5 ppm (1,300 µg/m^3)	
	24-Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[11]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[11]	—	
Lead[12,13]	30-Day Average	1.5 µg/m^3	Atomic Absorption	—	—	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m^3 (for certain areas)[13]	Same as Primary Standard	
	Rolling 3-Month Average[11]	—		0.15 µg/m^3		
Visibility-Reducing Particles[14]	8-Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24-Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[1,2]	24-Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

Source: CARB *Ambient Air Quality Standards*. May 4, 2016. Website: www.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf (accessed October 2022).

[1] California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1- and 24-hour), NO_2, and PM (PM_{10}, $PM_{2.5}$, and visibility-reducing particles) are values that are not to be exceeded. All others are not to be equaled or exceeded. California AAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[2] National standards (other than for O_3 and PM and those based on the annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth-highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the EPA for further clarification and current national policies.

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

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

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

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

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

[8] On October 1, 2015, the national 8-hour O_3 primary and secondary standards were lowered from 0.075 to 0.070 ppm.

[9] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM_{10} standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

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

[11] On June 2, 2010, a new 1-hour SO_2 standard was established, and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated as Nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

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

[13] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated as Nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standards are approved.

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

°C = degrees Celsius
$\mu g/m^3$ = micrograms per cubic meter
AAQS = ambient air quality standards
CARB = California Air Resources Board
CO = carbon monoxide
EPA = United States Environmental Protection Agency
mg/m^3 = milligrams per cubic meter
NO_2 = nitrogen dioxide
O_3 = ozone
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
ppb = parts per billion
ppm = parts per million
SO_2 = sulfur dioxide

Table B: Summary of Health and Environmental Effects of the Criteria Air Pollutants

Pollutant	Effects on Health and the Environment
Ozone (O_3)	● Respiratory symptoms ● Worsening of lung disease leading to premature death ● Damage to lung tissue ● Crop, forest and ecosystem damage ● Damage to a variety of materials, including rubber, plastics, fabrics, paint and metals
$PM_{2.5}$ (particulate matter less than 2.5 microns in aerodynamic diameter)	● Premature death ● Hospitalization for worsening of cardiovascular disease ● Hospitalization for respiratory disease ● Asthma-related emergency room visits ● Increased symptoms, increased inhaler usage
PM_{10} (particulate matter less than 10 microns in aerodynamic diameter)	● Premature death & hospitalization, primarily for worsening of respiratory disease ● Reduced visibility and material soiling
Nitrogen Oxides (NO_X)	● Lung irritation ● Enhanced allergic responses
Carbon Monoxide (CO)	● Chest pain in patients with heart disease ● Headache ● Light-headedness ● Reduced mental alertness
Sulfur Oxides (SO_X)	● Worsening of asthma: increased symptoms, increased medication usage, and emergency room visits
Lead	● Impaired mental functioning in children ● Learning disabilities in children ● Brain and kidney damage
Hydrogen Sulfide (H_2S)	● Nuisance odor (rotten egg smell) ● At high concentrations: headache & breathing difficulties
Sulfate	● Same as PM2.5, particularly worsening of asthma and other lung diseases ● Reduces visibility
Vinyl Chloride	● Central nervous system effects, such as dizziness, drowsiness & headaches ● Long-term exposure: liver damage & liver cancer
Visibility Reducing Particles	● Reduced airport safety, scenic enjoyment, road safety, and discourages tourism
Toxic Air Contaminants About 200 chemicals have been listed as toxic air contaminants	● Cancer ● Reproductive and developmental effects ● Neurological effects

Source: CARB Website: www.arb.ca.gov/resources/common-air-pollutants (accessed October 2022).
CARB = California Air Resources Board

Climate/Meteorology

Air quality in the planning area is affected not only by various emission sources (e.g., mobile and industry) but also by atmospheric conditions (e.g., wind speed, wind direction, temperature, and rainfall). The regional climate within the Basin is considered semi-arid and is characterized by warm summers, mild winters, infrequent seasonal rainfall, moderate daytime onshore breezes, and moderate humidity. The air quality within the Basin is primarily influenced by a wide range of emissions sources—such as dense population centers, heavy vehicular traffic, and industry—and meteorology.

The City of Banning is nestled between San Gorgonio and San Jacinto mountains. Banning is categorized as a subtropical desert climate type and Banning's climate is generally hot summers and cloudy winters, and infrequent seasonal rainfall. Average annual precipitation is 18.34. The climatological station closest to the site is Beaumont COOP (040606).

Description of Global Climate Change and Its Sources

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 radiated heat from escaping, thus warming Earth's atmosphere. GHGs keep the average surface temperature of the Earth to approximately 60°F. However, excessive concentrations of GHGs in the atmosphere can result in increased global mean temperatures, with associated adverse climatic and ecological consequences (IPCC 2013a).

Scientists refer to the global warming context of the past century as the "enhanced greenhouse effect" to distinguish it from the natural greenhouse effect (Pew Center 2006). 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 (GCC) is evidenced in changes to global temperature rise, warming oceans, shrinking ice sheets, glacial retreat, decreased snow cover, sea level rise, declining Arctic sea ice, extreme weather events, and ocean acidification (IPCC 2014).

Higher temperatures, conducive to air pollution formation, could worsen air quality in California. While climate change may increase the concentration of ground-level ozone, the magnitude of the effect and, therefore, its indirect effects, are uncertain. If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would exacerbate air quality. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat related deaths, illnesses, and asthma attacks throughout the state (California Department of Public Health 2014). However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thus reducing the pollution associated with wildfires. GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced GCC are the following:[1]

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Nitrous oxide (N_2O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur hexafluoride (SF_6)

[1] The greenhouse gases listed are consistent with the definition in Assembly Bill 32 (Government Code 38505), as discussed later in this section.

Over the last 200 years, human activities have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere and enhancing the natural greenhouse effect, which can cause global warming. Although GHGs produced by human activities include naturally occurring GHGs (e.g., CO_2, CH_4, and N_2O), some gases (e.g., HFCs, PFCs, and SF_6) are completely new to the atmosphere. Water vapor is a GHG, but is generally excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes (e.g., oceanic evaporation). For the purposes of this air quality study, the term "GHGs" will refer collectively to the six gases identified in the bulleted list provided above.

These GHGs vary considerably in terms of global warming potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. GWP is based on several factors, including the relative effectiveness of a gas in absorbing infrared radiation and the length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to CO_2, the most abundant GHG. The definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO_2 over a specified time period. For example, N_2O is from 265 to 310 times more potent at contributing to global warming than CO_2. GHG emissions are typically measured in terms of metric tons of CO_2 equivalents (MT CO_2e). Table C identifies the GWP for the three GHGs analyzed in this report. The EPA and CARB use GWP values from the 2007 IPCC Fourth Assessment Report. The IPCC has published the 2013 IPCC Fifth Assessment Report with updated GWP values.

Table C: Global Warming Potential for Selected Greenhouse Gases

Pollutant	Atmospheric Lifetime (Years)	Global Warming Potential (100-year)
Carbon Dioxide (CO_2)	~100[1]	1 (by definition)
Methane (CH_4)	12	28
Nitrous Oxide (N_2O)	121	265

Sources: *California's 2017 Climate Change Scoping Plan* (CARB 2017), IPCC Fifth Assessment Report (2013b), and *Climate Change 2007: The Physical Science Basis* (IPCC 2007).

[1] The EPA and CARB use global warming potential values from the IPCC Fourth Assessment Report (2007).

[2] CO_2 has a variable atmospheric lifetime and cannot be readily approximated as a single number.

CARB = California Air Resources Board

EPA = United States Environmental Protection Agency

IPCC = Intergovernmental Panel on Climate Change

Air Pollution Constituents and Attainment Status

CARB coordinates and oversees both State and federal air pollution control programs in the State. CARB oversees activities of local air quality management agencies and maintains air quality monitoring stations throughout the State in conjunction with the EPA and local air districts. CARB has divided the State into 15 air basins based on meteorological and topographical factors of air pollution. Data collected at these stations are used by CARB and the EPA to classify air basins as Attainment, Nonattainment, Nonattainment-Transitional, or Unclassified, based on air quality data for the most recent 3 calendar years compared with the AAQS.

Attainment areas may be the following:

- **Attainment/Unclassified** ("Unclassifiable" in some lists). These basins have never violated the air quality standard of interest or do not have enough monitoring data to establish Attainment or Nonattainment status.

- **Attainment-Maintenance** (national ambient air quality standards [NAAQS] only). These basins violated a NAAQS that is currently in use (were Nonattainment) in or after 1990, but now attain the standard and are officially redesignated as Attainment by the EPA with a Maintenance State Implementation Plan (SIP).

- **Attainment** (usually only for California ambient air quality standards [CAAQS], but sometimes for NAAQS). These basins have adequate monitoring data to show attainment, have never been Nonattainment, or, for NAAQS, have completed the official Maintenance period.

Nonattainment areas are imposed with additional restrictions as required by the EPA. The air quality data are also used to monitor progress in attaining air quality standards. Table D lists the attainment status for the criteria pollutants in the Basin.

Table D: Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
O_3	Nonattainment (1-hour) Nonattainment (8-hour)	Extreme Nonattainment (1-hour) Extreme Nonattainment (8-hour)
PM_{10}	Nonattainment (24-hour) Nonattainment (Annual)	Attainment-Maintenance (24-hour)
$PM_{2.5}$	Nonattainment (Annual)	Serious Nonattainment (24-hour) Moderate Nonattainment (Annual)
CO	Attainment (1-hour) Attainment (8-hour)	Attainment-Maintenance (1-hour) Attainment-Maintenance (8-hour)
NO_2	Attainment (1-hour) Attainment (Annual)	Attainment/Unclassified (1-hour) Attainment-Maintenance (Annual)
SO_2	Attainment (1-hour) Attainment (24-hour)	Attainment/Unclassified (1-hour) Attainment/Unclassified (Annual)
Lead[1]	Nonattainment (30-day average)	Nonattainment (3-month rolling)
All Others	Attainment/Unclassified	N/A

Source: *National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) Attainment Status for South Coast Air Basin* (SCAQMD), Website:www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf (accessed October 2022).

[1] Only the Los Angeles County portion of the Basin is in nonattainment for lead.

CO = carbon monoxide
N/A = not applicable
NO_2 = nitrogen dioxide
O_3 = ozone
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SO_2 = sulfur dioxide

Local Air Quality

SCAQMD, together with CARB, maintains ambient air quality monitoring stations. The air quality monitoring station that monitors air pollutant data closest to the site is the Banning Airport Station

at 200 S. Hathaway St, Banning California, approximately 2 miles east of the project site. This site only monitors Ozone, PM_{10}, and NO_2. The closest air quality monitoring station that monitors $PM_{2.5}$ is on the Morongo Reservation at 12160 Santiago Road, approximately 3.25 miles northeast of the project site. The closest air quality monitoring station that monitors CO is the Palm Springs Station at FS-590 Racquet Club Avenue, approximately 20 miles east of the project site. The air quality trends from these stations are used to represent the ambient air quality in the project area. The ambient air quality data in Table E show that NO_2 and CO levels are below the applicable State and federal standards. However, PM_{10} and O_3 levels frequently exceed their respective standards and $PM_{2.5}$ levels occasionally exceed the federal 24-hour standard.

Table E: Air Quality Concentrations in the Project Vicinity

Pollutant	Standard	2019	2020	2021
CO (Measured at the Palm Springs Monitoring Station)				
Maximum 1-hour concentration (ppm)		1.3	0.8	0.8
No. of days exceeded	State: 20 ppm	0	0	0
	Federal: 35 ppm	0	0	0
Maximum 8-hour concentration (ppm)		0.7	0.5	0.4
No. of days exceeded	State: 9 ppm	0	0	0
	Federal: 9 ppm	0	0	0
O_3 (Measured at the Banning Airport)				
Maximum 1-hour concentration (ppm)		0.119	0.150	0.139
No. of days exceeded	State: 0.09 ppm	24	29	41
Max 8-hr concentration (ppm)		0.096	0.115	0.116
No. of days exceeded	State: 0.07 ppm	62	71	82
	Federal: 0.07 ppm	59	68	80
PM_{10} (Measured at the Banning Airport)				
Maximum 24-hour concentration (µg/m³)		63.8	69.3	48.6
No. of days exceeded	State: 50 µg/m³	2	1	0
	Federal: 150 µg/m³	0	0	0
Annual avg. concentration (µg/m³)		17.7	21.2	21.2
Exceeds Standard?	State: 20 µg/m³	No	Yes	Yes
$PM_{2.5}$ (Measured at the Morongo Air Monitoring Station)				
Maximum 24-hour concentration (µg/m³)		11.5	6.7	24.2
No. of days exceeded	Federal: 35 µg/m³	0	0	0
Annual avg. concentration (µg/m³)		5.6	3.8	7.0
Exceeds Standard?	State: 12 µg/m³	No	No	No
	Federal: 12 µg/m³	No	No	No
NO_2 (Measured at the Banning Airport)				
Maximum 1-hour concentration (ppb):		56.0	51.1	56.8
No. of days exceeded	State: 180 ppb	0	0	0
	Federal: 100 ppb	0	0	0
Annual avg. concentration (ppb):		21.7	23.5	24.6
Exceeds standard?	State: 30 ppb	No	No	No
	Federal: 53 ppb	No	No	No

Sources: Air Data: EPA Air Quality Data Collected at Outdoor Monitors across the U.S.; and CARB's iADAM
Notes: Data was collected from the closest stations to the project site where each criteria pollutant data was available.
µg/m³ = micrograms per cubic meter
CARB = California Air Resources Board
CO = carbon monoxide
EPA = United States Environmental Protection Agency
ND = No data available
NO_2 = nitrogen dioxide
O_3 = ozone
$PM_{2.5}$ = particulate matter smaller than 2.5 microns in size
PM_{10} = particulate matter smaller than 10 microns in size
ppb = parts per billion
ppm = parts per million

REGULATORY FRAMEWORK

Air quality and GHG standards and the regulatory framework are discussed below.

Federal Regulations

Pursuant to the federal Clean Air Act (CAA) of 1970, the EPA established the NAAQS. The NAAQS were established for six major pollutants, termed "criteria" pollutants. Criteria pollutants are defined as those pollutants for which the federal and State governments have established AAQS, or criteria, for outdoor concentrations to protect public health.

The EPA has designated the Southern California Association of Governments (SCAG) as the Metropolitan Planning Organization responsible for ensuring compliance with the requirements of the CAA for the Basin.

The United States has historically had a voluntary approach to reducing GHG emissions; however, on April 2, 2007, the United States Supreme Court ruled that the EPA has the authority to regulate CO_2 emissions under the CAA. The Supreme Court ruled that GHGs fit within the CAA's definition of a pollutant and that the EPA did not have a valid rationale for not regulating GHGs. In December 2009, the EPA issued an endangerment finding for GHGs under the CAA.

On December 7, 2009, the EPA Administrator signed a final action under the CAA, finding that six GHGs (i.e., CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) constitute a threat to public health and welfare and that the combined emissions from motor vehicles cause and contribute to GCC.

On September 15, 2011, the EPA and the USDOT issued final rule for the first national standards to improve fuel efficiency of medium- and heavy-duty trucks and buses, model years 2014 to 2018. For combination tractors, the agencies proposed engine and vehicle standards that would achieve up to a 20 percent reduction from the model year 2014 in fuel consumption by the 2018 model year. For heavy-duty pickup trucks and vans, the agencies proposed separate gasoline and diesel truck standards, which would achieve up to a 10 percent reduction from the model year 2014 for gasoline vehicles and a 15 percent reduction for diesel vehicles (12 and 17 percent, respectively, if accounting for air conditioning leakage). Lastly, for vocational vehicles, the engine and vehicle standards would achieve up to a 10 percent reduction from model year 2014 in fuel consumption. On October 25, 2016, the EPA and USDOT issued Phase 2 of the national standards to improve fuel efficiency standards for medium- and heavy-duty trucks and buses for model years 2021 to 2027 to achieve vehicle fuel savings as high as 25 percent, depending on the vehicle category.

On August 2, 2018, the previous Administration released a notice of proposed rulemaking, The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks (SAFE Vehicles Rule) to amend the CAFE and greenhouse gas emission standards established in 2012 for model years 2021 through 2026. The SAFE Vehicle Rule would decrease fuel economy and would withdraw the California Waiver for the California Advanced Clean Car program, Zero Emissions Vehicle mandate, and greenhouse gas emission standards for model years 2021 through 2026.

The current administration withdrew portions of the SAFE Rule, concluding that the SAFE Rule overstepped the agency's legal authority and finalized updated CAFE Standards for model years 2024 through 2026. The final rule establishes standards that would require an industry-wide fleet average of approximately 49 mpg for passenger cars and light trucks in model year 2026, by increasing fuel efficiency by 8 percent annually for model years 2024 and 2025, and 10 percent annually for model years 2026. The agency projects the final standards will save consumers nearly $1,400 in total fuel expenses over the lifetimes of vehicles produced in these model years and avoid the consumption of about 234 billion gallons of gas between model years 2030 to 2050. The NHTSA also projects that the standards will cut greenhouse gases from the atmosphere, reduce air pollution, and reduce the country's dependence on oil.

State Agencies

California Air Resources Board

In 1967, the State Legislature passed the Mulford-Carrell Act, which combined two Department of Health bureaus (i.e., the Bureau of Air Sanitation and the Motor Vehicle Pollution Control Board) to establish CARB. Since its formation, CARB has worked with the public, the business sector, and local governments to find solutions to the State's air pollution problems. California adopted the CCAA in 1988. CARB administers the CAAQs for the 10 air pollutants designated in the CCAA. These 10 State air pollutants are the 6 criteria pollutants designated by the federal CAA as well as 4 others: visibility-reducing particulates, H_2S, sulfates, and vinyl chloride.

The California Global Warming Solutions Act of 2006, widely known as Assembly Bill (AB) 32, requires CARB to develop and enforce regulations for the reporting and verification of statewide GHG emissions. CARB was directed to set a statewide GHG emissions limit and set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner.

In 2016, the Legislature passed and Governor Jerry Brown signed, Senate Bill (SB) 32 and AB 197. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in Governor Brown's April 2015 Executive Order (EO) B-30-15. SB 32 builds on AB 32 and keeps California on the path toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels, consistent with an IPCC analysis of the emissions trajectory that would stabilize atmospheric GHG concentrations at 450 ppm CO_2e and reduce the likelihood of catastrophic impacts from climate change. The companion bill to SB 32, AB 197, provides additional direction to CARB related to the adoption of strategies to reduce GHG emissions.

In December 2017, CARB adopted "California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target" (CARB 2017) that describes the actions the State will take to achieve the SB 32 climate goal of reducing GHG emissions at least 40 percent below 1990 levels by 2030. The 2017 Scoping Plan includes input from a range of State agencies and is the result of a 2-year development process, including extensive public and stakeholder outreach, designed to ensure that California's climate and air quality efforts continue to improve public health and drive development of a more sustainable economy. It outlines an approach that cuts across economic sectors to combine GHG reductions with reductions of smog-causing pollutants, while also

safeguarding public health and economic goals. The 2017 Scoping Plan reflects the direction from the Legislature on the Cap-and-Trade Program, as described in AB 398, the need to extend key existing emissions reductions programs, and acknowledges the parallel actions required under AB 617 to strengthen monitoring and reduce air pollution at the community level.

The actions identified in the 2017 Scoping Plan can reduce overall GHG emissions in California and deliver strong policy signals that will continue to drive investment and certainty in a low-carbon economy. The 2017 Scoping Plan builds upon the successful framework established by the original Scoping Plan and the 2014 Scoping Plan, while also identifying new, technologically feasibility and cost-effective strategies to ensure that California meets its GHG reduction targets in a way that promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health, including in disadvantaged communities.

Although the 2017 Scoping Plan does not impose any specific mandates or policies that specifically apply to individual development projects such as the proposed project, the Scoping Plan encourages local municipalities to update building codes and establish sustainable development practices for accommodating future growth. Key policies that involve the residential and commercial building sectors that are indirectly applicable to the proposed Project include the implementation of SB 275 (promoting infill development and high density housing in high quality transit areas), implementing green building practices (i.e., the California Green Building Standards Code), energy efficiency and water conservation policies, and waste diversion efforts.

Senate Bill 97 and CEQA Guidelines

In August 2007, the Legislature adopted SB 97, requiring the Office of Planning and Research (OPR) to prepare and transmit new California Environmental Quality Act (CEQA) guidelines for the mitigation of GHG emissions or the effects of GHG emissions to the California Natural Resources Agency. OPR submitted its proposed guidelines to the Secretary for Natural Resources on April 13, 2009, and the CEQA Guidelines amendments were adopted on December 30, 2009 and became effective on March 18, 2010.

The CEQA Guidelines amendments do not specify a threshold of significance for GHG emissions or 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 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.

The CEQA Guidelines amendments require a lead agency to make a good-faith effort based on the extent possible on scientific and factual data to describe, calculate or estimate the amount of GHG emissions resulting from a project. The CEQA Guidelines amendments give discretion to the lead agency whether to (1) use a model or methodology to quantify GHG emissions resulting from a project and which model or methodology to use and/or (2) rely on a qualitative analysis or performance-based standards. The California Natural Resources Agency is required to periodically update the guidelines to incorporate new information or criteria established by CARB pursuant to AB 32.

California Green Building Standards

The California Green Building Standards Code, which is Part 11 of the California Code of Regulations, is commonly referred to as the CALGreen Code. The first edition of the CALGreen Code was released in 2008 and contained only voluntary standards. The 2019 CALGreen Code was updated in 2019, became effective on January 1, 2020, and applies to non-residential and residential developments. The CALGreen Code contains requirements for construction site selection, stormwater control during construction, construction waste reduction, indoor water use reduction, material selection, natural resource conservation, site irrigation conservation, and more. The CALGreen Code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The CALGreen Code also requires building commissioning, which is a process for the verification that all building systems, such as heating and cooling equipment and lighting systems, function at their maximum efficiency.

Regional Air Quality Planning Framework

SCAG is a council of governments for Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties. SCAG is a regional planning agency and a forum for regional issues relating to transportation, the economy and community development, and the environment. Although SCAG is not an air quality management agency, it is responsible for developing transportation, land use, and energy conservation measures that affect air quality.

On September 3, 2020, the Regional Council of SCAG adopted Connect SoCal, also known as the 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy: A Plan for Mobility, Accessibility, Sustainability, and High Quality of Life (a.k.a., 2020–2045 RTP/SCS). The 2020–2045 RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental and public health goals. Connect SoCal embodies a collective vision for the region's future and is developed with input from local governments, county transportation commissions (CTCs), tribal governments, non-profit organizations, businesses and local stakeholders within the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura.

South Coast Air Quality Management District

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the Basin. To that end, the SCAQMD, a regional agency, works directly with SCAG, county transportation commissions and local governments, and cooperates actively with State and federal government agencies. The SCAQMD develops air quality-related rules and regulations, establishes permitting requirements, inspects emissions sources, and provides regulatory enforcement through such measures as educational programs or fines, when necessary.

Regional Air Quality Management Plan

SCAQMD and SCAG are responsible for formulating and implementing the AQMP for the Basin. The main purpose of an AQMP is to bring the area into compliance with federal and State air quality standards. SCAQMD prepares a new AQMP every 3 years, updating the previous plan and a 20-year horizon.

The 2022 AQMP is currently under development; however, the latest plan is the 2016 AQMP (SCAQMD March 2017), which incorporates the latest scientific and technological information and planning assumptions, including updated emission inventory methodologies for various source categories. The 2016 AQMP includes the integrated strategies and measures needed to meet the NAAQS, implementation of new technology measures, and demonstrations of attainment of the 1-hour and 8-hour O_3 NAAQS as well as the latest 24-hour and annual $PM_{2.5}$ standards. Key elements of the 2016 AQMP include the following:

- Calculation and credit for co-benefits from other planning efforts (e.g., climate, energy, and transportation)
- A strategy with fair-share emission reductions at the federal, State, and local levels
- Investment in strategies and technologies meeting multiple air quality objectives
- Identification of new partnerships and significant funding for incentives to accelerate deployment of zero and near-zero technologies
- Enhanced socioeconomic assessment, including an expanded environmental-justice analysis
- Attainment of the 24-hour $PM_{2.5}$ standard in 2019 with no additional measures
- Attainment of the annual $PM_{2.5}$ standard by 2025 with implementation of a portion of the O_3 strategy
- Attainment of the 1-hour O_3 standard by 2022 with no reliance on "black box" future technology (CAA Section 182I(5) measures)

SCAQMD adopts rules and regulations to implement portions of the AQMP. Several of these rules may apply to project construction or operation. For example, SCAQMD Rule 403 requires the implementation of the best-available fugitive dust control measure during active construction periods capable of generating fugitive dust emissions from on-site earth-moving activities, construction/demolition activities, and construction equipment travel on paved and unpaved roads.

Although SCAQMD is responsible for regional air quality planning efforts, it does not have the authority to directly regulate the air quality issues associated with new development projects within the Basin, such as the proposed project. Instead, SCAQMD published the *CEQA Air Quality Handbook* (SCAQMD 1993) to assist lead agencies, as well as consultants, project proponents, and other interested parties in evaluating potential air quality impacts of projects proposed in the Basin. The *CEQA Air Quality Handbook* provides standards, methodologies, and procedures for conducting air quality analyses in Environmental Impact Reports and was used extensively in the preparation of this analysis. SCAQMD is currently in the process of replacing the *CEQA Air Quality Handbook* (1993) with the *Air Quality Analysis Guidance Handbook*.

To assist the CEQA practitioner in conducting an air quality analysis in the interim while the replacement *Air Quality Analysis Guidance Handbook* is being prepared, supplemental

guidance/information is provided on the SCAQMD website and includes (1) on-road vehicle emission factors, (2) background CO concentrations, (3) localized significance thresholds (LSTs), (4) mitigation measures and control efficiencies, (5) mobile-source toxics analysis, (6) off-road mobile-source emission factors, (7) $PM_{2.5}$ significance thresholds and calculation methodology, and (8) updated SCAQMD Air Quality Significance Thresholds. SCAQMD also recommends using approved models to calculate emissions from land use projects, such as the California Emissions Estimator Model (CalEEMod). These recommendations were followed in the preparation of this analysis.

The following SCAQMD rules and regulations would apply to the proposed project:

- SCAQMD Rule 403 (SCAQMD 2005) requires projects to incorporate fugitive dust control measures.

- SCAQMD Rule 1113 (SCAQMD 2016) limits the VOC content of architectural coatings.

Local Regulations

City of Banning General Plan

The Banning General Plan includes goals, policies and programs from the Environment Resources Chapter: Air Quality Element.

- **Goal 1:** To preserve and enhance local and regional air quality for the protection of the health and welfare of the community.

- **Policy 1:** The City shall be proactive in regulating local pollutant emitters and shall cooperate with the Southern California Association of Governments and the South Coast Air Quality Management District to assure compliance with air quality standards.

- **Policy 2:** The City shall continue to coordinate and cooperate with local, regional and federal efforts to monitor, manage and reduce the levels of major pollutants affecting the City and region, with particular emphasis on PM_{10} and ozone emissions, as well as other emissions associated with diesel-fueled equipment and motor vehicles.

- **Program 2.A:** On an on-going basis, the City shall continue to participate in efforts to monitor and control PM_{10} emissions from construction and other sources, and all other air pollutants of regional concern. The City shall coordinate with SCAQMD to provide all reporting data for the SCAQMD annual report.

- **Policy 3:** City land use planning efforts shall assure that sensitive receptors are separated from polluting point sources.

- **Policy 4:** Development proposals brought before the City shall be reviewed for their potential to adversely impact local and regional air quality and shall be required to mitigate any significant impacts.

THRESHOLDS OF SIGNIFICANCE

Certain air districts (e.g., SCAQMD) have created guidelines and requirements to conduct air quality analyses. SCAQMD's current guidelines, the *CEQA Air Quality Handbook* (SCAQMD 1993) with associated updates, were followed in this assessment of air quality and climate impacts for the proposed project.

Based on the *State CEQA Guidelines*, Appendix G (Public Resources Code Sections 15000–15387), a project would normally be considered to have a significant effect on air quality if the project would violate any CAAQS, contribute substantially to an existing air quality violation, expose sensitive receptors to substantial pollutants concentrations, or conflict with adopted environmental plans and goals of the community in which it is located.

Pollutants with Regional Effects

SCAQMD has established daily emissions thresholds for construction and operation of a proposed project in the Basin. The emissions thresholds were established based on the attainment status of the Basin with regard to air quality standards for specific criteria pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety, these emissions thresholds are regarded as conservative and would overstate an individual project's contribution to health risks.

Regional Emissions Thresholds

Table F lists the CEQA significance thresholds for construction and operational emissions established for the Basin.

Table F: Regional Thresholds for Construction and Operational Emissions

Emissions Source	Pollutant Emissions Thresholds (lbs/day)					
	VOCs	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_X
Construction	75	100	550	150	55	150
Operations	55	55	550	150	55	150

Source: South Coast AQMD Air Quality Significance Thresholds (SCAQMD2016)

CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOC = volatile organic compound

Projects in the Basin with construction- or operation-related emissions that exceed any of their respective emission thresholds would be considered significant under SCAQMD guidelines. These thresholds, which SCAQMD developed and which apply throughout the Basin, apply as both project and cumulative thresholds. If a project exceeds these standards, it is considered to have a project-specific and cumulative impact.

Local Microscale Concentration Standards

The significance of localized project impacts under CEQA depends on whether ambient CO levels in the vicinity of the project are above or below State and federal CO standards. Because ambient CO levels are below the standards throughout the Basin, a project would be considered to have a significant CO impact if project emissions result in an exceedance of one or more of the 1-hour or 8-hour standards. The following are applicable local emission concentration standards for CO:

- California State 1-hour CO standard of 20 ppm
- California State 8-hour CO standard of 9 ppm

Localized Impacts Analysis

SCAQMD published its *Final Localized Significance Threshold Methodology* in June 2003 and updated it in July 2008 (SCAQMD 2008), recommending that all air quality analyses include an assessment of both construction and operational impacts on the air quality of nearby sensitive receptors. LSTs represent the maximum emissions from a project site that are not expected to result in an exceedance of the NAAQS or the CAAQS for CO, NO_2, PM_{10} and $PM_{2.5}$, as shown in Table G. LSTs are based on the ambient concentrations of that pollutant within the project's Source Receptor Area (SRA) and the distance to the nearest sensitive receptor. The project site is in the Banning Airport SRA. Sensitive receptors include residences, schools, hospitals, and similar uses that are sensitive to adverse air quality. As described above, the nearest sensitive receptors in proximity to the project site are two single-family homes to the north of I-10, along South 3rd Street approximately 550 feet from the project site boundary. Industrial uses are located immediately south of W. Lincoln Street/State Route 243 between the Project site and the nearest residential uses (multi-family homes).

The SCAQMD provides LST screening tables for 25, 50, 100, 200, and 500-meter source-receptor distances. As identified, the nearby sensitive receptors are located approximately 550 ft (168 m) from the project site boundary. Therefore, LSTs for the 168-meter distance were derived by interpolation.

If the total acreage disturbed is less than or equal to 5 acres (ac) per day, then the SCAQMD's screening look-up tables can be used to determine if a project has the potential to result in a significant impact. The project site is approximately 6.45 ac. However, per SCAQMD LST surveys, the typical maximum daily disturbed area for a site of this size would be 4 acres. Therefore, the 4-acre LSTs at a 168-meter distance were used for the LST analysis.

Table G shows the emission thresholds that would apply based on the project size and distance to nearby receptors during project construction and operation, respectively.

Table G: SCAQMD Localized Significance Thresholds

Emissions Source Category	Pollutant Emissions (lbs/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Construction (4 ac, 168 m distance)	370	7,933	147	41
Operations (4 ac, 168 m distance)	370	7,933	36	10

Source: *Final Localized Significance Threshold Methodology* (SCAQMD 2008). SRA: Banning Airport
ac = acre
CO = carbon monoxide
ft = feet
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

Global Climate Change

State CEQA Guidelines Section 15064(b) provides that the "determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data", and further states that an "ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting."

Appendix G of the *State CEQA Guidelines* includes significance thresholds for GHG emissions. A project would normally have a significant effect on the environment if it would do either of the following:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment

- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs

Currently, there is no Statewide GHG emissions threshold that has been used to determine the potential GHG emissions impacts of a project. Threshold methodology and thresholds are still being developed and revised by air districts in California.

To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, SCAQMD convened a GHG CEQA Significance Threshold Working Group (Working Group) in 2008. This Working Group proposed a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency. The applicable tier for this project is Tier 3, which states that if GHG emissions are less than 3,000 MT CO_2e per year, project-level and cumulative GHG emissions would be less than significant. However, this threshold was developed to meet the 2020 GHG emissions goals.

To be consistent with State goals detailed in SB 32, EO B-30-15, and EO S-3-05 to reduce GHG emissions by 40 percent below 1990 levels by 2030, a scaled screening GHG threshold can be developed for an assumed opening year of 2024. Though the SCAQMD has not published a quantified threshold beyond 2020, a threshold of 2,520 MT CO_2e per year would be the appropriate

scaled GHG threshold for the opening year of 2024 based on the GHG reduction goals of SB 32 and EO B-30-15.

Energy

While no quantitative thresholds related to energy are included in the State CEQA Guidelines, the State CEQA Guidelines indicate that a project would normally have a significant adverse energy impact if the project would do either of the following:

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

For the purposes of this analysis, impacts to energy resources will be considered significant if the project would result in the wasteful, inefficient, or unnecessary consumption of fuel or energy; and/or conversely, if the project would not incorporate renewable energy or energy efficiency measures into building design, equipment use, transportation, or other project features.

IMPACTS AND MITIGATION MEASURES

Emissions would include criteria air pollutants and GHG emissions, while energy would be consumed during the construction and operation of the project. The sections below describe the proposed project's consistency with applicable air quality plans, estimated project emissions and energy use, and the significance of impacts.

Air Quality Impacts

Criteria Pollutant Analysis

The SCAB is designated as non-attainment for O_3 and $PM_{2.5}$ for federal standards and non-attainment for O_3, PM_{10}, and $PM_{2.5}$ for State standards. The SCAQMD's nonattainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

In developing thresholds of significance for air pollutants, the SCAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions.

Construction Emissions. Construction activities produce combustion emissions from various sources (utility engines, tenant improvements, and motor vehicles transporting the construction crew). Exhaust emissions from construction activities envisioned on site would vary daily as construction

activity levels change. Construction activities include removal of existing onsite vegetation, including seven eucalyptus trees. Construction would also include excavation, grading, paving, construction of the warehouse building and parking areas, and the installation of lighting, landscaping, and utility connections. During grading, on-site soils would be excavated and recompacted in accordance with the 2019 California Building Code (CBC) to accommodate the proposed industrial building and parking areas.

Construction parking and staging areas will occur on site. Construction be limited to 7:00 a.m. to 6:00 p.m. Monday through Friday and 7:00 a.m. to 6:00 p.m. on Saturday. According to the Project conceptual grading plans, the project is expected to result in an export condition with respect to exported (cut) and imported (fill) soil for excavation, compaction, and rough grading, with approximately 29,000 cubic yards of exported soil (cut) and 9,000 cubic yards of imported structural soil (fill) required for excavation, compaction, and rough grading.

The construction analysis includes estimating the construction equipment that would be used during each construction activity, the hours of use for that construction equipment, the quantities of earth and debris to be moved, and the on-road vehicle trips (e.g., worker, soil-hauling, and vendor trips). CalEEMod defaults are assumed for the construction activities, off-road equipment, and on-road construction fleet mix and trip lengths. It is expected that construction would start in mid 2023 and end in mid 2024. Table H lists the tentative project construction schedule.

Table H: Tentative Project Construction Schedule

Phase Name	Phase Start Date	Phase End Date	Number of Days
Site Preparation	6/1/2023	6/14/2023	10
Grading	6/15/2023	7/12/2023	20
Building Construction	7/13/2023	4/17/2024	200
Architectural Coating	3/4/2024	4/17/2024	33
Paving	4/18/2024	5/1/2024	10

Source: Estimated by LSA Associates, Inc. from the project information provided (September 2022).

The most recent version of CalEEMod (Version 2020.4.0) was used to develop the construction equipment inventory and calculate the construction emissions. Table I lists the estimated construction equipment that would be used during project construction as estimated by CalEEMod default values. The CalEEMod output is included as Attachment C.

Table I: Diesel Construction Equipment Used by Construction Phase

Construction Phase	Off-Road Equipment Type	Off-Road Equipment Unit Amount	Hours Used per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	3	8	247	0.40
	Tractors/Loaders/Backhoes	4	8	97	0.37
Grading	Excavators	1	8	158	0.38
	Graders	1	8	187	0.41
	Rubber Tired Dozers	1	8	247	0.40
	Tractors/Loaders/Backhoes	3	8	97	0.37
Building Construction	Cranes	1	7	231	0.29
	Forklifts	3	8	89	0.20
	Generator Sets	1	8	84	0.74
	Tractors/Loaders/Backhoes	3	7	97	0.37
	Welders	1	8	46	0.45
Architectural Coating	Air Compressors	1	6	78	0.48
Paving	Pavers	2	8	130	0.42
	Paving Equipment	2	8	132	0.36
	Rollers	2	8	80	0.38

Source: CalEEMod defaults.

The emissions rates shown in Table J are from the CalEEMod output tables listed as "Mitigated Construction," even though the only measures that have been applied to the analysis are the required construction emissions control measures, or standard conditions. They are also the combination of the on- and off-site emissions and the greater of summer and winter emissions. No exceedances of any criteria pollutants are expected. Standard measures are documented in the CalEEMod output in Attachment C.

Table J: Short-Term Regional Construction Emissions

Construction Phase	Total Regional Pollutant Emissions (lbs/day)							
	VOCs	NO_X	CO	SO_X	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Site Preparation	3	28	19	<1	9	1	5	1
Grading	2	34	20	<1	6	<1	2	<1
Building Construction	2	16	21	<1	2	<1	<1	<1
Architectural Coating	58	1	3	<1	<1	<1	<1	<1
Paving	1	10	15	<1	<1	<1	<1	<1
Peak Daily	**60**	**34**	**24**	**<1**	**10**		**6**	
SCAQMD Threshold	**75**	**100**	**550**	**150**	**150**		**55**	
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**		**No**	

Source: Compiled by LSA Associates, Inc. (September 2022).
Note: It is assumed that the Building Construction and Architectural Coating phases overlap. The PM_{10} and $PM_{2.5}$ fugitive emissions shown are from the CalEEMod Mitigated results; however, the only "mitigation" measures applied in this modeling are required dust control measures per SCAQMD Rule 403.

CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOCs = volatile organic compounds

Fugitive Dust. Fugitive dust emissions are generally associated with land clearing and exposure of soils to the air and wind, as well as cut-and-fill grading operations. Dust generated during construction varies substantially on a project-by-project basis, depending on the level of activity, the specific operations, and weather conditions at the time of construction.

The construction calculations prepared for this project assumed that dust control measures (watering a minimum of two times daily consistent with SCAQMD Rule 403) would be employed to reduce emissions of fugitive dust during site grading. Furthermore, all construction would need to comply with SCAQMD Rule 403 regarding the emission of fugitive dust. Table J lists total construction emissions (i.e., fugitive dust emissions and construction equipment exhausts) that have incorporated the following Rule 403 measures that would be implemented to significantly reduce PM_{10} emissions from construction:

- Water active sites at least twice daily (locations where grading is to occur shall be thoroughly watered prior to earthmoving).
- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 2 ft (0.6 meter) of freeboard (vertical space between the top of the load and the top of the trailer) in accordance with the requirements of California Vehicle Code Section 23114.
- Reduce traffic speeds on all unpaved roads to 15 miles per hour (mph) or less.

These Rule 403 measures were incorporated in the CalEEMod analysis.

Architectural Coatings. Architectural coatings contain VOCs that are part of the O_3 precursors. Based on the proposed project, it is estimated that application of the architectural coatings for the proposed peak construction day would result in a peak of 60 pound per day (lb/day) of VOCs. Therefore, VOC emissions from architectural-coating application would not exceed the SCAQMD VOC threshold of 75 lbs/day.

Localized Impacts Analysis. Table K shows the portion of the construction emissions that would be produced on the project sites compared to the LSTs. Table K shows that the localized construction emissions would not result in a locally significant air quality impact.

Table K: Construction Localized Impacts Analysis

Emissions Sources	Pollutant Emissions (lbs/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
On-Site Emissions	28	18	10	6
LST	**370**	**7,933**	**147**	**41**
Exceeds Threshold?	**No**	**No**	**No**	**No**

Source: Compiled by LSA Associates, Inc. (September 2022).
Note: The SRA is Banning Airport, 4 ac, receptors at 168 meters.
ac = acre
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
LST = localized significance threshold
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SRA = Source Receptor Area

Odors from Construction Activities. Heavy-duty equipment in the project area during construction would emit odors, primarily from the equipment exhaust. However, the construction-produced odors would cease to occur after individual construction is completed. No other sources of objectionable odors have been identified for the proposed project, and no mitigation measures are required.

SCAQMD Rule 402 regarding nuisances states,

> "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property."

The proposed uses are not anticipated to emit any objectionable odors. Therefore, objectionable odors posing a health risk to potential on-site and existing off-site uses would not occur as a result of the proposed project.

Construction Emissions Conclusions. Tables J and K show that daily regional construction emissions and localized emissions would not exceed the established thresholds of any criteria pollutant emission thresholds established by SCAQMD; thus, during construction, there would be no air quality impacts.

Operational Emissions. Long-term air pollutant emission impacts are those associated with mobile sources (e.g., vehicle trips), energy sources (e.g., electricity and natural gas) and area sources (e.g., architectural coatings and the use of landscape maintenance equipment) related to the proposed project.

PM_{10} emissions result from running exhaust, tire and brake wear, and the entrainment of dust into the atmosphere from vehicles traveling on paved roadways. Entrainment of PM_{10} occurs when vehicle tires pulverize small rocks and pavement and the vehicle wakes generate airborne dust. The contribution of tire and brake wear is small compared to the other PM emission processes. Gasoline-powered engines have small rates of particulate matter emissions compared with diesel-powered vehicles. Based on the Traffic Impact Analysis prepared for the project, the proposed project would generate a total of 203 vehicle trips and 71 truck trips, which was accounted for in the CalEEMod analysis.

Energy source emissions result from activities in buildings for which natural gas are used. The quantity of emissions is the product of usage intensity (i.e., the amount of natural gas) and the emission factor of the fuel source. Major sources of energy demand include building mechanical systems, such as heating and air conditioning, lighting, and plug-in electronics, such as computers. Greater building or appliance efficiency reduces the amount of energy for a given activity and thus lowers the resultant emissions. The emission factor is determined by the fuel source, with cleaner energy sources, like renewable energy, producing fewer emissions than conventional sources.

Typically, area source emissions consist of direct sources of air emissions located at the project site, including architectural coatings and the use of landscape maintenance equipment. Area source emissions associated with the project would include emissions from the use of landscaping equipment and the use of consumer products.

While it is unknown what type of warehouse material handling equipment would be used, LSA assumed that two forklifts and two “other equipment”, all diesel-powered as a "worst-case" fuel.

Emission estimates for operation of the project were calculated using CalEEMod and are shown in Table L, below. The peak daily emissions associated with project operations are identified in Table L for VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$.

Table L: Project Operation Emissions (pounds/day)

	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Area Source Emissions	3	<1	<1	0	<1	<1
Energy Source Emissions	<1	<1	<1	<1	<1	<1
Mobile Source Emissions	1	2	16	<1	4	1
Warehouse Equipment Emissions	<1	5	6	<1	<1	<1
Total Project Emissions	**4**	**7**	**22**	**<1**	**4**	**1**
SCAQMD Significance Threshold	**55**	**55**	**550**	**150**	**150**	**55**
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: LSA (September 2022).

The results shown in Table L indicate the project would not exceed the significance criteria for peak daily VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions; therefore, operation of the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State AAQS.

Emission calculations sheets are attached.

Localized Impacts Analysis. By design, the localized impacts analysis only includes on-site sources; however, the CalEEMod outputs do not separate on-site and off-site emissions for operations. Table M shows that the operational emission rates would not exceed the LSTs for sensitive receptors in the project area. Therefore, the proposed operational activity would not result in a locally significant air quality impact. The proposed project would be less than significant.

Table M: Long-Term Operational Localized Impacts Analysis

Emissions Sources	Pollutant Emissions (lbs/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
On-Site Emissions	5	7	<1	<1
LST	**370**	**7,933**	**36**	**10**
Exceeds Threshold?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (September 2022).
Note: The SRA is Banning Airport, 4 ac, receptors at 168 meters. On-site traffic is assumed to be 5% of the total.
ac = acre
CO = carbon monoxide
LST = local significance threshold
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SRA = Source Receptor Area

Objectionable Odors. The SCAQMD addresses odor criteria within the CEQA Handbook. The district has not established a rule or standard regarding odor emissions, rather, the district has a nuisance rule: "Any project with the potential to frequently expose members of the public to objectionable odors should be deemed to have a significant impact."

The proposed project would not include any activities or operations that would generate objectionable odors. Therefore, the proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Greenhouse Gas Impacts

Generate Greenhouse Gas Emissions. This section discusses the project's impacts related to the release of GHG emissions for the construction and operational phases of the project.

Emissions Background. Estimation of GHG emissions in the future does not account for all changes in technology that may reduce such emissions; therefore, the estimates are based on past performance and represent a scenario that is worse than that which is likely to be encountered (after energy-efficient technologies have been implemented). While information is presented below to assist the public and decision-makers in understanding the project's potential contribution to GCC impacts, the information available is not sufficiently detailed to allow a direct comparison between particular project characteristics and particular climate change impacts or between any particular proposed mitigation measure and any reduction in climate change impacts.

Construction and operation of the proposed project would generate GHG emissions, with the majority of energy consumption (and associated generation of GHG emissions) occurring during the project's operation.

Overall, the following activities associated with the proposed project could directly or indirectly contribute to the generation of GHG emissions.

Construction Activities. Construction activities associated with maximum buildout would produce combustion emissions from various sources. During construction, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each

of which typically use fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO_2, CH_4, and N_2O. Furthermore, CH_4 is emitted during the fueling of heavy equipment. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change. Table N lists the total GHG emissions for each phase of construction and that the total GHG emissions for construction of the proposed project would be 578 MT CO_2e.

The SCAQMD does not provide a separate GHG significance threshold for construction emissions, rather their guidance specifies that construction emissions should be amortized over 30 years (a typical project lifetime), added to the project operational emissions, and that total compared to the GHG significance threshold. Table N shows that the 30-year amortized GHG emissions would be 19 MT CO_2e per year.

Operational GHG Emissions. Long-term GHG emissions are typically generated from mobile sources (e.g., cars, trucks and buses), area sources (e.g., maintenance activities and landscaping), indirect emissions from sources associated with energy consumption, waste sources (land filling and waste disposal), and water sources (water supply and conveyance, treatment, and distribution). Mobile-source GHG emissions would include project-generated vehicle and truck trips to and from the project. Area-source emissions would be associated with activities such as landscaping and maintenance on the project site. Waste source emissions generated by the proposed project include energy generated by land filling and other methods of disposal related to transporting and managing project generated waste.

As described above, this analysis evaluates potential operational emissions associated with the proposed project. Operational GHG emissions were estimated using CalEEMod and the results are presented in Table O.

Table N: Construction Greenhouse Gas Emissions

Construction Phase	Total Emissions per Phase (MT)			Total Emissions per Phase (MT CO_2e)
	CO_2	CH_4	N_2O	
Site Preparation	17	<1	<1	18
Grading	99	<1	<1	103
Building Construction	414	<1	<1	419
Architectural Coating	2	<1	<1	2
Paving	35	<1	<1	35
Total Emissions for the Entire Construction Process				**578**
Total Construction Emissions Amortized over 30 Years				**19**

Source: Compiled by LSA Associates, Inc. (September 2022).

CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
MT CO_2e = metric tons of carbon dioxide equivalent
MT = metric tons
N_2O = nitrous oxide

Table O: Long Term Operational GHG Emissions

Source	Pollutant Emissions (MT per year)					
	Bio-CO_2	**NBio-CO_2**	**Total CO_2**	**CH_4**	**N_2O**	**CO_2e**
Construction Emissions Amortized over 30 Years						19
Operational Emissions						
Area	0	<1	<1	<1	0	<1
Energy	0	70	70	<1	<1	70
Mobile	0	627	627	<1	<1	635
Offroad	0	93	93	<1	0	94
Waste	23	0	23	1	0	56
Water	9	63	72	<1	<1	101
Total Project Emissions	**32**	**853**	**885**	**1**	**<1**	**976**
SCAQMD Post-2020-Adjusted Tier 3 Threshold						**2,520**
Exceeds?						**No**

Source: Compiled by LSA (September 2022).
Bio-CO_2 = biologically generated CO_2
CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
N_2O = nitrous oxide
NBio-CO_2 = non-biologically generated CO_2

As shown in Table O, the project would generate 976 metric tons of CO_2e per year. This is less than SCAQMD's threshold of 3,000 MT CO_2e per year and less than the post-2020-adjusted Tier 3 threshold of 2,520 MT CO_2e per year.

Energy.

The proposed project would increase the demand for electricity, natural gas, and gasoline when compared to the existing condition of the site. The discussion and analysis provided below is based on the data included in the CalEEMod output, which is included as Attachment C.

Construction-Period Energy Use. The anticipated construction schedule assumes that the proposed project would be built over approximately 12 months. The proposed project would require site preparation, grading, building construction, paving, and architectural coating during construction.

Construction of the proposed project would require energy for the manufacture and transportation of building materials and for preparation of the site for grading activities and building construction. Petroleum fuels (e.g., diesel and gasoline) would be the primary sources of energy for these activities.

Construction activities are not anticipated to result in an inefficient use of energy because gasoline and diesel fuel would be supplied by construction contractors who would conserve the use of their supplies to minimize their costs on the proposed project. Energy usage on the project site during construction would be temporary in nature and would be relatively small in comparison to the State's available energy sources. Therefore, construction energy impacts would be less than significant, and no mitigation would be required.

Operational Energy Use. Energy use includes both direct and indirect sources of emissions. Direct sources of emissions include on-site natural gas usage for heating, while indirect sources include electricity generated by off-site power plants. Natural gas use in CalEEMod is measured in units of a thousand British thermal units (kBTU) per year; however, this analysis converts the results to natural gas in units of therms. Electricity use in CalEEMod is measured in kilowatt hours (kWh) per year.

CalEEMod divides building electricity and natural gas use into uses that are subject to Title 24 standards and those that are not. For electricity, Title 24 uses include the major building envelope systems covered by Part 6 (California Energy Code) of Title 24 (e.g., space heating, space cooling, water heating, and ventilation). Non-Title 24 uses include all other end uses (e.g., appliances, electronics, and other miscellaneous plug-in uses). Because some lighting is not considered as part of the building envelope energy budget, CalEEMod considers lighting as a separate electricity use category.

For natural gas, uses are likewise categorized as Title 24 or non-Title 24. Title 24 uses include building heating and hot water end uses. Non-Title 24 natural gas uses include appliances.

Table P shows the estimated potential increased electricity, natural gas, gasoline, and diesel demand associated with the proposed project. The electricity and natural gas rates are from the CalEEMod analysis, while the gasoline and diesel rates are based on the traffic analysis in conjunction with United States Department of Transportation (DOT) fuel efficiency data (see Attachment D).

Table P: Estimated Annual Energy Use of the Proposed Project

Land Use	Electricity Use (kWh/yr)	Natural Gas Use (kBTU/yr)	Gasoline (gal/yr)	Diesel (gal/yr)
Industrial	320,865	238,760	71,187	40,496

Source: Compiled by LSA Associates, Inc. (September 2022).
gal/yr = gallons per year
kBTU = thousand British thermal units
kWh = kilowatt-hours

As shown in Table P, the estimated potential increased electricity demand associated with the proposed project is 320,865 kWh per year. In 2019, California consumed approximately 277,750 gigawatt hours (GWh) or 277,750,000,000 kWh. Of this total, Riverside County consumed 16,857.9 GWh or 16,857,930,966 kWh (California Energy Commission n.d.-a). Therefore, electricity demand associated with the proposed project would be approximately less than 0.01 percent of Riverside County's total electricity demand.

Also shown in Table P, the estimated potential increased natural gas demand associated with the proposed project is 238,760 kBTU per year or 2,388 therms (California Energy Commission n.d.-b). In 2019, California consumed approximately 12,571,000,000 therms, while Riverside County consumed 436.9 million therms (436,941,555 therms). Therefore, operation of the proposed project would negligibly increase the annual natural gas consumption in Riverside County by less than 0.01 percent.

Furthermore, the proposed project would result in energy usage associated with gasoline and diesel to fuel project-related trips. The average fuel economy for light-duty vehicles (automobiles, pickups, vans, and sport utility vehicles) in the United States has steadily increased, from about 14.9 miles per gallon (mpg) in 1980 to 22.9 mpg in 2020 (DOT 2017). The average fuel economy for heavy-duty trucks in the United States has also steadily increased, from 5.7 mpg in 2013 to a projected 8.0 mpg in 2021 (CEC 2015).

Using the EPA gasoline fuel economy estimates for 2020, the California diesel fuel economy estimates for 2021, and the traffic data from the project traffic analyses, the proposed project would result in the annual consumption of 71,187 gallons of gasoline and 40,496 gallons of diesel fuel. In 2019, vehicles in California consumed approximately 15.6 billion gallons of gasoline and 3.8 billion gallons of diesel fuel (CEC n.d.-c). Therefore, gasoline and diesel demand generated by vehicle trips associated with the proposed project would be a minimal fraction of gasoline and diesel fuel consumption in California and, by extension, in Riverside County.

In addition, vehicles associated with trips to and from the project site would be subject to fuel economy and efficiency standards, which are applicable throughout the State. As such, the fuel efficiency of vehicles associated with project operations would increase throughout the life of the proposed project. Therefore, implementation of the proposed project would not result in a substantial increase in transportation-related energy uses.

Energy Use Summary. As described above, the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of fuel or energy and would incorporate renewable energy or energy efficiency measures into building design, equipment uses, and transportation. Impacts would be less than significant, and no mitigation measures would be necessary.

Consistency with State and Local Plans for Renewable Energy and Energy Efficiency. As indicated above, energy usage on the project site during construction would be temporary in nature. In addition, energy usage associated with operation of the proposed project would be relatively small in comparison to the State's available energy sources and energy impacts would be negligible at the regional level. Because California's energy conservation planning actions are conducted at a regional level, and because the project's total impacts to regional energy supplies would be minor, the proposed project would not conflict with California's energy conservation plans as described in the CEC's 2021 Integrated Energy Policy Report. In addition, the proposed project would comply with Title 24 and CALGreen standards. Thus, as shown above, the proposed project would avoid or reduce the inefficient, wasteful, and unnecessary consumption of energy and would not result in any irreversible or irretrievable commitments of energy. Therefore, the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. Impacts would be less than significant, and no mitigation measures would be necessary.

CONCLUSION

Based on the analysis presented above, operational emissions associated with the proposed project would not exceed SCAQMD established significance thresholds. The proposed project is not expected to result in significant localized emissions that would affect nearby sensitive receptors. The

proposed project would also not result in objectionable odors affecting a substantial number of people. GHG emissions released during construction and operation of the project are estimated to be lower than the significance thresholds and would not be cumulatively considerable. The proposed project would also not result in the wasteful, inefficient, or unnecessary consumption of energy resources.

Attachments: A – References
B – Figures
C – CalEEMod Output
D – Energy Worksheet

ATTACHMENT A

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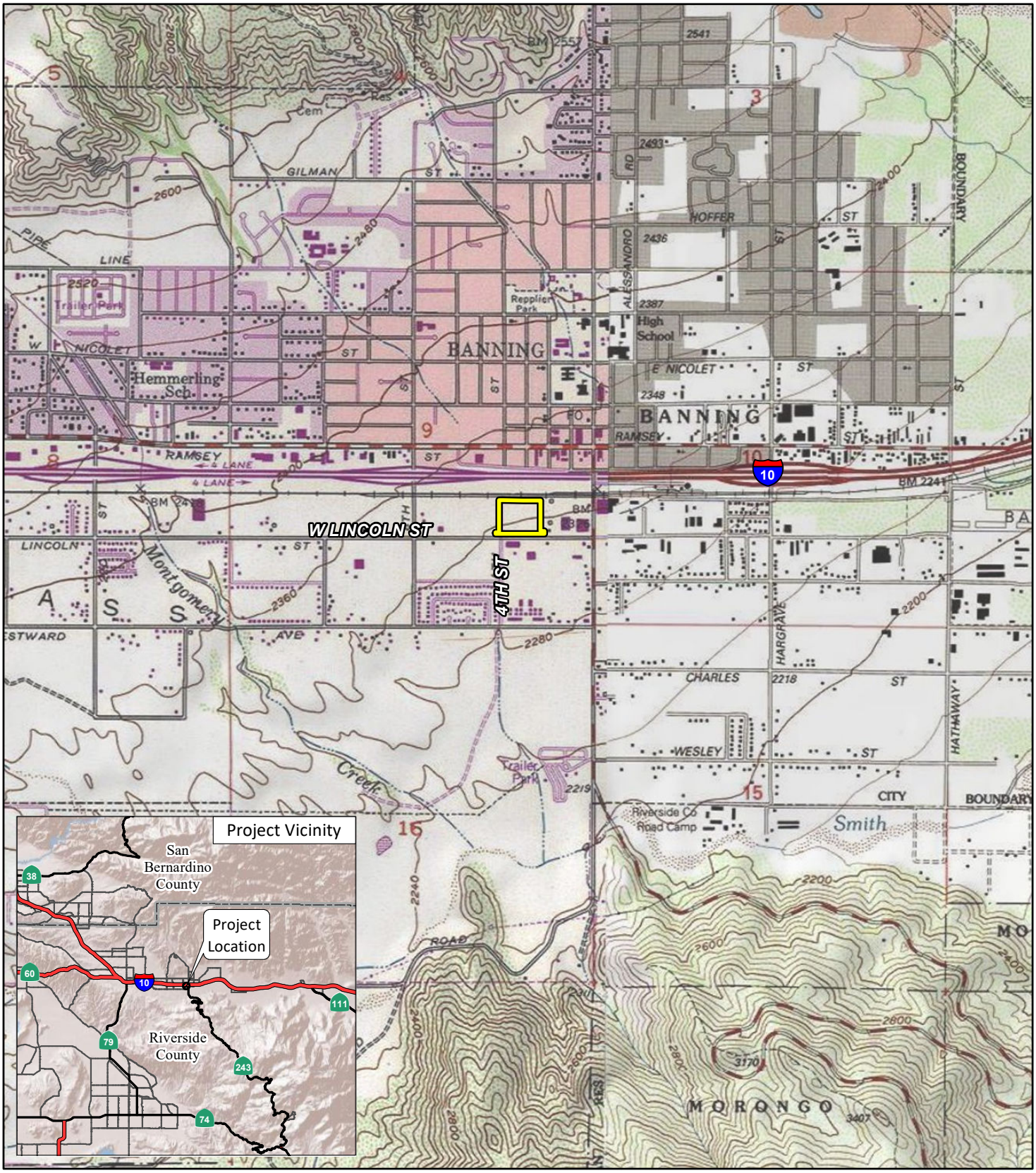
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ATTACHMENT B

FIGURES



LSA

LEGEND

Project Location

FIGURE 1

N

0 1000 2000

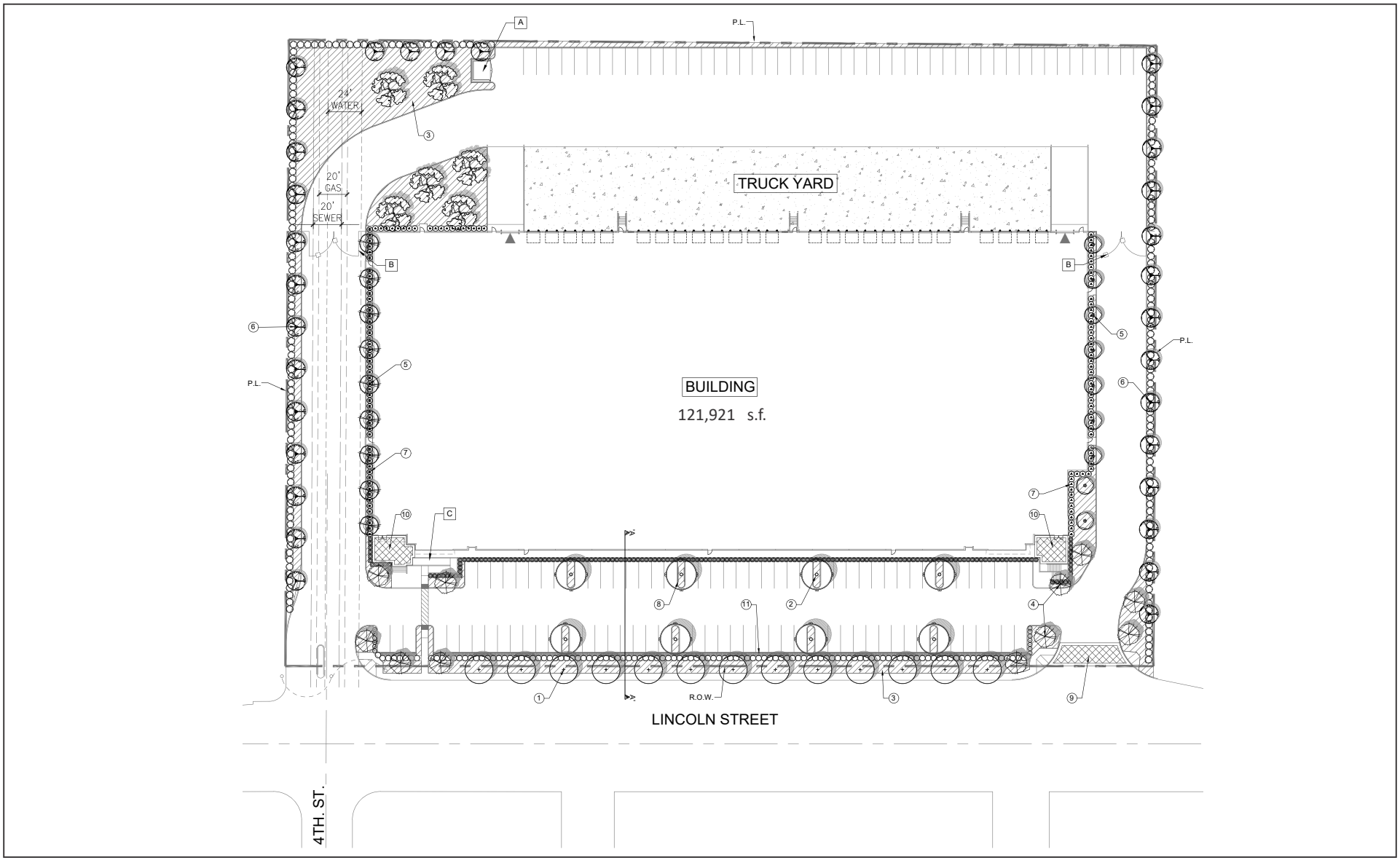
FEET

SOURCE: USGS 7.5' Quad - *Beaumont* (1988) and *Cabazon* (1988), CA

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First Lincoln Industrial Project

Regional and Project Location



LSA

FIGURE 2

0 15 30
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Source: HPA Architecture

First Lincoln Industrial Project

Site Plan

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ATTACHMENT C

CALEEMOD OUTPUT

First Lincoln Logistics Warehouse - South Coast Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

First Lincoln Logistics Warehouse

South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	118.79	1000sqft	2.73	118,786.00	0
Other Non-Asphalt Surfaces	32.56	1000sqft	0.75	32,563.00	0
Parking Lot	2.97	Acre	2.97	129,373.20	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Plans show 129,373sf of parking and 32,563sf of landscaping

Construction Phase - Conctruction schedule dates may change to September 2023-July 2024 per ERSC review.

Grading - Construction will require 29,000 CY of soil export and 9,000 CY of import for a net 20,000 CY soil export

Architectural Coating - Assume all Architectural Coatings comply with Rule 1113

Vehicle Trips - Trip generation of 1.71 per traffic study, assume the average haul trucks trip length is 40 miles and the divert and pass-by are accounted for in the traffic study's rate of 1.71

Area Coating - Area AC would comply with Rule 1113

Construction Off-road Equipment Mitigation - Dust Control measures as required by SCAQMD Rule 403

Date: 10/26/2022 3:02 PM

First Lincoln Logistics Warehouse - South Coast Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Area Mitigation - .

Operational Off-Road Equipment - Assume 2 diesel forklifts and two other diesel equipment for the warehouse operations and that diesel is a "worst-case" fuel.

Fleet Mix - Traffic did not include Fleet Mix info for specific trucks/vehicles except for showing 132 cars and 71 vehicles

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Parking	100	50
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	230.00	200.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	20.00	33.00
tblConstructionPhase	PhaseEndDate	5/29/2024	4/17/2024
tblConstructionPhase	PhaseEndDate	7/24/2024	5/1/2024
tblConstructionPhase	PhaseEndDate	6/26/2024	4/17/2024
tblConstructionPhase	PhaseStartDate	6/27/2024	4/18/2024
tblConstructionPhase	PhaseStartDate	5/30/2024	3/4/2024
tblGrading	MaterialExported	0.00	20,000.00
tblLandUse	LandUseSquareFeet	118,790.00	118,786.00
tblLandUse	LandUseSquareFeet	32,560.00	32,563.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblVehicleTrips	CW_TL	16.60	40.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00

First Lincoln Logistics Warehouse - South Coast Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	ST_TR	1.74	1.71
tblVehicleTrips	SU_TR	1.74	1.71
tblVehicleTrips	WD_TR	1.74	1.71

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.1550	1.4822	1.5552	4.0600e-003	0.2910	0.0589	0.3499	0.1176	0.0551	0.1727	0.0000	370.0947	370.0947	0.0554	0.0204	377.5462
2024	0.3813	0.7674	1.0569	2.2200e-003	0.0658	0.0326	0.0985	0.0177	0.0305	0.0483	0.0000	197.7195	197.7195	0.0343	5.6100e-003	200.2490
Maximum	**0.3813**	**1.4822**	**1.5552**	**4.0600e-003**	**0.2910**	**0.0589**	**0.3499**	**0.1176**	**0.0551**	**0.1727**	**0.0000**	**370.0947**	**370.0947**	**0.0554**	**0.0204**	**377.5462**

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					

First Lincoln Logistics Warehouse - South Coast Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2023	0.1550	1.4822	1.5552	4.0600e-003	0.1974	0.0589	0.2563	0.0709	0.0551	0.1260	0.0000	370.0945	370.0945	0.0554	0.0204	377.5460
2024	0.3813	0.7674	1.0569	2.2200e-003	0.0658	0.0326	0.0985	0.0177	0.0305	0.0483	0.0000	197.7194	197.7194	0.0343	5.6100e-003	200.2489
Maximum	**0.3813**	**1.4822**	**1.5552**	**4.0600e-003**	**0.1974**	**0.0589**	**0.2563**	**0.0709**	**0.0551**	**0.1260**	**0.0000**	**370.0945**	**370.0945**	**0.0554**	**0.0204**	**377.5460**

	ROG	NOx	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**	**26.24**	**0.00**	**20.88**	**34.51**	**0.00**	**21.13**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-1-2023	8-31-2023	0.8322	0.8322
2	9-1-2023	11-30-2023	0.5980	0.5980
3	12-1-2023	2-29-2024	0.5760	0.5760
4	3-1-2024	5-31-2024	0.7648	0.7648
		Highest	0.8322	0.8322

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	0.4685	2.0000e-005	1.9700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8300e-003	3.8300e-003	1.0000e-005	0.0000	4.0800e-003
Energy	1.2900e-003	0.0117	9.8300e-003	7.0000e-005		8.9000e-004	8.9000e-004		8.9000e-004	8.9000e-004	0.0000	69.6450	69.6450	5.0500e-003	8.2000e-004	70.0142
Mobile	0.2071	0.3114	2.7062	6.7700e-003	0.7356	4.7300e-003	0.7403	0.1963	4.4000e-003	0.2007	0.0000	626.6454	626.6454	0.0341	0.0245	634.7869

First Lincoln Logistics Warehouse - South Coast Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Offroad	0.0639	0.6012	0.7955	1.0600e-003		0.0333	0.0333		0.0306	0.0306	0.0000	93.4152	93.4152	0.0302	0.0000	94.1705
Waste						0.0000	0.0000		0.0000	0.0000	22.6660	0.0000	22.6660	1.3395	0.0000	56.1540
Water						0.0000	0.0000		0.0000	0.0000	8.7150	63.4346	72.1496	0.9005	0.0218	101.1532
Total	**0.7408**	**0.9244**	**3.5135**	**7.9000e-003**	**0.7356**	**0.0389**	**0.7745**	**0.1963**	**0.0359**	**0.2322**	**31.3810**	**853.1440**	**884.5250**	**2.3093**	**0.0471**	**956.2829**

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	0.4685	2.0000e-005	1.9700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8300e-003	3.8300e-003	1.0000e-005	0.0000	4.0800e-003
Energy	1.2900e-003	0.0117	9.8300e-003	7.0000e-005		8.9000e-004	8.9000e-004		8.9000e-004	8.9000e-004	0.0000	69.6450	69.6450	5.0500e-003	8.2000e-004	70.0142
Mobile	0.2071	0.3114	2.7062	6.7700e-003	0.7356	4.7300e-003	0.7403	0.1963	4.4000e-003	0.2007	0.0000	626.6454	626.6454	0.0341	0.0245	634.7869
Offroad	0.0639	0.6012	0.7955	1.0600e-003		0.0333	0.0333		0.0306	0.0306	0.0000	93.4152	93.4152	0.0302	0.0000	94.1705
Waste						0.0000	0.0000		0.0000	0.0000	22.6660	0.0000	22.6660	1.3395	0.0000	56.1540
Water						0.0000	0.0000		0.0000	0.0000	8.7150	63.4346	72.1496	0.9005	0.0218	101.1532
Total	**0.7408**	**0.9244**	**3.5135**	**7.9000e-003**	**0.7356**	**0.0389**	**0.7745**	**0.1963**	**0.0359**	**0.2322**	**31.3810**	**853.1440**	**884.5250**	**2.3093**	**0.0471**	**956.2829**

	ROG	NOx	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

First Lincoln Logistics Warehouse - South Coast Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2023	6/14/2023	5	10	
2	Grading	Grading	6/15/2023	7/12/2023	5	20	
3	Building Construction	Building Construction	7/13/2023	4/17/2024	5	200	
4	Paving	Paving	3/4/2024	4/17/2024	5	33	
5	Architectural Coating	Architectural Coating	4/18/2024	5/1/2024	5	10	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 20

Acres of Paving: 3.72

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 178,179; Non-Residential Outdoor: 59,393; Striped Parking Area: 9,716

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	2,500.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	118.00	46.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	24.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

First Lincoln Logistics Warehouse - South Coast Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	tons/yr										MT/yr					
Fugitive Dust					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1376	0.0912	1.9000e-004		6.3300e-003	6.3300e-003		5.8200e-003	5.8200e-003	0.0000	16.7254	16.7254	5.4100e-003	0.0000	16.8606
Total	**0.0133**	**0.1376**	**0.0912**	**1.9000e-004**	**0.0983**	**6.3300e-003**	**0.1046**	**0.0505**	**5.8200e-003**	**0.0563**	**0.0000**	**16.7254**	**16.7254**	**5.4100e-003**	**0.0000**	**16.8606**

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	2.8000e-004	2.2000e-004	2.9300e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.7727	0.7727	2.0000e-005	2.0000e-005	0.7791
Total	**2.8000e-004**	**2.2000e-004**	**2.9300e-003**	**1.0000e-005**	**9.9000e-004**	**1.0000e-005**	**9.9000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.7727**	**0.7727**	**2.0000e-005**	**2.0000e-005**	**0.7791**

Mitigated Construction On-Site

First Lincoln Logistics Warehouse - South Coast Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0442	0.0000	0.0442	0.0227	0.0000	0.0227	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1376	0.0912	1.9000e-004		6.3300e-003	6.3300e-003		5.8200e-003	5.8200e-003	0.0000	16.7253	16.7253	5.4100e-003	0.0000	16.8606
Total	**0.0133**	**0.1376**	**0.0912**	**1.9000e-004**	**0.0442**	**6.3300e-003**	**0.0506**	**0.0227**	**5.8200e-003**	**0.0286**	**0.0000**	**16.7253**	**16.7253**	**5.4100e-003**	**0.0000**	**16.8606**

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	2.8000e-004	2.2000e-004	2.9300e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.7727	0.7727	2.0000e-005	2.0000e-005	0.7791
Total	**2.8000e-004**	**2.2000e-004**	**2.9300e-003**	**1.0000e-005**	**9.9000e-004**	**1.0000e-005**	**9.9000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.7727**	**0.7727**	**2.0000e-005**	**2.0000e-005**	**0.7791**

3.3 Grading - 2023

Unmitigated Construction On-Site

First Lincoln Logistics Warehouse - South Coast Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0720	0.0000	0.0720	0.0344	0.0000	0.0344	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1794	0.1475	3.0000e-004		7.7500e-003	7.7500e-003		7.1300e-003	7.1300e-003	0.0000	26.0606	26.0606	8.4300e-003	0.0000	26.2713
Total	**0.0171**	**0.1794**	**0.1475**	**3.0000e-004**	**0.0720**	**7.7500e-003**	**0.0797**	**0.0344**	**7.1300e-003**	**0.0416**	**0.0000**	**26.0606**	**26.0606**	**8.4300e-003**	**0.0000**	**26.2713**

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	2.5700e-003	0.1622	0.0432	7.2000e-004	0.0215	1.0800e-003	0.0226	5.9000e-003	1.0300e-003	6.9400e-003	0.0000	71.9746	71.9746	4.4100e-003	0.0115	75.4965
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	4.7000e-004	3.6000e-004	4.8900e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.2878	1.2878	3.0000e-005	3.0000e-005	1.2985
Total	**3.0400e-003**	**0.1625**	**0.0481**	**7.3000e-004**	**0.0232**	**1.0900e-003**	**0.0243**	**6.3400e-003**	**1.0400e-003**	**7.3900e-003**	**0.0000**	**73.2624**	**73.2624**	**4.4400e-003**	**0.0115**	**76.7950**

First Lincoln Logistics Warehouse - South Coast Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					0.0324	0.0000	0.0324	0.0155	0.0000	0.0155	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1794	0.1475	3.0000e-004		7.7500e-003	7.7500e-003		7.1300e-003	7.1300e-003	0.0000	26.0606	26.0606	8.4300e-003	0.0000	26.2713
Total	**0.0171**	**0.1794**	**0.1475**	**3.0000e-004**	**0.0324**	**7.7500e-003**	**0.0401**	**0.0155**	**7.1300e-003**	**0.0226**	**0.0000**	**26.0606**	**26.0606**	**8.4300e-003**	**0.0000**	**26.2713**

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	2.5700e-003	0.1622	0.0432	7.2000e-004	0.0215	1.0800e-003	0.0226	5.9000e-003	1.0300e-003	6.9400e-003	0.0000	71.9746	71.9746	4.4100e-003	0.0115	75.4965
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	4.7000e-004	3.6000e-004	4.8900e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.2878	1.2878	3.0000e-005	3.0000e-005	1.2985
Total	**3.0400e-003**	**0.1625**	**0.0481**	**7.3000e-004**	**0.0232**	**1.0900e-003**	**0.0243**	**6.3400e-003**	**1.0400e-003**	**7.3900e-003**	**0.0000**	**73.2624**	**73.2624**	**4.4400e-003**	**0.0115**	**76.7950**

First Lincoln Logistics Warehouse - South Coast Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0959	0.8775	0.9909	1.6400e-003		0.0427	0.0427		0.0402	0.0402	0.0000	141.4009	141.4009	0.0336	0.0000	142.2418
Total	**0.0959**	**0.8775**	**0.9909**	**1.6400e-003**		**0.0427**	**0.0427**		**0.0402**	**0.0402**	**0.0000**	**141.4009**	**141.4009**	**0.0336**	**0.0000**	**142.2418**

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	2.9500e-003	0.1078	0.0400	5.1000e-004	0.0177	5.7000e-004	0.0183	5.1100e-003	5.4000e-004	5.6500e-003	0.0000	50.0757	50.0757	1.8500e-003	7.2700e-003	52.2880
Worker	0.0224	0.0172	0.2346	6.7000e-004	0.0790	4.5000e-004	0.0794	0.0210	4.2000e-004	0.0214	0.0000	61.7971	61.7971	1.5900e-003	1.5900e-003	62.3103
Total	**0.0253**	**0.1250**	**0.2746**	**1.1800e-003**	**0.0967**	**1.0200e-003**	**0.0977**	**0.0261**	**9.6000e-004**	**0.0270**	**0.0000**	**111.8727**	**111.8727**	**3.4400e-003**	**8.8600e-003**	**114.5984**

First Lincoln Logistics Warehouse - South Coast Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.0959	0.8775	0.9909	1.6400e-003		0.0427	0.0427		0.0402	0.0402	0.0000	141.4007	141.4007	0.0336	0.0000	142.2417
Total	**0.0959**	**0.8775**	**0.9909**	**1.6400e-003**		**0.0427**	**0.0427**		**0.0402**	**0.0402**	**0.0000**	**141.4007**	**141.4007**	**0.0336**	**0.0000**	**142.2417**

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	2.9500e-003	0.1078	0.0400	5.1000e-004	0.0177	5.7000e-004	0.0183	5.1100e-003	5.4000e-004	5.6500e-003	0.0000	50.0757	50.0757	1.8500e-003	7.2700e-003	52.2880
Worker	0.0224	0.0172	0.2346	6.7000e-004	0.0790	4.5000e-004	0.0794	0.0210	4.2000e-004	0.0214	0.0000	61.7971	61.7971	1.5900e-003	1.5900e-003	62.3103
Total	**0.0253**	**0.1250**	**0.2746**	**1.1800e-003**	**0.0967**	**1.0200e-003**	**0.0977**	**0.0261**	**9.6000e-004**	**0.0270**	**0.0000**	**111.8727**	**111.8727**	**3.4400e-003**	**8.8600e-003**	**114.5984**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

First Lincoln Logistics Warehouse - South Coast Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0574	0.5243	0.6305	1.0500e-003		0.0239	0.0239		0.0225	0.0225	0.0000	90.4212	90.4212	0.0214	0.0000	90.9557
Total	**0.0574**	**0.5243**	**0.6305**	**1.0500e-003**		**0.0239**	**0.0239**		**0.0225**	**0.0225**	**0.0000**	**90.4212**	**90.4212**	**0.0214**	**0.0000**	**90.9557**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.8400e-003	0.0692	0.0252	3.2000e-004	0.0113	3.7000e-004	0.0117	3.2600e-003	3.5000e-004	3.6100e-003	0.0000	31.5605	31.5605	1.1800e-003	4.5900e-003	32.9574
Worker	0.0134	9.8300e-003	0.1397	4.2000e-004	0.0505	2.8000e-004	0.0508	0.0134	2.6000e-004	0.0137	0.0000	38.3547	38.3547	9.2000e-004	9.5000e-004	38.6594
Total	**0.0152**	**0.0790**	**0.1648**	**7.4000e-004**	**0.0618**	**6.5000e-004**	**0.0625**	**0.0167**	**6.1000e-004**	**0.0173**	**0.0000**	**69.9151**	**69.9151**	**2.1000e-003**	**5.5400e-003**	**71.6168**

Mitigated Construction On-Site

First Lincoln Logistics Warehouse - South Coast Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0574	0.5243	0.6305	1.0500e-003		0.0239	0.0239		0.0225	0.0225	0.0000	90.4210	90.4210	0.0214	0.0000	90.9556
Total	**0.0574**	**0.5243**	**0.6305**	**1.0500e-003**		**0.0239**	**0.0239**		**0.0225**	**0.0225**	**0.0000**	**90.4210**	**90.4210**	**0.0214**	**0.0000**	**90.9556**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.8400e-003	0.0692	0.0252	3.2000e-004	0.0113	3.7000e-004	0.0117	3.2600e-003	3.5000e-004	3.6100e-003	0.0000	31.5605	31.5605	1.1800e-003	4.5900e-003	32.9574
Worker	0.0134	9.8300e-003	0.1397	4.2000e-004	0.0505	2.8000e-004	0.0508	0.0134	2.6000e-004	0.0137	0.0000	38.3547	38.3547	9.2000e-004	9.5000e-004	38.6594
Total	**0.0152**	**0.0790**	**0.1648**	**7.4000e-004**	**0.0618**	**6.5000e-004**	**0.0625**	**0.0167**	**6.1000e-004**	**0.0173**	**0.0000**	**69.9151**	**69.9151**	**2.1000e-003**	**5.5400e-003**	**71.6168**

3.5 Paving - 2024

Unmitigated Construction On-Site

First Lincoln Logistics Warehouse - South Coast Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0163	0.1572	0.2413	3.8000e-004		7.7300e-003	7.7300e-003		7.1100e-003	7.1100e-003	0.0000	33.0438	33.0438	0.0107	0.0000	33.3110
Paving	3.8900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0202**	**0.1572**	**0.2413**	**3.8000e-004**		**7.7300e-003**	**7.7300e-003**		**7.1100e-003**	**7.1100e-003**	**0.0000**	**33.0438**	**33.0438**	**0.0107**	**0.0000**	**33.3110**

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	7.2000e-004	5.3000e-004	7.5100e-003	2.0000e-005	2.7200e-003	1.0000e-005	2.7300e-003	7.2000e-004	1.0000e-005	7.3000e-004	0.0000	2.0628	2.0628	5.0000e-005	5.0000e-005	2.0791
Total	**7.2000e-004**	**5.3000e-004**	**7.5100e-003**	**2.0000e-005**	**2.7200e-003**	**1.0000e-005**	**2.7300e-003**	**7.2000e-004**	**1.0000e-005**	**7.3000e-004**	**0.0000**	**2.0628**	**2.0628**	**5.0000e-005**	**5.0000e-005**	**2.0791**

First Lincoln Logistics Warehouse - South Coast Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.0163	0.1572	0.2413	3.8000e-004		7.7300e-003	7.7300e-003		7.1100e-003	7.1100e-003	0.0000	33.0437	33.0437	0.0107	0.0000	33.3109
Paving	3.8900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0202**	**0.1572**	**0.2413**	**3.8000e-004**		**7.7300e-003**	**7.7300e-003**		**7.1100e-003**	**7.1100e-003**	**0.0000**	**33.0437**	**33.0437**	**0.0107**	**0.0000**	**33.3109**

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	7.2000e-004	5.3000e-004	7.5100e-003	2.0000e-005	2.7200e-003	1.0000e-005	2.7300e-003	7.2000e-004	1.0000e-005	7.3000e-004	0.0000	2.0628	2.0628	5.0000e-005	5.0000e-005	2.0791
Total	**7.2000e-004**	**5.3000e-004**	**7.5100e-003**	**2.0000e-005**	**2.7200e-003**	**1.0000e-005**	**2.7300e-003**	**7.2000e-004**	**1.0000e-005**	**7.3000e-004**	**0.0000**	**2.0628**	**2.0628**	**5.0000e-005**	**5.0000e-005**	**2.0791**

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3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2865					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0000e-004	6.0900e-003	9.0500e-003	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	1.2766	1.2766	7.0000e-005	0.0000	1.2784
Total	**0.2874**	**6.0900e-003**	**9.0500e-003**	**1.0000e-005**		**3.0000e-004**	**3.0000e-004**		**3.0000e-004**	**3.0000e-004**	**0.0000**	**1.2766**	**1.2766**	**7.0000e-005**	**0.0000**	**1.2784**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5000e-004	2.6000e-004	3.6400e-003	1.0000e-005	1.3200e-003	1.0000e-005	1.3200e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.0001	1.0001	2.0000e-005	2.0000e-005	1.0081
Total	**3.5000e-004**	**2.6000e-004**	**3.6400e-003**	**1.0000e-005**	**1.3200e-003**	**1.0000e-005**	**1.3200e-003**	**3.5000e-004**	**1.0000e-005**	**3.6000e-004**	**0.0000**	**1.0001**	**1.0001**	**2.0000e-005**	**2.0000e-005**	**1.0081**

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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	0.2865					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0000e-004	6.0900e-003	9.0500e-003	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	1.2766	1.2766	7.0000e-005	0.0000	1.2784
Total	**0.2874**	**6.0900e-003**	**9.0500e-003**	**1.0000e-005**		**3.0000e-004**	**3.0000e-004**		**3.0000e-004**	**3.0000e-004**	**0.0000**	**1.2766**	**1.2766**	**7.0000e-005**	**0.0000**	**1.2784**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5000e-004	2.6000e-004	3.6400e-003	1.0000e-005	1.3200e-003	1.0000e-005	1.3200e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.0001	1.0001	2.0000e-005	2.0000e-005	1.0081
Total	**3.5000e-004**	**2.6000e-004**	**3.6400e-003**	**1.0000e-005**	**1.3200e-003**	**1.0000e-005**	**1.3200e-003**	**3.5000e-004**	**1.0000e-005**	**3.6000e-004**	**0.0000**	**1.0001**	**1.0001**	**2.0000e-005**	**2.0000e-005**	**1.0081**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2071	0.3114	2.7062	6.7700e-003	0.7356	4.7300e-003	0.7403	0.1963	4.4000e-003	0.2007	0.0000	626.6454	626.6454	0.0341	0.0245	634.7869
Unmitigated	0.2071	0.3114	2.7062	6.7700e-003	0.7356	4.7300e-003	0.7403	0.1963	4.4000e-003	0.2007	0.0000	626.6454	626.6454	0.0341	0.0245	634.7869

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	203.13	203.13	203.13	1,954,151	1,954,151
Total	203.13	203.13	203.13	1,954,151	1,954,151

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

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Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	40.00	8.40	6.90	59.00	0.00	41.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.543401	0.061496	0.184986	0.128935	0.023820	0.006437	0.011961	0.008652	0.000812	0.000508	0.024540	0.000745	0.003706
Parking Lot	0.543401	0.061496	0.184986	0.128935	0.023820	0.006437	0.011961	0.008652	0.000812	0.000508	0.024540	0.000745	0.003706
Unrefrigerated Warehouse-No Rail	0.543401	0.061496	0.184986	0.128935	0.023820	0.006437	0.011961	0.008652	0.000812	0.000508	0.024540	0.000745	0.003706

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	56.9038	56.9038	4.8000e-003	5.8000e-004	57.1974
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	56.9038	56.9038	4.8000e-003	5.8000e-004	57.1974
NaturalGas Mitigated	1.2900e-003	0.0117	9.8300e-003	7.0000e-005		8.9000e-004	8.9000e-004		8.9000e-004	8.9000e-004	0.0000	12.7411	12.7411	2.4000e-004	2.3000e-004	12.8169
NaturalGas Unmitigated	1.2900e-003	0.0117	9.8300e-003	7.0000e-005		8.9000e-004	8.9000e-004		8.9000e-004	8.9000e-004	0.0000	12.7411	12.7411	2.4000e-004	2.3000e-004	12.8169

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	238760	1.2900e-003	0.0117	9.8300e-003	7.0000e-005		8.9000e-004	8.9000e-004		8.9000e-004	8.9000e-004	0.0000	12.7411	12.7411	2.4000e-004	2.3000e-004	12.8169
Total		**1.2900e-003**	**0.0117**	**9.8300e-003**	**7.0000e-005**		**8.9000e-004**	**8.9000e-004**		**8.9000e-004**	**8.9000e-004**	**0.0000**	**12.7411**	**12.7411**	**2.4000e-004**	**2.3000e-004**	**12.8169**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	238760	1.2900e-003	0.0117	9.8300e-003	7.0000e-005		8.9000e-004	8.9000e-004		8.9000e-004	8.9000e-004	0.0000	12.7411	12.7411	2.4000e-004	2.3000e-004	12.8169

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total		**1.2900e-003**	**0.0117**	**9.8300e-003**	**7.0000e-005**		**8.9000e-004**	**8.9000e-004**		**8.9000e-004**	**8.9000e-004**	**0.0000**	**12.7411**	**12.7411**	**2.4000e-004**	**2.3000e-004**	**12.8169**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	45280.6	8.0303	6.8000e-004	8.0000e-005	8.0717
Unrefrigerated Warehouse-No Rail	275584	48.8735	4.1300e-003	5.0000e-004	49.1256
Total		**56.9038**	**4.8100e-003**	**5.8000e-004**	**57.1974**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Parking Lot	45280.6	8.0303	6.8000e-004	8.0000e-005	8.0717
Unrefrigerated Warehouse-No Rail	275584	48.8735	4.1300e-003	5.0000e-004	49.1256
Total		**56.9038**	**4.8100e-003**	**5.8000e-004**	**57.1974**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4685	2.0000e-005	1.9700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8300e-003	3.8300e-003	1.0000e-005	0.0000	4.0800e-003
Unmitigated	0.4685	2.0000e-005	1.9700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8300e-003	3.8300e-003	1.0000e-005	0.0000	4.0800e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0287					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4397					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.8000e-004	2.0000e-005	1.9700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8300e-003	3.8300e-003	1.0000e-005	0.0000	4.0800e-003
Total	**0.4685**	**2.0000e-005**	**1.9700e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.8300e-003**	**3.8300e-003**	**1.0000e-005**	**0.0000**	**4.0800e-003**

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	0.0287					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4397					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.8000e-004	2.0000e-005	1.9700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8300e-003	3.8300e-003	1.0000e-005	0.0000	4.0800e-003
Total	**0.4685**	**2.0000e-005**	**1.9700e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.8300e-003**	**3.8300e-003**	**1.0000e-005**	**0.0000**	**4.0800e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	72.1496	0.9005	0.0218	101.1532
Unmitigated	72.1496	0.9005	0.0218	101.1532

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	27.4702 / 0	72.1496	0.9005	0.0218	101.1532
Total		**72.1496**	**0.9005**	**0.0218**	**101.1532**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	27.4702 / 0	72.1496	0.9005	0.0218	101.1532
Total		**72.1496**	**0.9005**	**0.0218**	**101.1532**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	22.6660	1.3395	0.0000	56.1540
Unmitigated	22.6660	1.3395	0.0000	56.1540

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No	111.66	22.6660	1.3395	0.0000	56.1540
Total		**22.6660**	**1.3395**	**0.0000**	**56.1540**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unrefrigerated Warehouse-No	111.66	22.6660	1.3395	0.0000	56.1540
Total		**22.6660**	**1.3395**	**0.0000**	**56.1540**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	2	8.00	260	89	0.20	Diesel
Other General Industrial Equipment	2	8.00	260	88	0.34	Diesel

UnMitigated/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
Equipment Type	tons/yr										MT/yr					
Forklifts	0.0245	0.2297	0.2962	4.0000e-004		0.0133	0.0133		0.0122	0.0122	0.0000	34.9157	34.9157	0.0113	0.0000	35.1980
Other General Industrial	0.0394	0.3715	0.4993	6.7000e-004		0.0200	0.0200		0.0184	0.0184	0.0000	58.4995	58.4995	0.0189	0.0000	58.9725
Total	**0.0639**	**0.6012**	**0.7955**	**1.0700e-003**		**0.0333**	**0.0333**		**0.0306**	**0.0306**	**0.0000**	**93.4152**	**93.4152**	**0.0302**	**0.0000**	**94.1705**

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

First Lincoln Logistics Warehouse - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

First Lincoln Logistics Warehouse

South Coast Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	118.79	1000sqft	2.73	118,786.00	0
Other Non-Asphalt Surfaces	32.56	1000sqft	0.75	32,563.00	0
Parking Lot	2.97	Acre	2.97	129,373.20	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Plans show 129,373sf of parking and 32,563sf of landscaping

Construction Phase - Conctruction schedule dates may change to September 2023-July 2024 per ERSC review.

Grading - Construction will require 29,000 CY of soil export and 9,000 CY of import for a net 20,000 CY soil export

Architectural Coating - Assume all Architectural Coatings comply with Rule 1113

Vehicle Trips - Trip generation of 1.71 per traffic study, assume the average haul trucks trip length is 40 miles and the divert and pass-by are accounted for in the traffic study's rate of 1.71

Area Coating - Area AC would comply with Rule 1113

Construction Off-road Equipment Mitigation - Dust Control measures as required by SCAQMD Rule 403

Area Mitigation - .

Date: 10/26/2022 3:11 PM

First Lincoln Logistics Warehouse - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Operational Off-Road Equipment - Assume 2 diesel forklifts and two other diesel equipment for the warehouse operations and that diesel is a "worst-case" fuel.

Fleet Mix - Traffic did not include Fleet Mix info for specific trucks/vehicles except for showing 132 cars and 71 vehicles

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Parking	100	50
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	230.00	200.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	20.00	33.00
tblConstructionPhase	PhaseEndDate	5/29/2024	4/17/2024
tblConstructionPhase	PhaseEndDate	7/24/2024	5/1/2024
tblConstructionPhase	PhaseEndDate	6/26/2024	4/17/2024
tblConstructionPhase	PhaseStartDate	6/27/2024	4/18/2024
tblConstructionPhase	PhaseStartDate	5/30/2024	3/4/2024
tblGrading	MaterialExported	0.00	20,000.00
tblLandUse	LandUseSquareFeet	118,790.00	118,786.00
tblLandUse	LandUseSquareFeet	32,560.00	32,563.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblVehicleTrips	CW_TL	16.60	40.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	92.00	100.00

First Lincoln Logistics Warehouse - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblVehicleTrips	ST_TR	1.74	1.71
tblVehicleTrips	SU_TR	1.74	1.71
tblVehicleTrips	WD_TR	1.74	1.71

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	2.7164	33.3558	21.0045	0.1029	19.8582	1.2672	21.1254	10.1558	1.1658	11.3216	0.0000	10,951.3501	10,951.3501	1.4194	1.2648	11,363.7319
2024	57.5606	24.9120	35.7451	0.0706	1.7811	1.0992	2.8803	0.4790	1.0243	1.5033	0.0000	6,930.5596	6,930.5596	1.3807	0.1574	7,011.9781
Maximum	**57.5606**	**33.3558**	**35.7451**	**0.1029**	**19.8582**	**1.2672**	**21.1254**	**10.1558**	**1.1658**	**11.3216**	**0.0000**	**10,951.3501**	**10,951.3501**	**1.4194**	**1.2648**	**11,363.7319**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	2.7164	33.3558	21.0045	0.1029	9.0469	1.2672	10.3140	4.5995	1.1658	5.7652	0.0000	10,951.3501	10,951.3501	1.4194	1.2648	11,363.7319

First Lincoln Logistics Warehouse - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2024	57.5606	24.9120	35.7451	0.0706	1.7811	1.0992	2.8803	0.4790	1.0243	1.5033	0.0000	6,930.5596	6,930.5596	1.3807	0.1574	7,011.9781
Maximum	**57.5606**	**33.3558**	**35.7451**	**0.1029**	**9.0469**	**1.2672**	**10.3140**	**4.5995**	**1.1658**	**5.7652**	**0.0000**	**10,951.3501**	**10,951.3501**	**1.4194**	**1.2648**	**11,363.7319**

	ROG	NOx	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**	**49.96**	**0.00**	**45.04**	**52.25**	**0.00**	**43.32**	**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	2.5678	1.4000e-004	0.0157	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0338	0.0338	9.0000e-005		0.0360
Energy	7.0500e-003	0.0641	0.0539	3.8000e-004		4.8700e-003	4.8700e-003		4.8700e-003	4.8700e-003		76.9573	76.9573	1.4800e-003	1.4100e-003	77.4146
Mobile	1.1589	1.5620	15.4582	0.0386	4.1170	0.0260	4.1430	1.0971	0.0242	1.1212		3,935.7614	3,935.7614	0.2049	0.1414	3,983.0110
Offroad	0.4915	4.6248	6.1195	8.1800e-003		0.2560	0.2560		0.2355	0.2355	0.0000	792.0980	792.0980	0.2562		798.5025
Total	**4.2252**	**6.2511**	**21.6473**	**0.0472**	**4.1170**	**0.2869**	**4.4040**	**1.0971**	**0.2647**	**1.3617**	**0.0000**	**4,804.8504**	**4,804.8504**	**0.4627**	**0.1428**	**4,858.9640**

Mitigated Operational

First Lincoln Logistics Warehouse - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.5678	1.4000e-004	0.0157	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0338	0.0338	9.0000e-005		0.0360
Energy	7.0500e-003	0.0641	0.0539	3.8000e-004		4.8700e-003	4.8700e-003		4.8700e-003	4.8700e-003		76.9573	76.9573	1.4800e-003	1.4100e-003	77.4146
Mobile	1.1589	1.5620	15.4582	0.0386	4.1170	0.0260	4.1430	1.0971	0.0242	1.1212		3,935.7614	3,935.7614	0.2049	0.1414	3,983.0110
Offroad	0.4915	4.6248	6.1195	8.1800e-003		0.2560	0.2560		0.2355	0.2355	0.0000	792.0980	792.0980	0.2562		798.5025
Total	**4.2252**	**6.2511**	**21.6473**	**0.0472**	**4.1170**	**0.2869**	**4.4040**	**1.0971**	**0.2647**	**1.3617**	**0.0000**	**4,804.8504**	**4,804.8504**	**0.4627**	**0.1428**	**4,858.9640**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2023	6/14/2023	5	10	
2	Grading	Grading	6/15/2023	7/12/2023	5	20	
3	Building Construction	Building Construction	7/13/2023	4/17/2024	5	200	
4	Paving	Paving	3/4/2024	4/17/2024	5	33	
5	Architectural Coating	Architectural Coating	4/18/2024	5/1/2024	5	10	

Acres of Grading (Site Preparation Phase): 15

First Lincoln Logistics Warehouse - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Acres of Grading (Grading Phase): 20

Acres of Paving: 3.72

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 178,179; Non-Residential Outdoor: 59,393; Striped Parking Area: 9,716

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	2,500.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

First Lincoln Logistics Warehouse - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Building Construction	9	118.00	46.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	24.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647		3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**19.6570**	**1.2660**	**20.9230**	**10.1025**	**1.1647**	**11.2672**		**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

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					

First Lincoln Logistics Warehouse - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0569	0.0384	0.6276	1.7600e-003	0.2012	1.1300e-003	0.2023	0.0534	1.0400e-003	0.0544		177.8853	177.8853	4.3200e-003	4.0500e-003	179.2014
Total	**0.0569**	**0.0384**	**0.6276**	**1.7600e-003**	**0.2012**	**1.1300e-003**	**0.2023**	**0.0534**	**1.0400e-003**	**0.0544**		**177.8853**	**177.8853**	**4.3200e-003**	**4.0500e-003**	**179.2014**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.8457	0.0000	8.8457	4.5461	0.0000	4.5461			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**8.8457**	**1.2660**	**10.1117**	**4.5461**	**1.1647**	**5.7108**	**0.0000**	**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

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					

First Lincoln Logistics Warehouse - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0569	0.0384	0.6276	1.7600e-003	0.2012	1.1300e-003	0.2023	0.0534	1.0400e-003	0.0544		177.8853	177.8853	4.3200e-003	4.0500e-003	179.2014
Total	**0.0569**	**0.0384**	**0.6276**	**1.7600e-003**	**0.2012**	**1.1300e-003**	**0.2023**	**0.0534**	**1.0400e-003**	**0.0544**		**177.8853**	**177.8853**	**4.3200e-003**	**4.0500e-003**	**179.2014**

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.1957	0.0000	7.1957	3.4419	0.0000	3.4419			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129		2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**1.7109**	**17.9359**	**14.7507**	**0.0297**	**7.1957**	**0.7749**	**7.9706**	**3.4419**	**0.7129**	**4.1548**		**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

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					

First Lincoln Logistics Warehouse - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Hauling	0.2637	15.3880	4.2961	0.0718	2.1856	0.1079	2.2936	0.5990	0.1033	0.7023		7,930.4214	7,930.4214	0.4867	1.2614	8,318.4792
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0474	0.0320	0.5230	1.4700e-003	0.1677	9.4000e-004	0.1686	0.0445	8.7000e-004	0.0453		148.2377	148.2377	3.6000e-003	3.3800e-003	149.3345
Total	**0.3112**	**15.4199**	**4.8191**	**0.0733**	**2.3533**	**0.1089**	**2.4622**	**0.6435**	**0.1041**	**0.7476**		**8,078.6592**	**8,078.6592**	**0.4903**	**1.2648**	**8,467.8137**

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					3.2381	0.0000	3.2381	1.5488	0.0000	1.5488			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129	0.0000	2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**1.7109**	**17.9359**	**14.7507**	**0.0297**	**3.2381**	**0.7749**	**4.0130**	**1.5488**	**0.7129**	**2.2618**	**0.0000**	**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

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					

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Hauling	0.2637	15.3880	4.2961	0.0718	2.1856	0.1079	2.2936	0.5990	0.1033	0.7023		7,930.4214	7,930.4214	0.4867	1.2614	8,318.4792
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0474	0.0320	0.5230	1.4700e-003	0.1677	9.4000e-004	0.1686	0.0445	8.7000e-004	0.0453		148.2377	148.2377	3.6000e-003	3.3800e-003	149.3345
Total	**0.3112**	**15.4199**	**4.8191**	**0.0733**	**2.3533**	**0.1089**	**2.4622**	**0.6435**	**0.1041**	**0.7476**		**8,078.6592**	**8,078.6592**	**0.4903**	**1.2648**	**8,467.8137**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Unmitigated Construction Off-Site

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

First Lincoln Logistics Warehouse - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Vendor	0.0494	1.6833	0.6460	8.3700e-003	0.2945	9.3000e-003	0.3038	0.0848	8.9000e-003	0.0937		904.2687	904.2687	0.0335	0.1312	944.1887
Worker	0.3732	0.2514	4.1144	0.0115	1.3190	7.4300e-003	1.3264	0.3498	6.8400e-003	0.3566		1,166.1368	1,166.1368	0.0283	0.0266	1,174.7648
Total	**0.4226**	**1.9347**	**4.7605**	**0.0199**	**1.6135**	**0.0167**	**1.6302**	**0.4346**	**0.0157**	**0.4503**		**2,070.4056**	**2,070.4056**	**0.0618**	**0.1577**	**2,118.9534**

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0494	1.6833	0.6460	8.3700e-003	0.2945	9.3000e-003	0.3038	0.0848	8.9000e-003	0.0937		904.2687	904.2687	0.0335	0.1312	944.1887

First Lincoln Logistics Warehouse - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Worker	0.3732	0.2514	4.1144	0.0115	1.3190	7.4300e-003	1.3264	0.3498	6.8400e-003	0.3566		1,166.1368	1,166.1368	0.0283	0.0266	1,174.7648
Total	**0.4226**	**1.9347**	**4.7605**	**0.0199**	**1.6135**	**0.0167**	**1.6302**	**0.4346**	**0.0157**	**0.4503**		**2,070.4056**	**2,070.4056**	**0.0618**	**0.1577**	**2,118.9534**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0481	1.6905	0.6355	8.2500e-003	0.2945	9.3500e-003	0.3039	0.0848	8.9500e-003	0.0937		891.4012	891.4012	0.0335	0.1295	930.8284
Worker	0.3483	0.2246	3.8301	0.0112	1.3190	7.1100e-003	1.3261	0.3498	6.5400e-003	0.3563		1,132.0124	1,132.0124	0.0256	0.0248	1,140.0269

First Lincoln Logistics Warehouse - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**0.3964**	**1.9151**	**4.4656**	**0.0195**	**1.6135**	**0.0165**	**1.6299**	**0.4346**	**0.0155**	**0.4501**		**2,023.4136**	**2,023.4136**	**0.0591**	**0.1543**	**2,070.8554**

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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0481	1.6905	0.6355	8.2500e-003	0.2945	9.3500e-003	0.3039	0.0848	8.9500e-003	0.0937		891.4012	891.4012	0.0335	0.1295	930.8284
Worker	0.3483	0.2246	3.8301	0.0112	1.3190	7.1100e-003	1.3261	0.3498	6.5400e-003	0.3563		1,132.0124	1,132.0124	0.0256	0.0248	1,140.0269
Total	**0.3964**	**1.9151**	**4.4656**	**0.0195**	**1.6135**	**0.0165**	**1.6299**	**0.4346**	**0.0155**	**0.4501**		**2,023.4136**	**2,023.4136**	**0.0591**	**0.1543**	**2,070.8554**

First Lincoln Logistics Warehouse - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.2358					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2240**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**		**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0443	0.0286	0.4869	1.4200e-003	0.1677	9.0000e-004	0.1686	0.0445	8.3000e-004	0.0453		143.8999	143.8999	3.2600e-003	3.1500e-003	144.9187
Total	**0.0443**	**0.0286**	**0.4869**	**1.4200e-003**	**0.1677**	**9.0000e-004**	**0.1686**	**0.0445**	**8.3000e-004**	**0.0453**		**143.8999**	**143.8999**	**3.2600e-003**	**3.1500e-003**	**144.9187**

First Lincoln Logistics Warehouse - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.2358					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2240**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**	**0.0000**	**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0443	0.0286	0.4869	1.4200e-003	0.1677	9.0000e-004	0.1686	0.0445	8.3000e-004	0.0453		143.8999	143.8999	3.2600e-003	3.1500e-003	144.9187
Total	**0.0443**	**0.0286**	**0.4869**	**1.4200e-003**	**0.1677**	**9.0000e-004**	**0.1686**	**0.0445**	**8.3000e-004**	**0.0453**		**143.8999**	**143.8999**	**3.2600e-003**	**3.1500e-003**	**144.9187**

First Lincoln Logistics Warehouse - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	57.3090					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**57.4898**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0708	0.0457	0.7790	2.2800e-003	0.2683	1.4500e-003	0.2697	0.0711	1.3300e-003	0.0725		230.2398	230.2398	5.2100e-003	5.0300e-003	231.8699
Total	**0.0708**	**0.0457**	**0.7790**	**2.2800e-003**	**0.2683**	**1.4500e-003**	**0.2697**	**0.0711**	**1.3300e-003**	**0.0725**		**230.2398**	**230.2398**	**5.2100e-003**	**5.0300e-003**	**231.8699**

First Lincoln Logistics Warehouse - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	57.3090					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**57.4898**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0708	0.0457	0.7790	2.2800e-003	0.2683	1.4500e-003	0.2697	0.0711	1.3300e-003	0.0725		230.2398	230.2398	5.2100e-003	5.0300e-003	231.8699
Total	**0.0708**	**0.0457**	**0.7790**	**2.2800e-003**	**0.2683**	**1.4500e-003**	**0.2697**	**0.0711**	**1.3300e-003**	**0.0725**		**230.2398**	**230.2398**	**5.2100e-003**	**5.0300e-003**	**231.8699**

First Lincoln Logistics Warehouse - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.1589	1.5620	15.4582	0.0386	4.1170	0.0260	4.1430	1.0971	0.0242	1.1212		3,935.7614	3,935.7614	0.2049	0.1414	3,983.0110
Unmitigated	1.1589	1.5620	15.4582	0.0386	4.1170	0.0260	4.1430	1.0971	0.0242	1.1212		3,935.7614	3,935.7614	0.2049	0.1414	3,983.0110

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	203.13	203.13	203.13	1,954,151	1,954,151
Total	203.13	203.13	203.13	1,954,151	1,954,151

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unrefrigerated Warehouse-No Rail	40.00	8.40	6.90	59.00	0.00	41.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.543401	0.061496	0.184986	0.128935	0.023820	0.006437	0.011961	0.008652	0.000812	0.000508	0.024540	0.000745	0.003706
Parking Lot	0.543401	0.061496	0.184986	0.128935	0.023820	0.006437	0.011961	0.008652	0.000812	0.000508	0.024540	0.000745	0.003706
Unrefrigerated Warehouse-No Rail	0.543401	0.061496	0.184986	0.128935	0.023820	0.006437	0.011961	0.008652	0.000812	0.000508	0.024540	0.000745	0.003706

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	7.0500e-003	0.0641	0.0539	3.8000e-004		4.8700e-003	4.8700e-003		4.8700e-003	4.8700e-003		76.9573	76.9573	1.4800e-003	1.4100e-003	77.4146
NaturalGas Unmitigated	7.0500e-003	0.0641	0.0539	3.8000e-004		4.8700e-003	4.8700e-003		4.8700e-003	4.8700e-003		76.9573	76.9573	1.4800e-003	1.4100e-003	77.4146

5.2 Energy by Land Use - NaturalGas

Unmitigated

First Lincoln Logistics Warehouse - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	654.137	7.0500e-003	0.0641	0.0539	3.8000e-004		4.8700e-003	4.8700e-003		4.8700e-003	4.8700e-003		76.9573	76.9573	1.4800e-003	1.4100e-003	77.4146
Total		**7.0500e-003**	**0.0641**	**0.0539**	**3.8000e-004**		**4.8700e-003**	**4.8700e-003**		**4.8700e-003**	**4.8700e-003**		**76.9573**	**76.9573**	**1.4800e-003**	**1.4100e-003**	**77.4146**

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					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0.654137	7.0500e-003	0.0641	0.0539	3.8000e-004		4.8700e-003	4.8700e-003		4.8700e-003	4.8700e-003		76.9573	76.9573	1.4800e-003	1.4100e-003	77.4146
Total		**7.0500e-003**	**0.0641**	**0.0539**	**3.8000e-004**		**4.8700e-003**	**4.8700e-003**		**4.8700e-003**	**4.8700e-003**		**76.9573**	**76.9573**	**1.4800e-003**	**1.4100e-003**	**77.4146**

6.0 Area Detail

6.1 Mitigation Measures Area

First Lincoln Logistics Warehouse - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.5678	1.4000e-004	0.0157	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0338	0.0338	9.0000e-005		0.0360
Unmitigated	2.5678	1.4000e-004	0.0157	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0338	0.0338	9.0000e-005		0.0360

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	0.1570					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.4093					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4500e-003	1.4000e-004	0.0157	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0338	0.0338	9.0000e-005		0.0360
Total	**2.5678**	**1.4000e-004**	**0.0157**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0338**	**0.0338**	**9.0000e-005**		**0.0360**

First Lincoln Logistics Warehouse - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.1570					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.4093					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4500e-003	1.4000e-004	0.0157	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0338	0.0338	9.0000e-005		0.0360
Total	**2.5678**	**1.4000e-004**	**0.0157**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0338**	**0.0338**	**9.0000e-005**		**0.0360**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	2	8.00	260	89	0.20	Diesel
Other General Industrial Equipment	2	8.00	260	88	0.34	Diesel

First Lincoln Logistics Warehouse - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

UnMitigated/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
Equipment Type	lb/day										lb/day					
Forklifts	0.1884	1.7671	2.2786	3.0600e-003		0.1021	0.1021		0.0939	0.0939	0.0000	296.0617	296.0617	0.0958		298.4555
Other General Industrial	0.3031	2.8578	3.8409	5.1200e-003		0.1540	0.1540		0.1417	0.1417	0.0000	496.0363	496.0363	0.1604		500.0470
Total	**0.4915**	**4.6248**	**6.1195**	**8.1800e-003**		**0.2560**	**0.2560**		**0.2355**	**0.2355**	**0.0000**	**792.0980**	**792.0980**	**0.2562**		**798.5025**

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

First Lincoln Logistics Warehouse - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

First Lincoln Logistics Warehouse

South Coast Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	118.79	1000sqft	2.73	118,786.00	0
Other Non-Asphalt Surfaces	32.56	1000sqft	0.75	32,563.00	0
Parking Lot	2.97	Acre	2.97	129,373.20	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Plans show 129,373sf of parking and 32,563sf of landscaping

Construction Phase - Conctruction schedule dates may change to September 2023-July 2024 per ERSC review.

Grading - Construction will require 29,000 CY of soil export and 9,000 CY of import for a net 20,000 CY soil export

Architectural Coating - Assume all Architectural Coatings comply with Rule 1113

Vehicle Trips - Trip generation of 1.71 per traffic study, assume the average haul trucks trip length is 40 miles and the divert and pass-by are accounted for in the traffic study's rate of 1.71

Area Coating - Area AC would comply with Rule 1113

Construction Off-road Equipment Mitigation - Dust Control measures as required by SCAQMD Rule 403

Area Mitigation - .

First Lincoln Logistics Warehouse - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Operational Off-Road Equipment - Assume 2 diesel forklifts and two other diesel equipment for the warehouse operations and that diesel is a "worst-case" fuel.

Fleet Mix - Traffic did not include Fleet Mix info for specific trucks/vehicles except for showing 132 cars and 71 vehicles

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Parking	100	50
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	230.00	200.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	20.00	33.00
tblConstructionPhase	PhaseEndDate	5/29/2024	4/17/2024
tblConstructionPhase	PhaseEndDate	7/24/2024	5/1/2024
tblConstructionPhase	PhaseEndDate	6/26/2024	4/17/2024
tblConstructionPhase	PhaseStartDate	6/27/2024	4/18/2024
tblConstructionPhase	PhaseStartDate	5/30/2024	3/4/2024
tblGrading	MaterialExported	0.00	20,000.00
tblLandUse	LandUseSquareFeet	118,790.00	118,786.00
tblLandUse	LandUseSquareFeet	32,560.00	32,563.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblVehicleTrips	CW_TL	16.60	40.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	92.00	100.00

First Lincoln Logistics Warehouse - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblVehicleTrips	ST_TR	1.74	1.71
tblVehicleTrips	SU_TR	1.74	1.71
tblVehicleTrips	WD_TR	1.74	1.71

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	2.7201	34.0509	20.6611	0.1029	19.8582	1.2672	21.1254	10.1558	1.1658	11.3216	0.0000	10,951.2453	10,951.2453	1.4186	1.2663	11,364.0618
2024	57.5654	25.0162	35.3858	0.0699	1.7811	1.0992	2.8804	0.4790	1.0243	1.5034	0.0000	6,861.0305	6,861.0305	1.3810	0.1595	6,943.0708
Maximum	**57.5654**	**34.0509**	**35.3858**	**0.1029**	**19.8582**	**1.2672**	**21.1254**	**10.1558**	**1.1658**	**11.3216**	**0.0000**	**10,951.2453**	**10,951.2453**	**1.4186**	**1.2663**	**11,364.0618**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	2.7201	34.0509	20.6611	0.1029	9.0469	1.2672	10.3140	4.5995	1.1658	5.7652	0.0000	10,951.2453	10,951.2453	1.4186	1.2663	11,364.0618

First Lincoln Logistics Warehouse - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2024	57.5654	25.0162	35.3858	0.0699	1.7811	1.0992	2.8804	0.4790	1.0243	1.5034	0.0000	6,861.0305	6,861.0305	1.3810	0.1595	6,943.0708
Maximum	**57.5654**	**34.0509**	**35.3858**	**0.1029**	**9.0469**	**1.2672**	**10.3140**	**4.5995**	**1.1658**	**5.7652**	**0.0000**	**10,951.2453**	**10,951.2453**	**1.4186**	**1.2663**	**11,364.0618**

	ROG	NOx	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**	**49.96**	**0.00**	**45.04**	**52.25**	**0.00**	**43.32**	**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	2.5678	1.4000e-004	0.0157	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0338	0.0338	9.0000e-005		0.0360
Energy	7.0500e-003	0.0641	0.0539	3.8000e-004		4.8700e-003	4.8700e-003		4.8700e-003	4.8700e-003		76.9573	76.9573	1.4800e-003	1.4100e-003	77.4146
Mobile	1.1470	1.6780	14.6456	0.0368	4.1170	0.0260	4.1430	1.0971	0.0242	1.1213		3,757.4091	3,757.4091	0.2065	0.1467	3,806.2762
Offroad	0.4915	4.6248	6.1195	8.1800e-003		0.2560	0.2560		0.2355	0.2355	0.0000	792.0980	792.0980	0.2562		798.5025
Total	**4.2133**	**6.3671**	**20.8347**	**0.0454**	**4.1170**	**0.2870**	**4.4040**	**1.0971**	**0.2647**	**1.3617**	**0.0000**	**4,626.4981**	**4,626.4981**	**0.4643**	**0.1481**	**4,682.2293**

Mitigated Operational

First Lincoln Logistics Warehouse - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.5678	1.4000e-004	0.0157	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0338	0.0338	9.0000e-005		0.0360
Energy	7.0500e-003	0.0641	0.0539	3.8000e-004		4.8700e-003	4.8700e-003		4.8700e-003	4.8700e-003		76.9573	76.9573	1.4800e-003	1.4100e-003	77.4146
Mobile	1.1470	1.6780	14.6456	0.0368	4.1170	0.0260	4.1430	1.0971	0.0242	1.1213		3,757.4091	3,757.4091	0.2065	0.1467	3,806.2762
Offroad	0.4915	4.6248	6.1195	8.1800e-003		0.2560	0.2560		0.2355	0.2355	0.0000	792.0980	792.0980	0.2562		798.5025
Total	**4.2133**	**6.3671**	**20.8347**	**0.0454**	**4.1170**	**0.2870**	**4.4040**	**1.0971**	**0.2647**	**1.3617**	**0.0000**	**4,626.4981**	**4,626.4981**	**0.4643**	**0.1481**	**4,682.2293**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2023	6/14/2023	5	10	
2	Grading	Grading	6/15/2023	7/12/2023	5	20	
3	Building Construction	Building Construction	7/13/2023	4/17/2024	5	200	
4	Paving	Paving	3/4/2024	4/17/2024	5	33	
5	Architectural Coating	Architectural Coating	4/18/2024	5/1/2024	5	10	

Acres of Grading (Site Preparation Phase): 15

First Lincoln Logistics Warehouse - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Acres of Grading (Grading Phase): 20

Acres of Paving: 3.72

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 178,179; Non-Residential Outdoor: 59,393; Striped Parking Area: 9,716

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	2,500.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

First Lincoln Logistics Warehouse - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Building Construction	9	118.00	46.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	24.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647		3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**19.6570**	**1.2660**	**20.9230**	**10.1025**	**1.1647**	**11.2672**		**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

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					

First Lincoln Logistics Warehouse - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0606	0.0421	0.5721	1.6600e-003	0.2012	1.1300e-003	0.2023	0.0534	1.0400e-003	0.0544		167.9721	167.9721	4.3800e-003	4.3100e-003	169.3658
Total	**0.0606**	**0.0421**	**0.5721**	**1.6600e-003**	**0.2012**	**1.1300e-003**	**0.2023**	**0.0534**	**1.0400e-003**	**0.0544**		**167.9721**	**167.9721**	**4.3800e-003**	**4.3100e-003**	**169.3658**

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					8.8457	0.0000	8.8457	4.5461	0.0000	4.5461			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**8.8457**	**1.2660**	**10.1117**	**4.5461**	**1.1647**	**5.7108**	**0.0000**	**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

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					

First Lincoln Logistics Warehouse - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0606	0.0421	0.5721	1.6600e-003	0.2012	1.1300e-003	0.2023	0.0534	1.0400e-003	0.0544		167.9721	167.9721	4.3800e-003	4.3100e-003	169.3658
Total	**0.0606**	**0.0421**	**0.5721**	**1.6600e-003**	**0.2012**	**1.1300e-003**	**0.2023**	**0.0534**	**1.0400e-003**	**0.0544**		**167.9721**	**167.9721**	**4.3800e-003**	**4.3100e-003**	**169.3658**

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.1957	0.0000	7.1957	3.4419	0.0000	3.4419			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129		2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**1.7109**	**17.9359**	**14.7507**	**0.0297**	**7.1957**	**0.7749**	**7.9706**	**3.4419**	**0.7129**	**4.1548**		**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

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					

First Lincoln Logistics Warehouse - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Hauling	0.2469	16.0800	4.3546	0.0719	2.1856	0.1082	2.2938	0.5990	0.1035	0.7025		7,938.5775	7,938.5775	0.4858	1.2627	8,327.0055
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0505	0.0351	0.4768	1.3800e-003	0.1677	9.4000e-004	0.1686	0.0445	8.7000e-004	0.0453		139.9767	139.9767	3.6500e-003	3.5900e-003	141.1381
Total	**0.2975**	**16.1151**	**4.8314**	**0.0733**	**2.3533**	**0.1091**	**2.4624**	**0.6435**	**0.1044**	**0.7479**		**8,078.5543**	**8,078.5543**	**0.4895**	**1.2663**	**8,468.1436**

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					3.2381	0.0000	3.2381	1.5488	0.0000	1.5488			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129	0.0000	2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**1.7109**	**17.9359**	**14.7507**	**0.0297**	**3.2381**	**0.7749**	**4.0130**	**1.5488**	**0.7129**	**2.2618**	**0.0000**	**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

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					

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Hauling	0.2469	16.0800	4.3546	0.0719	2.1856	0.1082	2.2938	0.5990	0.1035	0.7025		7,938.5775	7,938.5775	0.4858	1.2627	8,327.0055
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0505	0.0351	0.4768	1.3800e-003	0.1677	9.4000e-004	0.1686	0.0445	8.7000e-004	0.0453		139.9767	139.9767	3.6500e-003	3.5900e-003	141.1381
Total	**0.2975**	**16.1151**	**4.8314**	**0.0733**	**2.3533**	**0.1091**	**2.4624**	**0.6435**	**0.1044**	**0.7479**		**8,078.5543**	**8,078.5543**	**0.4895**	**1.2663**	**8,468.1436**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Unmitigated Construction Off-Site

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

First Lincoln Logistics Warehouse - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Vendor	0.0474	1.7627	0.6666	8.3900e-003	0.2945	9.3500e-003	0.3039	0.0848	8.9500e-003	0.0937		905.7718	905.7718	0.0333	0.1315	945.7855
Worker	0.3975	0.2758	3.7505	0.0109	1.3190	7.4300e-003	1.3264	0.3498	6.8400e-003	0.3566		1,101.1504	1,101.1504	0.0287	0.0283	1,110.2866
Total	**0.4449**	**2.0385**	**4.4171**	**0.0193**	**1.6135**	**0.0168**	**1.6303**	**0.4346**	**0.0158**	**0.4504**		**2,006.9222**	**2,006.9222**	**0.0621**	**0.1597**	**2,056.0721**

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0474	1.7627	0.6666	8.3900e-003	0.2945	9.3500e-003	0.3039	0.0848	8.9500e-003	0.0937		905.7718	905.7718	0.0333	0.1315	945.7855

First Lincoln Logistics Warehouse - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Worker	0.3975	0.2758	3.7505	0.0109	1.3190	7.4300e-003	1.3264	0.3498	6.8400e-003	0.3566		1,101.1504	1,101.1504	0.0287	0.0283	1,110.2866
Total	**0.4449**	**2.0385**	**4.4171**	**0.0193**	**1.6135**	**0.0168**	**1.6303**	**0.4346**	**0.0158**	**0.4504**		**2,006.9222**	**2,006.9222**	**0.0621**	**0.1597**	**2,056.0721**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0462	1.7703	0.6558	8.2600e-003	0.2945	9.4000e-003	0.3039	0.0848	8.9900e-003	0.0938		892.9112	892.9112	0.0333	0.1298	932.4297
Worker	0.3721	0.2463	3.4934	0.0106	1.3190	7.1100e-003	1.3261	0.3498	6.5400e-003	0.3563		1,068.9852	1,068.9852	0.0260	0.0263	1,077.4705

First Lincoln Logistics Warehouse - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**0.4182**	**2.0166**	**4.1492**	**0.0188**	**1.6135**	**0.0165**	**1.6300**	**0.4346**	**0.0155**	**0.4501**		**1,961.8964**	**1,961.8964**	**0.0594**	**0.1561**	**2,009.9002**

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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0462	1.7703	0.6558	8.2600e-003	0.2945	9.4000e-003	0.3039	0.0848	8.9900e-003	0.0938		892.9112	892.9112	0.0333	0.1298	932.4297
Worker	0.3721	0.2463	3.4934	0.0106	1.3190	7.1100e-003	1.3261	0.3498	6.5400e-003	0.3563		1,068.9852	1,068.9852	0.0260	0.0263	1,077.4705
Total	**0.4182**	**2.0166**	**4.1492**	**0.0188**	**1.6135**	**0.0165**	**1.6300**	**0.4346**	**0.0155**	**0.4501**		**1,961.8964**	**1,961.8964**	**0.0594**	**0.1561**	**2,009.9002**

First Lincoln Logistics Warehouse - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.2358					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2240**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**		**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0473	0.0313	0.4441	1.3400e-003	0.1677	9.0000e-004	0.1686	0.0445	8.3000e-004	0.0453		135.8880	135.8880	3.3100e-003	3.3400e-003	136.9666
Total	**0.0473**	**0.0313**	**0.4441**	**1.3400e-003**	**0.1677**	**9.0000e-004**	**0.1686**	**0.0445**	**8.3000e-004**	**0.0453**		**135.8880**	**135.8880**	**3.3100e-003**	**3.3400e-003**	**136.9666**

First Lincoln Logistics Warehouse - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.2358					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2240**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**	**0.0000**	**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0473	0.0313	0.4441	1.3400e-003	0.1677	9.0000e-004	0.1686	0.0445	8.3000e-004	0.0453		135.8880	135.8880	3.3100e-003	3.3400e-003	136.9666
Total	**0.0473**	**0.0313**	**0.4441**	**1.3400e-003**	**0.1677**	**9.0000e-004**	**0.1686**	**0.0445**	**8.3000e-004**	**0.0453**		**135.8880**	**135.8880**	**3.3100e-003**	**3.3400e-003**	**136.9666**

First Lincoln Logistics Warehouse - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	57.3090					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**57.4898**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0757	0.0501	0.7105	2.1500e-003	0.2683	1.4500e-003	0.2697	0.0711	1.3300e-003	0.0725		217.4207	217.4207	5.3000e-003	5.3500e-003	219.1465
Total	**0.0757**	**0.0501**	**0.7105**	**2.1500e-003**	**0.2683**	**1.4500e-003**	**0.2697**	**0.0711**	**1.3300e-003**	**0.0725**		**217.4207**	**217.4207**	**5.3000e-003**	**5.3500e-003**	**219.1465**

First Lincoln Logistics Warehouse - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	57.3090					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**57.4898**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0757	0.0501	0.7105	2.1500e-003	0.2683	1.4500e-003	0.2697	0.0711	1.3300e-003	0.0725		217.4207	217.4207	5.3000e-003	5.3500e-003	219.1465
Total	**0.0757**	**0.0501**	**0.7105**	**2.1500e-003**	**0.2683**	**1.4500e-003**	**0.2697**	**0.0711**	**1.3300e-003**	**0.0725**		**217.4207**	**217.4207**	**5.3000e-003**	**5.3500e-003**	**219.1465**

First Lincoln Logistics Warehouse - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.1470	1.6780	14.6456	0.0368	4.1170	0.0260	4.1430	1.0971	0.0242	1.1213		3,757.4091	3,757.4091	0.2065	0.1467	3,806.2762
Unmitigated	1.1470	1.6780	14.6456	0.0368	4.1170	0.0260	4.1430	1.0971	0.0242	1.1213		3,757.4091	3,757.4091	0.2065	0.1467	3,806.2762

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	203.13	203.13	203.13	1,954,151	1,954,151
Total	203.13	203.13	203.13	1,954,151	1,954,151

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

Unrefrigerated Warehouse-No Rail	40.00	8.40	6.90	59.00	0.00	41.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.543401	0.061496	0.184986	0.128935	0.023820	0.006437	0.011961	0.008652	0.000812	0.000508	0.024540	0.000745	0.003706
Parking Lot	0.543401	0.061496	0.184986	0.128935	0.023820	0.006437	0.011961	0.008652	0.000812	0.000508	0.024540	0.000745	0.003706
Unrefrigerated Warehouse-No Rail	0.543401	0.061496	0.184986	0.128935	0.023820	0.006437	0.011961	0.008652	0.000812	0.000508	0.024540	0.000745	0.003706

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	7.0500e-003	0.0641	0.0539	3.8000e-004		4.8700e-003	4.8700e-003		4.8700e-003	4.8700e-003		76.9573	76.9573	1.4800e-003	1.4100e-003	77.4146
NaturalGas Unmitigated	7.0500e-003	0.0641	0.0539	3.8000e-004		4.8700e-003	4.8700e-003		4.8700e-003	4.8700e-003		76.9573	76.9573	1.4800e-003	1.4100e-003	77.4146

5.2 Energy by Land Use - NaturalGas

Unmitigated

First Lincoln Logistics Warehouse - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	654.137	7.0500e-003	0.0641	0.0539	3.8000e-004		4.8700e-003	4.8700e-003		4.8700e-003	4.8700e-003		76.9573	76.9573	1.4800e-003	1.4100e-003	77.4146
Total		**7.0500e-003**	**0.0641**	**0.0539**	**3.8000e-004**		**4.8700e-003**	**4.8700e-003**		**4.8700e-003**	**4.8700e-003**		**76.9573**	**76.9573**	**1.4800e-003**	**1.4100e-003**	**77.4146**

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					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0.654137	7.0500e-003	0.0641	0.0539	3.8000e-004		4.8700e-003	4.8700e-003		4.8700e-003	4.8700e-003		76.9573	76.9573	1.4800e-003	1.4100e-003	77.4146
Total		**7.0500e-003**	**0.0641**	**0.0539**	**3.8000e-004**		**4.8700e-003**	**4.8700e-003**		**4.8700e-003**	**4.8700e-003**		**76.9573**	**76.9573**	**1.4800e-003**	**1.4100e-003**	**77.4146**

6.0 Area Detail

6.1 Mitigation Measures Area

First Lincoln Logistics Warehouse - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.5678	1.4000e-004	0.0157	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0338	0.0338	9.0000e-005		0.0360
Unmitigated	2.5678	1.4000e-004	0.0157	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0338	0.0338	9.0000e-005		0.0360

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	0.1570					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.4093					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4500e-003	1.4000e-004	0.0157	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0338	0.0338	9.0000e-005		0.0360
Total	**2.5678**	**1.4000e-004**	**0.0157**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0338**	**0.0338**	**9.0000e-005**		**0.0360**

First Lincoln Logistics Warehouse - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.1570					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.4093					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4500e-003	1.4000e-004	0.0157	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0338	0.0338	9.0000e-005		0.0360
Total	**2.5678**	**1.4000e-004**	**0.0157**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0338**	**0.0338**	**9.0000e-005**		**0.0360**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	2	8.00	260	89	0.20	Diesel
Other General Industrial Equipment	2	8.00	260	88	0.34	Diesel

First Lincoln Logistics Warehouse - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

UnMitigated/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
Equipment Type	lb/day										lb/day					
Forklifts	0.1884	1.7671	2.2786	3.0600e-003		0.1021	0.1021		0.0939	0.0939	0.0000	296.0617	296.0617	0.0958		298.4555
Other General Industrial	0.3031	2.8578	3.8409	5.1200e-003		0.1540	0.1540		0.1417	0.1417	0.0000	496.0363	496.0363	0.1604		500.0470
Total	**0.4915**	**4.6248**	**6.1195**	**8.1800e-003**		**0.2560**	**0.2560**		**0.2355**	**0.2355**	**0.0000**	**792.0980**	**792.0980**	**0.2562**		**798.5025**

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ATTACHMENT D

ENERGY WORKSHEET

Fuel Consumption Worksheet

Annual VMT from CalEEMod modeling	Gasoline-Fueled Percentage	Diesel-Fueled Percentage	Gasoline mpg	Gasoline Consumption (gallons/yr)	Diesel mpg	Diesel Consumption (gallons/yr)
1,954,151	83.4%	16.6%	22.9	71,187	8	40,496

		Fleet Mix from CalEEMod modeling												
Land Use	ADT	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Industrial	203	54.34%	6.15%	18.50%	12.89%	2.38%	0.64%	1.20%	0.87%	0%	0%	2%	0%	0%
		Vehicle Percentages by fuel type												
Gasoline-powered:		98%	95%	75%	50%	50%	10%	5%	5%	0%	0%	100%	10%	50%
Diesel-powered:		2%	5%	25%	50%	50%	90%	95%	95%	100%	100%	0%	90%	50%

truck % = 42.63%

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APPENDIX B

HEALTH RISK ASSESSMENT

HEALTH RISK ASSESSMENT

FIRST LINCOLN LOGISTICS WAREHOUSE PROJECT

BANNING, CALIFORNIA

LSA

October 2022

HEALTH RISK ASSESSMENT

FIRST LINCOLN LOGISTICS WAREHOUSE PROJECT

BANNING, CALIFORNIA

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October 2022

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LIST OF ABBREVIATIONS AND ACRONYMS

$\mu g/m^3$	millions per microgram per cubic meter
AB	Assembly Bill
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
Basin	South Coast Air Basin
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CARB Handbook	California Air Resources Board *Air Quality and Land Use Handbook: A Community Health Perspective*
CEQA	California Environmental Quality Act
DPM	diesel particulate matter
EMFAC2021	California Emissions Factor Model, Version 2021
EPA	United States Environmental Protection Agency
ft	foot/feet
HARP	Hotspots Analysis and Reporting Program, Version 2
HI	Hazard Index
HRA	health risk assessment
MEI	maximum exposed individual
MICR	maximum individual cancer risk
mph	miles per hour
OEHHA	Office of Environmental Health Hazard Assessment
PM_{10}	particulate matter less than 10 microns in size
$PM_{2.5}$	particulate matter less than 2.5 microns in size
project	First Lincoln Logistics Project
ROG	reactive organic gas
SCAQMD	South Coast Air Quality Management District
TAC	toxic air contaminant
URF	unit risk factor

1.0 INTRODUCTION

LSA has prepared a health risk assessment (HRA) for the proposed First Lincoln Logistics project in Banning, California. The proposed First Lincoln Logistics project (project) would construct a 118,786 square foot industrial warehouse building, of which 10,000 square feet would be designated office space across two levels. The project would include 25 freight truck loading docks and employee and trailer parking.

An HRA is a process used to estimate the increased health risk levels for people living and/or working near a project that emits toxic air contaminants (TACs). An HRA combines results of studies on the health effects of various animal and human exposure to TACs with results of studies that estimate the exposure levels at different distances from the source of pollutants. The purpose of the HRA is to document the increased cancer and noncancer health risk levels from project-related emissions of TACs on existing nearby sensitive receptors.

The City of Banning recommends the preparation of an HRA in accordance with policies and procedures of the State Office of Environmental Health Hazard Assessment (OEHHA) and the South Coast Air Quality Management District (SCAQMD). This HRA evaluates risk consistent with these documents and in compliance with all applicable requirements.

1.1 BACKGROUND

This section provides a discussion of regulatory guidance from the California Air Resources Board (CARB), the OEHHA, the California Air Pollution Control Officers Association (CAPCOA), and the SCAQMD.

1.1.1 California Air Resources Board Handbook and Technical Advisory

The CARB has developed an *Air Quality and Land Use Handbook: A Community Health Perspective* (CARB Handbook; 2005) and the supplement, *Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways: Technical Advisory* (CARB 2017), that are intended to serve as general reference guides for evaluating and reducing air pollution impacts associated with new projects that are part of the land use decision-making process. According to the CARB Handbook, recent air pollution studies have shown an association between both respiratory and other noncancer health effects and proximity to high-traffic roadways. Other studies have shown that diesel exhaust and other cancer-causing chemicals emitted from cars and trucks are responsible for much of the overall cancer risk from airborne toxics in California. The CARB Handbook recommends that planning agencies recognize that the configuration of warehouse and distribution centers can reduce population exposure and risk. For example, locating the main entry and exit points away from sensitive land uses helps to reduce cancer risks and other health impacts.

1.1.2 Office of Environmental Health and Hazard Assessment Guidelines

The OEHHA developed the *Air Toxics Hot Spots Program Guidance Manual* (OEHHA 2015) in conjunction with the CARB for use in implementing the Air Toxics Hot Spots Program (AB 2588). The manual describes health effect values, exposure pathway variates (e.g., breathing rates), and a

tiered approach for performing HRAs based on current science and policy assessment. The intent of the guidance manual is to incorporate children's health concerns, update risk assessment practices, and provide consistent risk assessment procedures.

1.1.3 California Air Pollution Control Officers Association

In 2009, the CAPCOA published guidance (CAPCOA 2009) on assessing the health risk impacts from and to proposed land use projects (i.e., any development project that would site new receptors or would impact existing receptors), focusing on the acute, chronic, and cancer impacts of sources affected by California Environmental Quality Act (CEQA). The document recommends procedures to identify when a project should undergo further risk evaluation, procedures for conducting an HRA, guidelines to engage the public, presentation guidelines for results from the HRA, and mitigation measures that may be appropriate for various land use projects.

1.1.4 South Coast Air Quality Management District

The SCAQMD has risk assessment guidelines, *AB 2588 and Rule 1402 Supplemental Guidelines* (SCAQMD 2018). These guidelines incorporate the OEHHA guidance and the options to be used when using the CARB's Hotspots Analysis and Reporting Program Version 2 (HARP) program for risk assessment calculations (CARB n.d.-b).

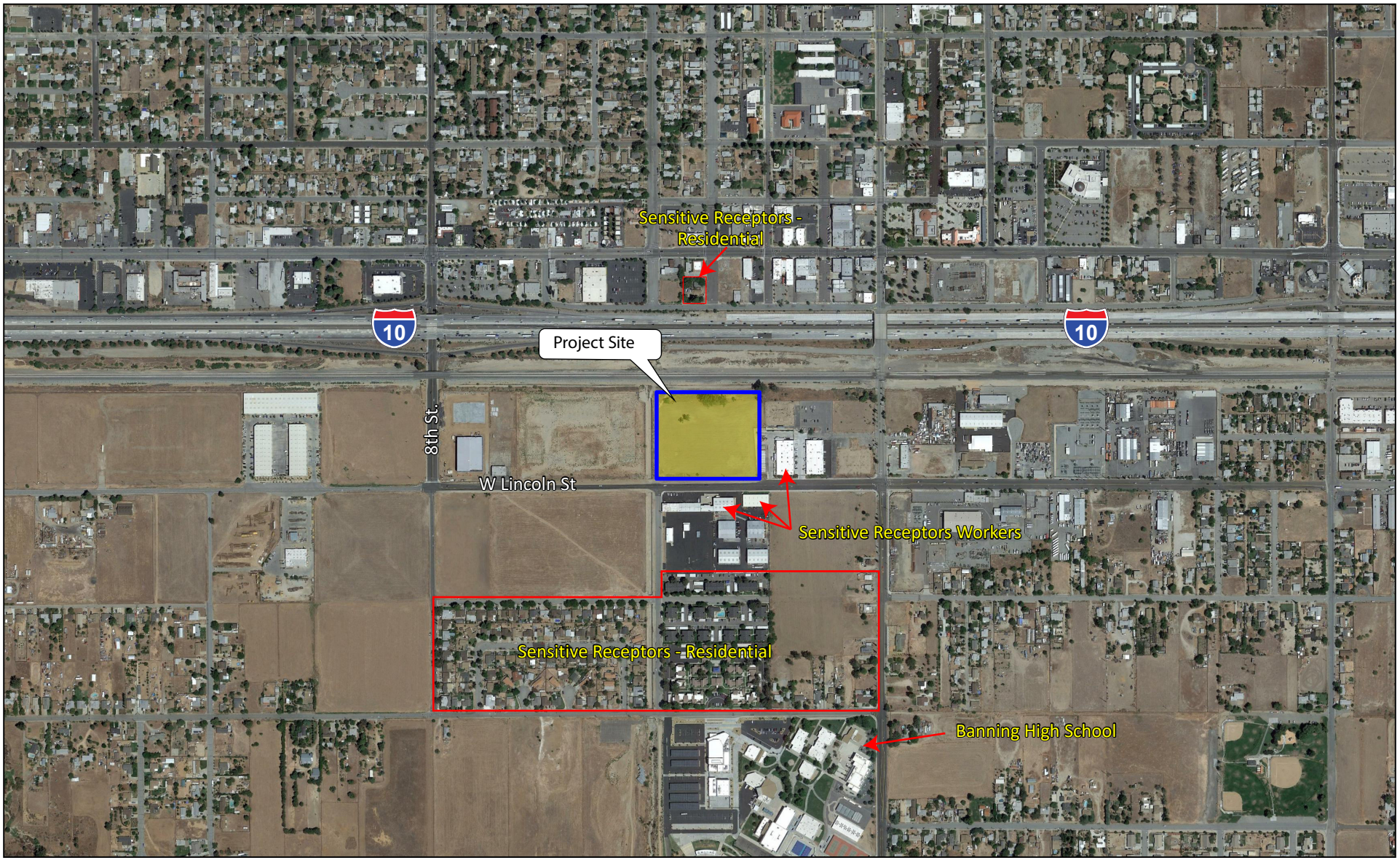
This HRA focuses on the potential health risks to residents and workers near the project site, following the CARB Handbook, CAPCOA, and SCAQMD guidance and recommendations. It examines the short-term and long-term potential health effects from emissions of TACs from project operations, primarily the exhaust from trucks traveling to and from the project site.

1.2 PROJECT LOCATION

The approximately 6.45 acres project site is located on the northeast corner of 4th Street and Lincoln Street/State Route 243, south of Interstate 10, in the City of Banning (City), Riverside County. Specifically, the center of the project site is at latitude 33°55'20.74" N and longitude -116°52'48.43" W at an elevation of approximately 2,317 feet above mean sea level and consists of two parcels (Assessor's Parcel Numbers [APNs] 0540-210-009 and -020). The project is in Compatibility Zone D (Primary Traffic Patterns and Runway Buffer Area) of the [*Banning Municipal Airport*] *Riverside County Airport Land Use Compatibility Plan* (ALUCP). Figure 1 shows the project location.

1.3 PROJECT DESCRIPTION

The proposed project would construct a 118,786 square foot industrial warehouse building, of which 10,000 square feet would be designated office space across two levels. The project would include 25 freight truck loading docks and employee and trailer parking. Figure 2 shows the site plan. It is expected that construction of the project would start in mid-2023 and be completed in the spring of 2024, resulting in a total construction duration of approximately 10 months.



LSA

FIGURE 1

LEGEND

Project Site

0 100 200

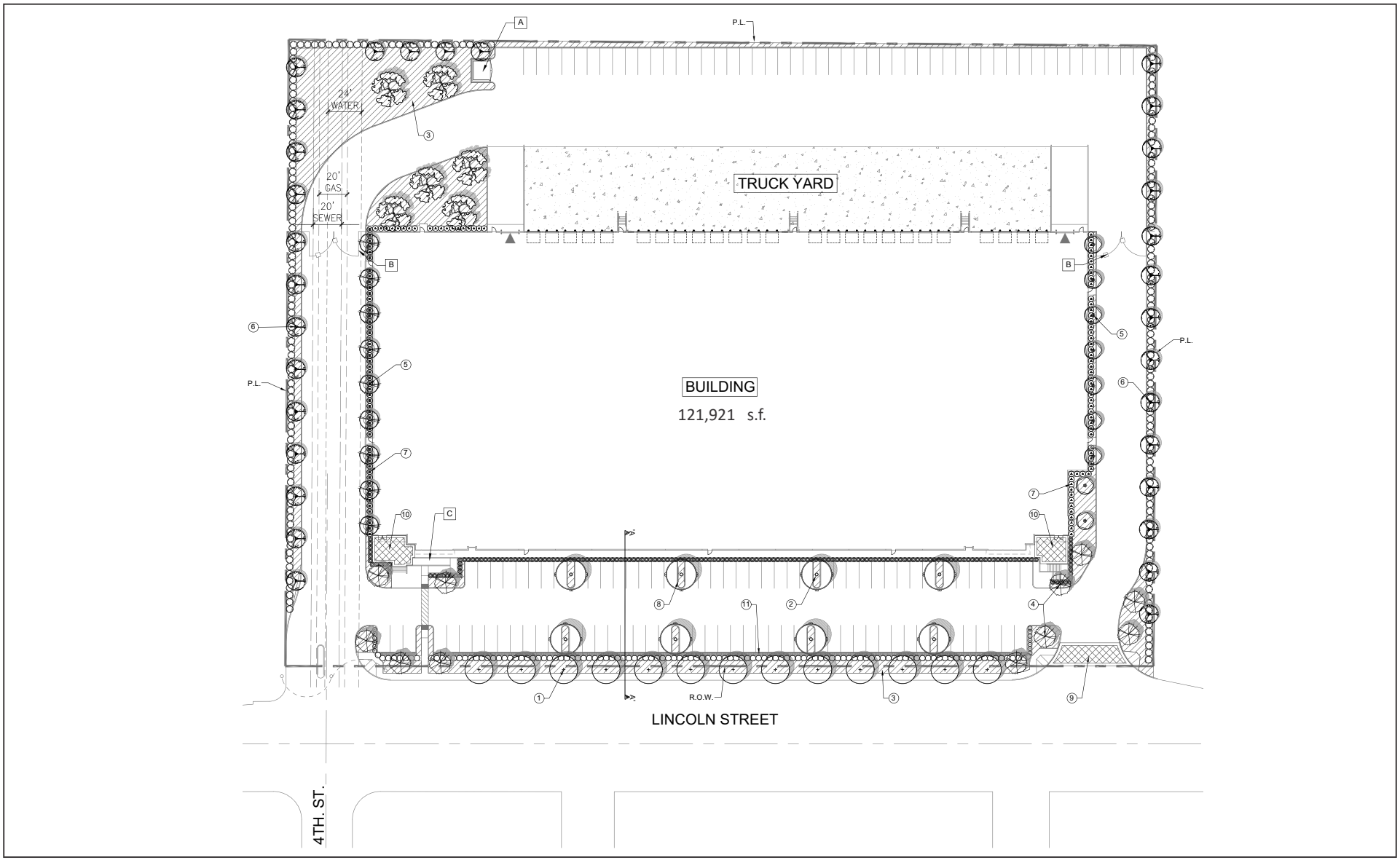
FEET

SOURCE: Google Earth 2021

First Lincoln Industrial Project

Project Location and Sensitive Receptors

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LSA

FIGURE 2

0 15 30
FEET

Source: HPA Architecture

First Lincoln Industrial Project

Site Plan

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1.4 EXISTING SENSITIVE LAND USES IN THE PROJECT AREA

Sensitive receptors include residences, schools, hospitals, and similar uses that are sensitive to air quality. The site is bounded by W. Lincoln Street/State Route 243 to the south, the Gilman Home Stormwater Channel to the west, the Union Pacific Railroad and Interstate 10 to the north, and light industrial uses to the east. The nearest sensitive receptors in proximity to the project site are two single-family homes to the north of I-10, along South 3rd Street approximately 550 feet north of the project site followed by multi-family homes located along Barbour Avenue approximately 580 feet south of the project site. Banning High School is further south along San Gorgonio Avenue. Industrial uses are located immediately south of W. Lincoln Street/State Route 243 between the project site and the nearest residential uses. See Figure 1 for the locations of these sensitive receptors.

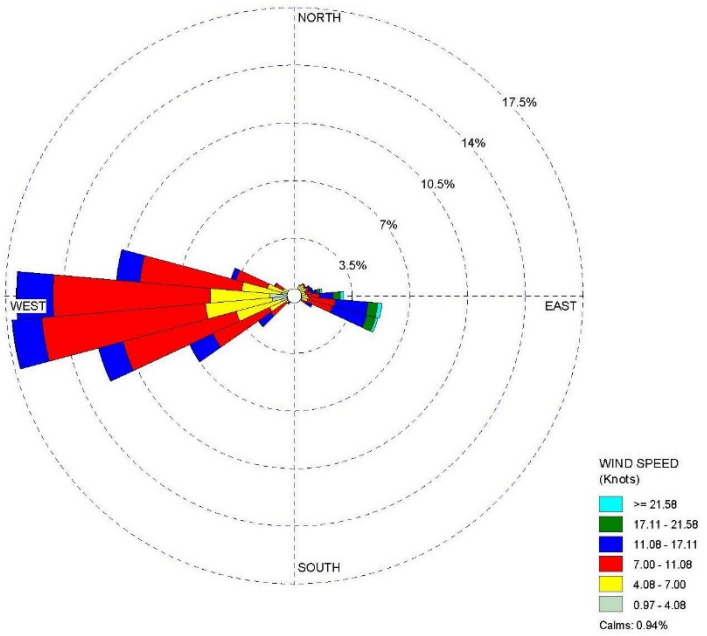
2.0 SETTING

2.1 REGIONAL AIR QUALITY

The project site is in Banning, California, which is part of the South Coast Air Basin (Basin) and is under the jurisdiction of the SCAQMD.

2.1.1 Climate/Meteorology

Air quality in the planning area is not only affected by various emission sources (e.g., mobile and industry), but also by atmospheric conditions (e.g., wind speed, wind direction, temperature, and rainfall). The nearest representative meteorological station that provides the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) ready meteorological data is the Banning Airport Meteorological Station, about 1.3 miles east of the project site. Figure 3, Project Area Wind Patterns, shows the windrose[1] from data measured at this station and the wind patterns for the project area.



Source: SCAQMD Meteorological Data for AERMOD. Website: www.aqmd.gov/home/air-quality/air-quality-data-studies/meteorological-data/data-for-aermod (accessed September 2022).

Figure 3: Project Area Wind Patterns

[1] A windrose provides a succinct view of how wind speed and direction are typically distributed at a particular location. Presented in a circular format, the windrose shows the frequency of winds blowing from particular directions.

2.1.2 Toxic Air Contaminants

The public's exposure to TACs is a significant environmental health issue in the State of California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant pursuant to subsection (b) of Section 112 of the Federal Act (42 United States Code Section 7412) is a TAC. Under State law, the California Environmental Protection Agency, acting through CARB, is authorized to identify a substance as a TAC if it determines the substance is an air pollutant that may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health.

California regulates TACs primarily through Assembly Bill (AB) 1807 (Tanner Air Toxics Act), AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987), and Senate Bill 25, the Children's Environmental Health Protection Act. The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions.

Air toxics from stationary sources are also regulated in California under AB 2588. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the designated air quality management district or air pollution control district. High-priority facilities are required to perform an HRA and, if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

To date, the CARB has designated over 200 compounds as TACs (CARB n.d.-a). Additionally, the CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines (diesel particulate matter [DPM]).

3.0 THRESHOLDS

3.1 HEALTH RISK ASSESSMENT THRESHOLDS OF SIGNIFICANCE

Both the State and federal governments have established health-based ambient air quality standards for seven air pollutants. For other air pollutants without defined significance standards, the definition of substantial pollutant concentrations varies. For TACs, "substantial" is taken to mean that the individual health risk exceeds a threshold considered to be a prudent risk management level.

The following limits for maximum individual cancer risk (MICR) and noncancer acute and chronic Hazard Index (HI) from project emissions of TACs are considered appropriate for use in determining the health risk for projects in the Basin:

- **MICR:** MICR is the estimated probability of a maximum exposed individual (MEI) contracting cancer as a result of exposure to TACs over a period of 30 years for adults and 9 years for children in residential locations and over a period of 25 years for workers. The MICR calculations include multipathway consideration, when applicable.

  The cumulative increase in MICR that is the sum of the calculated MICR values for all TACs would be considered significant if it would result in an increased MICR greater than 10 in 1 million (1×10^{-5}) at any receptor location.

- **Chronic HI:** Chronic HI is the ratio of the estimated long-term level of exposure to a TAC for a potential MEI to its chronic reference exposure level. The chronic HI calculations include multipathway consideration, when applicable.

  The project would be considered significant if the cumulative increase in total chronic HI for any target organ system would exceed 1.0 at any receptor location.

- **Acute HI:** Acute HI is the ratio of the estimated maximum 1-hour concentration of a TAC for a potential MEI to its acute reference exposure level.

  The project would be considered significant if the cumulative increase in total acute HI for any target organ system would exceed 1.0 at any receptor location.

The SCAQMD *CEQA Air Quality Handbook* (1993, currently under revision) states that emissions of TACs are considered significant if an HRA shows an increased risk of greater than 10 in 1 million. Based on guidance from SCAQMD in the document *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis* (2003), for the purposes of this analysis, the threshold of 10 in 1 million was used as the cancer risk threshold for the proposed project.

4.0 HEALTH RISK IMPACTS

4.1 GENERAL INFORMATION

For the purposes of an HRA, short-term emissions are of concern for analyzing acute health impacts, and long-term emissions are of concern for analyzing chronic and carcinogenic health impacts. A screening-level multipathway assessment has been conducted. This technique was chosen as recommended in the OEHHA *Air Toxic Hot Spots Program Risk Assessment Guidelines* (2015).

This HRA has been conducted using three models: the CARB's California Emissions Factor Model, Version 2021 (EMFAC2021) (CARB n.d.-d) for vehicle emissions factors and percentages of fuel type within the overall vehicle fleet; the United States Environmental Protection Agency's (EPA) AERMOD air dispersion model (EPA n.d.-a) to determine how the TACs would move through the atmosphere after release from sources both on site and along truck routes, and the CARB's HARP model to translate the pollutant concentrations from AERMOD into individual health risks at the nearby sensitive receptor locations.

This HRA includes analyzing the inhalation, dermal soil, mother's milk, and homegrown produce pathways. This technique was chosen as prescribed in SCAQMD's *AB 2588 and Rule 1402 Supplemental Guidelines* (2018).

The OEHHA has determined that long-term exposure to diesel exhaust particulates poses the highest cancer risk of any TAC it has evaluated. Exposure to diesel exhaust can also have immediate health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. In studies with human volunteers, diesel exhaust particles (also known as DPM) made people with allergies more susceptible to the materials to which they are allergic, such as dust and pollen. Exposure to diesel exhaust also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks. For risk assessment procedures, the OEHHA specifies that the surrogate for whole diesel exhaust is DPM.

The conservative nature of this analysis is due primarily to the following three factors:

- The CARB-adopted diesel exhaust unit risk factor (URF) of 300 in 1 million per microgram per cubic meter is based on the upper 95th percentile of estimated risk for each of the epidemiological studies used to develop the URF. Therefore, the risk factor is already representative of the conservative risk posed by DPM.

- The risk estimates assume sensitive residence receptors will be subject to DPM for 24 hours per day, 350 days per year and worker receptors for 8 hours per day, 350 days per year. As a conservative measure, SCAQMD does not recognize indoor adjustments for residents or

workers. However, typical people spend the majority of their time indoors at home versus remaining outdoors for 24 hours per day, 350 days per year.[1]

- The exposure to DPM is assumed to be constant for the given period analyzed (i.e., 30 years for residential and 25 years for workers). However, emissions from DPM are expected to substantially decrease in the future with the implementation of standard regulatory requirements, technological advancement to reduce DPM, and the transition to electric trucks. Therefore, the health risk levels from these future trucks would be less than presented in this analysis.

Improvements over the last 40 years to diesel fuel and diesel engines have resulted in lower emissions of some of these TACs (CARB 2019). These improvements resulted in a 75 percent reduction in particle emissions from diesel-powered trucks and other equipment in 2010 and an 85 percent reduction by 2020 as compared to 2000 levels (OEHHA 2001). These improvements are anticipated to continue into the foreseeable future. Electric trucks are also on the horizon and, once in use, would eliminate the emissions of DPM.

4.1.1 Emission Sources

The first step of an HRA is to characterize the project-related emissions of TACs. According to the *Proposed Traffic Study Scope of Work for First Lincoln Logistics Warehouse on Lincoln Street at 4th Street in the City of Banning* (Stantec, May 2022), the project would generate 203 total daily trips of which 71 would be trucks. The study didn't break down the trucks into sub-categories; for this HRA it was assumed that 21 percent of the trucks would be the large 4+-axle haul trucks and the rest of the trucks would be evenly split between 2-axle and 3-axle trucks.

While the TAC emissions from gasoline-powered vehicles have a small health effect compared to DPM, this HRA includes all the traffic information described and both gasoline- and diesel-powered vehicle emissions. For the diesel exhaust emissions, it is sufficient to only consider the DPM (particulate matter less than 10 microns in diameter [PM_{10}] and particulate matter less than 2.5 microns in diameter [$PM_{2.5}$]) portion of the exhaust; all the TACs for the gasoline exhaust emissions are contained in the reactive organic gas (ROG) emissions. Using speciation data from CARB (CARB n.d.-c), the emission rates of the TAC components in gasoline exhaust are derived from the total ROG emissions. The TAC components of the gasoline vehicle ROG exhaust are 1,3-butadiene, benzene, ethylbenzene, methyl ethyl ketone (MEK), naphthalene, propylene, styrene, toluene, and xylenes.

Because the actual hours of operation and schedules are unknown at this time, the vehicles associated with the project were assumed to operate 24 hours per day, 7 days per week, and 52 weeks per year. Making this assumption is conservative, resulting in higher health risk levels that would occur using fewer hours per day. The trucks would operate in two modes: stationary idling

[1] In May 1991, the CARB Research Division, in association with the University of California, Berkeley, published research findings titled *Activity Patterns of California Residents*. The findings of that study indicate that, on average, adults and adolescents in California spent almost 15 hours per day inside their homes and 6 hours in other indoor locations, for a total of 21 hours (87 percent of the day). About 2 hours per day were spent in transit, and just over 1 hour per day was spent in outdoor locations.

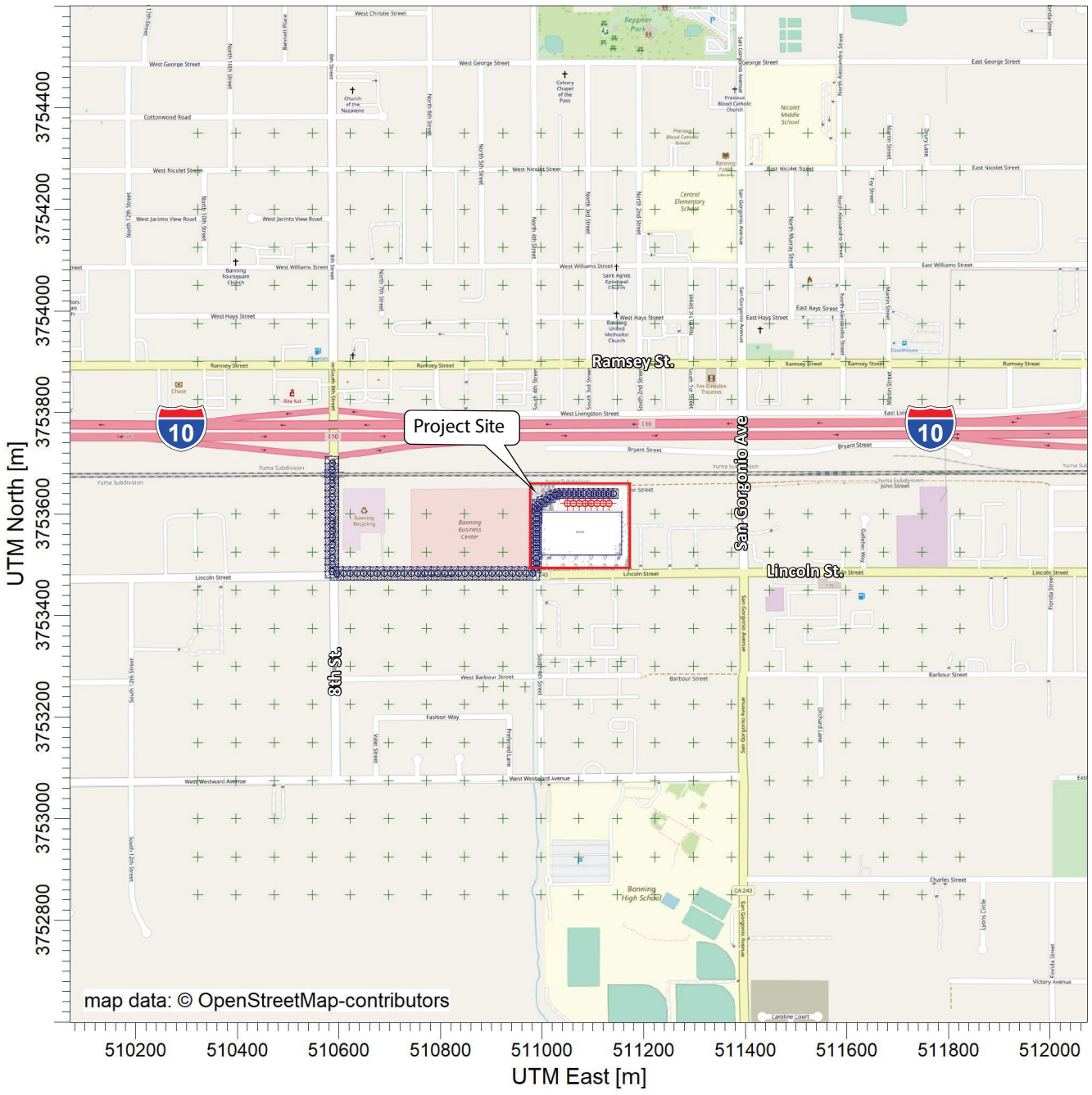
and moving on and off the site. The emissions from trucks while idling result in a much higher concentration of TACs at any nearby sensitive receptors compared to the emissions from moving trucks. This is due to the dispersion of emissions that occurs with distance and with travel of the vehicle. LSA assumed vehicles traveling on site would maneuver slowly, averaging approximately 5 miles per hour (mph), and that vehicles traveling on roadways would average 35 mph. Although the trucks will spend time at higher speeds, their emissions are greater at lower speeds, so using 5 and 35 mph results in a conservative analysis.

For the moving emissions, the truck exhaust emissions were modeled as a series of volume sources along the on-site driveway and along two possible truck routes as shown on Figure 4, AERMOD Modeling Layout, as the dark blue squares.

The idling emissions of trucks operating on the project site was modeled as individual point sources at idling locations along the planned loading docks, shown on Figure 4 as red circles next to the building. While the idling times of the trucks are regulated to be no more than 5 minutes, it is possible the trucks would stop at the loading dock and one or two other areas on site during a single delivery. For the purposes of this HRA, the idling times per delivery were conservatively assumed to be 15 minutes per delivery.

EMFAC2021 was used to determine the emissions factors of idling and operating diesel trucks to determine the total emissions of PM_{10}. Although the TAC of concern from diesel trucks is DPM, EMFAC2021 does not include emissions factors for this TAC. DPM is a component of the overall exhaust from the project-related trucks. This HRA conservatively assumes the DPM emissions to be equal to the PM_{10} emissions when actually the DPM is only a portion of the overall PM_{10} in the truck exhaust. While it is expected that the truck emissions rate will continue to reduce over time, an HRA only allows for a single emission rate to represent the entire 25- or 30-year exposure period. The use of emissions factors for the earliest year the proposed project could start operations (2024) was selected for this HRA to be conservative. For instance, based on operations starting in 2024, using emissions factors for a 2028 vehicle fleet (the midpoint of the 9-year exposure period) or using emissions for a 2039 vehicle fleet (the midpoint of the 30-year exposure period) could be used; however, either of these would be less conservative due to vehicle emissions trending lower over time in the future.

The tables in Appendix A show the development of the exhaust emission rates for the trucks while operating both near the building and on the roadways. The tables show the average daily traffic for the project on each stretch of road by vehicle category. Appendix A also shows the percentage within each vehicle category that is diesel powered (from EMFAC2021), the PM_{10}, particulate matter 2.5 microns or less in size ($PM_{2.5}$), and ROG emissions factors for each vehicle category at the average vehicle speed of 5 mph near the buildings and 35 mph on roadways. Because the AERMOD dispersion model cannot use emissions in grams per mile, emissions are converted to grams per second. The same derivation is repeated for ROG emissions from gasoline-powered vehicles (the majority of TAC emissions from gasoline exhaust are contained in the ROG emissions).



LSA

LEGEND

- Project Site
- AERMOD volume sources
- Truck Idling Locations
- AERMOD receptors

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FIGURE 4

First Lincoln Industrial Project

AERMOD Modeling Setup

I:\FRT2201\G\Modeling_Layout.ai (9/23/2022)

Table A shows the development of the exhaust emission rates for the trucks while idling in the building areas. The emissions are equally divided among the point sources along the loading dock areas. These are depicted on Figure 4 as red circles within the loading dock areas, approximately where the truck engine exhaust pipe would be while positioned for unloading or loading. Table A shows emissions data using the idling emissions factors from EMFAC2021 for these trucks, combined with the total truck count and assuming 15 minutes of idling per trip.

Table A: Onsite Diesel Truck Idling Emission Rates

Facility	Hours / Day	Diesel Truck Deliveries / Day[1]	Diesel Truck Deliveries / Hour	Diesel Idle Exhaust per Vehicle (g/hr)[2]		Idle Time (min/trip)[3]	Diesel Idle Exhaust (g/hr)	
				PM_{10}	$PM_{2.5}$		PM_{10}	$PM_{2.5}$
Idling at Docks	24	32	1.3	0.020	0.019	15	0.067	0.0064

Source: Compiled by LSA Associates, Inc. (2022).

[1] AADT from *Proposed Traffic Study Scope of Work for First Lincoln Logistics Warehouse on Lincoln Street at 4th Street in the City of Banning* (Stantec, May 2022). This is the total diesel truck deliveries per day (52% of the 8 2-axle trucks, 52% of the 8 3-axle trucks, and 97% of the 22 4+-axle trucks). Note that each truck delivery comprises two trips, one to arrive and one to leave.

[2] CARB EMFAC2021 idling emissions factors for 2024 HHDT diesel trucks.

[3] This table assumes each truck idles for 15 minutes per trip to account for multiple stops (i.e., at an entry check-in, loading/ unloading, and miscellaneous on-site activities).

CARB = California Air Resources Board
EMFAC2021 = California Emissions Factor Model, Version 2021
g/hr = grams per hour
HHDT = heavy heavy-duty truck
min/trip = minutes per trip
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter

It was assumed the trucks would idle using their main engines rather than an auxiliary power unit or plugging in to shore power throughout their time at the project site. This is a very conservative assumption, as the loading docks are required to have electrical hookups and the trucks to have the ability to run their accessories from that electricity, so it is likely that the trucks would only operate on their own power when arriving or departing. It was also assumed that any refrigerated trucks would use the electrical hookups rather than operate their transport refrigeration units (TRUs).

4.1.2 Toxic Air Contaminant Air Dispersion Modeling

To assess the dispersion of emissions associated with the project, air dispersion modeling was performed using AERMOD. The model is provided by the EPA to estimate the pollutant concentrations associated with emissions sources in simple and complex terrain. The model was used to calculate the annual average and short-duration (e.g., 1-hour) TAC concentrations associated with project operations. Details of these inputs are shown in Appendix B.

In addition to the idling point sources described above, a series of volume sources were used to represent vehicle activity along nearby roadways. The volume dimensions used were based on the EPA guidance for trucks. For all the truck idling sources, the release height was set to the approximate truck exhaust stack height of 12 ft, a temperature of 200° Fahrenheit, a flow rate of 50 meters (164 ft) per second, and an exhaust pipe diameter of 4 inches. Because building wake effects (building downwash) influences can significantly increase concentrations for receptors

downwind of the building close to the emissions source, consistent with SCAQMD modeling guidance, the proposed building was included with a building height of 35 ft.

The model requires additional input parameters, including local meteorology. Due to the model's sensitivity to individual parameters (e.g., wind speed, temperature, and direction), the EPA recommends meteorological data used as input into dispersion models be selected on the basis of relative spatial and temporal conditions that exist in the area of concern. As such, 5 years of meteorological data from SCAQMD's Banning Monitoring Station (the nearest available) (SCAQMD n.d.-a) was used to represent local weather conditions and prevailing winds.

Based on the sensitive receptor locations shown in Figure 1, modeling receptors points were placed in a rectangular grid approximately 1.0 mile square centered on the project site, also shown on Figure 4, to characterize the regional risk levels. Additional receptors were placed on the closest residences to the south. The Banning High School has five receptors along the closest part of the school property. Thus, there are modeling receptor points placed at all locations of interest.

4.1.3 Hot Spots Analysis and Reporting Program Modeling

CARB's HARP model is a tool that assists with the programmatic requirements of the Air Toxics "Hot Spots" Program (AB 2588). HARP was used to translate the TAC concentrations from AERMOD into long-term carcinogenic and chronic, and short-term acute health risk levels following the guidance in the SCAQMD risk assessment guidelines (2003) for sensitive receptors. These guidelines specify a minimum set of TAC pathways and HARP modeling options[1] for the carcinogenic assessment. To estimate chronic noncancer risks at residential receptors, the "OEHHA-Derived Method" risk-calculation option was used to calculate 1-hour and 8-hour chronic noncancer risk levels.

The dose-response relationship for a specific pollutant describes the association between exposure and the observed response (health effect). In other words, the relationship estimates how different levels of exposure to a pollutant change the likelihood and severity of health effects. The dose-response relationship (the response occurring with increasing doses) varies with each pollutant, individual sensitivity, and type of health effect. Combining the results of the emission characterization and dispersion modeling described above with the dose-response assessment gives an estimate of the increased health risk for an individual exposed to the maximum predicted long-term concentrations of TACs.

As described in Sections 4.1.1 and 4.1.2, the TACs included in this HRA include DPM (as PM_{10} and $PM_{2.5}$) from the diesel vehicle exhaust, and 1,3-butadiene, benzene, ethylbenzene, methyl ethyl ketone (MEK), naphthalene, propylene, styrene, toluene, and xylenes (all components of ROG) from the gasoline vehicle exhaust.

[1] The SCAQMD guidelines specify that residential cancer risks assume a 30-year exposure and must include, at a minimum, the following pathways: inhalation, homegrown produce, dermal absorption, soil ingestion, and mother's milk; a deposition rate of 0.02 meter per second for the non-inhalation pathways; the dermal pathway should assume a "warm" climate; and the "Risk Management Policy Using the Derived Method" risk calculation option should be used.

Appendix A contains the HRA emissions worksheet and EMFAC data, Appendix B contains select pages from the AERMOD output and the HARP report files for this HRA.

4.1.4 Acute Project-Related Emission Impacts

Exposure to TACs from vehicle exhaust can result in immediate health effects. According to the EPA's *Learn About Impacts of Diesel Exhaust and the Diesel Emissions Reduction Act (DERA)* website (EPA n.d.), exposure to diesel exhaust can lead to serious health conditions like asthma and respiratory illnesses and can worsen existing heart and lung disease, especially in children and the elderly. According to the CARB's Overview: Diesel Exhaust & Health website (CARB n.d.-e), in 2012, additional studies on the cancer-causing potential of diesel exhaust published since CARB's determination led the International Agency for Research on Cancer (IARC, a division of the World Health Organization) to list diesel engine exhaust as "carcinogenic to humans". Emissions from gasoline-powered vehicles contain TACs with short-term acute health effects.

The Acute Hazard Index is the ratio of the average short term (generally 1 hour) ambient concentration of an acutely toxic substance(s) divided by the acute reference exposure level set by the OEHHA. This ratio is repeated for every acutely toxic substance, and all are summed to derive the overall Acute Hazard Index. If this Acute Hazard Index is above one, then adverse health effects may occur. Using the modeling methods described above for the project, Table B shows the acute health risks from the operation of the proposed project.

Table B: Health Risk Levels for Nearby Residents and Workers

Location	Maximum Cancer Risk	Maximum Noncancer Chronic Risk (Hazard Index)	Maximum Noncancer Acute Risk (Hazard Index)
Peak Residential MEI Risk Levels	0.039 in 1 million	0.000010	0.000021
Peak Worker MEI Risk Levels	0.016 in 1 million	0.000047	0.000031
SCAQMD Significance Threshold	**10 in 1 million**	**1.0**	**1.0**
Is Either Significant?	**No**	**No**	**No**

Source: Compiled by LSA Associates, Inc. (2022).
MEI = Maximum Exposed Individual
SCAQMD = South Coast Air Quality Management District

The Acute HI would be 0.000021 for the residential MEI and 0.000031 for the worker MEI, both less than the threshold of 1.0. Acute impacts are a result of exposure to contaminant concentrations at extremely high levels. The proposed project would operate in an outdoor environment. As demonstrated by the results of the analysis, air dispersion between the emission sources and the receptor locations would substantially limit contaminant concentrations to the extent that a significant acute risk would not occur.

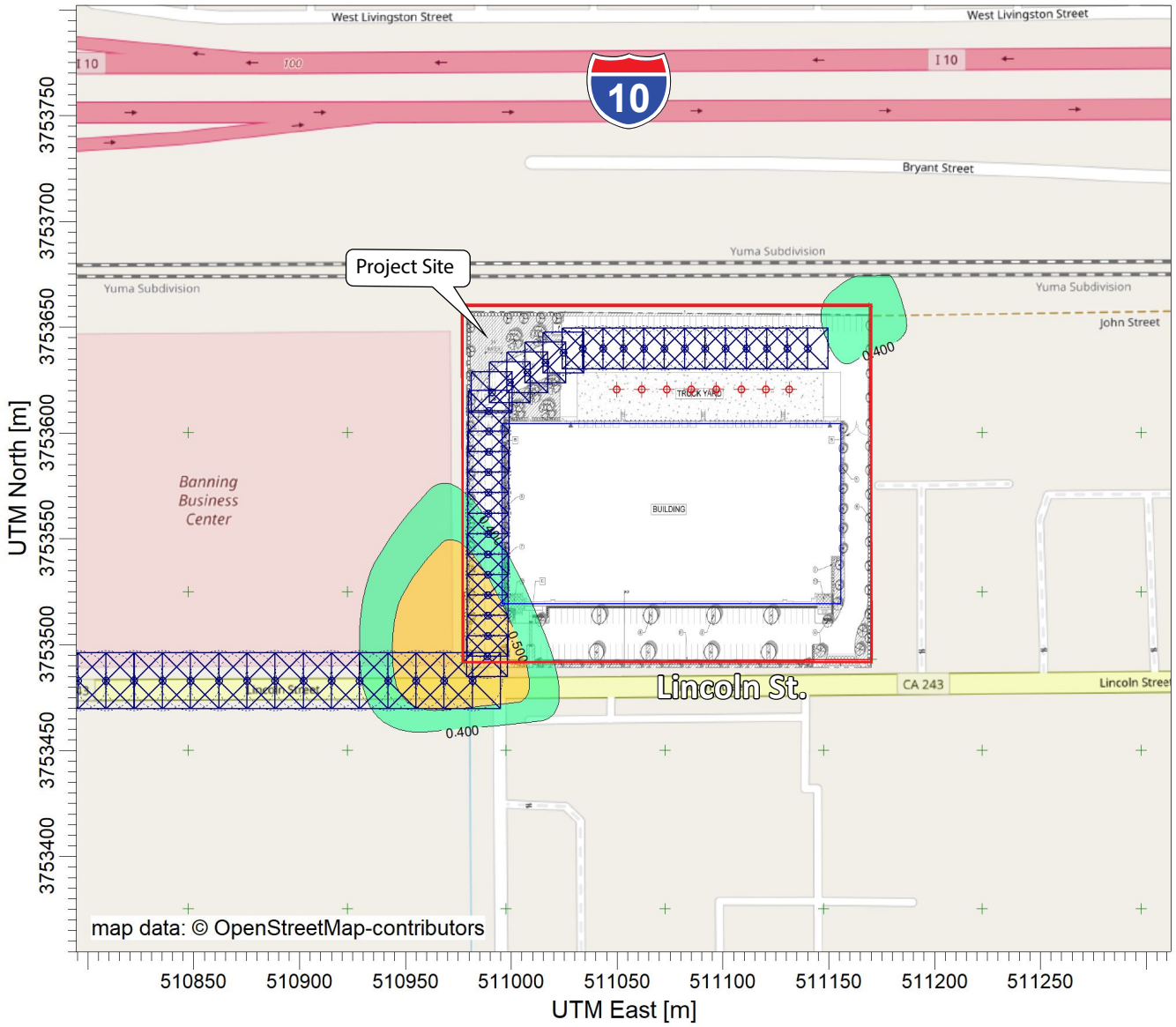
4.1.5 Carcinogenic and Chronic Project-Related Emission Impacts

Table B also shows the carcinogenic and chronic health risks from the operation of the proposed project. The residential risk incorporates both the risk for a child living in a residence for 9 years (the standard period of time for child risk) and an adult living in a residence for 30 years (considered a

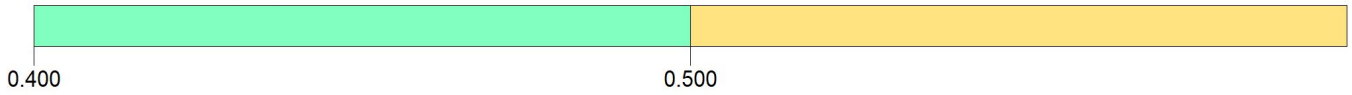
conservative period of time for an individual to live in any one residence). The maximum cancer risk for the residential MEI would be 0.039 in 1 million, less than the threshold of 10 in 1 million. Figure 5, 30-Year Residential Cancer Risk Levels, shows the extent of the cancer risk levels for residents. As shown in the figure, the project related cancer health risk contours are limited to the immediate project vicinity. Therefore, increased health risks to Banning High School staff or students from the project operations are not anticipated. The residential chronic health risks from the operation of the proposed project are also shown in Table B. Results indicate the chronic health risk impact to residential receptors would be 0.000010 which is well below the SCAQMD threshold of 1.0

The worker risk incorporates the risk to an adult working for 25 years (considered a conservative period of time for an individual to work in any one place). The maximum cancer risk for the worker MEI would be 0.016 in 1 million, less than the threshold of 10 in 1 million. Figure 6, 25-Year Worker Cancer Risk Levels, shows the extent of the cancer risk levels for workers. The maximum chronic health risk impact to worker receptors would be 0.000031, which is also well below the SCAQMD risk threshold of 1.0

As these results show, all health risk levels to nearby residents and workers from project-related emissions of TACs from the operation of the proposed project would be below the SCAQMD's HRA thresholds. No significant health risk would occur from the operation of the project, and no mitigation is necessary. Appendix B provides the HARP modeling reports and AERMOD information.



30 Year Residential Cancer Risk Level



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LEGEND

- Project Site
- Volume Sources Along Roads and Driveways
- Truck Idling Locations
- Receptors at Sensitive Receptors

FIGURE 5

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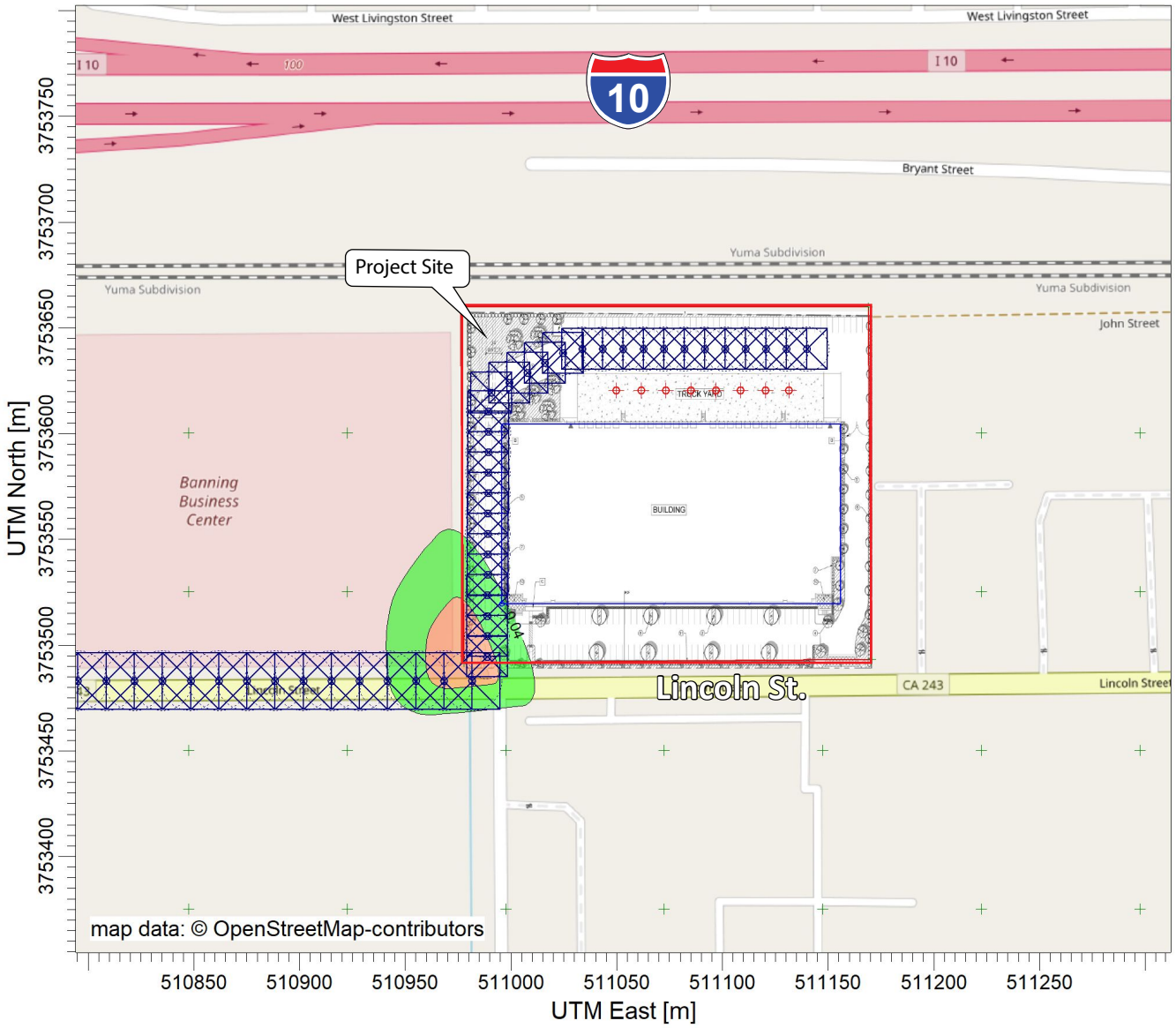
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First Lincoln Industrial Project

30-Year Residential Cancer Isopleth

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25 Year Worker Cancer Risk Level

4.0E-02 5.0E-02

LSA

LEGEND

- Project Site
- Volume Sources Along Roads and Driveways
- Truck Idling Locations
- Receptors at Sensitive Receptors

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FIGURE 6

First Lincoln Industrial Project

25-Year Worker Cancer Isopleth

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APPENDIX A

EMISSION FACTORS FOR VEHICLES AND HEALTH RISK ASSESSMENT EMISSION RATES

First Lincoln Logistics Facility

Project Trip Generation

Land Uses	Units	Daily
Warehouse	118.79 TSF	
Trip Generation (Total)		203
Trip Generation (Trucks)		71

From Proposed Traffic Study Scope of Work for First Lincoln Logistics Warehouse on Lincoln Street at 4th Street in the City of Banning (Stantec, May 2022)

Trip generation for the Project was determined based on Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition rates for Warehousing (Category 150).

TSF = Thousand Square-Feet

Trip Generation (Cars)	132	65%
Trip Generation (2-Axle Trucks)	15	7%
Trip Generation (3-Axle Trucks)	15	7%
Trip Generation (4+ Axle Trucks)	43	21%
Trip Generation (Total Trucks)	73	
Trip Generation (Total)	206	

It was assumed that 21 percent of the trucks would be the large 4+-axle haul trucks and the rest of the trucks would be evenly split between 2-axle and 3-axle trucks. All daily trip rates were rounded up to the nearest integer.

Truck Idling Worksheet

First Lincoln Logistics Facility

Facility	Hour per day	Deliveries per day[1]	Trips per Hour	Diesel Idle Exhaust PM_{10} (gm/vh-hr)[2]	Diesel Idle Exhaust $PM_{2.5}$ (gm/vh-hr)[2]	Idle Time (min/trip)[3]	Idle Exhaust Diesel PM_{10} (gm/hr)	Idle Exhaust Diesel $PM_{2.5}$ (gm/hr)
Main Building	24	32	1.3	0.0200	0.0192	15	0.0067	0.0064

Number of Sources	Diesel PM10 lb/hr	Diesel PM10 lb/yr	Diesel PM2.5 lb/hr	Diesel PM2.5 lb/yr
8	1.8E-06	0.0161	1.8E-06	0.0154

[1] AADT from Proposed Traffic Study Scope of Work for First Lincoln Logistics Warehouse on Lincoln Street at 4th Street in the City of Banning (Stantec, May 2022). This is the total diesel truck deliveries per day (52% of the 8 2-axle trucks, 52% of the 8 3-axle trucks, and 97% of the 22 4+-axle trucks). Note that each truck delivery comprises two trips, one to arrive and one to leave.

[2] Source: EMFAC2021 2024 idling emission factors for HHDT diesel trucks.

[3] It is assumed that each truck idles for 15 minute per trip to account for multiple stops, i.e. at an entry check-in, loading/unloading and miscellaneous tasks.

Truck Emissions Worksheet

First Lincoln Logistics Facility

Onsite travel		**AADT by Truck Category**[1]							
		LDV[2]	**2-Axle**[3]	**3-Axle**[3]	**4+-Axle**[4]				
		133	15	15	43				
		% of Vehicles That Are Diesel-Powered[6]							
Average Speed		0.6%	52%	52%	97%				
		Diesel Exhaust PM10 & PM2.5 Emissions at 5 mph (g/mi)7							
5 mph	PM_{10}	0.0671	0.1019	1.02E-01	1.90E-02				
	$PM_{2.5}$	0.0642	0.0975	9.75E-02	1.82E-02				
		% of Vehicles That Are Gasoline-Powered[6]							
		95%	48%	48%	0.02%				
Total distance covered by Onsite travel sources		**Gasoline Exhaust ROG Emissions at 5 mph (g/mi)7**				**Number of Sources**	**Emission Rates per source**		
	ROG	0.376	4.42E-01	4.42E-01	1.43E-01		**g/s**	**lb/hr**	**lb/yr**
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)							
269 meters	PM_{10}	1.00E-07	1.54E-06	1.54E-06	1.54E-06	30	1.6E-07	1.2E-06	0.0109
	$PM_{2.5}$	9.58E-08	1.47E-06	1.47E-06	1.47E-06	30	1.5E-07	1.2E-06	0.0105
	ROG	9.17E-05	6.13E-06	6.13E-06	2.11E-09	30	3.5E-06	2.8E-05	0.2411

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	1.09E-02	1.25E-06
PM2.5	--	1.05E-02	1.19E-06
1,3-butadiene	0.0055	1.33E-03	1.51E-07
benzene	0.02636	6.35E-03	7.25E-07
ethylbenzene	0.01072	2.58E-03	2.95E-07
MEK	0.00019	4.58E-05	5.23E-09
naphthalene	0.00048	1.16E-04	1.32E-08
propylene	0.03127998	7.54E-03	8.60E-07
styrene	0.00126	3.04E-04	3.47E-08
toluene	0.05879998	1.42E-02	1.62E-06
m & p-xylene	0.03639998	8.78E-03	1.00E-06

[1] AADT from Proposed Traffic Study Scope of Work for First Lincoln Logistics Warehouse on Lincoln Street at 4th Street in the City of Banning (Stantec, May 2022)

[2] LDV use the EMFAC2021 "Non-Truck" emissions factors

[3] 2 axle & 3 axle trucks use the EMFAC2021 "Truck 1" emissions factors

[4] 4+ axle trucks use the EMFAC2021 "Truck 2" emissions factors

[6] Source: EMFAC2021 VMT data

[7] Source: EMFAC2021 emission factors for 2024 (model year aggregate).

Truck Emissions Worksheet

First Lincoln Logistics Facility

From Project Drwy West on Lincoln St then North on 8th St. to I-10 Ramps		AADT by Truck Category[1]							
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**				
		133	15	15	43				
		% of Vehicles That Are Diesel-Powered[6]							
		0.6%	52%	52%	97%				
Average Speed		**Diesel Exhaust PM10 & PM2.5 Emissions at Speed mph (g/mi)7**							
35 mph	PM_{10}	0.0194	0.0327	3.27E-02	7.92E-03				
	$PM_{2.5}$	0.0185	0.0313	3.13E-02	7.58E-03				
		% of Vehicles That Are Gasoline-Powered[6]							
		95%	48%	48%	0.02%				
Total distance covered by these sources		**Gasoline Exhaust ROG Emissions at 35 mph (g/mi)7**				**Number of Sources**	**Emission Rates per source**		
	ROG	0.032	1.52E-01	1.52E-01	1.29E-02		**g/s**	**lb/hr**	**lb/yr**
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)							
609 meters	PM_{10}	6.54E-08	1.12E-06	1.12E-06	1.45E-06	47	8.0E-08	6.3E-07	0.0056
	$PM_{2.5}$	6.26E-08	1.07E-06	1.07E-06	1.39E-06	47	7.6E-08	6.1E-07	0.0053
	ROG	1.75E-05	4.75E-06	4.75E-06	4.30E-10	47	5.7E-07	4.6E-06	0.0400

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	5.55E-03	6.34E-07
PM2.5	--	5.31E-03	6.06E-07
1,3-butadiene	0.0055	2.20E-04	2.51E-08
benzene	0.02636	1.05E-03	1.20E-07
ethylbenzene	0.01072	4.29E-04	4.89E-08
MEK	0.00019	7.60E-06	8.67E-10
naphthalene	0.00048	1.92E-05	2.19E-09
propylene	0.03127998	1.25E-03	1.43E-07
styrene	0.00126	5.04E-05	5.75E-09
toluene	0.05879998	2.35E-03	2.68E-07
m & p-xylene	0.03639998	1.46E-03	1.66E-07

[1] AADT from Proposed Traffic Study Scope of Work for First Lincoln Logistics Warehouse on Lincoln Street at 4th Street in the City of Banning (Stantec, May 2022)

[2] LDV use the EMFAC2021 "Non-Truck" emissions factors

[3] 2 axle & 3 axle trucks use the EMFAC2021 "Truck 1" emissions factors

[4] 4+ axle trucks use the EMFAC2021 "Truck 2" emissions factors

[6] Source: EMFAC2021 VMT data

[7] Source: EMFAC2021 emission factors for 2024 (model year aggregate).

sub_area	Riverside (SC)
calendar_year	2024
season_month	Annual
process	RUNEX
fuel	Dsl

Max of emission_	**Column Labels**		
Row Labels	**NonTruck**	**2 Axle & 3 Axle Trucks**	**4+ axle trucks**
PM10	**0.06705274**	**0.101923035**	**0.019001074**
5	0.06705274	0.101923035	0.019001074
35	0.019376456	0.032712619	0.007922324
PM2_5	**0.064152068**	**0.097513889**	**0.018179096**
5	0.064152068	0.097513889	0.018179096
35	0.018538239	0.031297486	0.007579608
ROG	**0.375906754**	**0.442069703**	**0.143444418**
5	0.375906754	0.442069703	0.143444418
35	0.031753904	0.151631899	0.012889759

sub_area	Riverside (SC)
calendar_year	2024
season_month	Annual
process	IDLEX
fuel	Dsl

Max of emission_rate	**Column Labels**
Row Labels	**4+ axle trucks**
PM10	**0.020025204**
(blank)	0.020025204
PM2_5	**0.019158922**
(blank)	0.019158922
ROG	**2.161197335**
(blank)	2.161197335

EMFAC2021 VMT Data

Region	Riverside (SC)
Calendar Year	2024

Row Labels	Max of Total VMT
HHDT	**1,911,348**
Diesel	1,911,348
Electricity	5,148
Gasoline	348
Natural Gas	50,459
LDA	**20,418,130**
Diesel	54,327
Electricity	945,705
Gasoline	20,418,130
Plug-in Hybrid	650,967
LDT1	**1,523,061**
Diesel	340
Electricity	2,790
Gasoline	1,523,061
Plug-in Hybrid	2,973
LDT2	**8,732,861**
Diesel	29,008
Electricity	43,456
Gasoline	8,732,861
Plug-in Hybrid	88,085
LHDT1	**656,766**
Diesel	560,368
Electricity	3,953
Gasoline	656,766
LHDT2	**254,103**
Diesel	254,103
Electricity	970
Gasoline	89,755
MCY	**140,258**
Gasoline	140,258
MDV	**6,468,419**
Diesel	102,040
Electricity	48,186
Gasoline	6,468,419
Plug-in Hybrid	54,891
MH	**41,624**
Diesel	17,553
Gasoline	41,624
MHDT	**564,761**
Diesel	564,761
Electricity	2,075
Gasoline	49,966
Natural Gas	7,505
OBUS	**15,141**
Diesel	15,141
Electricity	56
Gasoline	12,782
Natural Gas	2,111
SBUS	**16,753**
Diesel	10,226
Electricity	62
Gasoline	16,753
Natural Gas	10,868
UBUS	**31,072**
Diesel	30
Electricity	18
Gasoline	18,511
Natural Gas	31,072

4+ Axle Trucks	
Dsl	97.16%
Electric	0.26%
Gasoline	0.02%
Natural Gas	2.56%

2 Axle & 3 Axle Trucks	
Dsl	52.01%
Electric	0.31%
Gasoline	47.67%

Non-Trucks	
Dsl	0.58%
Electric	2.63%
Gasoline	94.66%
Natural Gas	2.13%

APPENDIX B

AERMOD OUTPUT AND HARP RESULTS

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** MODEL SETUP OPTIONS SUMMARY ***

**Model Is Setup For Calculation of Average CONCentration Values.

-- DEPOSITION LOGIC --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION. DRYDPLT = F
**Model Uses NO WET DEPLETION. WETDPLT = F

**Model Uses URBAN Dispersion Algorithm for the SBL for 85 Source(s),
for Total of 1 Urban Area(s):
Urban Population = 30273.0 ; Urban Roughness Length = 1.000 m

**Model Uses Regulatory DEFAULT Options:
1. Stack-tip Downwash.
2. Model Accounts for ELEVated Terrain Effects.
3. Use Calms Processing Routine.
4. Use Missing Data Processing Routine.
5. No Exponential Decay.
6. Urban Roughness Length of 1.0 Meter Assumed.

**Other Options Specified:
ADJ_U* - Use ADJ_U* option for SBL in AERMET
TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of: TOXICS

**Model Calculates 1 Short Term Average(s) of: 1-HR
and Calculates PERIOD Averages

**This Run Includes: 85 Source(s); 85 Source Group(s); and 403 Receptor(s)

with: 8 POINT(s), including
0 POINTCAP(s) and 0 POINTHOR(s)
and: 77 VOLUME source(s)
and: 0 AREA type source(s)
and: 0 LINE source(s)
and: 0 RLINE/RLINEXT source(s)
and: 0 OPENPIT source(s)
and: 0 BUOYANT LINE source(s) with a total of 0 line(s)

**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 16216

**Output Options Selected:
Model Outputs Tables of PERIOD Averages by Receptor
Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)

```
        Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
        Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing Hours

**Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =   397.00 ;  Decay Coef. =    0.000     ;  Rot. Angle =     0.0
                 Emission Units = GRAMS/SEC                              ;  Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Approximate Storage Requirements of Model =      5.2 MB of RAM.

**Input Runstream File:          aermod.inp
**Output Print File:             aermod.out

**File for Summary of Results:   FRT2201.sum
```

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BLDG EXISTS	URBAN SOURCE	CAP/ HOR	EMIS RATE SCALAR VARY BY
IDLE01	0	0.10000E+01	511049.8	3753620.5	710.2	3.80	366.00	50.00	0.10	YES	YES	NO	
IDLE02	0	0.10000E+01	511061.6	3753620.5	710.2	3.80	366.00	50.00	0.10	YES	YES	NO	
IDLE03	0	0.10000E+01	511073.3	3753620.5	710.1	3.80	366.00	50.00	0.10	YES	YES	NO	
IDLE04	0	0.10000E+01	511085.1	3753620.5	709.9	3.80	366.00	50.00	0.10	YES	YES	NO	
IDLE05	0	0.10000E+01	511096.8	3753620.5	709.9	3.80	366.00	50.00	0.10	YES	YES	NO	
IDLE06	0	0.10000E+01	511108.6	3753620.5	709.9	3.80	366.00	50.00	0.10	YES	YES	NO	
IDLE07	0	0.10000E+01	511120.3	3753620.5	709.7	3.80	366.00	50.00	0.10	YES	YES	NO	
IDLE08	0	0.10000E+01	511131.3	3753620.5	709.6	3.80	366.00	50.00	0.10	YES	YES	NO	

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
ONSITE01	0	0.10000E+01	511140.0	3753640.0	710.2	3.11	4.49	2.89	YES	
ONSITE02	0	0.10000E+01	511130.4	3753640.0	710.2	3.11	4.49	2.89	YES	
ONSITE03	0	0.10000E+01	511120.7	3753640.0	710.2	3.11	4.49	2.89	YES	
ONSITE04	0	0.10000E+01	511111.1	3753640.0	710.5	3.11	4.49	2.89	YES	
ONSITE05	0	0.10000E+01	511101.4	3753640.0	710.5	3.11	4.49	2.89	YES	
ONSITE06	0	0.10000E+01	511091.7	3753640.0	710.5	3.11	4.49	2.89	YES	
ONSITE07	0	0.10000E+01	511082.1	3753640.0	710.5	3.11	4.49	2.89	YES	
ONSITE08	0	0.10000E+01	511072.4	3753640.0	710.7	3.11	4.49	2.89	YES	
ONSITE09	0	0.10000E+01	511062.8	3753640.0	710.8	3.11	4.49	2.89	YES	
ONSITE10	0	0.10000E+01	511053.1	3753640.0	710.8	3.11	4.49	2.89	YES	
ONSITE11	0	0.10000E+01	511043.5	3753640.0	710.8	3.11	4.49	2.89	YES	
ONSITE12	0	0.10000E+01	511033.8	3753640.0	711.0	3.11	4.49	2.89	YES	
ONSITE13	0	0.10000E+01	511024.6	3753638.0	711.1	3.11	4.49	2.89	YES	
ONSITE14	0	0.10000E+01	511016.2	3753633.3	710.9	3.11	4.49	2.89	YES	
ONSITE15	0	0.10000E+01	511007.8	3753628.6	710.9	3.11	4.49	2.89	YES	
ONSITE16	0	0.10000E+01	510999.3	3753623.9	710.9	3.11	4.49	2.89	YES	
ONSITE17	0	0.10000E+01	510990.9	3753619.2	710.8	3.11	4.49	2.89	YES	
ONSITE18	0	0.10000E+01	510989.5	3753610.4	710.5	3.11	4.49	2.89	YES	
ONSITE19	0	0.10000E+01	510989.4	3753600.7	710.2	3.11	4.49	2.89	YES	
ONSITE20	0	0.10000E+01	510989.3	3753591.1	709.9	3.11	4.49	2.89	YES	
ONSITE21	0	0.10000E+01	510989.3	3753581.4	709.6	3.11	4.49	2.89	YES	
ONSITE22	0	0.10000E+01	510989.2	3753571.8	709.4	3.11	4.49	2.89	YES	
ONSITE23	0	0.10000E+01	510989.2	3753562.1	709.0	3.11	4.49	2.89	YES	
ONSITE24	0	0.10000E+01	510989.1	3753552.4	708.7	3.11	4.49	2.89	YES	
ONSITE25	0	0.10000E+01	510989.1	3753542.8	708.4	3.11	4.49	2.89	YES	
ONSITE26	0	0.10000E+01	510989.0	3753533.1	708.1	3.11	4.49	2.89	YES	
ONSITE27	0	0.10000E+01	510989.0	3753523.5	707.8	3.11	4.49	2.89	YES	
ONSITE28	0	0.10000E+01	510988.9	3753513.8	707.6	3.11	4.49	2.89	YES	
ONSITE29	0	0.10000E+01	510988.8	3753504.1	707.3	3.11	4.49	2.89	YES	
ONSITE30	0	0.10000E+01	510988.8	3753494.5	707.0	3.11	4.49	2.89	YES	
LIN8TH01	0	0.10000E+01	510981.7	3753483.0	706.9	3.11	6.19	2.89	YES	
LIN8TH02	0	0.10000E+01	510968.4	3753483.0	707.0	3.11	6.19	2.89	YES	
LIN8TH03	0	0.10000E+01	510955.1	3753483.0	707.2	3.11	6.19	2.89	YES	
LIN8TH04	0	0.10000E+01	510941.8	3753483.0	707.3	3.11	6.19	2.89	YES	
LIN8TH05	0	0.10000E+01	510928.5	3753483.0	707.4	3.11	6.19	2.89	YES	
LIN8TH06	0	0.10000E+01	510915.1	3753483.0	707.8	3.11	6.19	2.89	YES	
LIN8TH07	0	0.10000E+01	510901.8	3753483.0	708.2	3.11	6.19	2.89	YES	
LIN8TH08	0	0.10000E+01	510888.5	3753483.0	708.6	3.11	6.19	2.89	YES	
LIN8TH09	0	0.10000E+01	510875.2	3753483.0	708.9	3.11	6.19	2.89	YES	
LIN8TH10	0	0.10000E+01	510861.9	3753483.0	709.3	3.11	6.19	2.89	YES	

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
LIN8TH11	0	0.10000E+01	510848.5	3753483.0	709.5	3.11	6.19	2.89	YES	
LIN8TH12	0	0.10000E+01	510835.2	3753483.0	709.8	3.11	6.19	2.89	YES	
LIN8TH13	0	0.10000E+01	510821.9	3753483.0	710.2	3.11	6.19	2.89	YES	
LIN8TH14	0	0.10000E+01	510808.6	3753483.0	710.4	3.11	6.19	2.89	YES	
LIN8TH15	0	0.10000E+01	510795.3	3753483.0	710.7	3.11	6.19	2.89	YES	
LIN8TH16	0	0.10000E+01	510782.0	3753483.0	710.9	3.11	6.19	2.89	YES	
LIN8TH17	0	0.10000E+01	510768.7	3753483.0	711.2	3.11	6.19	2.89	YES	
LIN8TH18	0	0.10000E+01	510755.3	3753483.0	711.4	3.11	6.19	2.89	YES	
LIN8TH19	0	0.10000E+01	510742.0	3753483.0	711.6	3.11	6.19	2.89	YES	
LIN8TH20	0	0.10000E+01	510728.7	3753483.0	711.9	3.11	6.19	2.89	YES	
LIN8TH21	0	0.10000E+01	510715.4	3753483.0	712.2	3.11	6.19	2.89	YES	
LIN8TH22	0	0.10000E+01	510702.1	3753483.0	712.4	3.11	6.19	2.89	YES	
LIN8TH23	0	0.10000E+01	510688.8	3753483.0	712.7	3.11	6.19	2.89	YES	
LIN8TH24	0	0.10000E+01	510675.5	3753483.0	712.9	3.11	6.19	2.89	YES	
LIN8TH25	0	0.10000E+01	510662.1	3753483.0	713.1	3.11	6.19	2.89	YES	
LIN8TH26	0	0.10000E+01	510648.8	3753483.0	713.3	3.11	6.19	2.89	YES	
LIN8TH27	0	0.10000E+01	510635.5	3753483.0	713.6	3.11	6.19	2.89	YES	
LIN8TH28	0	0.10000E+01	510622.2	3753483.0	713.8	3.11	6.19	2.89	YES	
LIN8TH29	0	0.10000E+01	510608.9	3753483.0	714.1	3.11	6.19	2.89	YES	
LIN8TH30	0	0.10000E+01	510595.6	3753483.0	714.3	3.11	6.19	2.89	YES	
LIN8TH31	0	0.10000E+01	510586.4	3753487.1	714.6	3.11	6.19	2.89	YES	
LIN8TH32	0	0.10000E+01	510586.4	3753500.5	714.9	3.11	6.19	2.89	YES	
LIN8TH33	0	0.10000E+01	510586.4	3753513.8	715.2	3.11	6.19	2.89	YES	
LIN8TH34	0	0.10000E+01	510586.4	3753527.1	715.5	3.11	6.19	2.89	YES	
LIN8TH35	0	0.10000E+01	510586.4	3753540.4	715.8	3.11	6.19	2.89	YES	
LIN8TH36	0	0.10000E+01	510586.4	3753553.7	716.1	3.11	6.19	2.89	YES	
LIN8TH37	0	0.10000E+01	510586.4	3753567.0	716.4	3.11	6.19	2.89	YES	
LIN8TH38	0	0.10000E+01	510586.4	3753580.3	716.8	3.11	6.19	2.89	YES	
LIN8TH39	0	0.10000E+01	510586.4	3753593.7	717.1	3.11	6.19	2.89	YES	
LIN8TH40	0	0.10000E+01	510586.4	3753607.0	717.5	3.11	6.19	2.89	YES	
LIN8TH41	0	0.10000E+01	510586.4	3753620.3	717.7	3.11	6.19	2.89	YES	
LIN8TH42	0	0.10000E+01	510586.4	3753633.6	718.0	3.11	6.19	2.89	YES	
LIN8TH43	0	0.10000E+01	510586.4	3753646.9	718.2	3.11	6.19	2.89	YES	
LIN8TH44	0	0.10000E+01	510586.4	3753660.2	718.5	3.11	6.19	2.89	YES	
LIN8TH45	0	0.10000E+01	510586.4	3753673.6	718.9	3.11	6.19	2.89	YES	
LIN8TH46	0	0.10000E+01	510586.4	3753686.9	719.3	3.11	6.19	2.89	YES	
LIN8TH47	0	0.10000E+01	510586.4	3753700.2	719.7	3.11	6.19	2.89	YES	

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
IDLE01	IDLE01 ,
IDLE02	IDLE02 ,
IDLE03	IDLE03 ,
IDLE04	IDLE04 ,
IDLE05	IDLE05 ,
IDLE06	IDLE06 ,
IDLE07	IDLE07 ,
IDLE08	IDLE08 ,
LIN8TH01	LIN8TH01 ,
LIN8TH02	LIN8TH02 ,
LIN8TH03	LIN8TH03 ,
LIN8TH04	LIN8TH04 ,
LIN8TH05	LIN8TH05 ,
LIN8TH06	LIN8TH06 ,
LIN8TH07	LIN8TH07 ,
LIN8TH08	LIN8TH08 ,
LIN8TH09	LIN8TH09 ,
LIN8TH10	LIN8TH10 ,
LIN8TH11	LIN8TH11 ,
LIN8TH12	LIN8TH12 ,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
LIN8TH13	LIN8TH13 ,
LIN8TH14	LIN8TH14 ,
LIN8TH15	LIN8TH15 ,
LIN8TH16	LIN8TH16 ,
LIN8TH17	LIN8TH17 ,
LIN8TH18	LIN8TH18 ,
LIN8TH19	LIN8TH19 ,
LIN8TH20	LIN8TH20 ,
LIN8TH21	LIN8TH21 ,
LIN8TH22	LIN8TH22 ,
LIN8TH23	LIN8TH23 ,
LIN8TH24	LIN8TH24 ,
LIN8TH25	LIN8TH25 ,
LIN8TH26	LIN8TH26 ,
LIN8TH27	LIN8TH27 ,
LIN8TH28	LIN8TH28 ,
LIN8TH29	LIN8TH29 ,
LIN8TH30	LIN8TH30 ,
LIN8TH31	LIN8TH31 ,
LIN8TH32	LIN8TH32 ,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
LIN8TH33	LIN8TH33 ,
LIN8TH34	LIN8TH34 ,
LIN8TH35	LIN8TH35 ,
LIN8TH36	LIN8TH36 ,
LIN8TH37	LIN8TH37 ,
LIN8TH38	LIN8TH38 ,
LIN8TH39	LIN8TH39 ,
LIN8TH40	LIN8TH40 ,
LIN8TH41	LIN8TH41 ,
LIN8TH42	LIN8TH42 ,
LIN8TH43	LIN8TH43 ,
LIN8TH44	LIN8TH44 ,
LIN8TH45	LIN8TH45 ,
LIN8TH46	LIN8TH46 ,
LIN8TH47	LIN8TH47 ,
ONSITE01	ONSITE01 ,
ONSITE02	ONSITE02 ,
ONSITE03	ONSITE03 ,
ONSITE04	ONSITE04 ,
ONSITE05	ONSITE05 ,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
ONSITE06	ONSITE06 ,
ONSITE07	ONSITE07 ,
ONSITE08	ONSITE08 ,
ONSITE09	ONSITE09 ,
ONSITE10	ONSITE10 ,
ONSITE11	ONSITE11 ,
ONSITE12	ONSITE12 ,
ONSITE13	ONSITE13 ,
ONSITE14	ONSITE14 ,
ONSITE15	ONSITE15 ,
ONSITE16	ONSITE16 ,
ONSITE17	ONSITE17 ,
ONSITE18	ONSITE18 ,
ONSITE19	ONSITE19 ,
ONSITE20	ONSITE20 ,
ONSITE21	ONSITE21 ,
ONSITE22	ONSITE22 ,
ONSITE23	ONSITE23 ,
ONSITE24	ONSITE24 ,
ONSITE25	ONSITE25 ,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
ONSITE26	ONSITE26 ,
ONSITE27	ONSITE27 ,
ONSITE28	ONSITE28 ,
ONSITE29	ONSITE29 ,
ONSITE30	ONSITE30 ,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINED AS URBAN SOURCES ***

URBAN ID	URBAN POP	SOURCE IDs
	30273.	IDLE01 , IDLE02 , IDLE03 , IDLE04 , IDLE05 , IDLE06 , IDLE07 , IDLE08 ,
		ONSITE01 , ONSITE02 , ONSITE03 , ONSITE04 , ONSITE05 , ONSITE06 , ONSITE07 , ONSITE08 ,
		ONSITE09 , ONSITE10 , ONSITE11 , ONSITE12 , ONSITE13 , ONSITE14 , ONSITE15 , ONSITE16 ,
		ONSITE17 , ONSITE18 , ONSITE19 , ONSITE20 , ONSITE21 , ONSITE22 , ONSITE23 , ONSITE24 ,
		ONSITE25 , ONSITE26 , ONSITE27 , ONSITE28 , ONSITE29 , ONSITE30 , LIN8TH01 , LIN8TH02 ,
		LIN8TH03 , LIN8TH04 , LIN8TH05 , LIN8TH06 , LIN8TH07 , LIN8TH08 , LIN8TH09 , LIN8TH10 ,
		LIN8TH11 , LIN8TH12 , LIN8TH13 , LIN8TH14 , LIN8TH15 , LIN8TH16 , LIN8TH17 , LIN8TH18 ,
		LIN8TH19 , LIN8TH20 , LIN8TH21 , LIN8TH22 , LIN8TH23 , LIN8TH24 , LIN8TH25 , LIN8TH26 ,
		LIN8TH27 , LIN8TH28 , LIN8TH29 , LIN8TH30 , LIN8TH31 , LIN8TH32 , LIN8TH33 , LIN8TH34 ,
		LIN8TH35 , LIN8TH36 , LIN8TH37 , LIN8TH38 , LIN8TH39 , LIN8TH40 , LIN8TH41 , LIN8TH42 ,
		LIN8TH43 , LIN8TH44 , LIN8TH45 , LIN8TH46 , LIN8TH47 ,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: IDLE01

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	15.2,	172.4,	111.5,	-109.0,	-35.8,	2	15.2,	179.5,	134.6,	-113.6,	-44.5,
3	15.2,	181.2,	153.6,	-114.7,	-51.8,	4	15.2,	177.3,	168.0,	-112.3,	-57.6,
5	15.2,	168.0,	177.3,	-106.5,	-61.6,	6	15.2,	153.6,	181.2,	-97.4,	-63.8,
7	15.2,	134.6,	179.5,	-85.4,	-64.0,	8	15.2,	111.5,	172.4,	-70.8,	-62.3,
9	0.0,	0.0,	0.0,	0.0,	0.0,	10	15.2,	111.5,	172.4,	-50.5,	-53.3,
11	15.2,	134.6,	179.5,	-45.3,	-46.3,	12	15.2,	153.6,	181.2,	-38.7,	-37.9,
13	15.2,	168.0,	177.3,	-31.0,	-28.3,	14	15.2,	177.3,	168.0,	-22.4,	-17.9,
15	15.2,	181.2,	153.6,	-13.0,	-6.9,	16	15.2,	179.5,	134.6,	-3.3,	4.3,
17	15.2,	172.4,	111.5,	6.6,	15.4,	18	15.2,	160.1,	85.0,	16.2,	26.0,
19	15.2,	172.4,	111.5,	-2.4,	35.8,	20	15.2,	179.5,	134.6,	-21.0,	44.5,
21	15.2,	181.2,	153.6,	-39.0,	51.8,	22	15.2,	177.3,	168.0,	-55.7,	57.6,
23	15.2,	168.0,	177.3,	-70.8,	61.6,	24	15.2,	153.6,	181.2,	-83.7,	63.8,
25	15.2,	134.6,	179.5,	-94.1,	64.0,	26	15.2,	111.5,	172.4,	-101.6,	62.3,
27	0.0,	0.0,	0.0,	0.0,	0.0,	28	15.2,	111.5,	172.4,	-122.0,	53.3,
29	15.2,	134.6,	179.5,	-134.2,	46.3,	30	15.2,	153.6,	181.2,	-142.4,	37.9,
31	15.2,	168.0,	177.3,	-146.2,	28.3,	32	15.2,	177.3,	168.0,	-145.7,	17.9,
33	15.2,	181.2,	153.6,	-140.6,	6.9,	34	15.2,	179.5,	134.6,	-131.3,	-4.3,
35	15.2,	172.4,	111.5,	-118.0,	-15.4,	36	15.2,	160.1,	85.0,	-101.2,	-26.0,

SOURCE ID: IDLE02

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	15.2,	172.4,	111.5,	-111.1,	-24.2,	2	15.2,	179.5,	134.6,	-117.6,	-33.4,
3	15.2,	181.2,	153.6,	-120.5,	-41.7,	4	15.2,	177.3,	168.0,	-119.8,	-48.6,
5	15.2,	168.0,	177.3,	-115.5,	-54.1,	6	15.2,	153.6,	181.2,	-107.6,	-57.9,
7	15.2,	134.6,	179.5,	-96.5,	-60.0,	8	15.2,	111.5,	172.4,	-82.4,	-60.3,
9	0.0,	0.0,	0.0,	0.0,	0.0,	10	15.2,	111.5,	172.4,	-62.0,	-55.3,
11	15.2,	134.6,	179.5,	-56.3,	-50.3,	12	15.2,	153.6,	181.2,	-48.9,	-43.7,
13	15.2,	168.0,	177.3,	-40.0,	-35.8,	14	15.2,	177.3,	168.0,	-29.9,	-26.9,
15	15.2,	181.2,	153.6,	-18.9,	-17.0,	16	15.2,	179.5,	134.6,	-7.3,	-6.7,
17	15.2,	172.4,	111.5,	4.5,	3.8,	18	15.2,	160.1,	85.0,	16.2,	14.2,
19	15.2,	172.4,	111.5,	-0.4,	24.2,	20	15.2,	179.5,	134.6,	-17.0,	33.4,
21	15.2,	181.2,	153.6,	-33.1,	41.7,	22	15.2,	177.3,	168.0,	-48.2,	48.6,
23	15.2,	168.0,	177.3,	-61.8,	54.1,	24	15.2,	153.6,	181.2,	-73.5,	57.9,
25	15.2,	134.6,	179.5,	-83.0,	60.0,	26	15.2,	111.5,	172.4,	-90.0,	60.3,
27	0.0,	0.0,	0.0,	0.0,	0.0,	28	15.2,	111.5,	172.4,	-110.4,	55.3,
29	15.2,	134.6,	179.5,	-123.2,	50.3,	30	15.2,	153.6,	181.2,	-132.2,	43.7,
31	15.2,	168.0,	177.3,	-137.2,	35.8,	32	15.2,	177.3,	168.0,	-138.1,	26.9,
33	15.2,	181.2,	153.6,	-134.8,	17.0,	34	15.2,	179.5,	134.6,	-127.3,	6.7,
35	15.2,	172.4,	111.5,	-116.0,	-3.8,	36	15.2,	160.1,	85.0,	-101.2,	-14.2,

SOURCE ID: IDLE03

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	15.2,	172.4,	111.5,	-113.1,	-12.6,	2	15.2,	179.5,	134.6,	-121.6,	-22.4,
3	15.2,	181.2,	153.6,	-126.4,	-31.5,	4	15.2,	177.3,	168.0,	-127.4,	-39.6,
5	15.2,	168.0,	177.3,	-124.5,	-46.5,	6	15.2,	153.6,	181.2,	-117.8,	-52.1,
7	15.2,	134.6,	179.5,	-107.5,	-56.0,	8	15.2,	111.5,	172.4,	-94.0,	-58.2,

9	0.0,	0.0,	0.0,	0.0,	0.0,	10	15.2,	111.5,	172.4,	-73.6,	-57.4,
11	15.2,	134.6,	179.5,	-67.4,	-54.3,	12	15.2,	153.6,	181.2,	-59.1,	-49.6,
13	15.2,	168.0,	177.3,	-49.0,	-43.4,	14	15.2,	177.3,	168.0,	-37.5,	-35.8,
15	15.2,	181.2,	153.6,	-24.8,	-27.2,	16	15.2,	179.5,	134.6,	-11.3,	-17.8,
17	15.2,	172.4,	111.5,	2.5,	-7.8,	18	15.2,	160.1,	85.0,	16.2,	2.5,
19	15.2,	172.4,	111.5,	1.6,	12.6,	20	15.2,	179.5,	134.6,	-13.0,	22.4,
21	15.2,	181.2,	153.6,	-27.2,	31.5,	22	15.2,	177.3,	168.0,	-40.6,	39.6,
23	15.2,	168.0,	177.3,	-52.8,	46.5,	24	15.2,	153.6,	181.2,	-63.3,	52.1,
25	15.2,	134.6,	179.5,	-72.0,	56.0,	26	15.2,	111.5,	172.4,	-78.5,	58.2,
27	0.0,	0.0,	0.0,	0.0,	0.0,	28	15.2,	111.5,	172.4,	-98.8,	57.4,
29	15.2,	134.6,	179.5,	-112.1,	54.3,	30	15.2,	153.6,	181.2,	-122.0,	49.6,
31	15.2,	168.0,	177.3,	-128.2,	43.4,	32	15.2,	177.3,	168.0,	-130.6,	35.8,
33	15.2,	181.2,	153.6,	-128.9,	27.2,	34	15.2,	179.5,	134.6,	-123.3,	17.8,
35	15.2,	172.4,	111.5,	-114.0,	7.8,	36	15.2,	160.1,	85.0,	-101.2,	-2.5,

SOURCE ID: IDLE04

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	15.2,	172.4,	111.5,	-115.2,	-1.1,	2	15.2,	179.5,	134.6,	-125.6,	-11.4,
3	15.2,	181.2,	153.6,	-132.3,	-21.3,	4	15.2,	177.3,	168.0,	-134.9,	-30.6,
5	15.2,	168.0,	177.3,	-133.5,	-39.0,	6	15.2,	153.6,	181.2,	-128.0,	-46.2,
7	15.2,	134.6,	179.5,	-118.6,	-52.0,	8	15.2,	111.5,	172.4,	-105.5,	-56.2,
9	0.0,	0.0,	0.0,	0.0,	0.0,	10	15.2,	111.5,	172.4,	-85.2,	-59.4,
11	15.2,	134.6,	179.5,	-78.4,	-58.3,	12	15.2,	153.6,	181.2,	-69.3,	-55.5,
13	15.2,	168.0,	177.3,	-58.0,	-50.9,	14	15.2,	177.3,	168.0,	-45.0,	-44.8,
15	15.2,	181.2,	153.6,	-30.6,	-37.4,	16	15.2,	179.5,	134.6,	-15.3,	-28.8,
17	15.2,	172.4,	111.5,	0.5,	-19.3,	18	15.2,	160.1,	85.0,	16.2,	-9.3,
19	15.2,	172.4,	111.5,	3.7,	1.1,	20	15.2,	179.5,	134.6,	-9.0,	11.4,
21	15.2,	181.2,	153.6,	-21.3,	21.3,	22	15.2,	177.3,	168.0,	-33.1,	30.6,
23	15.2,	168.0,	177.3,	-43.8,	39.0,	24	15.2,	153.6,	181.2,	-53.2,	46.2,
25	15.2,	134.6,	179.5,	-61.0,	52.0,	26	15.2,	111.5,	172.4,	-66.9,	56.2,
27	0.0,	0.0,	0.0,	0.0,	0.0,	28	15.2,	111.5,	172.4,	-87.3,	59.4,
29	15.2,	134.6,	179.5,	-101.1,	58.3,	30	15.2,	153.6,	181.2,	-111.9,	55.5,
31	15.2,	168.0,	177.3,	-119.3,	50.9,	32	15.2,	177.3,	168.0,	-123.0,	44.8,
33	15.2,	181.2,	153.6,	-123.0,	37.4,	34	15.2,	179.5,	134.6,	-119.3,	28.8,
35	15.2,	172.4,	111.5,	-111.9,	19.3,	36	15.2,	160.1,	85.0,	-101.2,	9.3,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: IDLE05

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	15.2,	172.4,	111.5,	-117.2,	10.5,	2	15.2,	179.5,	134.6,	-129.7,	-0.3,
3	15.2,	181.2,	153.6,	-138.2,	-11.1,	4	15.2,	177.3,	168.0,	-142.5,	-21.6,
5	15.2,	168.0,	177.3,	-142.5,	-31.4,	6	15.2,	153.6,	181.2,	-138.1,	-40.3,
7	15.2,	134.6,	179.5,	-129.6,	-48.0,	8	15.2,	111.5,	172.4,	-117.1,	-54.2,
9	0.0,	0.0,	0.0,	0.0,	0.0,	10	15.2,	111.5,	172.4,	-96.7,	-61.5,
11	15.2,	134.6,	179.5,	-89.5,	-62.3,	12	15.2,	153.6,	181.2,	-79.4,	-61.3,
13	15.2,	168.0,	177.3,	-67.0,	-58.5,	14	15.2,	177.3,	168.0,	-52.5,	-53.8,
15	15.2,	181.2,	153.6,	-36.5,	-47.6,	16	15.2,	179.5,	134.6,	-19.3,	-39.8,
17	15.2,	172.4,	111.5,	-1.6,	-30.9,	18	15.2,	160.1,	85.0,	16.2,	-21.0,
19	15.2,	172.4,	111.5,	5.7,	-10.5,	20	15.2,	179.5,	134.6,	-5.0,	0.3,
21	15.2,	181.2,	153.6,	-15.5,	11.1,	22	15.2,	177.3,	168.0,	-25.5,	21.6,
23	15.2,	168.0,	177.3,	-34.8,	31.4,	24	15.2,	153.6,	181.2,	-43.0,	40.3,
25	15.2,	134.6,	179.5,	-49.9,	48.0,	26	15.2,	111.5,	172.4,	-55.3,	54.2,
27	0.0,	0.0,	0.0,	0.0,	0.0,	28	15.2,	111.5,	172.4,	-75.7,	61.5,
29	15.2,	134.6,	179.5,	-90.1,	62.3,	30	15.2,	153.6,	181.2,	-101.7,	61.3,
31	15.2,	168.0,	177.3,	-110.3,	58.5,	32	15.2,	177.3,	168.0,	-115.5,	53.8,
33	15.2,	181.2,	153.6,	-117.1,	47.6,	34	15.2,	179.5,	134.6,	-115.3,	39.8,
35	15.2,	172.4,	111.5,	-109.9,	30.9,	36	15.2,	160.1,	85.0,	-101.2,	21.0,

SOURCE ID: IDLE06

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	15.2,	172.4,	111.5,	-119.2,	22.1,	2	15.2,	179.5,	134.6,	-133.7,	10.7,
3	15.2,	181.2,	153.6,	-144.0,	-1.0,	4	15.2,	177.3,	168.0,	-150.0,	-12.6,
5	15.2,	168.0,	177.3,	-151.5,	-23.9,	6	15.2,	153.6,	181.2,	-148.3,	-34.4,
7	15.2,	134.6,	179.5,	-140.6,	-43.9,	8	15.2,	111.5,	172.4,	-128.7,	-52.1,
9	0.0,	0.0,	0.0,	0.0,	0.0,	10	0.0,	0.0,	0.0,	0.0,	0.0,
11	15.2,	134.6,	179.5,	-100.5,	-66.4,	12	15.2,	153.6,	181.2,	-89.6,	-67.2,
13	15.2,	168.0,	177.3,	-76.0,	-66.0,	14	15.2,	177.3,	168.0,	-60.1,	-62.8,
15	15.2,	181.2,	153.6,	-42.4,	-57.7,	16	15.2,	179.5,	134.6,	-23.4,	-50.9,
17	15.2,	172.4,	111.5,	-3.6,	-42.5,	18	15.2,	160.1,	85.0,	16.2,	-32.8,
19	15.2,	172.4,	111.5,	7.8,	-22.1,	20	15.2,	179.5,	134.6,	-0.9,	-10.7,
21	15.2,	181.2,	153.6,	-9.6,	1.0,	22	15.2,	177.3,	168.0,	-18.0,	12.6,
23	15.2,	168.0,	177.3,	-25.8,	23.9,	24	15.2,	153.6,	181.2,	-32.8,	34.4,
25	15.2,	134.6,	179.5,	-38.9,	43.9,	26	15.2,	111.5,	172.4,	-43.8,	52.1,
27	0.0,	0.0,	0.0,	0.0,	0.0,	28	0.0,	0.0,	0.0,	0.0,	0.0,
29	15.2,	134.6,	179.5,	-79.0,	66.4,	30	15.2,	153.6,	181.2,	-91.5,	67.2,
31	15.2,	168.0,	177.3,	-101.3,	66.0,	32	15.2,	177.3,	168.0,	-107.9,	62.8,
33	15.2,	181.2,	153.6,	-111.3,	57.7,	34	15.2,	179.5,	134.6,	-111.2,	50.9,
35	15.2,	172.4,	111.5,	-107.8,	42.5,	36	15.2,	160.1,	85.0,	-101.2,	32.8,

SOURCE ID: IDLE07

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	15.2,	172.4,	111.5,	-121.3,	33.7,	2	15.2,	179.5,	134.6,	-137.7,	21.8,
3	15.2,	181.2,	153.6,	-149.9,	9.2,	4	15.2,	177.3,	168.0,	-157.6,	-3.6,
5	15.2,	168.0,	177.3,	-160.5,	-16.3,	6	15.2,	153.6,	181.2,	-158.5,	-28.6,
7	15.2,	134.6,	179.5,	-151.7,	-39.9,	8	15.2,	111.5,	172.4,	-140.3,	-50.1,

9	0.0,	0.0,	0.0,	0.0,	0.0,	10	0.0,	0.0,	0.0,	0.0,	0.0,
11	15.2,	134.6,	179.5,	-111.5,	-70.4,	12	15.2,	153.6,	181.2,	-99.8,	-73.1,
13	15.2,	168.0,	177.3,	-85.0,	-73.6,	14	15.2,	177.3,	168.0,	-67.7,	-71.8,
15	15.2,	181.2,	153.6,	-48.2,	-67.9,	16	15.2,	179.5,	134.6,	-27.4,	-61.9,
17	15.2,	172.4,	111.5,	-5.7,	-54.0,	18	15.2,	160.1,	85.0,	16.2,	-44.5,
19	15.2,	172.4,	111.5,	9.8,	-33.7,	20	15.2,	179.5,	134.6,	3.1,	-21.8,
21	15.2,	181.2,	153.6,	-3.7,	-9.2,	22	15.2,	177.3,	168.0,	-10.4,	3.6,
23	15.2,	168.0,	177.3,	-16.8,	16.3,	24	15.2,	153.6,	181.2,	-22.7,	28.6,
25	15.2,	134.6,	179.5,	-27.8,	39.9,	26	15.2,	111.5,	172.4,	-32.2,	50.1,
27	0.0,	0.0,	0.0,	0.0,	0.0,	28	0.0,	0.0,	0.0,	0.0,	0.0,
29	15.2,	134.6,	179.5,	-68.0,	70.4,	30	15.2,	153.6,	181.2,	-81.4,	73.1,
31	15.2,	168.0,	177.3,	-92.2,	73.6,	32	15.2,	177.3,	168.0,	-100.3,	71.8,
33	15.2,	181.2,	153.6,	-105.4,	67.9,	34	15.2,	179.5,	134.6,	-107.2,	61.9,
35	15.2,	172.4,	111.5,	-105.8,	54.0,	36	15.2,	160.1,	85.0,	-101.2,	44.5,

SOURCE ID: IDLE08

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	15.2,	172.4,	111.5,	-123.2,	44.5,	2	15.2,	179.5,	134.6,	-141.5,	32.1,
3	15.2,	181.2,	153.6,	-155.4,	18.8,	4	15.2,	177.3,	168.0,	-164.7,	4.8,
5	15.2,	168.0,	177.3,	-168.9,	-9.3,	6	15.2,	153.6,	181.2,	-168.0,	-23.1,
7	15.2,	134.6,	179.5,	-162.0,	-36.2,	8	15.2,	111.5,	172.4,	-151.1,	-48.2,
9	0.0,	0.0,	0.0,	0.0,	0.0,	10	0.0,	0.0,	0.0,	0.0,	0.0,
11	15.2,	134.6,	179.5,	-121.9,	-74.2,	12	15.2,	153.6,	181.2,	-109.3,	-78.6,
13	15.2,	168.0,	177.3,	-93.5,	-80.7,	14	15.2,	177.3,	168.0,	-74.7,	-80.3,
15	15.2,	181.2,	153.6,	-53.8,	-77.5,	16	15.2,	179.5,	134.6,	-31.1,	-72.3,
17	15.2,	172.4,	111.5,	-7.6,	-64.9,	18	15.2,	160.1,	85.0,	16.2,	-55.5,
19	15.2,	172.4,	111.5,	11.7,	-44.5,	20	15.2,	179.5,	134.6,	6.9,	-32.1,
21	15.2,	181.2,	153.6,	1.8,	-18.8,	22	15.2,	177.3,	168.0,	-3.3,	-4.8,
23	15.2,	168.0,	177.3,	-8.4,	9.3,	24	15.2,	153.6,	181.2,	-13.1,	23.1,
25	15.2,	134.6,	179.5,	-17.5,	36.2,	26	15.2,	111.5,	172.4,	-21.3,	48.2,
27	0.0,	0.0,	0.0,	0.0,	0.0,	28	0.0,	0.0,	0.0,	0.0,	0.0,
29	15.2,	134.6,	179.5,	-57.6,	74.2,	30	15.2,	153.6,	181.2,	-71.8,	78.6,
31	15.2,	168.0,	177.3,	-83.8,	80.7,	32	15.2,	177.3,	168.0,	-93.3,	80.3,
33	15.2,	181.2,	153.6,	-99.9,	77.5,	34	15.2,	179.5,	134.6,	-103.5,	72.3,
35	15.2,	172.4,	111.5,	-103.9,	64.9,	36	15.2,	160.1,	85.0,	-101.2,	55.5,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(510322.5,	3752850.2,	708.2,	708.2,	0.0);	(510397.5,	3752850.2,	705.5,	705.5,	0.0);
(510472.5,	3752850.2,	699.9,	704.4,	0.0);	(510547.5,	3752850.2,	696.5,	696.5,	0.0);
(510622.5,	3752850.2,	697.1,	697.1,	0.0);	(510697.5,	3752850.2,	697.4,	697.4,	0.0);
(510772.5,	3752850.2,	696.8,	696.8,	0.0);	(510847.5,	3752850.2,	694.5,	694.5,	0.0);
(510922.5,	3752850.2,	692.9,	692.9,	0.0);	(510997.5,	3752850.2,	692.5,	692.5,	0.0);
(511072.5,	3752850.2,	692.2,	692.2,	0.0);	(511147.5,	3752850.2,	692.0,	692.0,	0.0);
(511222.5,	3752850.2,	691.5,	691.5,	0.0);	(511297.5,	3752850.2,	691.0,	691.0,	0.0);
(511372.5,	3752850.2,	690.1,	690.1,	0.0);	(511447.5,	3752850.2,	689.7,	689.7,	0.0);
(511522.5,	3752850.2,	689.1,	689.1,	0.0);	(511597.5,	3752850.2,	688.1,	688.1,	0.0);
(511672.5,	3752850.2,	687.1,	687.1,	0.0);	(511747.5,	3752850.2,	686.0,	686.0,	0.0);
(511822.5,	3752850.2,	684.7,	684.7,	0.0);	(510322.5,	3752925.2,	707.9,	707.9,	0.0);
(510397.5,	3752925.2,	706.7,	706.7,	0.0);	(510472.5,	3752925.2,	703.6,	703.6,	0.0);
(510547.5,	3752925.2,	700.7,	700.7,	0.0);	(510622.5,	3752925.2,	699.4,	699.4,	0.0);
(510697.5,	3752925.2,	699.1,	699.1,	0.0);	(510772.5,	3752925.2,	697.3,	697.3,	0.0);
(510847.5,	3752925.2,	695.3,	695.3,	0.0);	(510922.5,	3752925.2,	694.4,	694.4,	0.0);
(510997.5,	3752925.2,	694.2,	694.2,	0.0);	(511072.5,	3752925.2,	694.4,	694.4,	0.0);
(511147.5,	3752925.2,	693.9,	693.9,	0.0);	(511222.5,	3752925.2,	693.3,	693.3,	0.0);
(511297.5,	3752925.2,	692.5,	692.5,	0.0);	(511372.5,	3752925.2,	691.7,	691.7,	0.0);
(511447.5,	3752925.2,	691.3,	691.3,	0.0);	(511522.5,	3752925.2,	690.6,	690.6,	0.0);
(511597.5,	3752925.2,	689.5,	689.5,	0.0);	(511672.5,	3752925.2,	688.5,	688.5,	0.0);
(511747.5,	3752925.2,	687.4,	687.4,	0.0);	(511822.5,	3752925.2,	686.1,	686.1,	0.0);
(510322.5,	3753000.2,	707.7,	707.7,	0.0);	(510397.5,	3753000.2,	708.4,	708.4,	0.0);
(510472.5,	3753000.2,	706.1,	706.1,	0.0);	(510547.5,	3753000.2,	703.9,	703.9,	0.0);
(510622.5,	3753000.2,	701.9,	701.9,	0.0);	(510697.5,	3753000.2,	700.4,	700.4,	0.0);
(510772.5,	3753000.2,	698.9,	698.9,	0.0);	(510847.5,	3753000.2,	697.2,	697.2,	0.0);
(510922.5,	3753000.2,	696.1,	696.1,	0.0);	(510997.5,	3753000.2,	695.7,	695.7,	0.0);
(511072.5,	3753000.2,	696.2,	696.2,	0.0);	(511147.5,	3753000.2,	695.6,	695.6,	0.0);
(511222.5,	3753000.2,	695.0,	695.0,	0.0);	(511297.5,	3753000.2,	694.4,	694.4,	0.0);
(511372.5,	3753000.2,	693.2,	693.2,	0.0);	(511447.5,	3753000.2,	692.9,	692.9,	0.0);
(511522.5,	3753000.2,	692.2,	692.2,	0.0);	(511597.5,	3753000.2,	691.1,	691.1,	0.0);
(511672.5,	3753000.2,	690.1,	690.1,	0.0);	(511747.5,	3753000.2,	688.9,	688.9,	0.0);
(511822.5,	3753000.2,	687.6,	687.6,	0.0);	(510322.5,	3753075.2,	709.0,	709.0,	0.0);
(510397.5,	3753075.2,	709.5,	709.5,	0.0);	(510472.5,	3753075.2,	707.9,	707.9,	0.0);
(510547.5,	3753075.2,	705.5,	705.5,	0.0);	(510622.5,	3753075.2,	704.0,	704.0,	0.0);
(510697.5,	3753075.2,	702.5,	702.5,	0.0);	(510772.5,	3753075.2,	700.9,	700.9,	0.0);
(510847.5,	3753075.2,	699.4,	699.4,	0.0);	(510922.5,	3753075.2,	697.8,	697.8,	0.0);
(510997.5,	3753075.2,	696.5,	696.5,	0.0);	(511072.5,	3753075.2,	697.9,	697.9,	0.0);
(511147.5,	3753075.2,	697.3,	697.3,	0.0);	(511222.5,	3753075.2,	696.7,	696.7,	0.0);
(511297.5,	3753075.2,	696.1,	696.1,	0.0);	(511372.5,	3753075.2,	694.6,	694.6,	0.0);
(511447.5,	3753075.2,	694.4,	694.4,	0.0);	(511522.5,	3753075.2,	693.8,	693.8,	0.0);
(511597.5,	3753075.2,	692.9,	692.9,	0.0);	(511672.5,	3753075.2,	691.9,	691.9,	0.0);
(511747.5,	3753075.2,	690.7,	690.7,	0.0);	(511822.5,	3753075.2,	689.3,	689.3,	0.0);
(510322.5,	3753150.2,	712.0,	712.0,	0.0);	(510397.5,	3753150.2,	710.9,	710.9,	0.0);
(510472.5,	3753150.2,	708.9,	708.9,	0.0);	(510547.5,	3753150.2,	707.0,	707.0,	0.0);
(510622.5,	3753150.2,	705.5,	705.5,	0.0);	(510697.5,	3753150.2,	704.1,	704.1,	0.0);

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(510772.5,	3753150.2,	702.8,	702.8,	0.0);	(510847.5,	3753150.2,	701.5,	701.5,	0.0);
(510922.5,	3753150.2,	700.1,	700.1,	0.0);	(510997.5,	3753150.2,	699.6,	699.6,	0.0);
(511072.5,	3753150.2,	699.4,	699.4,	0.0);	(511147.5,	3753150.2,	698.9,	698.9,	0.0);
(511222.5,	3753150.2,	698.3,	698.3,	0.0);	(511297.5,	3753150.2,	697.2,	697.2,	0.0);
(511372.5,	3753150.2,	696.2,	696.2,	0.0);	(511447.5,	3753150.2,	696.2,	696.2,	0.0);
(511522.5,	3753150.2,	695.7,	695.7,	0.0);	(511597.5,	3753150.2,	694.8,	694.8,	0.0);
(511672.5,	3753150.2,	693.7,	693.7,	0.0);	(511747.5,	3753150.2,	692.4,	692.4,	0.0);
(511822.5,	3753150.2,	691.0,	691.0,	0.0);	(510322.5,	3753225.2,	713.8,	713.8,	0.0);
(510397.5,	3753225.2,	712.3,	712.3,	0.0);	(510472.5,	3753225.2,	710.4,	710.4,	0.0);
(510547.5,	3753225.2,	708.5,	708.5,	0.0);	(510622.5,	3753225.2,	707.5,	707.5,	0.0);
(510697.5,	3753225.2,	706.4,	706.4,	0.0);	(510772.5,	3753225.2,	705.1,	705.1,	0.0);
(510847.5,	3753225.2,	703.8,	703.8,	0.0);	(510922.5,	3753225.2,	703.0,	703.0,	0.0);
(510997.5,	3753225.2,	701.7,	701.7,	0.0);	(511072.5,	3753225.2,	700.7,	700.7,	0.0);
(511147.5,	3753225.2,	700.6,	700.6,	0.0);	(511222.5,	3753225.2,	699.7,	699.7,	0.0);
(511297.5,	3753225.2,	698.9,	698.9,	0.0);	(511372.5,	3753225.2,	698.2,	698.2,	0.0);
(511447.5,	3753225.2,	697.8,	697.8,	0.0);	(511522.5,	3753225.2,	697.5,	697.5,	0.0);
(511597.5,	3753225.2,	696.6,	696.6,	0.0);	(511672.5,	3753225.2,	695.5,	695.5,	0.0);
(511747.5,	3753225.2,	694.3,	694.3,	0.0);	(511822.5,	3753225.2,	692.9,	692.9,	0.0);
(510322.5,	3753300.2,	715.9,	715.9,	0.0);	(510397.5,	3753300.2,	714.1,	714.1,	0.0);
(510472.5,	3753300.2,	712.2,	712.2,	0.0);	(510547.5,	3753300.2,	710.6,	710.6,	0.0);
(510622.5,	3753300.2,	709.5,	709.5,	0.0);	(510697.5,	3753300.2,	708.4,	708.4,	0.0);
(510772.5,	3753300.2,	706.8,	706.8,	0.0);	(510847.5,	3753300.2,	705.4,	705.4,	0.0);
(510922.5,	3753300.2,	704.6,	704.6,	0.0);	(510997.5,	3753300.2,	703.5,	703.5,	0.0);
(511072.5,	3753300.2,	702.8,	702.8,	0.0);	(511147.5,	3753300.2,	702.0,	702.0,	0.0);
(511222.5,	3753300.2,	701.4,	701.4,	0.0);	(511297.5,	3753300.2,	700.8,	700.8,	0.0);
(511372.5,	3753300.2,	700.2,	700.2,	0.0);	(511447.5,	3753300.2,	699.8,	699.8,	0.0);
(511522.5,	3753300.2,	699.3,	699.3,	0.0);	(511597.5,	3753300.2,	698.3,	698.3,	0.0);
(511672.5,	3753300.2,	697.3,	697.3,	0.0);	(511747.5,	3753300.2,	695.9,	695.9,	0.0);
(511822.5,	3753300.2,	694.6,	694.6,	0.0);	(510322.5,	3753375.2,	717.7,	717.7,	0.0);
(510397.5,	3753375.2,	715.7,	715.7,	0.0);	(510472.5,	3753375.2,	714.0,	714.0,	0.0);
(510547.5,	3753375.2,	712.6,	712.6,	0.0);	(510622.5,	3753375.2,	711.4,	711.4,	0.0);
(510697.5,	3753375.2,	709.9,	709.9,	0.0);	(510772.5,	3753375.2,	708.6,	708.6,	0.0);
(510847.5,	3753375.2,	707.3,	707.3,	0.0);	(510922.5,	3753375.2,	706.0,	706.0,	0.0);
(510997.5,	3753375.2,	704.8,	704.8,	0.0);	(511072.5,	3753375.2,	704.0,	704.0,	0.0);
(511147.5,	3753375.2,	703.5,	703.5,	0.0);	(511222.5,	3753375.2,	703.3,	703.3,	0.0);
(511297.5,	3753375.2,	702.8,	702.8,	0.0);	(511372.5,	3753375.2,	701.9,	701.9,	0.0);
(511447.5,	3753375.2,	701.9,	701.9,	0.0);	(511522.5,	3753375.2,	701.2,	701.2,	0.0);
(511597.5,	3753375.2,	700.1,	700.1,	0.0);	(511672.5,	3753375.2,	699.0,	699.0,	0.0);
(511747.5,	3753375.2,	697.8,	697.8,	0.0);	(511822.5,	3753375.2,	696.4,	696.4,	0.0);
(510322.5,	3753450.2,	718.5,	718.5,	0.0);	(510397.5,	3753450.2,	717.1,	717.1,	0.0);
(510472.5,	3753450.2,	715.7,	715.7,	0.0);	(510547.5,	3753450.2,	714.3,	714.3,	0.0);
(510622.5,	3753450.2,	713.2,	713.2,	0.0);	(510697.5,	3753450.2,	711.7,	711.7,	0.0);
(510772.5,	3753450.2,	710.5,	710.5,	0.0);	(510847.5,	3753450.2,	708.8,	708.8,	0.0);
(510922.5,	3753450.2,	707.3,	707.3,	0.0);	(510997.5,	3753450.2,	706.1,	706.1,	0.0);
(511072.5,	3753450.2,	705.8,	705.8,	0.0);	(511147.5,	3753450.2,	705.4,	705.4,	0.0);

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(	511222.5,	3753450.2,	705.1,	705.1,	0.0);	(511297.5,	3753450.2,	704.7,	704.7,	0.0);
(	511372.5,	3753450.2,	704.1,	704.1,	0.0);	(511447.5,	3753450.2,	703.8,	703.8,	0.0);
(	511522.5,	3753450.2,	703.1,	703.1,	0.0);	(511597.5,	3753450.2,	701.9,	701.9,	0.0);
(	511672.5,	3753450.2,	700.9,	700.9,	0.0);	(511747.5,	3753450.2,	699.7,	699.7,	0.0);
(	511822.5,	3753450.2,	698.3,	698.3,	0.0);	(510322.5,	3753525.2,	719.9,	719.9,	0.0);
(	510397.5,	3753525.2,	718.6,	718.6,	0.0);	(510472.5,	3753525.2,	717.3,	717.3,	0.0);
(	510547.5,	3753525.2,	716.0,	716.0,	0.0);	(510622.5,	3753525.2,	714.8,	714.8,	0.0);
(	510697.5,	3753525.2,	713.4,	713.4,	0.0);	(510772.5,	3753525.2,	712.1,	712.1,	0.0);
(	510847.5,	3753525.2,	710.5,	710.5,	0.0);	(510922.5,	3753525.2,	708.6,	708.6,	0.0);
(	511222.5,	3753525.2,	706.7,	706.7,	0.0);	(511297.5,	3753525.2,	706.4,	706.4,	0.0);
(	511372.5,	3753525.2,	706.1,	706.1,	0.0);	(511447.5,	3753525.2,	705.8,	705.8,	0.0);
(	511522.5,	3753525.2,	705.1,	705.1,	0.0);	(511597.5,	3753525.2,	703.9,	703.9,	0.0);
(	511672.5,	3753525.2,	702.8,	702.8,	0.0);	(511747.5,	3753525.2,	701.8,	701.8,	0.0);
(	511822.5,	3753525.2,	700.3,	700.3,	0.0);	(510322.5,	3753600.2,	722.0,	722.0,	0.0);
(	510397.5,	3753600.2,	720.4,	720.4,	0.0);	(510472.5,	3753600.2,	719.1,	719.1,	0.0);
(	510547.5,	3753600.2,	717.9,	717.9,	0.0);	(510622.5,	3753600.2,	716.7,	716.7,	0.0);
(	510697.5,	3753600.2,	715.5,	715.5,	0.0);	(510772.5,	3753600.2,	714.1,	714.1,	0.0);
(	510847.5,	3753600.2,	712.4,	712.4,	0.0);	(510922.5,	3753600.2,	711.0,	711.0,	0.0);
(	511222.5,	3753600.2,	708.7,	708.7,	0.0);	(511297.5,	3753600.2,	708.2,	708.2,	0.0);
(	511372.5,	3753600.2,	708.1,	708.1,	0.0);	(511447.5,	3753600.2,	707.8,	707.8,	0.0);
(	511522.5,	3753600.2,	707.1,	707.1,	0.0);	(511597.5,	3753600.2,	706.2,	706.2,	0.0);
(	511672.5,	3753600.2,	704.9,	704.9,	0.0);	(511747.5,	3753600.2,	704.0,	704.0,	0.0);
(	511822.5,	3753600.2,	702.6,	702.6,	0.0);	(510322.5,	3753825.2,	728.3,	728.3,	0.0);
(	510397.5,	3753825.2,	726.8,	726.8,	0.0);	(510472.5,	3753825.2,	725.0,	725.0,	0.0);
(	510547.5,	3753825.2,	723.8,	723.8,	0.0);	(510622.5,	3753825.2,	722.7,	722.7,	0.0);
(	510697.5,	3753825.2,	721.2,	721.2,	0.0);	(510772.5,	3753825.2,	720.3,	720.3,	0.0);
(	510847.5,	3753825.2,	719.0,	719.0,	0.0);	(510922.5,	3753825.2,	717.6,	717.6,	0.0);
(	510997.5,	3753825.2,	716.8,	716.8,	0.0);	(511072.5,	3753825.2,	716.2,	716.2,	0.0);
(	511147.5,	3753825.2,	715.6,	715.6,	0.0);	(511222.5,	3753825.2,	715.0,	715.0,	0.0);
(	511297.5,	3753825.2,	714.4,	714.4,	0.0);	(511372.5,	3753825.2,	714.0,	714.0,	0.0);
(	511447.5,	3753825.2,	713.1,	713.1,	0.0);	(511522.5,	3753825.2,	712.2,	712.2,	0.0);
(	511597.5,	3753825.2,	711.3,	711.3,	0.0);	(511672.5,	3753825.2,	710.4,	710.4,	0.0);
(	511747.5,	3753825.2,	708.7,	708.7,	0.0);	(511822.5,	3753825.2,	707.6,	707.6,	0.0);
(	510322.5,	3753900.2,	730.6,	730.6,	0.0);	(510397.5,	3753900.2,	729.2,	729.2,	0.0);
(	510472.5,	3753900.2,	727.3,	727.3,	0.0);	(510547.5,	3753900.2,	725.6,	725.6,	0.0);
(	510622.5,	3753900.2,	724.4,	724.4,	0.0);	(510697.5,	3753900.2,	723.1,	723.1,	0.0);
(	510772.5,	3753900.2,	722.0,	722.0,	0.0);	(510847.5,	3753900.2,	720.2,	720.2,	0.0);
(	510922.5,	3753900.2,	719.1,	719.1,	0.0);	(510997.5,	3753900.2,	718.8,	718.8,	0.0);
(	511072.5,	3753900.2,	718.4,	718.4,	0.0);	(511147.5,	3753900.2,	717.8,	717.8,	0.0);
(	511222.5,	3753900.2,	716.9,	716.9,	0.0);	(511297.5,	3753900.2,	716.3,	716.3,	0.0);
(	511372.5,	3753900.2,	715.9,	715.9,	0.0);	(511447.5,	3753900.2,	715.0,	715.0,	0.0);
(	511522.5,	3753900.2,	713.9,	713.9,	0.0);	(511597.5,	3753900.2,	712.9,	712.9,	0.0);
(	511672.5,	3753900.2,	711.8,	711.8,	0.0);	(511747.5,	3753900.2,	710.5,	710.5,	0.0);
(	511822.5,	3753900.2,	709.4,	709.4,	0.0);	(510322.5,	3753975.2,	733.0,	733.0,	0.0);
(	510397.5,	3753975.2,	730.9,	730.9,	0.0);	(510472.5,	3753975.2,	729.3,	729.3,	0.0);

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(	510547.5,	3753975.2,	727.7,	727.7,	0.0);	(	510622.5,	3753975.2,	726.4,	726.4,	0.0);
(	510697.5,	3753975.2,	724.8,	724.8,	0.0);	(	510772.5,	3753975.2,	723.5,	723.5,	0.0);
(	510847.5,	3753975.2,	722.0,	722.0,	0.0);	(	510922.5,	3753975.2,	721.0,	721.0,	0.0);
(	510997.5,	3753975.2,	720.7,	720.7,	0.0);	(	511072.5,	3753975.2,	720.7,	720.7,	0.0);
(	511147.5,	3753975.2,	719.5,	719.5,	0.0);	(	511222.5,	3753975.2,	719.1,	719.1,	0.0);
(	511297.5,	3753975.2,	718.4,	718.4,	0.0);	(	511372.5,	3753975.2,	718.2,	718.2,	0.0);
(	511447.5,	3753975.2,	717.0,	717.0,	0.0);	(	511522.5,	3753975.2,	715.7,	715.7,	0.0);
(	511597.5,	3753975.2,	714.6,	714.6,	0.0);	(	511672.5,	3753975.2,	713.5,	713.5,	0.0);
(	511747.5,	3753975.2,	712.4,	712.4,	0.0);	(	511822.5,	3753975.2,	711.2,	711.2,	0.0);
(	510322.5,	3754050.2,	734.2,	734.2,	0.0);	(	510397.5,	3754050.2,	732.4,	732.4,	0.0);
(	510472.5,	3754050.2,	731.1,	731.1,	0.0);	(	510547.5,	3754050.2,	729.2,	729.2,	0.0);
(	510622.5,	3754050.2,	727.9,	727.9,	0.0);	(	510697.5,	3754050.2,	726.6,	726.6,	0.0);
(	510772.5,	3754050.2,	725.2,	725.2,	0.0);	(	510847.5,	3754050.2,	724.0,	724.0,	0.0);
(	510922.5,	3754050.2,	723.2,	723.2,	0.0);	(	510997.5,	3754050.2,	722.7,	722.7,	0.0);
(	511072.5,	3754050.2,	722.3,	722.3,	0.0);	(	511147.5,	3754050.2,	721.5,	721.5,	0.0);
(	511222.5,	3754050.2,	720.9,	720.9,	0.0);	(	511297.5,	3754050.2,	720.3,	720.3,	0.0);
(	511372.5,	3754050.2,	720.2,	720.2,	0.0);	(	511447.5,	3754050.2,	719.3,	719.3,	0.0);
(	511522.5,	3754050.2,	717.5,	717.5,	0.0);	(	511597.5,	3754050.2,	716.3,	716.3,	0.0);
(	511672.5,	3754050.2,	715.2,	715.2,	0.0);	(	511747.5,	3754050.2,	714.3,	714.3,	0.0);
(	511822.5,	3754050.2,	713.1,	713.1,	0.0);	(	510322.5,	3754125.2,	736.2,	736.2,	0.0);
(	510397.5,	3754125.2,	734.5,	734.5,	0.0);	(	510472.5,	3754125.2,	732.2,	732.2,	0.0);
(	510547.5,	3754125.2,	730.8,	730.8,	0.0);	(	510622.5,	3754125.2,	729.6,	729.6,	0.0);
(	510697.5,	3754125.2,	728.4,	728.4,	0.0);	(	510772.5,	3754125.2,	727.3,	727.3,	0.0);
(	510847.5,	3754125.2,	726.0,	726.0,	0.0);	(	510922.5,	3754125.2,	725.2,	725.2,	0.0);
(	510997.5,	3754125.2,	724.5,	724.5,	0.0);	(	511072.5,	3754125.2,	723.9,	723.9,	0.0);
(	511147.5,	3754125.2,	723.5,	723.5,	0.0);	(	511222.5,	3754125.2,	722.9,	722.9,	0.0);
(	511297.5,	3754125.2,	722.3,	722.3,	0.0);	(	511372.5,	3754125.2,	721.6,	721.6,	0.0);
(	511447.5,	3754125.2,	719.6,	719.6,	0.0);	(	511522.5,	3754125.2,	719.0,	719.0,	0.0);
(	511597.5,	3754125.2,	718.1,	718.1,	0.0);	(	511672.5,	3754125.2,	717.2,	717.2,	0.0);
(	511747.5,	3754125.2,	716.3,	716.3,	0.0);	(	511822.5,	3754125.2,	715.1,	715.1,	0.0);
(	510322.5,	3754200.2,	738.5,	738.5,	0.0);	(	510397.5,	3754200.2,	736.2,	736.2,	0.0);
(	510472.5,	3754200.2,	734.2,	734.2,	0.0);	(	510547.5,	3754200.2,	732.5,	732.5,	0.0);
(	510622.5,	3754200.2,	731.7,	731.7,	0.0);	(	510697.5,	3754200.2,	729.8,	729.8,	0.0);
(	510772.5,	3754200.2,	728.5,	728.5,	0.0);	(	510847.5,	3754200.2,	727.6,	727.6,	0.0);
(	510922.5,	3754200.2,	727.0,	727.0,	0.0);	(	510997.5,	3754200.2,	726.5,	726.5,	0.0);
(	511072.5,	3754200.2,	726.0,	726.0,	0.0);	(	511147.5,	3754200.2,	725.4,	725.4,	0.0);
(	511222.5,	3754200.2,	724.9,	724.9,	0.0);	(	511297.5,	3754200.2,	724.0,	724.0,	0.0);
(	511372.5,	3754200.2,	722.6,	722.6,	0.0);	(	511447.5,	3754200.2,	721.5,	721.5,	0.0);
(	511522.5,	3754200.2,	720.9,	720.9,	0.0);	(	511597.5,	3754200.2,	720.0,	720.0,	0.0);
(	511672.5,	3754200.2,	719.2,	719.2,	0.0);	(	511747.5,	3754200.2,	718.3,	718.3,	0.0);
(	511822.5,	3754200.2,	717.2,	717.2,	0.0);	(	510322.5,	3754275.2,	740.8,	740.8,	0.0);
(	510397.5,	3754275.2,	738.2,	738.2,	0.0);	(	510472.5,	3754275.2,	736.2,	736.2,	0.0);
(	510547.5,	3754275.2,	734.7,	734.7,	0.0);	(	510622.5,	3754275.2,	732.8,	732.8,	0.0);
(	510697.5,	3754275.2,	730.9,	730.9,	0.0);	(	510772.5,	3754275.2,	729.9,	729.9,	0.0);
(	510847.5,	3754275.2,	729.2,	729.2,	0.0);	(	510922.5,	3754275.2,	728.7,	728.7,	0.0);

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(	510997.5,	3754275.2,	728.3,	728.3,	0.0);	(	511072.5,	3754275.2,	728.0,	728.0,	0.0);
(	511147.5,	3754275.2,	727.3,	727.3,	0.0);	(	511222.5,	3754275.2,	726.9,	726.9,	0.0);
(	511297.5,	3754275.2,	726.0,	726.0,	0.0);	(	511372.5,	3754275.2,	724.4,	724.4,	0.0);
(	511447.5,	3754275.2,	723.8,	723.8,	0.0);	(	511522.5,	3754275.2,	723.1,	723.1,	0.0);
(	511597.5,	3754275.2,	722.2,	722.2,	0.0);	(	511672.5,	3754275.2,	721.4,	721.4,	0.0);
(	511747.5,	3754275.2,	720.2,	720.2,	0.0);	(	511822.5,	3754275.2,	719.2,	719.2,	0.0);
(	510322.5,	3754350.2,	742.6,	742.6,	0.0);	(	510397.5,	3754350.2,	740.2,	740.2,	0.0);
(	510472.5,	3754350.2,	738.5,	738.5,	0.0);	(	510547.5,	3754350.2,	736.5,	736.5,	0.0);
(	510622.5,	3754350.2,	734.2,	734.2,	0.0);	(	510697.5,	3754350.2,	732.3,	732.3,	0.0);
(	510772.5,	3754350.2,	731.3,	731.3,	0.0);	(	510847.5,	3754350.2,	730.8,	730.8,	0.0);
(	510922.5,	3754350.2,	730.4,	730.4,	0.0);	(	510997.5,	3754350.2,	730.3,	730.3,	0.0);
(	511072.5,	3754350.2,	730.0,	730.0,	0.0);	(	511147.5,	3754350.2,	729.7,	729.7,	0.0);
(	511222.5,	3754350.2,	729.1,	729.1,	0.0);	(	511297.5,	3754350.2,	728.2,	728.2,	0.0);
(	511372.5,	3754350.2,	726.9,	726.9,	0.0);	(	511447.5,	3754350.2,	726.0,	726.0,	0.0);
(	511522.5,	3754350.2,	725.3,	725.3,	0.0);	(	511597.5,	3754350.2,	724.5,	724.5,	0.0);
(	511672.5,	3754350.2,	723.6,	723.6,	0.0);	(	511747.5,	3754350.2,	722.5,	722.5,	0.0);
(	511822.5,	3754350.2,	721.7,	721.7,	0.0);	(	511025.0,	3753308.3,	703.3,	703.3,	0.0);
(	511095.6,	3753309.4,	702.7,	702.7,	0.0);	(	511155.4,	3753310.0,	702.1,	702.1,	0.0);
(	510966.3,	3753259.3,	703.0,	703.0,	0.0);	(	510924.2,	3753261.0,	703.8,	703.8,	0.0);
(	510884.3,	3753259.3,	704.0,	704.0,	0.0);	(	510976.1,	3753659.8,	712.2,	712.2,	0.0);
(	511168.9,	3753659.8,	710.6,	710.6,	0.0);	(	511170.6,	3753493.2,	706.1,	706.1,	0.0);
(	510977.8,	3753491.6,	707.1,	707.1,	0.0);						

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

* SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT BE PERFORMED *
LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR FASTAREA/FASTALL

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS)	YR (METERS)	DISTANCE (METERS)
LIN8TH01	510977.8	3753491.6	-3.86
LIN8TH02	510977.8	3753491.6	-0.59

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

1 1 1

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: BanningADJU\BNAP_V9_ADJU\BNAP_v9.SFC Met Version: 16216
Profile file: BanningADJU\BNAP_V9_ADJU\BNAP_v9.PFL
Surface format: FREE
Profile format: FREE
Surface station no.: 3171 Upper air station no.: 3190
Name: BANNING_AIR_PORT Name: MIRAMAR
Year: 2011 Year: 2011

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
11	01	01	1	01	-50.0	0.519	-9.000	-9.000	-999.	897.	296.2	0.15	4.23	1.00	5.40	108.	9.1	274.2	5.5
11	01	01	1	02	-54.0	0.559	-9.000	-9.000	-999.	1002.	343.7	0.15	4.23	1.00	5.80	113.	9.1	273.8	5.5
11	01	01	1	03	-50.2	0.519	-9.000	-9.000	-999.	899.	296.1	0.15	4.23	1.00	5.40	112.	9.1	273.1	5.5
11	01	01	1	04	-45.5	0.469	-9.000	-9.000	-999.	773.	241.8	0.15	4.23	1.00	4.90	111.	9.1	272.5	5.5
11	01	01	1	05	-13.5	0.164	-9.000	-9.000	-999.	293.	29.5	0.15	4.23	1.00	1.80	78.	9.1	270.9	5.5
11	01	01	1	06	-19.9	0.203	-9.000	-9.000	-999.	220.	45.4	0.15	4.23	1.00	2.20	58.	9.1	270.4	5.5
11	01	01	1	07	-19.9	0.203	-9.000	-9.000	-999.	220.	45.4	0.15	4.23	1.00	2.20	54.	9.1	270.4	5.5
11	01	01	1	08	-12.2	0.206	-9.000	-9.000	-999.	224.	60.4	0.15	4.23	0.55	2.20	60.	9.1	270.9	5.5
11	01	01	1	09	45.6	0.455	0.587	0.005	150.	738.	-174.7	0.15	4.23	0.34	4.50	96.	9.1	273.8	5.5
11	01	01	1	10	126.7	0.592	0.981	0.005	252.	1092.	-138.5	0.15	4.23	0.27	5.80	102.	9.1	274.9	5.5
11	01	01	1	11	195.5	0.684	1.823	0.009	1048.	1355.	-138.3	0.15	4.23	0.25	6.70	100.	9.1	275.9	5.5
11	01	01	1	12	229.2	0.688	2.066	0.009	1302.	1370.	-120.1	0.15	4.23	0.24	6.70	96.	9.1	276.4	5.5
11	01	01	1	13	190.6	0.647	1.999	0.009	1417.	1254.	-120.0	0.15	4.23	0.24	6.30	95.	9.1	277.0	5.5
11	01	01	1	14	115.4	0.590	1.708	0.009	1459.	1094.	-150.2	0.15	4.23	0.26	5.80	98.	9.1	277.0	5.5
11	01	01	1	15	101.2	0.588	1.649	0.009	1496.	1081.	-169.0	0.15	4.23	0.29	5.80	99.	9.1	276.4	5.5
11	01	01	1	16	27.7	0.534	1.074	0.009	1507.	940.	-462.4	0.15	4.23	0.38	5.40	103.	9.1	276.4	5.5
11	01	01	1	17	-42.8	0.469	-9.000	-9.000	-999.	777.	242.4	0.15	4.23	0.67	4.90	106.	9.1	275.9	5.5
11	01	01	1	18	-32.7	0.340	-9.000	-9.000	-999.	489.	127.2	0.15	4.23	1.00	3.60	100.	9.1	274.9	5.5
11	01	01	1	19	-24.4	0.252	-9.000	-9.000	-999.	308.	69.8	0.15	4.23	1.00	2.70	70.	9.1	273.1	5.5
11	01	01	1	20	-28.2	0.291	-9.000	-9.000	-999.	377.	93.1	0.15	4.23	1.00	3.10	85.	9.1	273.1	5.5
11	01	01	1	21	-28.2	0.291	-9.000	-9.000	-999.	377.	93.1	0.15	4.23	1.00	3.10	82.	9.1	273.1	5.5
11	01	01	1	22	-24.5	0.252	-9.000	-9.000	-999.	304.	69.8	0.15	4.23	1.00	2.70	64.	9.1	272.5	5.5
11	01	01	1	23	-24.5	0.252	-9.000	-9.000	-999.	304.	69.8	0.15	4.23	1.00	2.70	61.	9.1	272.5	5.5
11	01	01	1	24	-24.5	0.252	-9.000	-9.000	-999.	304.	69.8	0.15	4.23	1.00	2.70	76.	9.1	272.5	5.5

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
11	01	01	01	5.5	0	-999.	-99.00	274.3	99.0	-99.00	-99.00
11	01	01	01	9.1	1	108.	5.40	-999.0	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF TOXICS IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					OF TYPE	NETWORK GRID-ID
IDLE01	1ST HIGHEST VALUE IS	64.67996 AT	(511168.93,	3753659.84,	710.60,	710.60,	0.00)	DC	
	2ND HIGHEST VALUE IS	47.83767 AT	(511222.52,	3753600.19,	708.70,	708.70,	0.00)	DC	
	3RD HIGHEST VALUE IS	29.28912 AT	(511297.52,	3753600.19,	708.21,	708.21,	0.00)	DC	
	4TH HIGHEST VALUE IS	25.13507 AT	(510976.13,	3753659.84,	712.18,	712.18,	0.00)	DC	
	5TH HIGHEST VALUE IS	21.00358 AT	(511372.52,	3753600.19,	708.06,	708.06,	0.00)	DC	
	6TH HIGHEST VALUE IS	17.66083 AT	(511222.52,	3753525.19,	706.70,	706.70,	0.00)	DC	
	7TH HIGHEST VALUE IS	15.80741 AT	(511447.52,	3753600.19,	707.83,	707.83,	0.00)	DC	
	8TH HIGHEST VALUE IS	15.32023 AT	(511297.52,	3753525.19,	706.40,	706.40,	0.00)	DC	
	9TH HIGHEST VALUE IS	14.70124 AT	(510922.52,	3753600.19,	711.05,	711.05,	0.00)	DC	
	10TH HIGHEST VALUE IS	14.20640 AT	(511372.52,	3753525.19,	706.10,	706.10,	0.00)	DC	
IDLE02	1ST HIGHEST VALUE IS	68.51103 AT	(511168.93,	3753659.84,	710.60,	710.60,	0.00)	DC	
	2ND HIGHEST VALUE IS	50.80436 AT	(511222.52,	3753600.19,	708.70,	708.70,	0.00)	DC	
	3RD HIGHEST VALUE IS	30.95473 AT	(511297.52,	3753600.19,	708.21,	708.21,	0.00)	DC	
	4TH HIGHEST VALUE IS	23.89424 AT	(510976.13,	3753659.84,	712.18,	712.18,	0.00)	DC	
	5TH HIGHEST VALUE IS	22.02248 AT	(511372.52,	3753600.19,	708.06,	708.06,	0.00)	DC	
	6TH HIGHEST VALUE IS	16.96080 AT	(511222.52,	3753525.19,	706.70,	706.70,	0.00)	DC	
	7TH HIGHEST VALUE IS	16.48273 AT	(511447.52,	3753600.19,	707.83,	707.83,	0.00)	DC	
	8TH HIGHEST VALUE IS	15.16929 AT	(511297.52,	3753525.19,	706.40,	706.40,	0.00)	DC	
	9TH HIGHEST VALUE IS	14.28243 AT	(511372.52,	3753525.19,	706.10,	706.10,	0.00)	DC	
	10TH HIGHEST VALUE IS	13.74846 AT	(510922.52,	3753600.19,	711.05,	711.05,	0.00)	DC	
IDLE03	1ST HIGHEST VALUE IS	75.12342 AT	(511168.93,	3753659.84,	710.60,	710.60,	0.00)	DC	
	2ND HIGHEST VALUE IS	54.21891 AT	(511222.52,	3753600.19,	708.70,	708.70,	0.00)	DC	
	3RD HIGHEST VALUE IS	32.83819 AT	(511297.52,	3753600.19,	708.21,	708.21,	0.00)	DC	
	4TH HIGHEST VALUE IS	23.07229 AT	(511372.52,	3753600.19,	708.06,	708.06,	0.00)	DC	
	5TH HIGHEST VALUE IS	20.90446 AT	(510976.13,	3753659.84,	712.18,	712.18,	0.00)	DC	
	6TH HIGHEST VALUE IS	17.21426 AT	(511447.52,	3753600.19,	707.83,	707.83,	0.00)	DC	
	7TH HIGHEST VALUE IS	16.10563 AT	(511222.52,	3753525.19,	706.70,	706.70,	0.00)	DC	
	8TH HIGHEST VALUE IS	14.97781 AT	(511297.52,	3753525.19,	706.40,	706.40,	0.00)	DC	
	9TH HIGHEST VALUE IS	14.35043 AT	(511372.52,	3753525.19,	706.10,	706.10,	0.00)	DC	
	10TH HIGHEST VALUE IS	13.33111 AT	(511522.52,	3753600.19,	707.14,	707.14,	0.00)	DC	
IDLE04	1ST HIGHEST VALUE IS	83.27821 AT	(511168.93,	3753659.84,	710.60,	710.60,	0.00)	DC	
	2ND HIGHEST VALUE IS	57.57110 AT	(511222.52,	3753600.19,	708.70,	708.70,	0.00)	DC	
	3RD HIGHEST VALUE IS	34.64518 AT	(511297.52,	3753600.19,	708.21,	708.21,	0.00)	DC	
	4TH HIGHEST VALUE IS	24.08455 AT	(511372.52,	3753600.19,	708.06,	708.06,	0.00)	DC	
	5TH HIGHEST VALUE IS	18.52097 AT	(510976.13,	3753659.84,	712.18,	712.18,	0.00)	DC	
	6TH HIGHEST VALUE IS	17.84598 AT	(511447.52,	3753600.19,	707.83,	707.83,	0.00)	DC	
	7TH HIGHEST VALUE IS	15.01357 AT	(511222.52,	3753525.19,	706.70,	706.70,	0.00)	DC	
	8TH HIGHEST VALUE IS	14.62737 AT	(511297.52,	3753525.19,	706.40,	706.40,	0.00)	DC	
	9TH HIGHEST VALUE IS	14.33818 AT	(511372.52,	3753525.19,	706.10,	706.10,	0.00)	DC	
	10TH HIGHEST VALUE IS	13.76580 AT	(511522.52,	3753600.19,	707.14,	707.14,	0.00)	DC	

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF TOXICS IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)				OF TYPE	NETWORK GRID-ID
IDLE05	1ST HIGHEST VALUE IS	83.16089 AT	511168.93,	3753659.84,	710.60,	710.60, 0.00)	DC	
	2ND HIGHEST VALUE IS	60.40903 AT	511222.52,	3753600.19,	708.70,	708.70, 0.00)	DC	
	3RD HIGHEST VALUE IS	36.14804 AT	511297.52,	3753600.19,	708.21,	708.21, 0.00)	DC	
	4TH HIGHEST VALUE IS	24.88287 AT	511372.52,	3753600.19,	708.06,	708.06, 0.00)	DC	
	5TH HIGHEST VALUE IS	18.32140 AT	511447.52,	3753600.19,	707.83,	707.83, 0.00)	DC	
	6TH HIGHEST VALUE IS	16.84401 AT	510976.13,	3753659.84,	712.18,	712.18, 0.00)	DC	
	7TH HIGHEST VALUE IS	14.29260 AT	511372.52,	3753525.19,	706.10,	706.10, 0.00)	DC	
	8TH HIGHEST VALUE IS	14.11762 AT	511297.52,	3753525.19,	706.40,	706.40, 0.00)	DC	
	9TH HIGHEST VALUE IS	14.08883 AT	511522.52,	3753600.19,	707.14,	707.14, 0.00)	DC	
	10TH HIGHEST VALUE IS	13.65372 AT	511222.52,	3753525.19,	706.70,	706.70, 0.00)	DC	
IDLE06	1ST HIGHEST VALUE IS	70.63804 AT	511222.52,	3753600.19,	708.70,	708.70, 0.00)	DC	
	2ND HIGHEST VALUE IS	67.83103 AT	511168.93,	3753659.84,	710.60,	710.60, 0.00)	DC	
	3RD HIGHEST VALUE IS	40.13789 AT	511297.52,	3753600.19,	708.21,	708.21, 0.00)	DC	
	4TH HIGHEST VALUE IS	26.21814 AT	511372.52,	3753600.19,	708.06,	708.06, 0.00)	DC	
	5TH HIGHEST VALUE IS	18.71041 AT	511447.52,	3753600.19,	707.83,	707.83, 0.00)	DC	
	6TH HIGHEST VALUE IS	16.76051 AT	510976.13,	3753659.84,	712.18,	712.18, 0.00)	DC	
	7TH HIGHEST VALUE IS	14.73137 AT	511297.52,	3753525.19,	706.40,	706.40, 0.00)	DC	
	8TH HIGHEST VALUE IS	14.28078 AT	511372.52,	3753525.19,	706.10,	706.10, 0.00)	DC	
	9TH HIGHEST VALUE IS	14.16417 AT	511522.52,	3753600.19,	707.14,	707.14, 0.00)	DC	
	10TH HIGHEST VALUE IS	12.29023 AT	511222.52,	3753525.19,	706.70,	706.70, 0.00)	DC	
IDLE07	1ST HIGHEST VALUE IS	75.80030 AT	511222.52,	3753600.19,	708.70,	708.70, 0.00)	DC	
	2ND HIGHEST VALUE IS	50.21420 AT	511168.93,	3753659.84,	710.60,	710.60, 0.00)	DC	
	3RD HIGHEST VALUE IS	42.40043 AT	511297.52,	3753600.19,	708.21,	708.21, 0.00)	DC	
	4TH HIGHEST VALUE IS	27.21815 AT	511372.52,	3753600.19,	708.06,	708.06, 0.00)	DC	
	5TH HIGHEST VALUE IS	19.21730 AT	511447.52,	3753600.19,	707.83,	707.83, 0.00)	DC	
	6TH HIGHEST VALUE IS	15.18916 AT	510976.13,	3753659.84,	712.18,	712.18, 0.00)	DC	
	7TH HIGHEST VALUE IS	14.53503 AT	511372.52,	3753525.19,	706.10,	706.10, 0.00)	DC	
	8TH HIGHEST VALUE IS	14.45855 AT	511522.52,	3753600.19,	707.14,	707.14, 0.00)	DC	
	9TH HIGHEST VALUE IS	14.33215 AT	511297.52,	3753525.19,	706.40,	706.40, 0.00)	DC	
	10TH HIGHEST VALUE IS	12.47596 AT	511447.52,	3753525.19,	705.79,	705.79, 0.00)	DC	
IDLE08	1ST HIGHEST VALUE IS	80.72806 AT	511222.52,	3753600.19,	708.70,	708.70, 0.00)	DC	
	2ND HIGHEST VALUE IS	44.81098 AT	511297.52,	3753600.19,	708.21,	708.21, 0.00)	DC	
	3RD HIGHEST VALUE IS	33.71104 AT	511168.93,	3753659.84,	710.60,	710.60, 0.00)	DC	
	4TH HIGHEST VALUE IS	28.30635 AT	511372.52,	3753600.19,	708.06,	708.06, 0.00)	DC	
	5TH HIGHEST VALUE IS	19.78927 AT	511447.52,	3753600.19,	707.83,	707.83, 0.00)	DC	
	6TH HIGHEST VALUE IS	14.80076 AT	511522.52,	3753600.19,	707.14,	707.14, 0.00)	DC	
	7TH HIGHEST VALUE IS	14.67961 AT	511372.52,	3753525.19,	706.10,	706.10, 0.00)	DC	
	8TH HIGHEST VALUE IS	13.92249 AT	510976.13,	3753659.84,	712.18,	712.18, 0.00)	DC	
	9TH HIGHEST VALUE IS	13.73189 AT	511297.52,	3753525.19,	706.40,	706.40, 0.00)	DC	
	10TH HIGHEST VALUE IS	12.78010 AT	511447.52,	3753525.19,	705.79,	705.79, 0.00)	DC	

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF TOXICS IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)				OF TYPE	NETWORK GRID-ID
LIN8TH01	1ST HIGHEST VALUE IS	120.34778	510997.52,	3753450.19,	706.10,	706.10, 0.00)	DC	
	2ND HIGHEST VALUE IS	113.42726	511072.52,	3753450.19,	705.76,	705.76, 0.00)	DC	
	3RD HIGHEST VALUE IS	72.01623	510922.52,	3753450.19,	707.27,	707.27, 0.00)	DC	
	4TH HIGHEST VALUE IS	63.82179	511170.56,	3753493.19,	706.14,	706.14, 0.00)	DC	
	5TH HIGHEST VALUE IS	59.81672	511147.52,	3753450.19,	705.37,	705.37, 0.00)	DC	
	6TH HIGHEST VALUE IS	52.74509	510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	7TH HIGHEST VALUE IS	40.98122	511222.52,	3753525.19,	706.70,	706.70, 0.00)	DC	
	8TH HIGHEST VALUE IS	35.87958	511222.52,	3753450.19,	705.07,	705.07, 0.00)	DC	
	9TH HIGHEST VALUE IS	27.03225	511297.52,	3753525.19,	706.40,	706.40, 0.00)	DC	
	10TH HIGHEST VALUE IS	24.03127	511297.52,	3753450.19,	704.74,	704.74, 0.00)	DC	
LIN8TH02	1ST HIGHEST VALUE IS	128.92160	510997.52,	3753450.19,	706.10,	706.10, 0.00)	DC	
	2ND HIGHEST VALUE IS	100.95627	511072.52,	3753450.19,	705.76,	705.76, 0.00)	DC	
	3RD HIGHEST VALUE IS	93.73048	510922.52,	3753450.19,	707.27,	707.27, 0.00)	DC	
	4TH HIGHEST VALUE IS	59.03499	510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	5TH HIGHEST VALUE IS	57.07274	511170.56,	3753493.19,	706.14,	706.14, 0.00)	DC	
	6TH HIGHEST VALUE IS	54.07843	511147.52,	3753450.19,	705.37,	705.37, 0.00)	DC	
	7TH HIGHEST VALUE IS	37.79552	511222.52,	3753525.19,	706.70,	706.70, 0.00)	DC	
	8TH HIGHEST VALUE IS	33.18490	511222.52,	3753450.19,	705.07,	705.07, 0.00)	DC	
	9TH HIGHEST VALUE IS	26.76309	510847.52,	3753450.19,	708.78,	708.78, 0.00)	DC	
	10TH HIGHEST VALUE IS	26.66952	510847.52,	3753525.19,	710.46,	710.46, 0.00)	DC	
LIN8TH03	1ST HIGHEST VALUE IS	1059.92758	510977.77,	3753491.56,	707.09,	707.09, 0.00)	DC	
	2ND HIGHEST VALUE IS	139.84105	510997.52,	3753450.19,	706.10,	706.10, 0.00)	DC	
	3RD HIGHEST VALUE IS	121.25510	510922.52,	3753450.19,	707.27,	707.27, 0.00)	DC	
	4TH HIGHEST VALUE IS	89.42139	511072.52,	3753450.19,	705.76,	705.76, 0.00)	DC	
	5TH HIGHEST VALUE IS	64.75344	510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	6TH HIGHEST VALUE IS	51.33228	511170.56,	3753493.19,	706.14,	706.14, 0.00)	DC	
	7TH HIGHEST VALUE IS	49.02989	511147.52,	3753450.19,	705.37,	705.37, 0.00)	DC	
	8TH HIGHEST VALUE IS	34.94913	511222.52,	3753525.19,	706.70,	706.70, 0.00)	DC	
	9TH HIGHEST VALUE IS	31.95113	510847.52,	3753450.19,	708.78,	708.78, 0.00)	DC	
	10TH HIGHEST VALUE IS	30.85556	510847.52,	3753525.19,	710.46,	710.46, 0.00)	DC	
LIN8TH04	1ST HIGHEST VALUE IS	710.98935	510977.77,	3753491.56,	707.09,	707.09, 0.00)	DC	
	2ND HIGHEST VALUE IS	146.12526	510922.52,	3753450.19,	707.27,	707.27, 0.00)	DC	
	3RD HIGHEST VALUE IS	140.77027	510997.52,	3753450.19,	706.10,	706.10, 0.00)	DC	
	4TH HIGHEST VALUE IS	79.54245	511072.52,	3753450.19,	705.76,	705.76, 0.00)	DC	
	5TH HIGHEST VALUE IS	70.77617	510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	6TH HIGHEST VALUE IS	46.49329	511170.56,	3753493.19,	706.14,	706.14, 0.00)	DC	
	7TH HIGHEST VALUE IS	44.70981	511147.52,	3753450.19,	705.37,	705.37, 0.00)	DC	
	8TH HIGHEST VALUE IS	38.74564	510847.52,	3753450.19,	708.78,	708.78, 0.00)	DC	
	9TH HIGHEST VALUE IS	35.78016	510847.52,	3753525.19,	710.46,	710.46, 0.00)	DC	
	10TH HIGHEST VALUE IS	32.43073	511222.52,	3753525.19,	706.70,	706.70, 0.00)	DC	

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*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF TOXICS IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)				OF TYPE	NETWORK GRID-ID
LIN8TH05	1ST HIGHEST VALUE IS	489.62932 AT	(510977.77,	3753491.56,	707.09,	707.09,	0.00)	DC
	2ND HIGHEST VALUE IS	147.23372 AT	(510922.52,	3753450.19,	707.27,	707.27,	0.00)	DC
	3RD HIGHEST VALUE IS	132.37850 AT	(510997.52,	3753450.19,	706.10,	706.10,	0.00)	DC
	4TH HIGHEST VALUE IS	77.71426 AT	(510922.52,	3753525.19,	708.57,	708.57,	0.00)	DC
	5TH HIGHEST VALUE IS	70.94424 AT	(511072.52,	3753450.19,	705.76,	705.76,	0.00)	DC
	6TH HIGHEST VALUE IS	47.94080 AT	(510847.52,	3753450.19,	708.78,	708.78,	0.00)	DC
	7TH HIGHEST VALUE IS	42.32381 AT	(511170.56,	3753493.19,	706.14,	706.14,	0.00)	DC
	8TH HIGHEST VALUE IS	41.46992 AT	(510847.52,	3753525.19,	710.46,	710.46,	0.00)	DC
	9TH HIGHEST VALUE IS	40.91476 AT	(511147.52,	3753450.19,	705.37,	705.37,	0.00)	DC
	10TH HIGHEST VALUE IS	30.17286 AT	(511222.52,	3753525.19,	706.70,	706.70,	0.00)	DC
LIN8TH06	1ST HIGHEST VALUE IS	350.79366 AT	(510977.77,	3753491.56,	707.09,	707.09,	0.00)	DC
	2ND HIGHEST VALUE IS	127.37245 AT	(510922.52,	3753450.19,	707.27,	707.27,	0.00)	DC
	3RD HIGHEST VALUE IS	119.21077 AT	(510997.52,	3753450.19,	706.10,	706.10,	0.00)	DC
	4TH HIGHEST VALUE IS	83.46902 AT	(510922.52,	3753525.19,	708.57,	708.57,	0.00)	DC
	5TH HIGHEST VALUE IS	63.30738 AT	(511072.52,	3753450.19,	705.76,	705.76,	0.00)	DC
	6TH HIGHEST VALUE IS	60.86920 AT	(510847.52,	3753450.19,	708.78,	708.78,	0.00)	DC
	7TH HIGHEST VALUE IS	47.89131 AT	(510847.52,	3753525.19,	710.46,	710.46,	0.00)	DC
	8TH HIGHEST VALUE IS	38.64038 AT	(511170.56,	3753493.19,	706.14,	706.14,	0.00)	DC
	9TH HIGHEST VALUE IS	37.48635 AT	(511147.52,	3753450.19,	705.37,	705.37,	0.00)	DC
	10TH HIGHEST VALUE IS	28.11135 AT	(511222.52,	3753525.19,	706.70,	706.70,	0.00)	DC
LIN8TH07	1ST HIGHEST VALUE IS	262.90201 AT	(510977.77,	3753491.56,	707.09,	707.09,	0.00)	DC
	2ND HIGHEST VALUE IS	120.49282 AT	(510922.52,	3753450.19,	707.27,	707.27,	0.00)	DC
	3RD HIGHEST VALUE IS	105.69375 AT	(510997.52,	3753450.19,	706.10,	706.10,	0.00)	DC
	4TH HIGHEST VALUE IS	96.65149 AT	(510922.52,	3753525.19,	708.57,	708.57,	0.00)	DC
	5TH HIGHEST VALUE IS	79.11110 AT	(510847.52,	3753450.19,	708.78,	708.78,	0.00)	DC
	6TH HIGHEST VALUE IS	56.75652 AT	(511072.52,	3753450.19,	705.76,	705.76,	0.00)	DC
	7TH HIGHEST VALUE IS	54.52955 AT	(510847.52,	3753525.19,	710.46,	710.46,	0.00)	DC
	8TH HIGHEST VALUE IS	35.42373 AT	(511170.56,	3753493.19,	706.14,	706.14,	0.00)	DC
	9TH HIGHEST VALUE IS	34.46238 AT	(511147.52,	3753450.19,	705.37,	705.37,	0.00)	DC
	10TH HIGHEST VALUE IS	26.24888 AT	(511222.52,	3753525.19,	706.70,	706.70,	0.00)	DC
LIN8TH08	1ST HIGHEST VALUE IS	204.80575 AT	(510977.77,	3753491.56,	707.09,	707.09,	0.00)	DC
	2ND HIGHEST VALUE IS	130.62353 AT	(510922.52,	3753450.19,	707.27,	707.27,	0.00)	DC
	3RD HIGHEST VALUE IS	120.07361 AT	(510922.52,	3753525.19,	708.57,	708.57,	0.00)	DC
	4TH HIGHEST VALUE IS	103.34689 AT	(510847.52,	3753450.19,	708.78,	708.78,	0.00)	DC
	5TH HIGHEST VALUE IS	93.42119 AT	(510997.52,	3753450.19,	706.10,	706.10,	0.00)	DC
	6TH HIGHEST VALUE IS	60.69074 AT	(510847.52,	3753525.19,	710.46,	710.46,	0.00)	DC
	7TH HIGHEST VALUE IS	51.18390 AT	(511072.52,	3753450.19,	705.76,	705.76,	0.00)	DC
	8TH HIGHEST VALUE IS	32.61924 AT	(511170.56,	3753493.19,	706.14,	706.14,	0.00)	DC
	9TH HIGHEST VALUE IS	31.81121 AT	(511147.52,	3753450.19,	705.37,	705.37,	0.00)	DC
	10TH HIGHEST VALUE IS	28.47602 AT	(510772.52,	3753450.19,	710.46,	710.46,	0.00)	DC

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF TOXICS IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)				OF TYPE	NETWORK GRID-ID
LIN8TH09	1ST HIGHEST VALUE IS	164.57344 AT	510977.77,	3753491.56,	707.09,	707.09, 0.00)	DC	
	2ND HIGHEST VALUE IS	137.94799 AT	510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	3RD HIGHEST VALUE IS	137.51715 AT	510922.52,	3753450.19,	707.27,	707.27, 0.00)	DC	
	4TH HIGHEST VALUE IS	130.72851 AT	510847.52,	3753450.19,	708.78,	708.78, 0.00)	DC	
	5TH HIGHEST VALUE IS	82.75716 AT	510997.52,	3753450.19,	706.10,	706.10, 0.00)	DC	
	6TH HIGHEST VALUE IS	66.45953 AT	510847.52,	3753525.19,	710.46,	710.46, 0.00)	DC	
	7TH HIGHEST VALUE IS	46.42703 AT	511072.52,	3753450.19,	705.76,	705.76, 0.00)	DC	
	8TH HIGHEST VALUE IS	34.25337 AT	510772.52,	3753450.19,	710.46,	710.46, 0.00)	DC	
	9TH HIGHEST VALUE IS	32.60197 AT	510772.52,	3753525.19,	712.11,	712.11, 0.00)	DC	
	10TH HIGHEST VALUE IS	30.16293 AT	511170.56,	3753493.19,	706.14,	706.14, 0.00)	DC	
LIN8TH10	1ST HIGHEST VALUE IS	145.76407 AT	510847.52,	3753450.19,	708.78,	708.78, 0.00)	DC	
	2ND HIGHEST VALUE IS	142.37861 AT	510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	3RD HIGHEST VALUE IS	135.11207 AT	510977.77,	3753491.56,	707.09,	707.09, 0.00)	DC	
	4TH HIGHEST VALUE IS	133.34052 AT	510922.52,	3753450.19,	707.27,	707.27, 0.00)	DC	
	5TH HIGHEST VALUE IS	73.73684 AT	510847.52,	3753525.19,	710.46,	710.46, 0.00)	DC	
	6TH HIGHEST VALUE IS	73.39255 AT	510997.52,	3753450.19,	706.10,	706.10, 0.00)	DC	
	7TH HIGHEST VALUE IS	42.25086 AT	511072.52,	3753450.19,	705.76,	705.76, 0.00)	DC	
	8TH HIGHEST VALUE IS	42.00600 AT	510772.52,	3753450.19,	710.46,	710.46, 0.00)	DC	
	9TH HIGHEST VALUE IS	37.93405 AT	510772.52,	3753525.19,	712.11,	712.11, 0.00)	DC	
	10TH HIGHEST VALUE IS	27.96564 AT	511170.56,	3753493.19,	706.14,	706.14, 0.00)	DC	
LIN8TH11	1ST HIGHEST VALUE IS	137.48661 AT	510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	2ND HIGHEST VALUE IS	136.43406 AT	510847.52,	3753450.19,	708.78,	708.78, 0.00)	DC	
	3RD HIGHEST VALUE IS	123.86319 AT	510922.52,	3753450.19,	707.27,	707.27, 0.00)	DC	
	4TH HIGHEST VALUE IS	113.68428 AT	510977.77,	3753491.56,	707.09,	707.09, 0.00)	DC	
	5TH HIGHEST VALUE IS	80.09741 AT	510847.52,	3753525.19,	710.46,	710.46, 0.00)	DC	
	6TH HIGHEST VALUE IS	65.70531 AT	510997.52,	3753450.19,	706.10,	706.10, 0.00)	DC	
	7TH HIGHEST VALUE IS	52.44730 AT	510772.52,	3753450.19,	710.46,	710.46, 0.00)	DC	
	8TH HIGHEST VALUE IS	43.96014 AT	510772.52,	3753525.19,	712.11,	712.11, 0.00)	DC	
	9TH HIGHEST VALUE IS	38.74259 AT	511072.52,	3753450.19,	705.76,	705.76, 0.00)	DC	
	10TH HIGHEST VALUE IS	26.06045 AT	511170.56,	3753493.19,	706.14,	706.14, 0.00)	DC	
LIN8TH12	1ST HIGHEST VALUE IS	126.80908 AT	510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	2ND HIGHEST VALUE IS	119.28000 AT	510847.52,	3753450.19,	708.78,	708.78, 0.00)	DC	
	3RD HIGHEST VALUE IS	111.34798 AT	510922.52,	3753450.19,	707.27,	707.27, 0.00)	DC	
	4TH HIGHEST VALUE IS	96.84364 AT	510977.77,	3753491.56,	707.09,	707.09, 0.00)	DC	
	5TH HIGHEST VALUE IS	86.83651 AT	510847.52,	3753525.19,	710.46,	710.46, 0.00)	DC	
	6TH HIGHEST VALUE IS	67.13282 AT	510772.52,	3753450.19,	710.46,	710.46, 0.00)	DC	
	7TH HIGHEST VALUE IS	58.90549 AT	510997.52,	3753450.19,	706.10,	706.10, 0.00)	DC	
	8TH HIGHEST VALUE IS	50.54402 AT	510772.52,	3753525.19,	712.11,	712.11, 0.00)	DC	
	9TH HIGHEST VALUE IS	35.58728 AT	511072.52,	3753450.19,	705.76,	705.76, 0.00)	DC	
	10TH HIGHEST VALUE IS	24.32270 AT	511170.56,	3753493.19,	706.14,	706.14, 0.00)	DC	

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF TOXICS IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)				OF TYPE	NETWORK GRID-ID
LIN8TH13	1ST HIGHEST VALUE IS	120.54171 AT	(510847.52,	3753450.19,	708.78,	708.78, 0.00)	DC	
	2ND HIGHEST VALUE IS	114.29300 AT	(510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	3RD HIGHEST VALUE IS	104.66297 AT	(510847.52,	3753525.19,	710.46,	710.46, 0.00)	DC	
	4TH HIGHEST VALUE IS	98.75916 AT	(510922.52,	3753450.19,	707.27,	707.27, 0.00)	DC	
	5TH HIGHEST VALUE IS	87.35580 AT	(510772.52,	3753450.19,	710.46,	710.46, 0.00)	DC	
	6TH HIGHEST VALUE IS	83.47507 AT	(510977.77,	3753491.56,	707.09,	707.09, 0.00)	DC	
	7TH HIGHEST VALUE IS	57.16347 AT	(510772.52,	3753525.19,	712.11,	712.11, 0.00)	DC	
	8TH HIGHEST VALUE IS	52.98835 AT	(510997.52,	3753450.19,	706.10,	706.10, 0.00)	DC	
	9TH HIGHEST VALUE IS	32.77299 AT	(511072.52,	3753450.19,	705.76,	705.76, 0.00)	DC	
	10TH HIGHEST VALUE IS	25.74774 AT	(510697.52,	3753525.19,	713.41,	713.41, 0.00)	DC	
LIN8TH14	1ST HIGHEST VALUE IS	133.20590 AT	(510847.52,	3753450.19,	708.78,	708.78, 0.00)	DC	
	2ND HIGHEST VALUE IS	128.61112 AT	(510847.52,	3753525.19,	710.46,	710.46, 0.00)	DC	
	3RD HIGHEST VALUE IS	113.63019 AT	(510772.52,	3753450.19,	710.46,	710.46, 0.00)	DC	
	4TH HIGHEST VALUE IS	102.69905 AT	(510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	5TH HIGHEST VALUE IS	88.06422 AT	(510922.52,	3753450.19,	707.27,	707.27, 0.00)	DC	
	6TH HIGHEST VALUE IS	73.18659 AT	(510977.77,	3753491.56,	707.09,	707.09, 0.00)	DC	
	7TH HIGHEST VALUE IS	62.80233 AT	(510772.52,	3753525.19,	712.11,	712.11, 0.00)	DC	
	8TH HIGHEST VALUE IS	48.15590 AT	(510997.52,	3753450.19,	706.10,	706.10, 0.00)	DC	
	9TH HIGHEST VALUE IS	30.56478 AT	(510697.52,	3753450.19,	711.72,	711.72, 0.00)	DC	
	10TH HIGHEST VALUE IS	30.40218 AT	(511072.52,	3753450.19,	705.76,	705.76, 0.00)	DC	
LIN8TH15	1ST HIGHEST VALUE IS	142.38192 AT	(510847.52,	3753525.19,	710.46,	710.46, 0.00)	DC	
	2ND HIGHEST VALUE IS	139.38469 AT	(510772.52,	3753450.19,	710.46,	710.46, 0.00)	DC	
	3RD HIGHEST VALUE IS	136.48498 AT	(510847.52,	3753450.19,	708.78,	708.78, 0.00)	DC	
	4TH HIGHEST VALUE IS	91.66387 AT	(510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	5TH HIGHEST VALUE IS	78.25272 AT	(510922.52,	3753450.19,	707.27,	707.27, 0.00)	DC	
	6TH HIGHEST VALUE IS	68.77894 AT	(510772.52,	3753525.19,	712.11,	712.11, 0.00)	DC	
	7TH HIGHEST VALUE IS	64.59003 AT	(510977.77,	3753491.56,	707.09,	707.09, 0.00)	DC	
	8TH HIGHEST VALUE IS	43.82981 AT	(510997.52,	3753450.19,	706.10,	706.10, 0.00)	DC	
	9TH HIGHEST VALUE IS	37.00179 AT	(510697.52,	3753450.19,	711.72,	711.72, 0.00)	DC	
	10TH HIGHEST VALUE IS	34.54940 AT	(510697.52,	3753525.19,	713.41,	713.41, 0.00)	DC	
LIN8TH16	1ST HIGHEST VALUE IS	147.03075 AT	(510772.52,	3753450.19,	710.46,	710.46, 0.00)	DC	
	2ND HIGHEST VALUE IS	143.14515 AT	(510847.52,	3753525.19,	710.46,	710.46, 0.00)	DC	
	3RD HIGHEST VALUE IS	130.49735 AT	(510847.52,	3753450.19,	708.78,	708.78, 0.00)	DC	
	4TH HIGHEST VALUE IS	81.96610 AT	(510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	5TH HIGHEST VALUE IS	75.95664 AT	(510772.52,	3753525.19,	712.11,	712.11, 0.00)	DC	
	6TH HIGHEST VALUE IS	69.87613 AT	(510922.52,	3753450.19,	707.27,	707.27, 0.00)	DC	
	7TH HIGHEST VALUE IS	57.55446 AT	(510977.77,	3753491.56,	707.09,	707.09, 0.00)	DC	
	8TH HIGHEST VALUE IS	45.62219 AT	(510697.52,	3753450.19,	711.72,	711.72, 0.00)	DC	
	9TH HIGHEST VALUE IS	40.14690 AT	(510697.52,	3753525.19,	713.41,	713.41, 0.00)	DC	
	10TH HIGHEST VALUE IS	40.10873 AT	(510997.52,	3753450.19,	706.10,	706.10, 0.00)	DC	

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*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF TOXICS IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC		RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					OF TYPE	NETWORK GRID-ID
LIN8TH17	1ST HIGHEST VALUE IS	135.05759	AT	510847.52,	3753525.19,	710.46,	710.46,	0.00)	DC	
	2ND HIGHEST VALUE IS	129.81798	AT	510772.52,	3753450.19,	710.46,	710.46,	0.00)	DC	
	3RD HIGHEST VALUE IS	119.03687	AT	510847.52,	3753450.19,	708.78,	708.78,	0.00)	DC	
	4TH HIGHEST VALUE IS	81.73710	AT	510772.52,	3753525.19,	712.11,	712.11,	0.00)	DC	
	5TH HIGHEST VALUE IS	73.30478	AT	510922.52,	3753525.19,	708.57,	708.57,	0.00)	DC	
	6TH HIGHEST VALUE IS	62.48469	AT	510922.52,	3753450.19,	707.27,	707.27,	0.00)	DC	
	7TH HIGHEST VALUE IS	57.62611	AT	510697.52,	3753450.19,	711.72,	711.72,	0.00)	DC	
	8TH HIGHEST VALUE IS	51.55694	AT	510977.77,	3753491.56,	707.09,	707.09,	0.00)	DC	
	9TH HIGHEST VALUE IS	46.51787	AT	510697.52,	3753525.19,	713.41,	713.41,	0.00)	DC	
	10TH HIGHEST VALUE IS	36.77454	AT	510997.52,	3753450.19,	706.10,	706.10,	0.00)	DC	
LIN8TH18	1ST HIGHEST VALUE IS	123.67155	AT	510847.52,	3753525.19,	710.46,	710.46,	0.00)	DC	
	2ND HIGHEST VALUE IS	119.13525	AT	510772.52,	3753450.19,	710.46,	710.46,	0.00)	DC	
	3RD HIGHEST VALUE IS	106.90832	AT	510847.52,	3753450.19,	708.78,	708.78,	0.00)	DC	
	4TH HIGHEST VALUE IS	91.18141	AT	510772.52,	3753525.19,	712.11,	712.11,	0.00)	DC	
	5TH HIGHEST VALUE IS	73.95057	AT	510697.52,	3753450.19,	711.72,	711.72,	0.00)	DC	
	6TH HIGHEST VALUE IS	65.94707	AT	510922.52,	3753525.19,	708.57,	708.57,	0.00)	DC	
	7TH HIGHEST VALUE IS	56.29997	AT	510922.52,	3753450.19,	707.27,	707.27,	0.00)	DC	
	8TH HIGHEST VALUE IS	53.13221	AT	510697.52,	3753525.19,	713.41,	713.41,	0.00)	DC	
	9TH HIGHEST VALUE IS	46.58766	AT	510977.77,	3753491.56,	707.09,	707.09,	0.00)	DC	
	10TH HIGHEST VALUE IS	33.91552	AT	510997.52,	3753450.19,	706.10,	706.10,	0.00)	DC	
LIN8TH19	1ST HIGHEST VALUE IS	128.14538	AT	510772.52,	3753450.19,	710.46,	710.46,	0.00)	DC	
	2ND HIGHEST VALUE IS	113.56409	AT	510772.52,	3753525.19,	712.11,	712.11,	0.00)	DC	
	3RD HIGHEST VALUE IS	111.43765	AT	510847.52,	3753525.19,	710.46,	710.46,	0.00)	DC	
	4TH HIGHEST VALUE IS	96.35032	AT	510697.52,	3753450.19,	711.72,	711.72,	0.00)	DC	
	5TH HIGHEST VALUE IS	95.27475	AT	510847.52,	3753450.19,	708.78,	708.78,	0.00)	DC	
	6TH HIGHEST VALUE IS	59.57242	AT	510922.52,	3753525.19,	708.57,	708.57,	0.00)	DC	
	7TH HIGHEST VALUE IS	59.36024	AT	510697.52,	3753525.19,	713.41,	713.41,	0.00)	DC	
	8TH HIGHEST VALUE IS	50.97600	AT	510922.52,	3753450.19,	707.27,	707.27,	0.00)	DC	
	9TH HIGHEST VALUE IS	42.34874	AT	510977.77,	3753491.56,	707.09,	707.09,	0.00)	DC	
	10TH HIGHEST VALUE IS	31.39290	AT	510997.52,	3753450.19,	706.10,	706.10,	0.00)	DC	
LIN8TH20	1ST HIGHEST VALUE IS	137.91076	AT	510772.52,	3753450.19,	710.46,	710.46,	0.00)	DC	
	2ND HIGHEST VALUE IS	135.53421	AT	510772.52,	3753525.19,	712.11,	712.11,	0.00)	DC	
	3RD HIGHEST VALUE IS	123.32557	AT	510697.52,	3753450.19,	711.72,	711.72,	0.00)	DC	
	4TH HIGHEST VALUE IS	99.58539	AT	510847.52,	3753525.19,	710.46,	710.46,	0.00)	DC	
	5TH HIGHEST VALUE IS	84.60015	AT	510847.52,	3753450.19,	708.78,	708.78,	0.00)	DC	
	6TH HIGHEST VALUE IS	65.03954	AT	510697.52,	3753525.19,	713.41,	713.41,	0.00)	DC	
	7TH HIGHEST VALUE IS	53.96904	AT	510922.52,	3753525.19,	708.57,	708.57,	0.00)	DC	
	8TH HIGHEST VALUE IS	46.29823	AT	510922.52,	3753450.19,	707.27,	707.27,	0.00)	DC	
	9TH HIGHEST VALUE IS	38.65237	AT	510977.77,	3753491.56,	707.09,	707.09,	0.00)	DC	
	10TH HIGHEST VALUE IS	32.68094	AT	510622.52,	3753450.19,	713.20,	713.20,	0.00)	DC	

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*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF TOXICS IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)				OF TYPE	NETWORK GRID-ID
LIN8TH21	1ST HIGHEST VALUE IS	144.84259 AT	(510772.52,	3753525.19,	712.11,	712.11, 0.00)	DC	
	2ND HIGHEST VALUE IS	143.98560 AT	(510697.52,	3753450.19,	711.72,	711.72, 0.00)	DC	
	3RD HIGHEST VALUE IS	136.79273 AT	(510772.52,	3753450.19,	710.46,	710.46, 0.00)	DC	
	4TH HIGHEST VALUE IS	88.78886 AT	(510847.52,	3753525.19,	710.46,	710.46, 0.00)	DC	
	5TH HIGHEST VALUE IS	75.19302 AT	(510847.52,	3753450.19,	708.78,	708.78, 0.00)	DC	
	6TH HIGHEST VALUE IS	71.65485 AT	(510697.52,	3753525.19,	713.41,	713.41, 0.00)	DC	
	7TH HIGHEST VALUE IS	49.05686 AT	(510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	8TH HIGHEST VALUE IS	42.19859 AT	(510922.52,	3753450.19,	707.27,	707.27, 0.00)	DC	
	9TH HIGHEST VALUE IS	39.83724 AT	(510622.52,	3753450.19,	713.20,	713.20, 0.00)	DC	
	10TH HIGHEST VALUE IS	36.51860 AT	(510622.52,	3753525.19,	714.82,	714.82, 0.00)	DC	
LIN8TH22	1ST HIGHEST VALUE IS	141.75038 AT	(510772.52,	3753525.19,	712.11,	712.11, 0.00)	DC	
	2ND HIGHEST VALUE IS	141.04269 AT	(510697.52,	3753450.19,	711.72,	711.72, 0.00)	DC	
	3RD HIGHEST VALUE IS	128.08737 AT	(510772.52,	3753450.19,	710.46,	710.46, 0.00)	DC	
	4TH HIGHEST VALUE IS	79.39139 AT	(510847.52,	3753525.19,	710.46,	710.46, 0.00)	DC	
	5TH HIGHEST VALUE IS	78.68933 AT	(510697.52,	3753525.19,	713.41,	713.41, 0.00)	DC	
	6TH HIGHEST VALUE IS	67.21264 AT	(510847.52,	3753450.19,	708.78,	708.78, 0.00)	DC	
	7TH HIGHEST VALUE IS	49.50229 AT	(510622.52,	3753450.19,	713.20,	713.20, 0.00)	DC	
	8TH HIGHEST VALUE IS	44.82211 AT	(510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	9TH HIGHEST VALUE IS	42.40777 AT	(510622.52,	3753525.19,	714.82,	714.82, 0.00)	DC	
	10TH HIGHEST VALUE IS	38.67414 AT	(510922.52,	3753450.19,	707.27,	707.27, 0.00)	DC	
LIN8TH23	1ST HIGHEST VALUE IS	131.88860 AT	(510772.52,	3753525.19,	712.11,	712.11, 0.00)	DC	
	2ND HIGHEST VALUE IS	122.51159 AT	(510697.52,	3753450.19,	711.72,	711.72, 0.00)	DC	
	3RD HIGHEST VALUE IS	115.78817 AT	(510772.52,	3753450.19,	710.46,	710.46, 0.00)	DC	
	4TH HIGHEST VALUE IS	84.28372 AT	(510697.52,	3753525.19,	713.41,	713.41, 0.00)	DC	
	5TH HIGHEST VALUE IS	71.11596 AT	(510847.52,	3753525.19,	710.46,	710.46, 0.00)	DC	
	6TH HIGHEST VALUE IS	62.99435 AT	(510622.52,	3753450.19,	713.20,	713.20, 0.00)	DC	
	7TH HIGHEST VALUE IS	60.25412 AT	(510847.52,	3753450.19,	708.78,	708.78, 0.00)	DC	
	8TH HIGHEST VALUE IS	48.93968 AT	(510622.52,	3753525.19,	714.82,	714.82, 0.00)	DC	
	9TH HIGHEST VALUE IS	41.06646 AT	(510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	10TH HIGHEST VALUE IS	35.53976 AT	(510922.52,	3753450.19,	707.27,	707.27, 0.00)	DC	
LIN8TH24	1ST HIGHEST VALUE IS	119.88427 AT	(510772.52,	3753525.19,	712.11,	712.11, 0.00)	DC	
	2ND HIGHEST VALUE IS	119.85442 AT	(510697.52,	3753450.19,	711.72,	711.72, 0.00)	DC	
	3RD HIGHEST VALUE IS	103.55159 AT	(510772.52,	3753450.19,	710.46,	710.46, 0.00)	DC	
	4TH HIGHEST VALUE IS	98.51612 AT	(510697.52,	3753525.19,	713.41,	713.41, 0.00)	DC	
	5TH HIGHEST VALUE IS	81.39337 AT	(510622.52,	3753450.19,	713.20,	713.20, 0.00)	DC	
	6TH HIGHEST VALUE IS	64.06781 AT	(510847.52,	3753525.19,	710.46,	710.46, 0.00)	DC	
	7TH HIGHEST VALUE IS	55.46650 AT	(510622.52,	3753525.19,	714.82,	714.82, 0.00)	DC	
	8TH HIGHEST VALUE IS	54.40778 AT	(510847.52,	3753450.19,	708.78,	708.78, 0.00)	DC	
	9TH HIGHEST VALUE IS	37.82424 AT	(510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	10TH HIGHEST VALUE IS	32.84010 AT	(510922.52,	3753450.19,	707.27,	707.27, 0.00)	DC	

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF TOXICS IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)				OF TYPE	NETWORK GRID-ID
LIN8TH25	1ST HIGHEST VALUE IS	131.94865 AT	510697.52,	3753450.19,	711.72,	711.72, 0.00)	DC	
	2ND HIGHEST VALUE IS	122.60998 AT	510697.52,	3753525.19,	713.41,	713.41, 0.00)	DC	
	3RD HIGHEST VALUE IS	107.61100 AT	510772.52,	3753525.19,	712.11,	712.11, 0.00)	DC	
	4TH HIGHEST VALUE IS	106.15270 AT	510622.52,	3753450.19,	713.20,	713.20, 0.00)	DC	
	5TH HIGHEST VALUE IS	92.08405 AT	510772.52,	3753450.19,	710.46,	710.46, 0.00)	DC	
	6TH HIGHEST VALUE IS	61.39236 AT	510622.52,	3753525.19,	714.82,	714.82, 0.00)	DC	
	7TH HIGHEST VALUE IS	57.93266 AT	510847.52,	3753525.19,	710.46,	710.46, 0.00)	DC	
	8TH HIGHEST VALUE IS	49.33524 AT	510847.52,	3753450.19,	708.78,	708.78, 0.00)	DC	
	9TH HIGHEST VALUE IS	34.94577 AT	510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	10TH HIGHEST VALUE IS	30.43738 AT	510922.52,	3753450.19,	707.27,	707.27, 0.00)	DC	
LIN8TH26	1ST HIGHEST VALUE IS	140.68838 AT	510697.52,	3753525.19,	713.41,	713.41, 0.00)	DC	
	2ND HIGHEST VALUE IS	138.03660 AT	510697.52,	3753450.19,	711.72,	711.72, 0.00)	DC	
	3RD HIGHEST VALUE IS	133.39917 AT	510622.52,	3753450.19,	713.20,	713.20, 0.00)	DC	
	4TH HIGHEST VALUE IS	96.00648 AT	510772.52,	3753525.19,	712.11,	712.11, 0.00)	DC	
	5TH HIGHEST VALUE IS	81.69777 AT	510772.52,	3753450.19,	710.46,	710.46, 0.00)	DC	
	6TH HIGHEST VALUE IS	67.15529 AT	510622.52,	3753525.19,	714.82,	714.82, 0.00)	DC	
	7TH HIGHEST VALUE IS	52.52917 AT	510847.52,	3753525.19,	710.46,	710.46, 0.00)	DC	
	8TH HIGHEST VALUE IS	44.85670 AT	510847.52,	3753450.19,	708.78,	708.78, 0.00)	DC	
	9TH HIGHEST VALUE IS	35.19444 AT	510547.52,	3753450.19,	714.28,	714.28, 0.00)	DC	
	10TH HIGHEST VALUE IS	33.23489 AT	510547.52,	3753525.19,	715.99,	715.99, 0.00)	DC	
LIN8TH27	1ST HIGHEST VALUE IS	147.94538 AT	510622.52,	3753450.19,	713.20,	713.20, 0.00)	DC	
	2ND HIGHEST VALUE IS	144.82346 AT	510697.52,	3753525.19,	713.41,	713.41, 0.00)	DC	
	3RD HIGHEST VALUE IS	134.04151 AT	510697.52,	3753450.19,	711.72,	711.72, 0.00)	DC	
	4TH HIGHEST VALUE IS	85.74176 AT	510772.52,	3753525.19,	712.11,	712.11, 0.00)	DC	
	5TH HIGHEST VALUE IS	74.09355 AT	510622.52,	3753525.19,	714.82,	714.82, 0.00)	DC	
	6TH HIGHEST VALUE IS	72.82557 AT	510772.52,	3753450.19,	710.46,	710.46, 0.00)	DC	
	7TH HIGHEST VALUE IS	47.87088 AT	510847.52,	3753525.19,	710.46,	710.46, 0.00)	DC	
	8TH HIGHEST VALUE IS	43.18265 AT	510547.52,	3753450.19,	714.28,	714.28, 0.00)	DC	
	9TH HIGHEST VALUE IS	41.01135 AT	510847.52,	3753450.19,	708.78,	708.78, 0.00)	DC	
	10TH HIGHEST VALUE IS	38.63602 AT	510547.52,	3753525.19,	715.99,	715.99, 0.00)	DC	
LIN8TH28	1ST HIGHEST VALUE IS	138.77753 AT	510697.52,	3753525.19,	713.41,	713.41, 0.00)	DC	
	2ND HIGHEST VALUE IS	136.17376 AT	510622.52,	3753450.19,	713.20,	713.20, 0.00)	DC	
	3RD HIGHEST VALUE IS	123.77845 AT	510697.52,	3753450.19,	711.72,	711.72, 0.00)	DC	
	4TH HIGHEST VALUE IS	80.17546 AT	510622.52,	3753525.19,	714.82,	714.82, 0.00)	DC	
	5TH HIGHEST VALUE IS	76.73986 AT	510772.52,	3753525.19,	712.11,	712.11, 0.00)	DC	
	6TH HIGHEST VALUE IS	65.18315 AT	510772.52,	3753450.19,	710.46,	710.46, 0.00)	DC	
	7TH HIGHEST VALUE IS	54.11442 AT	510547.52,	3753450.19,	714.28,	714.28, 0.00)	DC	
	8TH HIGHEST VALUE IS	44.79812 AT	510547.52,	3753525.19,	715.99,	715.99, 0.00)	DC	
	9TH HIGHEST VALUE IS	43.79750 AT	510847.52,	3753525.19,	710.46,	710.46, 0.00)	DC	
	10TH HIGHEST VALUE IS	37.64616 AT	510847.52,	3753450.19,	708.78,	708.78, 0.00)	DC	

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF TOXICS IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					OF TYPE	NETWORK GRID-ID
LIN8TH29	1ST HIGHEST VALUE IS	127.52119 AT	510697.52,	3753525.19,	713.41,	713.41,	0.00)	DC	
	2ND HIGHEST VALUE IS	120.01195 AT	510622.52,	3753450.19,	713.20,	713.20,	0.00)	DC	
	3RD HIGHEST VALUE IS	110.96942 AT	510697.52,	3753450.19,	711.72,	711.72,	0.00)	DC	
	4TH HIGHEST VALUE IS	87.46380 AT	510622.52,	3753525.19,	714.82,	714.82,	0.00)	DC	
	5TH HIGHEST VALUE IS	69.10616 AT	510547.52,	3753450.19,	714.28,	714.28,	0.00)	DC	
	6TH HIGHEST VALUE IS	68.77229 AT	510772.52,	3753525.19,	712.11,	712.11,	0.00)	DC	
	7TH HIGHEST VALUE IS	58.45163 AT	510772.52,	3753450.19,	710.46,	710.46,	0.00)	DC	
	8TH HIGHEST VALUE IS	51.50338 AT	510547.52,	3753525.19,	715.99,	715.99,	0.00)	DC	
	9TH HIGHEST VALUE IS	40.14936 AT	510847.52,	3753525.19,	710.46,	710.46,	0.00)	DC	
	10TH HIGHEST VALUE IS	34.61295 AT	510847.52,	3753450.19,	708.78,	708.78,	0.00)	DC	
LIN8TH30	1ST HIGHEST VALUE IS	124.57412 AT	510622.52,	3753450.19,	713.20,	713.20,	0.00)	DC	
	2ND HIGHEST VALUE IS	115.16539 AT	510697.52,	3753525.19,	713.41,	713.41,	0.00)	DC	
	3RD HIGHEST VALUE IS	106.98917 AT	510622.52,	3753525.19,	714.82,	714.82,	0.00)	DC	
	4TH HIGHEST VALUE IS	98.86732 AT	510697.52,	3753450.19,	711.72,	711.72,	0.00)	DC	
	5TH HIGHEST VALUE IS	89.64899 AT	510547.52,	3753450.19,	714.28,	714.28,	0.00)	DC	
	6TH HIGHEST VALUE IS	61.98941 AT	510772.52,	3753525.19,	712.11,	712.11,	0.00)	DC	
	7TH HIGHEST VALUE IS	57.99797 AT	510547.52,	3753525.19,	715.99,	715.99,	0.00)	DC	
	8TH HIGHEST VALUE IS	52.79896 AT	510772.52,	3753450.19,	710.46,	710.46,	0.00)	DC	
	9TH HIGHEST VALUE IS	36.99394 AT	510847.52,	3753525.19,	710.46,	710.46,	0.00)	DC	
	10TH HIGHEST VALUE IS	31.99782 AT	510847.52,	3753450.19,	708.78,	708.78,	0.00)	DC	
LIN8TH31	1ST HIGHEST VALUE IS	156.58687 AT	510622.52,	3753525.19,	714.82,	714.82,	0.00)	DC	
	2ND HIGHEST VALUE IS	114.31699 AT	510697.52,	3753525.19,	713.41,	713.41,	0.00)	DC	
	3RD HIGHEST VALUE IS	104.79746 AT	510622.52,	3753450.19,	713.20,	713.20,	0.00)	DC	
	4TH HIGHEST VALUE IS	96.21829 AT	510547.52,	3753450.19,	714.28,	714.28,	0.00)	DC	
	5TH HIGHEST VALUE IS	83.13863 AT	510697.52,	3753450.19,	711.72,	711.72,	0.00)	DC	
	6TH HIGHEST VALUE IS	72.30465 AT	510547.52,	3753525.19,	715.99,	715.99,	0.00)	DC	
	7TH HIGHEST VALUE IS	59.29751 AT	510772.52,	3753525.19,	712.11,	712.11,	0.00)	DC	
	8TH HIGHEST VALUE IS	47.19944 AT	510772.52,	3753450.19,	710.46,	710.46,	0.00)	DC	
	9TH HIGHEST VALUE IS	35.41405 AT	510847.52,	3753525.19,	710.46,	710.46,	0.00)	DC	
	10TH HIGHEST VALUE IS	30.18646 AT	510472.52,	3753525.19,	717.33,	717.33,	0.00)	DC	
LIN8TH32	1ST HIGHEST VALUE IS	346.58395 AT	510622.52,	3753525.19,	714.82,	714.82,	0.00)	DC	
	2ND HIGHEST VALUE IS	134.93243 AT	510697.52,	3753525.19,	713.41,	713.41,	0.00)	DC	
	3RD HIGHEST VALUE IS	120.10738 AT	510547.52,	3753525.19,	715.99,	715.99,	0.00)	DC	
	4TH HIGHEST VALUE IS	68.98766 AT	510547.52,	3753450.19,	714.28,	714.28,	0.00)	DC	
	5TH HIGHEST VALUE IS	62.51953 AT	510772.52,	3753525.19,	712.11,	712.11,	0.00)	DC	
	6TH HIGHEST VALUE IS	60.04018 AT	510697.52,	3753450.19,	711.72,	711.72,	0.00)	DC	
	7TH HIGHEST VALUE IS	57.25942 AT	510622.52,	3753450.19,	713.20,	713.20,	0.00)	DC	
	8TH HIGHEST VALUE IS	40.07511 AT	510772.52,	3753450.19,	710.46,	710.46,	0.00)	DC	
	9TH HIGHEST VALUE IS	36.10586 AT	510847.52,	3753525.19,	710.46,	710.46,	0.00)	DC	
	10TH HIGHEST VALUE IS	33.52730 AT	510472.52,	3753525.19,	717.33,	717.33,	0.00)	DC	

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*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF TOXICS IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)				OF TYPE	NETWORK GRID-ID
LIN8TH33	1ST HIGHEST VALUE IS	646.71602 AT	(510622.52,	3753525.19,	714.82,	714.82, 0.00)	DC	
	2ND HIGHEST VALUE IS	179.24352 AT	(510547.52,	3753525.19,	715.99,	715.99, 0.00)	DC	
	3RD HIGHEST VALUE IS	145.30556 AT	(510697.52,	3753525.19,	713.41,	713.41, 0.00)	DC	
	4TH HIGHEST VALUE IS	63.29249 AT	(510772.52,	3753525.19,	712.11,	712.11, 0.00)	DC	
	5TH HIGHEST VALUE IS	50.13192 AT	(510547.52,	3753450.19,	714.28,	714.28, 0.00)	DC	
	6TH HIGHEST VALUE IS	42.22563 AT	(510697.52,	3753450.19,	711.72,	711.72, 0.00)	DC	
	7TH HIGHEST VALUE IS	40.06920 AT	(510697.52,	3753600.19,	715.53,	715.53, 0.00)	DC	
	8TH HIGHEST VALUE IS	37.49954 AT	(510622.52,	3753450.19,	713.20,	713.20, 0.00)	DC	
	9TH HIGHEST VALUE IS	37.06588 AT	(510772.52,	3753600.19,	714.11,	714.11, 0.00)	DC	
	10TH HIGHEST VALUE IS	35.98133 AT	(510847.52,	3753525.19,	710.46,	710.46, 0.00)	DC	
LIN8TH34	1ST HIGHEST VALUE IS	711.29092 AT	(510622.52,	3753525.19,	714.82,	714.82, 0.00)	DC	
	2ND HIGHEST VALUE IS	198.33190 AT	(510547.52,	3753525.19,	715.99,	715.99, 0.00)	DC	
	3RD HIGHEST VALUE IS	141.15783 AT	(510697.52,	3753525.19,	713.41,	713.41, 0.00)	DC	
	4TH HIGHEST VALUE IS	61.43400 AT	(510772.52,	3753525.19,	712.11,	712.11, 0.00)	DC	
	5TH HIGHEST VALUE IS	55.54120 AT	(510697.52,	3753600.19,	715.53,	715.53, 0.00)	DC	
	6TH HIGHEST VALUE IS	43.75885 AT	(510772.52,	3753600.19,	714.11,	714.11, 0.00)	DC	
	7TH HIGHEST VALUE IS	37.32930 AT	(510547.52,	3753450.19,	714.28,	714.28, 0.00)	DC	
	8TH HIGHEST VALUE IS	35.03807 AT	(510847.52,	3753525.19,	710.46,	710.46, 0.00)	DC	
	9TH HIGHEST VALUE IS	34.82126 AT	(510622.52,	3753600.19,	716.66,	716.66, 0.00)	DC	
	10TH HIGHEST VALUE IS	34.68989 AT	(510472.52,	3753525.19,	717.33,	717.33, 0.00)	DC	
LIN8TH35	1ST HIGHEST VALUE IS	411.36396 AT	(510622.52,	3753525.19,	714.82,	714.82, 0.00)	DC	
	2ND HIGHEST VALUE IS	162.33347 AT	(510547.52,	3753525.19,	715.99,	715.99, 0.00)	DC	
	3RD HIGHEST VALUE IS	123.92752 AT	(510697.52,	3753525.19,	713.41,	713.41, 0.00)	DC	
	4TH HIGHEST VALUE IS	75.72348 AT	(510697.52,	3753600.19,	715.53,	715.53, 0.00)	DC	
	5TH HIGHEST VALUE IS	57.28696 AT	(510772.52,	3753525.19,	712.11,	712.11, 0.00)	DC	
	6TH HIGHEST VALUE IS	54.62294 AT	(510622.52,	3753600.19,	716.66,	716.66, 0.00)	DC	
	7TH HIGHEST VALUE IS	50.43899 AT	(510772.52,	3753600.19,	714.11,	714.11, 0.00)	DC	
	8TH HIGHEST VALUE IS	35.82863 AT	(510547.52,	3753600.19,	717.94,	717.94, 0.00)	DC	
	9TH HIGHEST VALUE IS	33.39301 AT	(510847.52,	3753525.19,	710.46,	710.46, 0.00)	DC	
	10TH HIGHEST VALUE IS	32.85255 AT	(510472.52,	3753525.19,	717.33,	717.33, 0.00)	DC	
LIN8TH36	1ST HIGHEST VALUE IS	172.64729 AT	(510622.52,	3753525.19,	714.82,	714.82, 0.00)	DC	
	2ND HIGHEST VALUE IS	118.59882 AT	(510547.52,	3753525.19,	715.99,	715.99, 0.00)	DC	
	3RD HIGHEST VALUE IS	99.61940 AT	(510697.52,	3753600.19,	715.53,	715.53, 0.00)	DC	
	4TH HIGHEST VALUE IS	99.28191 AT	(510697.52,	3753525.19,	713.41,	713.41, 0.00)	DC	
	5TH HIGHEST VALUE IS	99.02410 AT	(510622.52,	3753600.19,	716.66,	716.66, 0.00)	DC	
	6TH HIGHEST VALUE IS	56.42879 AT	(510772.52,	3753600.19,	714.11,	714.11, 0.00)	DC	
	7TH HIGHEST VALUE IS	53.28290 AT	(510547.52,	3753600.19,	717.94,	717.94, 0.00)	DC	
	8TH HIGHEST VALUE IS	51.39950 AT	(510772.52,	3753525.19,	712.11,	712.11, 0.00)	DC	
	9TH HIGHEST VALUE IS	34.68906 AT	(510847.52,	3753600.19,	712.44,	712.44, 0.00)	DC	
	10TH HIGHEST VALUE IS	31.15600 AT	(510847.52,	3753525.19,	710.46,	710.46, 0.00)	DC	

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*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF TOXICS IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)				OF TYPE	NETWORK GRID-ID
LIN8TH37	1ST HIGHEST VALUE IS	209.03838 AT	(510622.52,	3753600.19,	716.66,	716.66, 0.00)	DC	
	2ND HIGHEST VALUE IS	123.73752 AT	(510697.52,	3753600.19,	715.53,	715.53, 0.00)	DC	
	3RD HIGHEST VALUE IS	86.59113 AT	(510547.52,	3753600.19,	717.94,	717.94, 0.00)	DC	
	4TH HIGHEST VALUE IS	85.15323 AT	(510547.52,	3753525.19,	715.99,	715.99, 0.00)	DC	
	5TH HIGHEST VALUE IS	81.36786 AT	(510622.52,	3753525.19,	714.82,	714.82, 0.00)	DC	
	6TH HIGHEST VALUE IS	74.12718 AT	(510697.52,	3753525.19,	713.41,	713.41, 0.00)	DC	
	7TH HIGHEST VALUE IS	61.02531 AT	(510772.52,	3753600.19,	714.11,	714.11, 0.00)	DC	
	8TH HIGHEST VALUE IS	44.56260 AT	(510772.52,	3753525.19,	712.11,	712.11, 0.00)	DC	
	9TH HIGHEST VALUE IS	35.89754 AT	(510847.52,	3753600.19,	712.44,	712.44, 0.00)	DC	
	10TH HIGHEST VALUE IS	31.57554 AT	(510472.52,	3753600.19,	719.08,	719.08, 0.00)	DC	
LIN8TH38	1ST HIGHEST VALUE IS	454.44563 AT	(510622.52,	3753600.19,	716.66,	716.66, 0.00)	DC	
	2ND HIGHEST VALUE IS	142.20547 AT	(510547.52,	3753600.19,	717.94,	717.94, 0.00)	DC	
	3RD HIGHEST VALUE IS	141.36724 AT	(510697.52,	3753600.19,	715.53,	715.53, 0.00)	DC	
	4TH HIGHEST VALUE IS	63.33659 AT	(510772.52,	3753600.19,	714.11,	714.11, 0.00)	DC	
	5TH HIGHEST VALUE IS	61.05707 AT	(510547.52,	3753525.19,	715.99,	715.99, 0.00)	DC	
	6TH HIGHEST VALUE IS	52.69903 AT	(510697.52,	3753525.19,	713.41,	713.41, 0.00)	DC	
	7TH HIGHEST VALUE IS	47.92950 AT	(510622.52,	3753525.19,	714.82,	714.82, 0.00)	DC	
	8TH HIGHEST VALUE IS	37.37324 AT	(510772.52,	3753525.19,	712.11,	712.11, 0.00)	DC	
	9TH HIGHEST VALUE IS	36.25773 AT	(510847.52,	3753600.19,	712.44,	712.44, 0.00)	DC	
	10TH HIGHEST VALUE IS	34.33280 AT	(510472.52,	3753600.19,	719.08,	719.08, 0.00)	DC	
LIN8TH39	1ST HIGHEST VALUE IS	723.82568 AT	(510622.52,	3753600.19,	716.66,	716.66, 0.00)	DC	
	2ND HIGHEST VALUE IS	193.64239 AT	(510547.52,	3753600.19,	717.94,	717.94, 0.00)	DC	
	3RD HIGHEST VALUE IS	146.64265 AT	(510697.52,	3753600.19,	715.53,	715.53, 0.00)	DC	
	4TH HIGHEST VALUE IS	63.10136 AT	(510772.52,	3753600.19,	714.11,	714.11, 0.00)	DC	
	5TH HIGHEST VALUE IS	44.66910 AT	(510547.52,	3753525.19,	715.99,	715.99, 0.00)	DC	
	6TH HIGHEST VALUE IS	36.93076 AT	(510697.52,	3753525.19,	713.41,	713.41, 0.00)	DC	
	7TH HIGHEST VALUE IS	35.80594 AT	(510847.52,	3753600.19,	712.44,	712.44, 0.00)	DC	
	8TH HIGHEST VALUE IS	35.16001 AT	(510472.52,	3753600.19,	719.08,	719.08, 0.00)	DC	
	9TH HIGHEST VALUE IS	32.76359 AT	(510622.52,	3753525.19,	714.82,	714.82, 0.00)	DC	
	10TH HIGHEST VALUE IS	30.62000 AT	(510772.52,	3753525.19,	712.11,	712.11, 0.00)	DC	
LIN8TH40	1ST HIGHEST VALUE IS	621.02139 AT	(510622.52,	3753600.19,	716.66,	716.66, 0.00)	DC	
	2ND HIGHEST VALUE IS	189.01281 AT	(510547.52,	3753600.19,	717.94,	717.94, 0.00)	DC	
	3RD HIGHEST VALUE IS	137.14214 AT	(510697.52,	3753600.19,	715.53,	715.53, 0.00)	DC	
	4TH HIGHEST VALUE IS	60.31886 AT	(510772.52,	3753600.19,	714.11,	714.11, 0.00)	DC	
	5TH HIGHEST VALUE IS	34.57675 AT	(510847.52,	3753600.19,	712.44,	712.44, 0.00)	DC	
	6TH HIGHEST VALUE IS	34.16989 AT	(510472.52,	3753600.19,	719.08,	719.08, 0.00)	DC	
	7TH HIGHEST VALUE IS	33.60276 AT	(510547.52,	3753525.19,	715.99,	715.99, 0.00)	DC	
	8TH HIGHEST VALUE IS	26.21315 AT	(510697.52,	3753525.19,	713.41,	713.41, 0.00)	DC	
	9TH HIGHEST VALUE IS	24.69985 AT	(510772.52,	3753525.19,	712.11,	712.11, 0.00)	DC	
	10TH HIGHEST VALUE IS	24.29032 AT	(510622.52,	3753525.19,	714.82,	714.82, 0.00)	DC	

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF TOXICS IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)				OF TYPE	NETWORK GRID-ID
LIN8TH41	1ST HIGHEST VALUE IS	304.55343 AT	(510622.52,	3753600.19,	716.66,	716.66, 0.00)	DC	
	2ND HIGHEST VALUE IS	145.49403 AT	(510547.52,	3753600.19,	717.94,	717.94, 0.00)	DC	
	3RD HIGHEST VALUE IS	116.66993 AT	(510697.52,	3753600.19,	715.53,	715.53, 0.00)	DC	
	4TH HIGHEST VALUE IS	55.58125 AT	(510772.52,	3753600.19,	714.11,	714.11, 0.00)	DC	
	5TH HIGHEST VALUE IS	32.76105 AT	(510847.52,	3753600.19,	712.44,	712.44, 0.00)	DC	
	6TH HIGHEST VALUE IS	31.96364 AT	(510472.52,	3753600.19,	719.08,	719.08, 0.00)	DC	
	7TH HIGHEST VALUE IS	26.12678 AT	(510547.52,	3753525.19,	715.99,	715.99, 0.00)	DC	
	8TH HIGHEST VALUE IS	21.93241 AT	(510922.52,	3753600.19,	711.05,	711.05, 0.00)	DC	
	9TH HIGHEST VALUE IS	19.83435 AT	(510772.52,	3753525.19,	712.11,	712.11, 0.00)	DC	
	10TH HIGHEST VALUE IS	19.27251 AT	(510697.52,	3753525.19,	713.41,	713.41, 0.00)	DC	
LIN8TH42	1ST HIGHEST VALUE IS	128.13319 AT	(510622.52,	3753600.19,	716.66,	716.66, 0.00)	DC	
	2ND HIGHEST VALUE IS	105.90471 AT	(510547.52,	3753600.19,	717.94,	717.94, 0.00)	DC	
	3RD HIGHEST VALUE IS	90.79167 AT	(510697.52,	3753600.19,	715.53,	715.53, 0.00)	DC	
	4TH HIGHEST VALUE IS	49.20851 AT	(510772.52,	3753600.19,	714.11,	714.11, 0.00)	DC	
	5TH HIGHEST VALUE IS	30.33594 AT	(510847.52,	3753600.19,	712.44,	712.44, 0.00)	DC	
	6TH HIGHEST VALUE IS	29.37856 AT	(510472.52,	3753600.19,	719.08,	719.08, 0.00)	DC	
	7TH HIGHEST VALUE IS	20.75316 AT	(510547.52,	3753525.19,	715.99,	715.99, 0.00)	DC	
	8TH HIGHEST VALUE IS	20.75238 AT	(510922.52,	3753600.19,	711.05,	711.05, 0.00)	DC	
	9TH HIGHEST VALUE IS	18.82611 AT	(510976.13,	3753659.84,	712.18,	712.18, 0.00)	DC	
	10TH HIGHEST VALUE IS	16.61332 AT	(510472.52,	3753525.19,	717.33,	717.33, 0.00)	DC	
LIN8TH43	1ST HIGHEST VALUE IS	75.96412 AT	(510547.52,	3753600.19,	717.94,	717.94, 0.00)	DC	
	2ND HIGHEST VALUE IS	66.45578 AT	(510697.52,	3753600.19,	715.53,	715.53, 0.00)	DC	
	3RD HIGHEST VALUE IS	65.90586 AT	(510622.52,	3753600.19,	716.66,	716.66, 0.00)	DC	
	4TH HIGHEST VALUE IS	42.17002 AT	(510772.52,	3753600.19,	714.11,	714.11, 0.00)	DC	
	5TH HIGHEST VALUE IS	27.56113 AT	(510847.52,	3753600.19,	712.44,	712.44, 0.00)	DC	
	6TH HIGHEST VALUE IS	26.81494 AT	(510472.52,	3753600.19,	719.08,	719.08, 0.00)	DC	
	7TH HIGHEST VALUE IS	19.39452 AT	(510922.52,	3753600.19,	711.05,	711.05, 0.00)	DC	
	8TH HIGHEST VALUE IS	18.68375 AT	(510976.13,	3753659.84,	712.18,	712.18, 0.00)	DC	
	9TH HIGHEST VALUE IS	16.86525 AT	(510547.52,	3753525.19,	715.99,	715.99, 0.00)	DC	
	10TH HIGHEST VALUE IS	14.78553 AT	(510472.52,	3753525.19,	717.33,	717.33, 0.00)	DC	
LIN8TH44	1ST HIGHEST VALUE IS	54.85151 AT	(510547.52,	3753600.19,	717.94,	717.94, 0.00)	DC	
	2ND HIGHEST VALUE IS	46.89151 AT	(510697.52,	3753600.19,	715.53,	715.53, 0.00)	DC	
	3RD HIGHEST VALUE IS	41.48311 AT	(510622.52,	3753600.19,	716.66,	716.66, 0.00)	DC	
	4TH HIGHEST VALUE IS	35.07296 AT	(510772.52,	3753600.19,	714.11,	714.11, 0.00)	DC	
	5TH HIGHEST VALUE IS	24.55274 AT	(510847.52,	3753600.19,	712.44,	712.44, 0.00)	DC	
	6TH HIGHEST VALUE IS	24.46198 AT	(510472.52,	3753600.19,	719.08,	719.08, 0.00)	DC	
	7TH HIGHEST VALUE IS	18.31617 AT	(510976.13,	3753659.84,	712.18,	712.18, 0.00)	DC	
	8TH HIGHEST VALUE IS	17.87900 AT	(510922.52,	3753600.19,	711.05,	711.05, 0.00)	DC	
	9TH HIGHEST VALUE IS	13.93144 AT	(510547.52,	3753525.19,	715.99,	715.99, 0.00)	DC	
	10TH HIGHEST VALUE IS	13.11812 AT	(510472.52,	3753525.19,	717.33,	717.33, 0.00)	DC	

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF TOXICS IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)				OF TYPE	NETWORK GRID-ID
LIN8TH45	1ST HIGHEST VALUE IS	40.55581 AT	510547.52,	3753600.19,	717.94,	717.94, 0.00)	DC	
	2ND HIGHEST VALUE IS	32.95368 AT	510697.52,	3753600.19,	715.53,	715.53, 0.00)	DC	
	3RD HIGHEST VALUE IS	29.39579 AT	510622.52,	3753600.19,	716.66,	716.66, 0.00)	DC	
	4TH HIGHEST VALUE IS	28.57542 AT	510772.52,	3753600.19,	714.11,	714.11, 0.00)	DC	
	5TH HIGHEST VALUE IS	22.17382 AT	510472.52,	3753600.19,	719.08,	719.08, 0.00)	DC	
	6TH HIGHEST VALUE IS	21.54075 AT	510847.52,	3753600.19,	712.44,	712.44, 0.00)	DC	
	7TH HIGHEST VALUE IS	17.76397 AT	510976.13,	3753659.84,	712.18,	712.18, 0.00)	DC	
	8TH HIGHEST VALUE IS	16.30278 AT	510922.52,	3753600.19,	711.05,	711.05, 0.00)	DC	
	9TH HIGHEST VALUE IS	14.86020 AT	510847.52,	3753825.19,	718.98,	718.98, 0.00)	DC	
	10TH HIGHEST VALUE IS	13.76619 AT	510772.52,	3753825.19,	720.32,	720.32, 0.00)	DC	
LIN8TH46	1ST HIGHEST VALUE IS	30.77113 AT	510547.52,	3753600.19,	717.94,	717.94, 0.00)	DC	
	2ND HIGHEST VALUE IS	23.57856 AT	510697.52,	3753600.19,	715.53,	715.53, 0.00)	DC	
	3RD HIGHEST VALUE IS	22.94339 AT	510772.52,	3753600.19,	714.11,	714.11, 0.00)	DC	
	4TH HIGHEST VALUE IS	22.19851 AT	510622.52,	3753600.19,	716.66,	716.66, 0.00)	DC	
	5TH HIGHEST VALUE IS	19.95958 AT	510472.52,	3753600.19,	719.08,	719.08, 0.00)	DC	
	6TH HIGHEST VALUE IS	18.63748 AT	510847.52,	3753600.19,	712.44,	712.44, 0.00)	DC	
	7TH HIGHEST VALUE IS	17.23769 AT	510847.52,	3753825.19,	718.98,	718.98, 0.00)	DC	
	8TH HIGHEST VALUE IS	17.03180 AT	510976.13,	3753659.84,	712.18,	712.18, 0.00)	DC	
	9TH HIGHEST VALUE IS	16.98622 AT	510772.52,	3753825.19,	720.32,	720.32, 0.00)	DC	
	10TH HIGHEST VALUE IS	15.21194 AT	510922.52,	3753825.19,	717.57,	717.57, 0.00)	DC	
LIN8TH47	1ST HIGHEST VALUE IS	23.97497 AT	510547.52,	3753600.19,	717.94,	717.94, 0.00)	DC	
	2ND HIGHEST VALUE IS	20.98772 AT	510772.52,	3753825.19,	720.32,	720.32, 0.00)	DC	
	3RD HIGHEST VALUE IS	19.84901 AT	510847.52,	3753825.19,	718.98,	718.98, 0.00)	DC	
	4TH HIGHEST VALUE IS	18.30740 AT	510772.52,	3753600.19,	714.11,	714.11, 0.00)	DC	
	5TH HIGHEST VALUE IS	17.83001 AT	510472.52,	3753600.19,	719.08,	719.08, 0.00)	DC	
	6TH HIGHEST VALUE IS	17.47209 AT	510622.52,	3753600.19,	716.66,	716.66, 0.00)	DC	
	7TH HIGHEST VALUE IS	17.45201 AT	510697.52,	3753600.19,	715.53,	715.53, 0.00)	DC	
	8TH HIGHEST VALUE IS	16.72815 AT	510922.52,	3753825.19,	717.57,	717.57, 0.00)	DC	
	9TH HIGHEST VALUE IS	16.46510 AT	510697.52,	3753825.19,	721.20,	721.20, 0.00)	DC	
	10TH HIGHEST VALUE IS	16.15877 AT	510976.13,	3753659.84,	712.18,	712.18, 0.00)	DC	
ONSITE01	1ST HIGHEST VALUE IS	471.70033 AT	511168.93,	3753659.84,	710.60,	710.60, 0.00)	DC	
	2ND HIGHEST VALUE IS	95.26079 AT	511222.52,	3753600.19,	708.70,	708.70, 0.00)	DC	
	3RD HIGHEST VALUE IS	57.60866 AT	511297.52,	3753600.19,	708.21,	708.21, 0.00)	DC	
	4TH HIGHEST VALUE IS	35.62672 AT	511372.52,	3753600.19,	708.06,	708.06, 0.00)	DC	
	5TH HIGHEST VALUE IS	24.08126 AT	511447.52,	3753600.19,	707.83,	707.83, 0.00)	DC	
	6TH HIGHEST VALUE IS	18.73081 AT	510976.13,	3753659.84,	712.18,	712.18, 0.00)	DC	
	7TH HIGHEST VALUE IS	17.38973 AT	511522.52,	3753600.19,	707.14,	707.14, 0.00)	DC	
	8TH HIGHEST VALUE IS	14.53666 AT	511372.52,	3753525.19,	706.10,	706.10, 0.00)	DC	
	9TH HIGHEST VALUE IS	14.46536 AT	511297.52,	3753525.19,	706.40,	706.40, 0.00)	DC	
	10TH HIGHEST VALUE IS	13.19354 AT	511597.52,	3753600.19,	706.19,	706.19, 0.00)	DC	

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*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF TOXICS IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					OF TYPE	NETWORK GRID-ID
ONSITE02	1ST HIGHEST VALUE IS	441.67719 AT	511168.93,	3753659.84,	710.60,	710.60,	0.00)	DC	
	2ND HIGHEST VALUE IS	90.86846 AT	511222.52,	3753600.19,	708.70,	708.70,	0.00)	DC	
	3RD HIGHEST VALUE IS	53.90209 AT	511297.52,	3753600.19,	708.21,	708.21,	0.00)	DC	
	4TH HIGHEST VALUE IS	33.72935 AT	511372.52,	3753600.19,	708.06,	708.06,	0.00)	DC	
	5TH HIGHEST VALUE IS	23.03047 AT	511447.52,	3753600.19,	707.83,	707.83,	0.00)	DC	
	6TH HIGHEST VALUE IS	20.77383 AT	510976.13,	3753659.84,	712.18,	712.18,	0.00)	DC	
	7TH HIGHEST VALUE IS	16.75529 AT	511522.52,	3753600.19,	707.14,	707.14,	0.00)	DC	
	8TH HIGHEST VALUE IS	14.63640 AT	511297.52,	3753525.19,	706.40,	706.40,	0.00)	DC	
	9TH HIGHEST VALUE IS	14.39544 AT	511372.52,	3753525.19,	706.10,	706.10,	0.00)	DC	
	10TH HIGHEST VALUE IS	12.97623 AT	511222.52,	3753525.19,	706.70,	706.70,	0.00)	DC	
ONSITE03	1ST HIGHEST VALUE IS	386.09613 AT	511168.93,	3753659.84,	710.60,	710.60,	0.00)	DC	
	2ND HIGHEST VALUE IS	85.70934 AT	511222.52,	3753600.19,	708.70,	708.70,	0.00)	DC	
	3RD HIGHEST VALUE IS	50.46287 AT	511297.52,	3753600.19,	708.21,	708.21,	0.00)	DC	
	4TH HIGHEST VALUE IS	31.96479 AT	511372.52,	3753600.19,	708.06,	708.06,	0.00)	DC	
	5TH HIGHEST VALUE IS	23.17862 AT	510976.13,	3753659.84,	712.18,	712.18,	0.00)	DC	
	6TH HIGHEST VALUE IS	22.04155 AT	511447.52,	3753600.19,	707.83,	707.83,	0.00)	DC	
	7TH HIGHEST VALUE IS	16.15151 AT	511522.52,	3753600.19,	707.14,	707.14,	0.00)	DC	
	8TH HIGHEST VALUE IS	14.74783 AT	511297.52,	3753525.19,	706.40,	706.40,	0.00)	DC	
	9TH HIGHEST VALUE IS	14.22052 AT	511372.52,	3753525.19,	706.10,	706.10,	0.00)	DC	
	10TH HIGHEST VALUE IS	13.12888 AT	511222.52,	3753525.19,	706.70,	706.70,	0.00)	DC	
ONSITE04	1ST HIGHEST VALUE IS	329.42758 AT	511168.93,	3753659.84,	710.60,	710.60,	0.00)	DC	
	2ND HIGHEST VALUE IS	80.00550 AT	511222.52,	3753600.19,	708.70,	708.70,	0.00)	DC	
	3RD HIGHEST VALUE IS	47.18472 AT	511297.52,	3753600.19,	708.21,	708.21,	0.00)	DC	
	4TH HIGHEST VALUE IS	30.27940 AT	511372.52,	3753600.19,	708.06,	708.06,	0.00)	DC	
	5TH HIGHEST VALUE IS	26.04549 AT	510976.13,	3753659.84,	712.18,	712.18,	0.00)	DC	
	6TH HIGHEST VALUE IS	21.08689 AT	511447.52,	3753600.19,	707.83,	707.83,	0.00)	DC	
	7TH HIGHEST VALUE IS	15.56141 AT	511522.52,	3753600.19,	707.14,	707.14,	0.00)	DC	
	8TH HIGHEST VALUE IS	14.76726 AT	511297.52,	3753525.19,	706.40,	706.40,	0.00)	DC	
	9TH HIGHEST VALUE IS	13.99303 AT	511372.52,	3753525.19,	706.10,	706.10,	0.00)	DC	
	10TH HIGHEST VALUE IS	13.28975 AT	511222.52,	3753525.19,	706.70,	706.70,	0.00)	DC	
ONSITE05	1ST HIGHEST VALUE IS	279.69046 AT	511168.93,	3753659.84,	710.60,	710.60,	0.00)	DC	
	2ND HIGHEST VALUE IS	74.73597 AT	511222.52,	3753600.19,	708.70,	708.70,	0.00)	DC	
	3RD HIGHEST VALUE IS	44.29665 AT	511297.52,	3753600.19,	708.21,	708.21,	0.00)	DC	
	4TH HIGHEST VALUE IS	29.47728 AT	510976.13,	3753659.84,	712.18,	712.18,	0.00)	DC	
	5TH HIGHEST VALUE IS	28.76886 AT	511372.52,	3753600.19,	708.06,	708.06,	0.00)	DC	
	6TH HIGHEST VALUE IS	20.21828 AT	511447.52,	3753600.19,	707.83,	707.83,	0.00)	DC	
	7TH HIGHEST VALUE IS	15.01985 AT	511522.52,	3753600.19,	707.14,	707.14,	0.00)	DC	
	8TH HIGHEST VALUE IS	14.77996 AT	511297.52,	3753525.19,	706.40,	706.40,	0.00)	DC	
	9TH HIGHEST VALUE IS	14.14228 AT	510922.52,	3753600.19,	711.05,	711.05,	0.00)	DC	
	10TH HIGHEST VALUE IS	13.77850 AT	511372.52,	3753525.19,	706.10,	706.10,	0.00)	DC	

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF TOXICS IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					OF TYPE	NETWORK GRID-ID
ONSITE06	1ST HIGHEST VALUE IS	238.40467 AT	(511168.93,	3753659.84,	710.60,	710.60,	0.00)	DC	
	2ND HIGHEST VALUE IS	69.84057 AT	(511222.52,	3753600.19,	708.70,	708.70,	0.00)	DC	
	3RD HIGHEST VALUE IS	41.70639 AT	(511297.52,	3753600.19,	708.21,	708.21,	0.00)	DC	
	4TH HIGHEST VALUE IS	33.63780 AT	(510976.13,	3753659.84,	712.18,	712.18,	0.00)	DC	
	5TH HIGHEST VALUE IS	27.39465 AT	(511372.52,	3753600.19,	708.06,	708.06,	0.00)	DC	
	6TH HIGHEST VALUE IS	19.41755 AT	(511447.52,	3753600.19,	707.83,	707.83,	0.00)	DC	
	7TH HIGHEST VALUE IS	15.44927 AT	(510922.52,	3753600.19,	711.05,	711.05,	0.00)	DC	
	8TH HIGHEST VALUE IS	14.77120 AT	(511297.52,	3753525.19,	706.40,	706.40,	0.00)	DC	
	9TH HIGHEST VALUE IS	14.51627 AT	(511522.52,	3753600.19,	707.14,	707.14,	0.00)	DC	
	10TH HIGHEST VALUE IS	13.80685 AT	(511222.52,	3753525.19,	706.70,	706.70,	0.00)	DC	
ONSITE07	1ST HIGHEST VALUE IS	204.72542 AT	(511168.93,	3753659.84,	710.60,	710.60,	0.00)	DC	
	2ND HIGHEST VALUE IS	65.17277 AT	(511222.52,	3753600.19,	708.70,	708.70,	0.00)	DC	
	3RD HIGHEST VALUE IS	39.30758 AT	(511297.52,	3753600.19,	708.21,	708.21,	0.00)	DC	
	4TH HIGHEST VALUE IS	38.74671 AT	(510976.13,	3753659.84,	712.18,	712.18,	0.00)	DC	
	5TH HIGHEST VALUE IS	26.10881 AT	(511372.52,	3753600.19,	708.06,	708.06,	0.00)	DC	
	6TH HIGHEST VALUE IS	18.65991 AT	(511447.52,	3753600.19,	707.83,	707.83,	0.00)	DC	
	7TH HIGHEST VALUE IS	16.95581 AT	(510922.52,	3753600.19,	711.05,	711.05,	0.00)	DC	
	8TH HIGHEST VALUE IS	14.71278 AT	(511297.52,	3753525.19,	706.40,	706.40,	0.00)	DC	
	9TH HIGHEST VALUE IS	14.06411 AT	(511222.52,	3753525.19,	706.70,	706.70,	0.00)	DC	
	10TH HIGHEST VALUE IS	14.03516 AT	(511522.52,	3753600.19,	707.14,	707.14,	0.00)	DC	
ONSITE08	1ST HIGHEST VALUE IS	177.12293 AT	(511168.93,	3753659.84,	710.60,	710.60,	0.00)	DC	
	2ND HIGHEST VALUE IS	60.71662 AT	(511222.52,	3753600.19,	708.70,	708.70,	0.00)	DC	
	3RD HIGHEST VALUE IS	45.09485 AT	(510976.13,	3753659.84,	712.18,	712.18,	0.00)	DC	
	4TH HIGHEST VALUE IS	37.05662 AT	(511297.52,	3753600.19,	708.21,	708.21,	0.00)	DC	
	5TH HIGHEST VALUE IS	24.89026 AT	(511372.52,	3753600.19,	708.06,	708.06,	0.00)	DC	
	6TH HIGHEST VALUE IS	18.69718 AT	(510922.52,	3753600.19,	711.05,	711.05,	0.00)	DC	
	7TH HIGHEST VALUE IS	17.93434 AT	(511447.52,	3753600.19,	707.83,	707.83,	0.00)	DC	
	8TH HIGHEST VALUE IS	14.59486 AT	(511297.52,	3753525.19,	706.40,	706.40,	0.00)	DC	
	9TH HIGHEST VALUE IS	14.26587 AT	(511222.52,	3753525.19,	706.70,	706.70,	0.00)	DC	
	10TH HIGHEST VALUE IS	13.56965 AT	(511522.52,	3753600.19,	707.14,	707.14,	0.00)	DC	
ONSITE09	1ST HIGHEST VALUE IS	154.39658 AT	(511168.93,	3753659.84,	710.60,	710.60,	0.00)	DC	
	2ND HIGHEST VALUE IS	56.61122 AT	(511222.52,	3753600.19,	708.70,	708.70,	0.00)	DC	
	3RD HIGHEST VALUE IS	53.10165 AT	(510976.13,	3753659.84,	712.18,	712.18,	0.00)	DC	
	4TH HIGHEST VALUE IS	34.98586 AT	(511297.52,	3753600.19,	708.21,	708.21,	0.00)	DC	
	5TH HIGHEST VALUE IS	23.75420 AT	(511372.52,	3753600.19,	708.06,	708.06,	0.00)	DC	
	6TH HIGHEST VALUE IS	20.72482 AT	(510922.52,	3753600.19,	711.05,	711.05,	0.00)	DC	
	7TH HIGHEST VALUE IS	17.25013 AT	(511447.52,	3753600.19,	707.83,	707.83,	0.00)	DC	
	8TH HIGHEST VALUE IS	14.44519 AT	(511297.52,	3753525.19,	706.40,	706.40,	0.00)	DC	
	9TH HIGHEST VALUE IS	14.42994 AT	(511222.52,	3753525.19,	706.70,	706.70,	0.00)	DC	
	10TH HIGHEST VALUE IS	13.12673 AT	(511522.52,	3753600.19,	707.14,	707.14,	0.00)	DC	

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF TOXICS IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)				OF TYPE	NETWORK GRID-ID
ONSITE10	1ST HIGHEST VALUE IS	135.96751 AT	(511168.93,	3753659.84,	710.60,	710.60, 0.00)	DC	
	2ND HIGHEST VALUE IS	63.33083 AT	(510976.13,	3753659.84,	712.18,	712.18, 0.00)	DC	
	3RD HIGHEST VALUE IS	52.96391 AT	(511222.52,	3753600.19,	708.70,	708.70, 0.00)	DC	
	4TH HIGHEST VALUE IS	33.13119 AT	(511297.52,	3753600.19,	708.21,	708.21, 0.00)	DC	
	5TH HIGHEST VALUE IS	23.10092 AT	(510922.52,	3753600.19,	711.05,	711.05, 0.00)	DC	
	6TH HIGHEST VALUE IS	22.72045 AT	(511372.52,	3753600.19,	708.06,	708.06, 0.00)	DC	
	7TH HIGHEST VALUE IS	16.61998 AT	(511447.52,	3753600.19,	707.83,	707.83, 0.00)	DC	
	8TH HIGHEST VALUE IS	14.58444 AT	(511222.52,	3753525.19,	706.70,	706.70, 0.00)	DC	
	9TH HIGHEST VALUE IS	14.29472 AT	(511297.52,	3753525.19,	706.40,	706.40, 0.00)	DC	
	10TH HIGHEST VALUE IS	13.84122 AT	(510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
ONSITE11	1ST HIGHEST VALUE IS	120.67719 AT	(511168.93,	3753659.84,	710.60,	710.60, 0.00)	DC	
	2ND HIGHEST VALUE IS	76.52194 AT	(510976.13,	3753659.84,	712.18,	712.18, 0.00)	DC	
	3RD HIGHEST VALUE IS	49.63518 AT	(511222.52,	3753600.19,	708.70,	708.70, 0.00)	DC	
	4TH HIGHEST VALUE IS	31.42758 AT	(511297.52,	3753600.19,	708.21,	708.21, 0.00)	DC	
	5TH HIGHEST VALUE IS	25.90978 AT	(510922.52,	3753600.19,	711.05,	711.05, 0.00)	DC	
	6TH HIGHEST VALUE IS	21.75863 AT	(511372.52,	3753600.19,	708.06,	708.06, 0.00)	DC	
	7TH HIGHEST VALUE IS	16.02752 AT	(511447.52,	3753600.19,	707.83,	707.83, 0.00)	DC	
	8TH HIGHEST VALUE IS	14.70965 AT	(510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	9TH HIGHEST VALUE IS	14.69760 AT	(511222.52,	3753525.19,	706.70,	706.70, 0.00)	DC	
	10TH HIGHEST VALUE IS	14.12510 AT	(511297.52,	3753525.19,	706.40,	706.40, 0.00)	DC	
ONSITE12	1ST HIGHEST VALUE IS	107.62074 AT	(511168.93,	3753659.84,	710.60,	710.60, 0.00)	DC	
	2ND HIGHEST VALUE IS	93.72346 AT	(510976.13,	3753659.84,	712.18,	712.18, 0.00)	DC	
	3RD HIGHEST VALUE IS	46.46204 AT	(511222.52,	3753600.19,	708.70,	708.70, 0.00)	DC	
	4TH HIGHEST VALUE IS	29.79589 AT	(511297.52,	3753600.19,	708.21,	708.21, 0.00)	DC	
	5TH HIGHEST VALUE IS	29.25743 AT	(510922.52,	3753600.19,	711.05,	711.05, 0.00)	DC	
	6TH HIGHEST VALUE IS	20.82880 AT	(511372.52,	3753600.19,	708.06,	708.06, 0.00)	DC	
	7TH HIGHEST VALUE IS	15.52931 AT	(510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	8TH HIGHEST VALUE IS	15.44967 AT	(511447.52,	3753600.19,	707.83,	707.83, 0.00)	DC	
	9TH HIGHEST VALUE IS	14.71771 AT	(511222.52,	3753525.19,	706.70,	706.70, 0.00)	DC	
	10TH HIGHEST VALUE IS	13.90296 AT	(511297.52,	3753525.19,	706.40,	706.40, 0.00)	DC	
ONSITE13	1ST HIGHEST VALUE IS	109.16578 AT	(510976.13,	3753659.84,	712.18,	712.18, 0.00)	DC	
	2ND HIGHEST VALUE IS	96.43987 AT	(511168.93,	3753659.84,	710.60,	710.60, 0.00)	DC	
	3RD HIGHEST VALUE IS	44.67149 AT	(511222.52,	3753600.19,	708.70,	708.70, 0.00)	DC	
	4TH HIGHEST VALUE IS	33.57080 AT	(510922.52,	3753600.19,	711.05,	711.05, 0.00)	DC	
	5TH HIGHEST VALUE IS	28.76040 AT	(511297.52,	3753600.19,	708.21,	708.21, 0.00)	DC	
	6TH HIGHEST VALUE IS	20.20167 AT	(511372.52,	3753600.19,	708.06,	708.06, 0.00)	DC	
	7TH HIGHEST VALUE IS	16.62111 AT	(510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	8TH HIGHEST VALUE IS	15.18178 AT	(511222.52,	3753525.19,	706.70,	706.70, 0.00)	DC	
	9TH HIGHEST VALUE IS	15.04519 AT	(511447.52,	3753600.19,	707.83,	707.83, 0.00)	DC	
	10TH HIGHEST VALUE IS	14.39803 AT	(510847.52,	3753600.19,	712.44,	712.44, 0.00)	DC	

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF TOXICS IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)				OF TYPE	NETWORK GRID-ID
ONSITE14	1ST HIGHEST VALUE IS	109.62088 AT	(510976.13,	3753659.84,	712.18,	712.18, 0.00)	DC	
	2ND HIGHEST VALUE IS	86.62982 AT	(511168.93,	3753659.84,	710.60,	710.60, 0.00)	DC	
	3RD HIGHEST VALUE IS	44.25432 AT	(511222.52,	3753600.19,	708.70,	708.70, 0.00)	DC	
	4TH HIGHEST VALUE IS	39.48664 AT	(510922.52,	3753600.19,	711.05,	711.05, 0.00)	DC	
	5TH HIGHEST VALUE IS	28.34958 AT	(511297.52,	3753600.19,	708.21,	708.21, 0.00)	DC	
	6TH HIGHEST VALUE IS	19.90550 AT	(511372.52,	3753600.19,	708.06,	708.06, 0.00)	DC	
	7TH HIGHEST VALUE IS	18.28548 AT	(510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	8TH HIGHEST VALUE IS	16.29664 AT	(511222.52,	3753525.19,	706.70,	706.70, 0.00)	DC	
	9TH HIGHEST VALUE IS	15.86152 AT	(510847.52,	3753600.19,	712.44,	712.44, 0.00)	DC	
	10TH HIGHEST VALUE IS	14.83680 AT	(511447.52,	3753600.19,	707.83,	707.83, 0.00)	DC	
ONSITE15	1ST HIGHEST VALUE IS	99.83637 AT	(510976.13,	3753659.84,	712.18,	712.18, 0.00)	DC	
	2ND HIGHEST VALUE IS	77.95715 AT	(511168.93,	3753659.84,	710.60,	710.60, 0.00)	DC	
	3RD HIGHEST VALUE IS	47.17525 AT	(510922.52,	3753600.19,	711.05,	711.05, 0.00)	DC	
	4TH HIGHEST VALUE IS	43.47102 AT	(511222.52,	3753600.19,	708.70,	708.70, 0.00)	DC	
	5TH HIGHEST VALUE IS	27.81844 AT	(511297.52,	3753600.19,	708.21,	708.21, 0.00)	DC	
	6TH HIGHEST VALUE IS	20.14256 AT	(510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	7TH HIGHEST VALUE IS	19.55765 AT	(511372.52,	3753600.19,	708.06,	708.06, 0.00)	DC	
	8TH HIGHEST VALUE IS	17.58158 AT	(510847.52,	3753600.19,	712.44,	712.44, 0.00)	DC	
	9TH HIGHEST VALUE IS	17.33663 AT	(511222.52,	3753525.19,	706.70,	706.70, 0.00)	DC	
	10TH HIGHEST VALUE IS	15.02858 AT	(511297.52,	3753525.19,	706.40,	706.40, 0.00)	DC	
ONSITE16	1ST HIGHEST VALUE IS	86.79387 AT	(510976.13,	3753659.84,	712.18,	712.18, 0.00)	DC	
	2ND HIGHEST VALUE IS	70.34036 AT	(511168.93,	3753659.84,	710.60,	710.60, 0.00)	DC	
	3RD HIGHEST VALUE IS	57.43753 AT	(510922.52,	3753600.19,	711.05,	711.05, 0.00)	DC	
	4TH HIGHEST VALUE IS	42.41887 AT	(511222.52,	3753600.19,	708.70,	708.70, 0.00)	DC	
	5TH HIGHEST VALUE IS	27.19954 AT	(511297.52,	3753600.19,	708.21,	708.21, 0.00)	DC	
	6TH HIGHEST VALUE IS	22.21614 AT	(510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	7TH HIGHEST VALUE IS	19.61229 AT	(510847.52,	3753600.19,	712.44,	712.44, 0.00)	DC	
	8TH HIGHEST VALUE IS	19.17226 AT	(511372.52,	3753600.19,	708.06,	708.06, 0.00)	DC	
	9TH HIGHEST VALUE IS	18.28364 AT	(511222.52,	3753525.19,	706.70,	706.70, 0.00)	DC	
	10TH HIGHEST VALUE IS	15.42386 AT	(511297.52,	3753525.19,	706.40,	706.40, 0.00)	DC	
ONSITE17	1ST HIGHEST VALUE IS	76.73437 AT	(510976.13,	3753659.84,	712.18,	712.18, 0.00)	DC	
	2ND HIGHEST VALUE IS	71.56837 AT	(510922.52,	3753600.19,	711.05,	711.05, 0.00)	DC	
	3RD HIGHEST VALUE IS	63.74351 AT	(511168.93,	3753659.84,	710.60,	710.60, 0.00)	DC	
	4TH HIGHEST VALUE IS	41.26026 AT	(511222.52,	3753600.19,	708.70,	708.70, 0.00)	DC	
	5TH HIGHEST VALUE IS	26.56012 AT	(511297.52,	3753600.19,	708.21,	708.21, 0.00)	DC	
	6TH HIGHEST VALUE IS	24.66227 AT	(510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	7TH HIGHEST VALUE IS	21.99637 AT	(510847.52,	3753600.19,	712.44,	712.44, 0.00)	DC	
	8TH HIGHEST VALUE IS	19.17928 AT	(511222.52,	3753525.19,	706.70,	706.70, 0.00)	DC	
	9TH HIGHEST VALUE IS	18.78304 AT	(511372.52,	3753600.19,	708.06,	708.06, 0.00)	DC	
	10TH HIGHEST VALUE IS	15.78159 AT	(511297.52,	3753525.19,	706.40,	706.40, 0.00)	DC	

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF TOXICS IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)				OF TYPE	NETWORK GRID-ID
ONSITE18	1ST HIGHEST VALUE IS	80.85627 AT	510922.52,	3753600.19,	711.05,	711.05, 0.00)	DC	
	2ND HIGHEST VALUE IS	58.93529 AT	511168.93,	3753659.84,	710.60,	710.60, 0.00)	DC	
	3RD HIGHEST VALUE IS	56.72664 AT	510976.13,	3753659.84,	712.18,	712.18, 0.00)	DC	
	4TH HIGHEST VALUE IS	42.71977 AT	511222.52,	3753600.19,	708.70,	708.70, 0.00)	DC	
	5TH HIGHEST VALUE IS	28.34569 AT	510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	6TH HIGHEST VALUE IS	27.21125 AT	511297.52,	3753600.19,	708.21,	708.21, 0.00)	DC	
	7TH HIGHEST VALUE IS	23.13678 AT	510847.52,	3753600.19,	712.44,	712.44, 0.00)	DC	
	8TH HIGHEST VALUE IS	21.48345 AT	511222.52,	3753525.19,	706.70,	706.70, 0.00)	DC	
	9TH HIGHEST VALUE IS	19.13215 AT	511372.52,	3753600.19,	708.06,	708.06, 0.00)	DC	
	10TH HIGHEST VALUE IS	17.05476 AT	511297.52,	3753525.19,	706.40,	706.40, 0.00)	DC	
ONSITE19	1ST HIGHEST VALUE IS	85.83783 AT	510922.52,	3753600.19,	711.05,	711.05, 0.00)	DC	
	2ND HIGHEST VALUE IS	53.67062 AT	511168.93,	3753659.84,	710.60,	710.60, 0.00)	DC	
	3RD HIGHEST VALUE IS	44.18264 AT	511222.52,	3753600.19,	708.70,	708.70, 0.00)	DC	
	4TH HIGHEST VALUE IS	42.40828 AT	510976.13,	3753659.84,	712.18,	712.18, 0.00)	DC	
	5TH HIGHEST VALUE IS	32.84142 AT	510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	6TH HIGHEST VALUE IS	27.91128 AT	511297.52,	3753600.19,	708.21,	708.21, 0.00)	DC	
	7TH HIGHEST VALUE IS	24.25773 AT	511222.52,	3753525.19,	706.70,	706.70, 0.00)	DC	
	8TH HIGHEST VALUE IS	23.78318 AT	510847.52,	3753600.19,	712.44,	712.44, 0.00)	DC	
	9TH HIGHEST VALUE IS	19.52664 AT	511372.52,	3753600.19,	708.06,	708.06, 0.00)	DC	
	10TH HIGHEST VALUE IS	18.54225 AT	511297.52,	3753525.19,	706.40,	706.40, 0.00)	DC	
ONSITE20	1ST HIGHEST VALUE IS	85.38486 AT	510922.52,	3753600.19,	711.05,	711.05, 0.00)	DC	
	2ND HIGHEST VALUE IS	48.10455 AT	511168.93,	3753659.84,	710.60,	710.60, 0.00)	DC	
	3RD HIGHEST VALUE IS	45.03162 AT	511222.52,	3753600.19,	708.70,	708.70, 0.00)	DC	
	4TH HIGHEST VALUE IS	38.07640 AT	510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	5TH HIGHEST VALUE IS	32.94111 AT	510976.13,	3753659.84,	712.18,	712.18, 0.00)	DC	
	6TH HIGHEST VALUE IS	28.37753 AT	511297.52,	3753600.19,	708.21,	708.21, 0.00)	DC	
	7TH HIGHEST VALUE IS	27.19974 AT	511222.52,	3753525.19,	706.70,	706.70, 0.00)	DC	
	8TH HIGHEST VALUE IS	24.07830 AT	510847.52,	3753600.19,	712.44,	712.44, 0.00)	DC	
	9TH HIGHEST VALUE IS	21.50221 AT	510977.77,	3753491.56,	707.09,	707.09, 0.00)	DC	
	10TH HIGHEST VALUE IS	20.04513 AT	511297.52,	3753525.19,	706.40,	706.40, 0.00)	DC	
ONSITE21	1ST HIGHEST VALUE IS	78.51777 AT	510922.52,	3753600.19,	711.05,	711.05, 0.00)	DC	
	2ND HIGHEST VALUE IS	45.21097 AT	511222.52,	3753600.19,	708.70,	708.70, 0.00)	DC	
	3RD HIGHEST VALUE IS	44.05452 AT	510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	4TH HIGHEST VALUE IS	42.51653 AT	511168.93,	3753659.84,	710.60,	710.60, 0.00)	DC	
	5TH HIGHEST VALUE IS	30.22710 AT	511222.52,	3753525.19,	706.70,	706.70, 0.00)	DC	
	6TH HIGHEST VALUE IS	28.58860 AT	511297.52,	3753600.19,	708.21,	708.21, 0.00)	DC	
	7TH HIGHEST VALUE IS	26.37410 AT	510976.13,	3753659.84,	712.18,	712.18, 0.00)	DC	
	8TH HIGHEST VALUE IS	25.83839 AT	510977.77,	3753491.56,	707.09,	707.09, 0.00)	DC	
	9TH HIGHEST VALUE IS	23.93154 AT	510847.52,	3753600.19,	712.44,	712.44, 0.00)	DC	
	10TH HIGHEST VALUE IS	23.20855 AT	511170.56,	3753493.19,	706.14,	706.14, 0.00)	DC	

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF TOXICS IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)				OF TYPE	NETWORK GRID-ID
ONSITE22	1ST HIGHEST VALUE IS	66.97239 AT	510922.52,	3753600.19,	711.05,	711.05, 0.00)	DC	
	2ND HIGHEST VALUE IS	50.80116 AT	510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	3RD HIGHEST VALUE IS	44.72560 AT	511222.52,	3753600.19,	708.70,	708.70, 0.00)	DC	
	4TH HIGHEST VALUE IS	37.12547 AT	511168.93,	3753659.84,	710.60,	710.60, 0.00)	DC	
	5TH HIGHEST VALUE IS	33.25874 AT	511222.52,	3753525.19,	706.70,	706.70, 0.00)	DC	
	6TH HIGHEST VALUE IS	31.67780 AT	510977.77,	3753491.56,	707.09,	707.09, 0.00)	DC	
	7TH HIGHEST VALUE IS	28.54318 AT	511297.52,	3753600.19,	708.21,	708.21, 0.00)	DC	
	8TH HIGHEST VALUE IS	27.39005 AT	511170.56,	3753493.19,	706.14,	706.14, 0.00)	DC	
	9TH HIGHEST VALUE IS	23.28744 AT	510847.52,	3753600.19,	712.44,	712.44, 0.00)	DC	
	10TH HIGHEST VALUE IS	22.95586 AT	511297.52,	3753525.19,	706.40,	706.40, 0.00)	DC	
ONSITE23	1ST HIGHEST VALUE IS	58.38619 AT	510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	2ND HIGHEST VALUE IS	53.95459 AT	510922.52,	3753600.19,	711.05,	711.05, 0.00)	DC	
	3RD HIGHEST VALUE IS	43.61579 AT	511222.52,	3753600.19,	708.70,	708.70, 0.00)	DC	
	4TH HIGHEST VALUE IS	39.82496 AT	510977.77,	3753491.56,	707.09,	707.09, 0.00)	DC	
	5TH HIGHEST VALUE IS	36.19090 AT	511222.52,	3753525.19,	706.70,	706.70, 0.00)	DC	
	6TH HIGHEST VALUE IS	32.16111 AT	511170.56,	3753493.19,	706.14,	706.14, 0.00)	DC	
	7TH HIGHEST VALUE IS	32.11337 AT	511168.93,	3753659.84,	710.60,	710.60, 0.00)	DC	
	8TH HIGHEST VALUE IS	28.24771 AT	511297.52,	3753600.19,	708.21,	708.21, 0.00)	DC	
	9TH HIGHEST VALUE IS	24.30142 AT	511297.52,	3753525.19,	706.40,	706.40, 0.00)	DC	
	10TH HIGHEST VALUE IS	22.15930 AT	510847.52,	3753600.19,	712.44,	712.44, 0.00)	DC	
ONSITE24	1ST HIGHEST VALUE IS	66.87915 AT	510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	2ND HIGHEST VALUE IS	51.66737 AT	510977.77,	3753491.56,	707.09,	707.09, 0.00)	DC	
	3RD HIGHEST VALUE IS	42.14254 AT	510922.52,	3753600.19,	711.05,	711.05, 0.00)	DC	
	4TH HIGHEST VALUE IS	41.95010 AT	511222.52,	3753600.19,	708.70,	708.70, 0.00)	DC	
	5TH HIGHEST VALUE IS	38.90523 AT	511222.52,	3753525.19,	706.70,	706.70, 0.00)	DC	
	6TH HIGHEST VALUE IS	37.45369 AT	511170.56,	3753493.19,	706.14,	706.14, 0.00)	DC	
	7TH HIGHEST VALUE IS	27.71478 AT	511297.52,	3753600.19,	708.21,	708.21, 0.00)	DC	
	8TH HIGHEST VALUE IS	27.58322 AT	511168.93,	3753659.84,	710.60,	710.60, 0.00)	DC	
	9TH HIGHEST VALUE IS	25.52646 AT	511297.52,	3753525.19,	706.40,	706.40, 0.00)	DC	
	10TH HIGHEST VALUE IS	22.59481 AT	510922.52,	3753450.19,	707.27,	707.27, 0.00)	DC	
ONSITE25	1ST HIGHEST VALUE IS	75.67977 AT	510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	2ND HIGHEST VALUE IS	69.55527 AT	510977.77,	3753491.56,	707.09,	707.09, 0.00)	DC	
	3RD HIGHEST VALUE IS	43.07409 AT	511170.56,	3753493.19,	706.14,	706.14, 0.00)	DC	
	4TH HIGHEST VALUE IS	41.24507 AT	511222.52,	3753525.19,	706.70,	706.70, 0.00)	DC	
	5TH HIGHEST VALUE IS	39.76232 AT	511222.52,	3753600.19,	708.70,	708.70, 0.00)	DC	
	6TH HIGHEST VALUE IS	32.81251 AT	510922.52,	3753600.19,	711.05,	711.05, 0.00)	DC	
	7TH HIGHEST VALUE IS	26.95560 AT	511297.52,	3753600.19,	708.21,	708.21, 0.00)	DC	
	8TH HIGHEST VALUE IS	26.57889 AT	511297.52,	3753525.19,	706.40,	706.40, 0.00)	DC	
	9TH HIGHEST VALUE IS	26.06841 AT	510922.52,	3753450.19,	707.27,	707.27, 0.00)	DC	
	10TH HIGHEST VALUE IS	23.59046 AT	511168.93,	3753659.84,	710.60,	710.60, 0.00)	DC	

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF TOXICS IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)				OF TYPE	NETWORK GRID-ID
ONSITE26	1ST HIGHEST VALUE IS	98.53626	510977.77,	3753491.56,	707.09,	707.09, 0.00)	DC	
	2ND HIGHEST VALUE IS	83.32860	510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	3RD HIGHEST VALUE IS	48.82759	511170.56,	3753493.19,	706.14,	706.14, 0.00)	DC	
	4TH HIGHEST VALUE IS	43.11867	511222.52,	3753525.19,	706.70,	706.70, 0.00)	DC	
	5TH HIGHEST VALUE IS	37.23180	511222.52,	3753600.19,	708.70,	708.70, 0.00)	DC	
	6TH HIGHEST VALUE IS	30.18835	510922.52,	3753450.19,	707.27,	707.27, 0.00)	DC	
	7TH HIGHEST VALUE IS	27.43808	511297.52,	3753525.19,	706.40,	706.40, 0.00)	DC	
	8TH HIGHEST VALUE IS	27.12775	510997.52,	3753450.19,	706.10,	706.10, 0.00)	DC	
	9TH HIGHEST VALUE IS	26.63797	511147.52,	3753450.19,	705.37,	705.37, 0.00)	DC	
	10TH HIGHEST VALUE IS	25.99676	511297.52,	3753600.19,	708.21,	708.21, 0.00)	DC	
ONSITE27	1ST HIGHEST VALUE IS	149.38125	510977.77,	3753491.56,	707.09,	707.09, 0.00)	DC	
	2ND HIGHEST VALUE IS	87.26882	510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	3RD HIGHEST VALUE IS	54.40986	511170.56,	3753493.19,	706.14,	706.14, 0.00)	DC	
	4TH HIGHEST VALUE IS	44.43011	511222.52,	3753525.19,	706.70,	706.70, 0.00)	DC	
	5TH HIGHEST VALUE IS	35.02501	510922.52,	3753450.19,	707.27,	707.27, 0.00)	DC	
	6TH HIGHEST VALUE IS	34.48659	511222.52,	3753600.19,	708.70,	708.70, 0.00)	DC	
	7TH HIGHEST VALUE IS	33.53308	510997.52,	3753450.19,	706.10,	706.10, 0.00)	DC	
	8TH HIGHEST VALUE IS	32.15705	511147.52,	3753450.19,	705.37,	705.37, 0.00)	DC	
	9TH HIGHEST VALUE IS	31.92775	511072.52,	3753450.19,	705.76,	705.76, 0.00)	DC	
	10TH HIGHEST VALUE IS	28.07722	511297.52,	3753525.19,	706.40,	706.40, 0.00)	DC	
ONSITE28	1ST HIGHEST VALUE IS	247.39919	510977.77,	3753491.56,	707.09,	707.09, 0.00)	DC	
	2ND HIGHEST VALUE IS	85.21508	510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	3RD HIGHEST VALUE IS	59.44486	511170.56,	3753493.19,	706.14,	706.14, 0.00)	DC	
	4TH HIGHEST VALUE IS	45.09879	511222.52,	3753525.19,	706.70,	706.70, 0.00)	DC	
	5TH HIGHEST VALUE IS	42.81169	511072.52,	3753450.19,	705.76,	705.76, 0.00)	DC	
	6TH HIGHEST VALUE IS	42.55872	510997.52,	3753450.19,	706.10,	706.10, 0.00)	DC	
	7TH HIGHEST VALUE IS	40.61262	510922.52,	3753450.19,	707.27,	707.27, 0.00)	DC	
	8TH HIGHEST VALUE IS	38.59916	511147.52,	3753450.19,	705.37,	705.37, 0.00)	DC	
	9TH HIGHEST VALUE IS	31.61208	511222.52,	3753600.19,	708.70,	708.70, 0.00)	DC	
	10TH HIGHEST VALUE IS	28.46988	511297.52,	3753525.19,	706.40,	706.40, 0.00)	DC	
ONSITE29	1ST HIGHEST VALUE IS	460.01344	510977.77,	3753491.56,	707.09,	707.09, 0.00)	DC	
	2ND HIGHEST VALUE IS	76.82652	510922.52,	3753525.19,	708.57,	708.57, 0.00)	DC	
	3RD HIGHEST VALUE IS	63.60679	511170.56,	3753493.19,	706.14,	706.14, 0.00)	DC	
	4TH HIGHEST VALUE IS	58.98643	511072.52,	3753450.19,	705.76,	705.76, 0.00)	DC	
	5TH HIGHEST VALUE IS	55.97084	510997.52,	3753450.19,	706.10,	706.10, 0.00)	DC	
	6TH HIGHEST VALUE IS	46.99137	510922.52,	3753450.19,	707.27,	707.27, 0.00)	DC	
	7TH HIGHEST VALUE IS	45.89387	511147.52,	3753450.19,	705.37,	705.37, 0.00)	DC	
	8TH HIGHEST VALUE IS	45.11393	511222.52,	3753525.19,	706.70,	706.70, 0.00)	DC	
	9TH HIGHEST VALUE IS	31.12557	511222.52,	3753450.19,	705.07,	705.07, 0.00)	DC	
	10TH HIGHEST VALUE IS	28.71552	511222.52,	3753600.19,	708.70,	708.70, 0.00)	DC	

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF TOXICS IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					OF TYPE	NETWORK GRID-ID
ONSITE30	1ST HIGHEST VALUE IS	866.28797 AT	(510977.77,	3753491.56,	707.09,	707.09,	0.00)	DC	
	2ND HIGHEST VALUE IS	82.22988 AT	(511072.52,	3753450.19,	705.76,	705.76,	0.00)	DC	
	3RD HIGHEST VALUE IS	77.04212 AT	(510997.52,	3753450.19,	706.10,	706.10,	0.00)	DC	
	4TH HIGHEST VALUE IS	66.54039 AT	(511170.56,	3753493.19,	706.14,	706.14,	0.00)	DC	
	5TH HIGHEST VALUE IS	64.45725 AT	(510922.52,	3753525.19,	708.57,	708.57,	0.00)	DC	
	6TH HIGHEST VALUE IS	53.82269 AT	(510922.52,	3753450.19,	707.27,	707.27,	0.00)	DC	
	7TH HIGHEST VALUE IS	53.78221 AT	(511147.52,	3753450.19,	705.37,	705.37,	0.00)	DC	
	8TH HIGHEST VALUE IS	44.46585 AT	(511222.52,	3753525.19,	706.70,	706.70,	0.00)	DC	
	9TH HIGHEST VALUE IS	34.13329 AT	(511222.52,	3753450.19,	705.07,	705.07,	0.00)	DC	
	10TH HIGHEST VALUE IS	28.49941 AT	(511297.52,	3753525.19,	706.40,	706.40,	0.00)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF TOXICS IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
IDLE01	HIGH 1ST HIGH VALUE IS	890.71464	ON 12112401:	AT (510977.77, 3753491.56, 707.09, 707.09, 0.00)	DC	
IDLE02	HIGH 1ST HIGH VALUE IS	873.09238	ON 12112401:	AT (510977.77, 3753491.56, 707.09, 707.09, 0.00)	DC	
IDLE03	HIGH 1ST HIGH VALUE IS	789.25004	ON 11111302:	AT (511072.52, 3753450.19, 705.76, 705.76, 0.00)	DC	
IDLE04	HIGH 1ST HIGH VALUE IS	785.11183	ON 12122903:	AT (511072.52, 3753450.19, 705.76, 705.76, 0.00)	DC	
IDLE05	HIGH 1ST HIGH VALUE IS	913.96780	ON 11111624:	AT (511072.52, 3753450.19, 705.76, 705.76, 0.00)	DC	
IDLE06	HIGH 1ST HIGH VALUE IS	935.54249	ON 11111624:	AT (511072.52, 3753450.19, 705.76, 705.76, 0.00)	DC	
IDLE07	HIGH 1ST HIGH VALUE IS	889.92508	ON 11102820:	AT (511072.52, 3753450.19, 705.76, 705.76, 0.00)	DC	
IDLE08	HIGH 1ST HIGH VALUE IS	819.06503	ON 11102820:	AT (511072.52, 3753450.19, 705.76, 705.76, 0.00)	DC	
LIN8TH01	HIGH 1ST HIGH VALUE IS	2399.43711	ON 15101021:	AT (510997.52, 3753450.19, 706.10, 706.10, 0.00)	DC	
LIN8TH02	HIGH 1ST HIGH VALUE IS	2089.94619	ON 11020708:	AT (510997.52, 3753450.19, 706.10, 706.10, 0.00)	DC	
LIN8TH03	HIGH 1ST HIGH VALUE IS	3899.15833	ON 15021808:	AT (510977.77, 3753491.56, 707.09, 707.09, 0.00)	DC	
LIN8TH04	HIGH 1ST HIGH VALUE IS	2621.38357	ON 15112308:	AT (510977.77, 3753491.56, 707.09, 707.09, 0.00)	DC	
LIN8TH05	HIGH 1ST HIGH VALUE IS	3049.02884	ON 15020508:	AT (510922.52, 3753450.19, 707.27, 707.27, 0.00)	DC	
LIN8TH06	HIGH 1ST HIGH VALUE IS	2624.51208	ON 13101619:	AT (510922.52, 3753450.19, 707.27, 707.27, 0.00)	DC	
LIN8TH07	HIGH 1ST HIGH VALUE IS	2222.52781	ON 14100620:	AT (510922.52, 3753450.19, 707.27, 707.27, 0.00)	DC	
LIN8TH08	HIGH 1ST HIGH VALUE IS	1890.50440	ON 11020708:	AT (510922.52, 3753450.19, 707.27, 707.27, 0.00)	DC	
LIN8TH09	HIGH 1ST HIGH VALUE IS	2094.52385	ON 12081506:	AT (510847.52, 3753450.19, 708.78, 708.78, 0.00)	DC	
LIN8TH10	HIGH 1ST HIGH VALUE IS	2479.12463	ON 14100406:	AT (510847.52, 3753450.19, 708.78, 708.78, 0.00)	DC	
LIN8TH11	HIGH 1ST HIGH VALUE IS	2949.91276	ON 15020508:	AT (510847.52, 3753450.19, 708.78, 708.78, 0.00)	DC	
LIN8TH12	HIGH 1ST HIGH VALUE IS	2450.99625	ON 15101021:	AT (510847.52, 3753450.19, 708.78, 708.78, 0.00)	DC	
LIN8TH13	HIGH 1ST HIGH VALUE IS	2102.07973	ON 11020708:	AT (510847.52, 3753450.19, 708.78, 708.78, 0.00)	DC	
LIN8TH14	HIGH 1ST HIGH VALUE IS	1878.73251	ON 14100407:	AT (510772.52, 3753450.19, 710.46, 710.46, 0.00)	DC	

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LIN8TH15 HIGH   1ST HIGH VALUE IS    2261.00264  ON 14121008: AT (  510772.52,  3753450.19,   710.46,   710.46,    0.00)  DC
LIN8TH16 HIGH   1ST HIGH VALUE IS    2808.04275  ON 15020508: AT (  510772.52,  3753450.19,   710.46,   710.46,    0.00)  DC
LIN8TH17 HIGH   1ST HIGH VALUE IS    2662.28693  ON 15090906: AT (  510772.52,  3753450.19,   710.46,   710.46,    0.00)  DC
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*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF TOXICS IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
LIN8TH18 HIGH 1ST HIGH VALUE IS	2340.61234	ON 14100620:	AT (510772.52, 3753450.19, 710.46, 710.46, 0.00)	DC	
LIN8TH19 HIGH 1ST HIGH VALUE IS	2026.94629	ON 11020708:	AT (510772.52, 3753450.19, 710.46, 710.46, 0.00)	DC	
LIN8TH20 HIGH 1ST HIGH VALUE IS	1977.88119	ON 14100407:	AT (510697.52, 3753450.19, 711.72, 711.72, 0.00)	DC	
LIN8TH21 HIGH 1ST HIGH VALUE IS	2384.96058	ON 14121008:	AT (510697.52, 3753450.19, 711.72, 711.72, 0.00)	DC	
LIN8TH22 HIGH 1ST HIGH VALUE IS	3005.75430	ON 15020508:	AT (510697.52, 3753450.19, 711.72, 711.72, 0.00)	DC	
LIN8TH23 HIGH 1ST HIGH VALUE IS	2525.23066	ON 13101619:	AT (510697.52, 3753450.19, 711.72, 711.72, 0.00)	DC	
LIN8TH24 HIGH 1ST HIGH VALUE IS	2156.99490	ON 12050806:	AT (510697.52, 3753450.19, 711.72, 711.72, 0.00)	DC	
LIN8TH25 HIGH 1ST HIGH VALUE IS	1836.07541	ON 11020708:	AT (510697.52, 3753450.19, 711.72, 711.72, 0.00)	DC	
LIN8TH26 HIGH 1ST HIGH VALUE IS	2143.43036	ON 12081506:	AT (510622.52, 3753450.19, 713.20, 713.20, 0.00)	DC	
LIN8TH27 HIGH 1ST HIGH VALUE IS	2549.68436	ON 14100406:	AT (510622.52, 3753450.19, 713.20, 713.20, 0.00)	DC	
LIN8TH28 HIGH 1ST HIGH VALUE IS	2907.24171	ON 15020508:	AT (510622.52, 3753450.19, 713.20, 713.20, 0.00)	DC	
LIN8TH29 HIGH 1ST HIGH VALUE IS	2453.99872	ON 15101021:	AT (510622.52, 3753450.19, 713.20, 713.20, 0.00)	DC	
LIN8TH30 HIGH 1ST HIGH VALUE IS	2116.18296	ON 11020708:	AT (510622.52, 3753450.19, 713.20, 713.20, 0.00)	DC	
LIN8TH31 HIGH 1ST HIGH VALUE IS	1793.39225	ON 12072206:	AT (510622.52, 3753525.19, 714.82, 714.82, 0.00)	DC	
LIN8TH32 HIGH 1ST HIGH VALUE IS	2046.56436	ON 13111708:	AT (510622.52, 3753525.19, 714.82, 714.82, 0.00)	DC	
LIN8TH33 HIGH 1ST HIGH VALUE IS	2457.20644	ON 15100907:	AT (510622.52, 3753525.19, 714.82, 714.82, 0.00)	DC	
LIN8TH34 HIGH 1ST HIGH VALUE IS	2609.94244	ON 13022508:	AT (510622.52, 3753525.19, 714.82, 714.82, 0.00)	DC	
LIN8TH35 HIGH 1ST HIGH VALUE IS	2220.94980	ON 15101007:	AT (510622.52, 3753525.19, 714.82, 714.82, 0.00)	DC	
LIN8TH36 HIGH 1ST HIGH VALUE IS	1878.29831	ON 11020708:	AT (510622.52, 3753525.19, 714.82, 714.82, 0.00)	DC	
LIN8TH37 HIGH 1ST HIGH VALUE IS	1925.98762	ON 12072206:	AT (510622.52, 3753600.19, 716.66, 716.66, 0.00)	DC	
LIN8TH38 HIGH 1ST HIGH VALUE IS	2259.22735	ON 15021808:	AT (510622.52, 3753600.19, 716.66, 716.66, 0.00)	DC	
LIN8TH39 HIGH 1ST HIGH VALUE IS	2668.19304	ON 15112308:	AT (510622.52, 3753600.19, 716.66, 716.66, 0.00)	DC	

```
LIN8TH40 HIGH   1ST HIGH VALUE IS    2551.16910  ON 13022508: AT (  510622.52,  3753600.19,   716.66,   716.66,    0.00)  DC
LIN8TH41 HIGH   1ST HIGH VALUE IS    2185.72077  ON 15101007: AT (  510622.52,  3753600.19,   716.66,   716.66,    0.00)  DC
LIN8TH42 HIGH   1ST HIGH VALUE IS    1795.41914  ON 11020708: AT (  510622.52,  3753600.19,   716.66,   716.66,    0.00)  DC
```

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF TOXICS IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
LIN8TH43 HIGH 1ST HIGH VALUE IS	1387.17654	ON 12012908:	AT (510547.52, 3753600.19, 717.94, 717.94, 0.00)	DC	
LIN8TH44 HIGH 1ST HIGH VALUE IS	1087.69115	ON 12012908:	AT (510547.52, 3753600.19, 717.94, 717.94, 0.00)	DC	
LIN8TH45 HIGH 1ST HIGH VALUE IS	882.19492	ON 13082706:	AT (510547.52, 3753600.19, 717.94, 717.94, 0.00)	DC	
LIN8TH46 HIGH 1ST HIGH VALUE IS	732.78765	ON 14100403:	AT (510547.52, 3753600.19, 717.94, 717.94, 0.00)	DC	
LIN8TH47 HIGH 1ST HIGH VALUE IS	619.05434	ON 12091404:	AT (510547.52, 3753600.19, 717.94, 717.94, 0.00)	DC	
ONSITE01 HIGH 1ST HIGH VALUE IS	2703.26773	ON 13111708:	AT (511168.93, 3753659.84, 710.60, 710.60, 0.00)	DC	
ONSITE02 HIGH 1ST HIGH VALUE IS	2215.12375	ON 15021808:	AT (511168.93, 3753659.84, 710.60, 710.60, 0.00)	DC	
ONSITE03 HIGH 1ST HIGH VALUE IS	1734.80829	ON 15021808:	AT (511168.93, 3753659.84, 710.60, 710.60, 0.00)	DC	
ONSITE04 HIGH 1ST HIGH VALUE IS	1410.96299	ON 11041118:	AT (511168.93, 3753659.84, 710.60, 710.60, 0.00)	DC	
ONSITE05 HIGH 1ST HIGH VALUE IS	1191.74305	ON 15021708:	AT (511168.93, 3753659.84, 710.60, 710.60, 0.00)	DC	
ONSITE06 HIGH 1ST HIGH VALUE IS	1022.06957	ON 15021708:	AT (511168.93, 3753659.84, 710.60, 710.60, 0.00)	DC	
ONSITE07 HIGH 1ST HIGH VALUE IS	890.42221	ON 15112308:	AT (511168.93, 3753659.84, 710.60, 710.60, 0.00)	DC	
ONSITE08 HIGH 1ST HIGH VALUE IS	791.00890	ON 15112308:	AT (511168.93, 3753659.84, 710.60, 710.60, 0.00)	DC	
ONSITE09 HIGH 1ST HIGH VALUE IS	877.13367	ON 11033118:	AT (510976.13, 3753659.84, 712.18, 712.18, 0.00)	DC	
ONSITE10 HIGH 1ST HIGH VALUE IS	1004.20910	ON 11033118:	AT (510976.13, 3753659.84, 712.18, 712.18, 0.00)	DC	
ONSITE11 HIGH 1ST HIGH VALUE IS	1163.47737	ON 12101517:	AT (510976.13, 3753659.84, 712.18, 712.18, 0.00)	DC	
ONSITE12 HIGH 1ST HIGH VALUE IS	1424.38624	ON 12101517:	AT (510976.13, 3753659.84, 712.18, 712.18, 0.00)	DC	
ONSITE13 HIGH 1ST HIGH VALUE IS	1727.13108	ON 13032318:	AT (510976.13, 3753659.84, 712.18, 712.18, 0.00)	DC	
ONSITE14 HIGH 1ST HIGH VALUE IS	1967.82096	ON 13032318:	AT (510976.13, 3753659.84, 712.18, 712.18, 0.00)	DC	
ONSITE15 HIGH 1ST HIGH VALUE IS	2185.74711	ON 15030108:	AT (510976.13, 3753659.84, 712.18, 712.18, 0.00)	DC	
ONSITE16 HIGH 1ST HIGH VALUE IS	2110.16987	ON 14091419:	AT (510976.13, 3753659.84, 712.18, 712.18, 0.00)	DC	
ONSITE17 HIGH 1ST HIGH VALUE IS	2035.25452	ON 12011018:	AT (510976.13, 3753659.84, 712.18, 712.18, 0.00)	DC	

```
ONSITE18 HIGH   1ST HIGH VALUE IS    1699.43678  ON 12121316: AT (  510976.13,  3753659.84,   712.18,   712.18,    0.00)  DC
ONSITE19 HIGH   1ST HIGH VALUE IS    1387.04798  ON 12121316: AT (  510976.13,  3753659.84,   712.18,   712.18,    0.00)  DC
ONSITE20 HIGH   1ST HIGH VALUE IS    1249.00196  ON 11033118: AT (  510922.52,  3753600.19,   711.05,   711.05,    0.00)  DC
```

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF TOXICS IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
ONSITE21 HIGH 1ST HIGH VALUE IS	1182.72370	ON 11033118:	AT (510922.52, 3753600.19, 711.05, 711.05, 0.00)	DC	
ONSITE22 HIGH 1ST HIGH VALUE IS	1121.16536	ON 13032318:	AT (510922.52, 3753600.19, 711.05, 711.05, 0.00)	DC	
ONSITE23 HIGH 1ST HIGH VALUE IS	1153.71787	ON 11111208:	AT (510977.77, 3753491.56, 707.09, 707.09, 0.00)	DC	
ONSITE24 HIGH 1ST HIGH VALUE IS	1384.92774	ON 11111208:	AT (510977.77, 3753491.56, 707.09, 707.09, 0.00)	DC	
ONSITE25 HIGH 1ST HIGH VALUE IS	1702.40841	ON 15020508:	AT (510977.77, 3753491.56, 707.09, 707.09, 0.00)	DC	
ONSITE26 HIGH 1ST HIGH VALUE IS	2150.11998	ON 15020508:	AT (510977.77, 3753491.56, 707.09, 707.09, 0.00)	DC	
ONSITE27 HIGH 1ST HIGH VALUE IS	2764.52875	ON 15020508:	AT (510977.77, 3753491.56, 707.09, 707.09, 0.00)	DC	
ONSITE28 HIGH 1ST HIGH VALUE IS	3871.66062	ON 11101221:	AT (510977.77, 3753491.56, 707.09, 707.09, 0.00)	DC	
ONSITE29 HIGH 1ST HIGH VALUE IS	5779.39589	ON 12081506:	AT (510977.77, 3753491.56, 707.09, 707.09, 0.00)	DC	
ONSITE30 HIGH 1ST HIGH VALUE IS	7842.63116	ON 15101707:	AT (510977.77, 3753491.56, 707.09, 707.09, 0.00)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** Message Summary : AERMOD Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 102 Warning Message(s)
A Total of 1311 Informational Message(s)

A Total of 43824 Hours Were Processed

A Total of 64 Calm Hours Identified

A Total of 1247 Missing Hours Identified (2.85 Percent)

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********

ME W186	1003	MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used	0.50
ME W187	1003	MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET	
OU W565	1084	OUPLOT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1085	OUPLOT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1086	OUPLOT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1087	OUPLOT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1088	OUPLOT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1089	OUPLOT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1090	OUPLOT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1091	OUPLOT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1092	OUPLOT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1093	OUPLOT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1094	OUPLOT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1095	OUPLOT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1096	OUPLOT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1097	OUPLOT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1098	OUPLOT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1099	PERPLT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1100	PERPLT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1101	PERPLT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1102	PERPLT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1103	PERPLT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1104	PERPLT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1105	PERPLT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1106	PERPLT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1107	PERPLT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1108	PERPLT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1109	PERPLT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1110	PERPLT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1111	PERPLT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1112	PERPLT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1113	PERPLT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE
OU W565	1114	PERPLT: Possible Conflict With Dynamically Allocated FUNIT	PLOTFILE

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OU W565    1115       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1116       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1117       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1118       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1119       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1120       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1121       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1122       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1123       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1124       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1125       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1126       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1127       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1128       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1129       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1130       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1131       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1132       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
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OU W565    1140       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
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OU W565    1143       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1144       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
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OU W565    1149       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1150       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1151       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1152       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
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OU W565    1158       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1159       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1160       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1161       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1162       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1163       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
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OU W565    1168       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
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OU W565    1170       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1171       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1172       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
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OU W565    1173       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1174       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1175       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1176       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1177       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1178       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1179       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1180       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1181       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1182       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE
OU W565    1183       PERPLT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE

   ************************************
   *** AERMOD Finishes Successfully ***
   ************************************
```

HARP Project Summary Report 9/22/2022 6:22:07 PM

PROJECT INFORMATION
HARP Version: 22118
Project Name: FRT2201-HARP
Project Output Directory: C:\Users\RonaldB\Local AERMOD\FRT2201-HARP
HARP Database: NA

POLLUTANT HEALTH INFORMATION
Health Database: C:\HARP2\Tables\HEALTH17320.mdb
Health Table Version: HEALTH22013
Official: True

PolID	PolAbbrev	InhCancer	OralCancer	AcuteREL	InhChronicREL	OralChronicREL	InhChronic8HRREL
9901	DieselExhPM	1.1			5		
88101	PM25						
106990	1,3-Butadiene	0.6		660	2		9
71432	Benzene	0.1		27	3		3
100414	Ethyl Benzene	0.0087			2000		
78933	MEK			13000			
91203	Naphthalene	0.12			9		
115071	Propylene				3000		
100425	Styrene			21000	900		
108883	Toluene			5000	420		830
1330207	Xylenes			22000	700		

HARP2 - HRACalc (dated 22118) 9/22/2022 6:05:35 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: All
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: -0.25
Total Exposure Duration: 30

Exposure Duration Bin Distribution
3rd Trimester Bin: 0.25
0<2 Years Bin: 2
2<9 Years Bin: 0
2<16 Years Bin: 14
16<30 Years Bin: 14
16 to 70 Years Bin: 0

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: True
Dermal: True
Mother's milk: True
Water: False
Fish: False
Homegrown crops: True
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: RMP

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
3rd Trimester to 16 years: OFF
16 years to 70 years: ON

****
SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.02
Soil mixing depth (m): 0.01
Dermal climate: Warm

****
HOMEGROWN CROP PATHWAY SETTINGS

Household type: HouseholdsthatGarden
Fraction leafy: 0.137
Fraction exposed: 0.137

```
Fraction protected: 0.137
Fraction root: 0.137

*********************************
TIER 2 SETTINGS
Tier2 not used.

*********************************

Calculating cancer risk
Cancer risk breakdown by pollutant and receptor saved to: C:\Users\RonaldB\Local AERMOD\FRT2201-
HARP\hra\30-Yr CancerRisk.csv
Cancer risk total by receptor saved to: C:\Users\RonaldB\Local AERMOD\FRT2201-HARP\hra\30-Yr
CancerRiskSumByRec.csv
Calculating chronic risk
Chronic risk breakdown by pollutant and receptor saved to: C:\Users\RonaldB\Local AERMOD\FRT2201-
HARP\hra\30-Yr NCChronicRisk.csv
Chronic risk total by receptor saved to: C:\Users\RonaldB\Local AERMOD\FRT2201-HARP\hra\30-Yr
NCChronicRiskSumByRec.csv
Calculating acute risk
Acute risk breakdown by pollutant and receptor saved to: C:\Users\RonaldB\Local AERMOD\FRT2201-
HARP\hra\30-Yr NCAcuteRisk.csv
Acute risk total by receptor saved to: C:\Users\RonaldB\Local AERMOD\FRT2201-HARP\hra\30-Yr
NCAcuteRiskSumByRec.csv
HRA ran successfully
```

HARP2 - HRACalc (dated 22118) 9/22/2022 6:19:55 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Worker
Scenario: All
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: 16
Total Exposure Duration: 25

Exposure Duration Bin Distribution
3rd Trimester Bin: 0
0<2 Years Bin: 0
2<9 Years Bin: 0
2<16 Years Bin: 0
16<30 Years Bin: 0
16 to 70 Years Bin: 25

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: True
Dermal: True
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: Moderate8HR

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
3rd Trimester to 16 years: OFF
16 years to 70 years: OFF

****
SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.02
Soil mixing depth (m): 0.01
Dermal climate: Warm

****
TIER 2 SETTINGS
Tier2 not used.

****

```
Calculating cancer risk
Cancer risk breakdown by pollutant and receptor saved to: C:\Users\RonaldB\Local AERMOD\FRT2201-
HARP\hra\25-Yr CancerRisk.csv
Cancer risk total by receptor saved to: C:\Users\RonaldB\Local AERMOD\FRT2201-HARP\hra\25-Yr
CancerRiskSumByRec.csv
Calculating chronic risk
Chronic risk breakdown by pollutant and receptor saved to: C:\Users\RonaldB\Local AERMOD\FRT2201-
HARP\hra\25-Yr NCChronicRisk.csv
Chronic risk total by receptor saved to: C:\Users\RonaldB\Local AERMOD\FRT2201-HARP\hra\25-Yr
NCChronicRiskSumByRec.csv
Calculating acute risk
Acute risk breakdown by pollutant and receptor saved to: C:\Users\RonaldB\Local AERMOD\FRT2201-
HARP\hra\25-Yr NCAcuteRisk.csv
Acute risk total by receptor saved to: C:\Users\RonaldB\Local AERMOD\FRT2201-HARP\hra\25-Yr
NCAcuteRiskSumByRec.csv
HRA ran successfully
```

HARP2 - HRACalc (dated 22118) 9/22/2022 6:17:16 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: NCChronic8HR
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER
Exposure duration are only adjusted for cancer assessments

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: RMP

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
NOTE: Exposure duration (i.e., start age, end age, ED, & FAH) are only adjusted for cancer assessments.

****
TIER 2 SETTINGS
Tier2 not used.

****

Calculating chronic 8hr risk
Chronic 8-hr risk breakdown by pollutant and receptor saved to: C:\Users\RonaldB\Local AERMOD\FRT2201-HARP\hra\8-Hr NCChronic8HrRisk.csv
Chronic 8-hr risk total by receptor saved to: C:\Users\RonaldB\Local AERMOD\FRT2201-HARP\hra\8-Hr NCChronic8HrRiskSumByRec.csv
HRA ran successfully

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APPENDIX C

BIOLOGICAL ASSESSMENT REPORT

Biological Assessment Report

for the

West Lincoln Street 2-Lot

Redevelopment Project

City of Banning

Prepared For:

First Industrial Realty Trust, Inc.
First Industrial L.P.
First Industrial Acquisition II, LLC
C/O Weis Environmental LLC
1938 Kellogg Avenue, Suite 116
Carlsbad, CA 92008

January 28, 2022

Prepared By:

Michael K. Jefferson
Senior Biologist
BLUE Consulting Group

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1.0 INTRODUCTION

This report documents the findings of an evaluation of biological resources conducted by BLUE for the proposed West Lincoln 2-Lot redevelopment Project (Project). The proposed Project includes the re-development of approximately 6.12 acres within 2 parcels (APN's 540-210-009 and 540-210-020) within the City of Banning, County of Riverside, California. The Project is bound by railroad tracks and Interstate 10 to the north, residential and industrial development is located to the south, undeveloped disturbed land to the west and industrial uses to the east. Access to the property is on the southern property line, adjacent to West Lincoln Street.

The Project is located within the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) and is comprised of a total of 6.12 acres. The Project is not located within any MSHCP designated Criteria Areas or Subunits. As such, the Project is not subject to Cell Criteria compliance under the MSHCP. The Project footprint does not fall within any Public/Quasi-Public (PQP) or other MSHCP Conserved Lands.

The Biological Study Area (BSA) includes the Project parcels, plus a 100-foot buffer. The BSA is located within the United States Geological Survey (USGS) 7.5-minute Cabazon Topographic Map. The Project is located at NE¼ of the SE¼ of Section 9 Township 3 South, Range 1, East San Bernardino Principal Meridian Riverside, California; Long, Lat: -116.88038, 33.92225, in the city of Banning.

The subject property is naturally relatively flat-lying. Due to the completed grading, the site is now a single uniform pad. Regional topography generally slopes to the south. Elevation on the subject property ranges from approximately 2,311 feet above mean sea level (MSL) in the southeastern portion to approximately 2,330 feet above MSL in the northern portion of the subject property. Naturally, soil beneath the subject property consists of Gorgonio gravelly loamy fine sand, 2 to 15 percent slopes (Web Soil Survey; 2021).

The Property is composed of a mass graded single large pad/slopes/roads/infrastructure and disturbed areas. Eucalyptus trees are located along the northern Property Line (PL).

The intended use of this document is to disclose and evaluate habitat conditions and determine the potential for occurrence of common and special-status species and their habitats within survey area limits pursuant to the MSHCP. Special-status species refers to any species that has been afforded special protection by federal, state, or local resource agencies (e.g., U.S. Fish and Wildlife Service [USFWS], California Department of Fish and Game [CDFW]) or resource conservation organizations (e.g., California Native Plant Society [CNPS]). The term "special-status species" excludes those avian species solely identified under Section 10 of the Migratory Bird Treaty Act (MBTA) for federal protection. The MBTA species protected by Section 10 are afforded avoidance and minimization measures per state and federal requirements.

2.0 METHODS

Prior to beginning the field survey, a literature review was completed to determine locations and types of biological resources having the potential to exist within the region. The project site is within the Cabazon, California quadrangle but is close enough to the Beaumont, California quadrangle that database searches were conducted for both quadrangles. The MSHCP Transportation and Land Management Agency Geographic Information Services Database and Multiple Species Habitat Conservation Plan (MSHCP) Report was also reviewed (County of Riverside, 2012a; County of Riverside, 2012b and 2021).

In addition to utilizing on-line databases and mapping tools, the Cabazon topographic map was reviewed to determine the locations of any potential special aquatic resource areas (e.g., wetlands or other Waters of the United States or Waters of the State) under regulatory jurisdiction of the US Army Corps of Engineers (USACE), CDFW, and Regional Water Quality Control Board (RWQCB), and Riparian/Riverine habitats prior to beginning field surveys of the BSA.

Additionally, the United States Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) on-line Web Soil Survey tool (NRCS 2015) and Figure 2-4 of the MSHCP were reviewed to determine the types and percent cover of soils within the BSA.

Lands within the BSA that were potentially suspected of being potential special aquatic resource and Riparian/Riverine habitats were then assessed by visual observation during the field survey. No potential special aquatic resource areas and riparian/riverine habitats were not observed and additional further evaluation is not required.

Michael Jefferson, senior qualified BLUE biologist, conducted a pedestrian-based biological survey to observe, document, and evaluate plant and wildlife resources and determine the potential for occurrence of special-status plant and wildlife species. Approximately 100-foot wide meandering transects were utilized to provide visual coverage of the BSA.

Vegetation community type descriptions were based on observed dominant vegetation composition and derived from the criteria and definitions of vegetation classification systems (Holland, 1986; Sawyer and Keeler-Wolf, 1995; Sawyer et al., 2009). Plants were identified in the field to the lowest taxonomic level sufficient to determine positive identity and status. Plants of uncertain identity were subsequently identified using taxonomic keys, and scientific and common species names were recorded according to Baldwin (2012).

The presence of a wildlife species was based on direct observation or wildlife sign (e.g., tracks, burrows, nests, scat, or vocalization). Field data compiled for wildlife species included scientific name, common name, and evidence of sign when no direct observations were made. Wildlife of uncertain distinctiveness was documented and subsequently identified from field guides and related literature (Burt and Grossenheider, 1980; Halfpenny, 2000; Sibley, 2000; Elbroch, 2003; and Stebbins, 2003).

The BSA was also assessed for its potential to support special-status species, based on habitat suitability comparisons with reported occupied habitats.

The following definitions were used to determine the need for subsequent surveys and to assess project-related effects to special-status species:

- Absent (A): No habitat occurs within the survey area and no further surveys are necessary
- Habitat Present (HP): Habitat is present within the survey area
- Present (P): The species was observed within the survey area during the survey
- Critical Habitat (CH): The survey area is located within designated critical habitat

3.0 RESULTS

BLUE biologist Mike Jefferson conducted a biological survey for the Project on November 11, 2021; beginning at 10:30 AM and ending at 11:15AM. Weather conditions during the surveys included 90% clear skies, with temperatures ranging from 72° to 73° Fahrenheit, and minor wind from 0 to 5 miles per hour.

3.1 VEGETATION COMMUNITIES/LAND COVER TYPES

A total of two (2) vegetation community/land cover types were observed onsite; Graded/Disturbed area that is comprised of historic agriculture is the dominant habitat with the balance comprised of developed area (paved driveway). The graded parcel (agriculturally disturbed area) appears to be disked/maintained to control weed growth and control potential erosion. The onsite developed area is comprised of the paved areas (parking), graded roads and the stormwater infrastructure access (adjacent to the wester property line); Table 1; Figure 3). No natural ground and/or naturally occurring vegetation was observed within the survey area.

Table 1: On-Site Vegetation

Community Type	Acres
Graded/Disturbed	5.79
Developed	0.33
Total	6.12

Communities/Land Cover Types Observed Onsite

3.1.1 GRADED/DISTURBED

Developed and semi-urban areas contain numerous and varied horticultural plantings located within landscaping, residential yards, active-use parklands, and golf courses. In the older, urbanized portions of the City, tall exotic plantings, such as pepper and eucalyptus trees (Eucalyptus sp.) with allelopathic toxins that tend to inhibit understory growth, form well developed, and dense woodlands. Occasionally, other planted woodlands such as introduced pines, ash, and elm are present. Disturbed areas are typically located adjacent to urbanization and contain a mix of primarily weedy species, including non-native forbs, annuals, and grasses, usually found pioneering on recently disturbed soils. Characteristic weedy species include prickly sow thistle (*Sonchus asper*), common sow thistle (*Sonchus oleraceus*), bristly ox-tongue (*Picris echioides*), Russian thistle (*Salsola tragus*), giant reed, hottentot-fig (*Carpobrotus edulis*), wild lettuce (*Lactuca serriola*), tree tobacco (*Nicotiana glauca*), castor-bean (*Ricinus communis*), pampas grass (*Cortaderia selloana*), smooth cat's-ear (*Hypochoeris glabra*), red-stem filaree (*Erodium cicutarium*), short-beak filaree (*Erodium brachycarpum*) and white-stem filaree (*Erodium moschatum*). These urban lands do not typically contain native vegetation or provide essential habitat connectivity; and therefore, tend to have reduced biological value.

Onsite, Disturbed areas (maintained) are the dominant 'habitat' within the BSA. The plant community within the maintained areas is unvegetated. Around the edges non-native weed species such as *erodium* spp., Russian thistle (*Salsola tragus*) and prickly lettuce (*Lactuca serriola*) were observed. The property supports a total of seven *eucalyptus* trees located within the northern portion of the site.

No native and/or naturally occurring herbaceous layer was present.

3.1.2 DEVELOPED

Developed lands within the BSA consist of the paved driveway into the Property, located along the western PL. No native vegetation is present within this land cover type.

3.2 PLANT AND WILDLIFE SPECIES

Plant and wildlife species observed within the survey area were typical of developed and disturbed habitats. All plant and wildlife species observed within the survey area are listed in Table 2 and Table 3, respectively.

Table 2: Plant Species Observed within the Survey Area

Species	Common Name
Eucalyptus ssp.*	Eucalyptus trees
*Erodium cicutarium**	red-stem erodium
*Lactuca serriola**	prickly lettuce
*Salsola tragus**	Russian thistle
** non-native species*	

Table 3: Wildlife Species Observed within the Survey Area

Scientific Name	Common Name
Birds	
Corvidae	Jays and Crows
Corvus brachyrhynchos	American crow

3.2.1 SPECIAL-STATUS PLANTS

The Project site is not designated as a rare survey area for any species.

As a result of the grading and ongoing maintenance, the destruction of the appropriate soil structure and composition, there is no potential for the presence of Special Status plant species. Similarly, occurrence of other rare plants on the Project site is low and the Project site does not provide suitable habitat for other Cell Criteria Species as well as Narrow Endemic Plant Species (NEPS) such as Marvin's onion (*Allium marvinii*), Many-stemmed dudleya (*Dudleya multicaulis*).

3.2.2 SPECIAL-STATUS WILDLIFE

No special-status wildlife species were observed.

The site lacks the appropriate hydrology, habitat and being immediately adjacent to the active railroad tracks and main frontage street, is exposed to significant noise impacts. As a result, special-status wildlife species are not expected to occur onsite and are considered to have no potential for occurrence onsite.

Due to a lack of riparian habitat on or adjacent to the site, no bird species associated with riparian areas was observed and none are expected to occur.

3.2.3 WESTERN RIVERSIDE COUNTY MULTIPLE SPECIES HABITAT CONSERVATION PLAN (MSHCP)

The Project is located within the Banning Area Plan outside of any MSHCP designated Criteria Cells or Cell Groups (Table 4) (County of Riverside, 2012a). The Project is not subject to Cell Criteria compliance under the MSHCP. The Project does not include any MSHCP Conserved Lands or PQP lands.

The project site is within the MSHCP habitat assessment area for Western Burrowing Owl (*Athene cunicularia*) (BUOW).

A burrowing owl assessment was completed according to the Burrowing Owl Survey Instructions for the Western Riverside County Multiple Species Habitat Conservation Plan Area (County of Riverside 2006). Due to the lack of appropriate quality habitat created by the mass grading (compacted soils), in addition to a lack of mammal burrows, no burrowing owls or suitable habitat were located during the assessment. Even though BUOW and/or burrows were not observed during survey, the Project site contains suitable foraging habitat for BUOW.

3.2.4 RIPARIAN/RIVERINE

Section 6.1.2 of the MSHCP defines Riparian/Riverine areas as "lands which contain Habitat dominated by trees, shrubs, persistent emergents, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year." Riparian/Riverine areas as defined by the MSHCP are not present within the survey area and will not be impacted by the Project.

No riparian/riverine and/or jurisdictional features were observed within the survey area. Due to a lack of riparian habitat on or adjacent to the site, no bird species associated with riparian areas was observed and none are expected to occur.

3.2.5 VERNAL POOL AND FAIRY SHRIMP

Vernal pools, vernal swales, alkali scalds or flats, or other seasonal wet habitats were not identified within the BSA during field surveys conducted in November by a qualified biologist.

The BSA lacks suitable habitat for fairy shrimp species (*Branchinecta lynchi* and Riverside fairy shrimp *Streptocephalus woottoni*) or other vernal pool species, including plants. None are expected to occur.

As a result of the inappropriate substrate, hydrological conditions and maintenance of the property, it is not expected that vernal pool fairy shrimp and Riverside fairy shrimp persist onsite. No additional surveys are recommended at this time.

3.3 AQUATIC RESOURCES

Due to the improved nature of the property, the BSA does not contain any special aquatic resource area such as wetlands or areas under the regulatory jurisdiction of the USACE, CDFW, and RWQCB.

3.4 WILDLIFE MOVEMENT CORRIDORS

Wildlife movement corridors are defined as areas that connect suitable wildlife habitat areas in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features such as canyon drainages, ridgelines, or areas with vegetation cover provide corridors for wildlife travel. Wildlife movement corridors are important because they provide access to mates, food, and water; allow the dispersal of individuals

away from high population density areas; and facilitate the exchange of genetic traits between populations (Beier and Loe 1992). Wildlife movement corridors are considered sensitive by resource and conservation agencies.

The partially fenced and historically developed Property is now in a rough graded and maintained condition and adjacent/within a fully developed area that is not situated between areas of natural habitat.

The Property is not within a recognized USFWS, California Department of Fish and Wildlife (CDFW) or City wildlife corridor and does not support habitat which would be required. No impacts to a wildlife corridor are possible.

3.5 MSHCP URBAN/WILDLIFE INTERFACE GUIDELINES

The Property is not adjacent or near natural wildlands. As a result, an urban/wildlife interface is not required.

As designed, the development of the property and Project will not conflict with the MSHCP urban/wildlife interface guidelines.

3.6 COMPLIANCE WITH PROVISIONS OF AN ADOPTED HABITAT CONSERVATION PLAN

The Project is located within the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The Project is not located within any MSHCP designated Criteria Areas or Subunits. As such, the Project is not subject to Cell Criteria compliance under the MSHCP. The Project footprint does not fall within any Public/Quasi-Public (PQP) or other MSHCP Conserved Lands. The Property is not within a designated US Fish and Wildlife (USFWS) Critical Habitat area.

As designed, the development of the property and Project will not conflict with the stated provisions, goals and objectives of any adopted NCCP/HCP.

3.7 COMPLIANCE WITH ANY LOCAL POLICIES OR ORDINANCES PROTECTING BIOLOGICAL RESOURCES

No sensitive biological resources were observed or expected to occur onsite. As a result, none are expected to be impacted. The as-designed project would not conflict with any local policies or ordinances protecting biological resources.

4.0 CONCLUSIONS

No sensitive riparian/riverine, upland vegetation and/or special aquatic resource areas were discovered within the BSA and none are expected to be impacted by the potential Project.

The literature review and field assessment data confirm that no special-status species currently utilize the BSA. The BSA lacks suitable habitat that would typically support special-status species or receive state or federal Endangered Species Act (ESA) protections. Consequently, there is no reasonable presumption of adverse impact to any special status species or their habitats as a result of Project implementation.

No Narrow Endemic Plant Species/Criteria Area plant species were observed on site during the habitat assessment. Given the site's exposure to recurring surface disturbances associated with vegetation management, these species are not expected to occur on site. The BSA supports no riparian/riverine/vernal pool habitats or species associated with these habitat types; none were observed on site.

No suitable habitat for burrowing owl was present within the survey area and no direct observations or burrowing owl sign (feathers, pellets, fecal material, prey remains, etc.) were made during the site assessment. No potentially suitable burrows were present on site due to extensive disturbances associated with mass grading activities, which can reduce the site's suitability to support small mammal colonies (e.g. ground squirrel) which may provide

potentially suitable burrows for burrowing owl. No ground squirrels (an important indicator species) were observed on site.

Burrowing owl has historically been observed in the general project vicinity; however, no evidence of burrowing owl was observed within the survey area. The nearest previously-documented burrowing owl occurrences were located approximately 5.0 miles southwest of the BSA and were observed in 2009.

Although no burrowing owl was observed, they could potentially inhabit the survey area in areas that were previously determined to be unoccupied. Per MSHCP Section 6.3.2, this Project is within a mandatory Burrow Survey Area and is obligated to survey for burrowing owls during the environmental review process as indicated in the MSHCP "Additional Survey Needs and Procedures." As such, a pre-construction protocol survey for burrowing owls following the Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area (County of Riverside 2006) should be conducted to determine whether burrowing owls are subsequently occupying the survey area.

Surveys must be conducted within at least 30-days prior to any ground disturbance.

5.0 MITIGATION MEASURES (MM-Bio)

MM Bio 1: In order to avoid violation of the Burrowing Owl Protocol and the California Fish and Game Code, a pre-activity field survey and findings report will be required to be completed, regardless of what time of year construction begins, and provided to City of Banning.

6.0 REFERENCES

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7.0 CERTIFICATION

The following qualified Biologist completed the stated field survey(s) and preparation of this report:

Michael Jefferson – Senior Biologist, BLUE Consulting Group

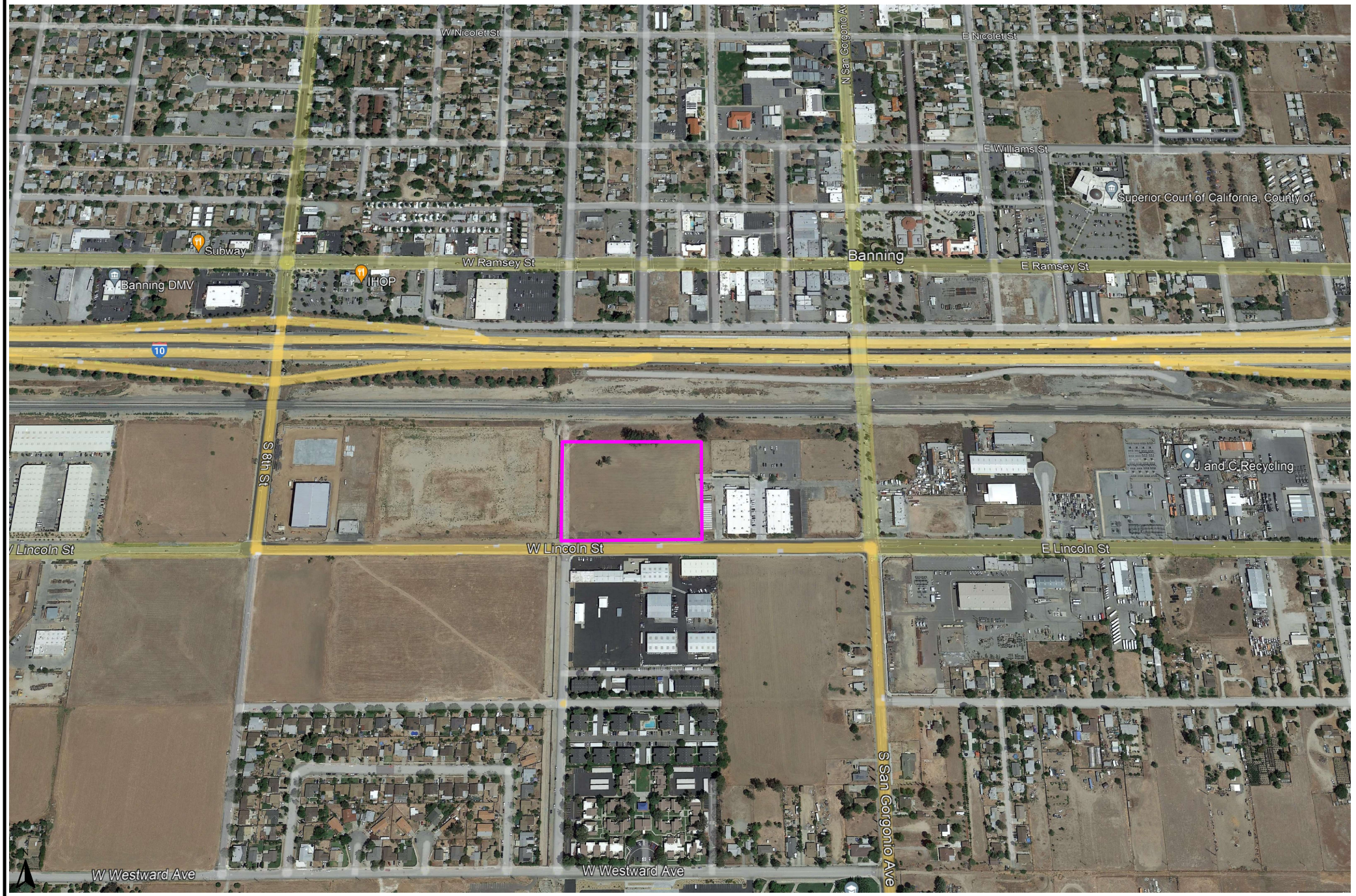
CERTIFICATION: *I hereby certify that the statements furnished above and in the attached exhibits present data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.*

Signed:



Michael K. Jefferson
BLUE Consulting Group
Senior Biologist

Mike@BLUEconsulting.com
858-391-8145



Property

FIGURE 1
Regional Location

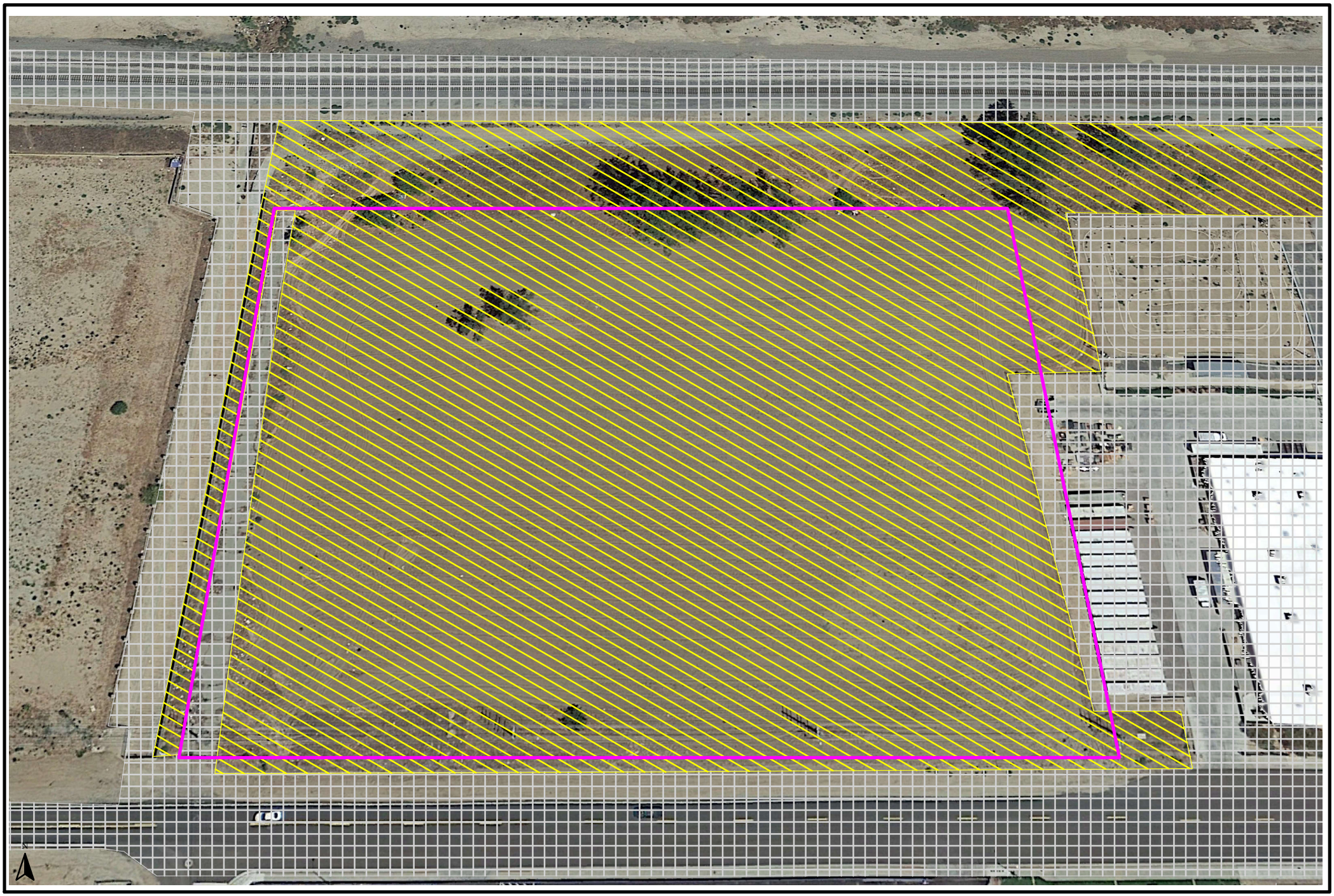


FIGURE 2
Property Vegetation



Photograph 1 From NW corner - Looking SE across the property. Paved driveway and maintained graded area



Photograph 2 From NE corner looking west - Eucalyptus trees and maintained area

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APPENDIX D

CULTURAL RESOURCES ASSESSMENT

A PHASE I CULTURAL RESOURCES ASSESSMENT FOR THE LINCOLN AND 4TH PROJECT

CITY OF BANNING, CALIFORNIA

APNs 540-210-009 and -020

Project Site Location: Section 9, Township 3 South, Range 1 East, San Bernardino Base and Meridian, as shown on the *Beaumont* USGS Quadrangle Topographic Map

Prepared on Behalf of:

First Industrial Realty Trust, Inc.;
First Industrial, LP;
First Industrial Acquisitions II, LLC
One North Wacker Drive, Suite 4200
Chicago, Illinois 60606

Prepared for:

City of Banning
Community Development Department
99 East Ramsey Street
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Prepared by:

Andrew J. Garrison, M.A., RPA and
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Brian F. Smith and Associates, Inc.
14010 Poway Road, Suite A
Poway, California 92064

May 18, 2022

Fieldwork Performed: November 16, 2021
Key Words: 6.12 acres; archaeological survey; RIV-8228; historic foundation and road alignment; not eligible for the CRHR; monitoring recommended.

Archaeological Report Summary Information

Authors:	Andrew J. Garrison, M.A., RPA and Brian F. Smith, M.A., Principal Investigator
Prepared by:	Brian F. Smith and Associates, Inc. 14010 Poway Road, Suite A Poway, California 92064 (858) 679-8218
Report Date:	May 18, 2022
Report Title:	A Phase I Cultural Resources Assessment for the Lincoln and 4th Project, City of Banning, California
Prepared on Behalf of:	First Industrial Realty Trust, Inc.; First Industrial, LP; First Industrial Acquisitions II, LLC One North Wacker Drive, Suite 4200 Chicago, Illinois 60606
Prepared for:	City of Banning Community Development Department 99 East Ramsey Street Banning, California 92220
Assessor's Parcel Numbers:	540-210-009 and -020
USGS Quadrangle:	Section 9, Township 3 South, Range 1 East, San Bernardino Base and Meridian of the USGS *Beaumont*, *California* (7.5 minute) Quadrangle.
Study Area:	6.12 acres
Key Words:	Archaeological survey program; city of Banning; *Beaumont* USGS topographic quadrangle; historic foundation and road alignment recorded as RIV-8228; not eligible for the CRHR; monitoring recommended.

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1.0 MANAGEMENT SUMMARY/ABSTRACT

The following report describes the results of the cultural resources survey conducted by Brian F. Smith and Associates, Inc. (BFSA) for the Lincoln and 4th Project. The survey included 6.12 acres situated within the city of Banning, California. The project applicant proposes the construction of an industrial warehouse building with associated tractor-trailer loading docks, parking, and infrastructure. The project includes Assessor's Parcel Numbers (APNs) 540-210-009 and -020 and is located northeast of the intersection of West Lincoln and 4th streets. The project is situated within Section 9, Township 3 South, Range 1 East, of the San Bernardino Baseline and Meridian, on the 7.5-minute U.S. Geological Survey (USGS) *Beaumont, California* topographic quadrangle map. This study was conducted by BFSA in compliance with the California Environmental Quality Act (CEQA) and the City of Banning environmental guidelines to locate and record any cultural resources present within the project.

1.1 Purpose of Investigation

The purpose of this investigation was to determine if any cultural resources would be affected by the proposed land development. This study consisted of the processing of a records search of previously recorded archaeological sites on or near the property and the completion of an archaeological survey of the project. The archaeological records search results from the Eastern Information Center (EIC) at the University of California at Riverside (UCR) indicate that 81 resources are located within a one-half-mile radius of the current project, one of which, the fragmented foundational remains of the E.L. Robertson fruit drying facility (RIV-8228), is recorded within the subject property. In addition, the Native American Heritage Commission (NAHC) was contacted for a Sacred Lands File (SLF) search, and the results were negative for the presence of recorded sacred sites or locations of religious or ceremonial importance within the project.

1.2 Major Findings

The survey revisited Site RIV-8228 and identified it as the fragmented remnants of a 15 by 20-foot rock and mortar-lined foundation in the southwestern corner of the property. In addition, a segment of the vacated alignment of 4th Street that has been paved was also identified. Archival research revealed that the subject property was associated with E.L. Robertson, a prominent early twentieth century fruit grower in the region. As such, the site form for RIV-8228 was updated based upon the current findings according to the Office of Historic Preservation's (OHP's) manual, *Instructions for Recording Historical Resources,* using Department of Parks and Recreation (DPR) forms (Appendix B). Although the features at Site RIV-8228 are over 50 years old, they would not qualify as significant resources under CEQA. The foundation remnant and 4th Street alignment no longer possess the level of integrity necessary to qualify for listing on the California Register of Historical Resources (CRHR). Furthermore, they are not associated with a master builder, and

they likely cannot provide any further information in regards to the property use.

1.3 Recommendation Summary

Although Site RIV-8228 does not qualify as a significant resource under CEQA, due to the documented historic occupation of the parcel and the disturbance to the property, there remains the potential for additional historic features or deposits to be uncovered during development. Therefore, it is recommended that a Mitigation Monitoring and Reporting Program (MMRP) be implemented as a condition of project approval. The MMRP should include archaeological monitoring of all excavation and grading activities associated with the project, in addition to a testing and significance evaluation should historic or prehistoric resources be encountered. A copy of this report will be permanently filed with the EIC at UCR. All notes, photographs, and other materials related to this project will be curated at the archaeological laboratory of BFSA in Poway, California.

2.0 INTRODUCTION

BFSA was retained by the applicant to conduct a cultural resources survey of the proposed Lincoln and 4th Project. The archaeological survey was conducted in order to comply with CEQA and City of Banning environmental guidelines with regards to development-generated impacts to cultural resources. The project is located in an area of moderate cultural resource sensitivity, as is suggested by known site density and predictive modeling. Most resources within the city of Banning tend to be associated with the historic period. Sensitivity for prehistoric cultural resources in a given area is usually indicated by known settlement patterns, which in Riverside County are concentrated around environments with accessible food and water.

The Lincoln and 4th Project proposes to construct an industrial warehouse development on 6.12 acres situated within the city of Banning (Figure 2.0–1). The project includes APNs 540-210-009 and -020 and is located northeast of the intersection of West Lincoln and 4th streets. The project is situated within Section 9, Township 3 South, Range 1 East, of the San Bernardino Baseline and Meridian on the USGS 7.5-minute *Beaumont*, *California* topographic quadrangle map (Figure 2.0–2). The project proposes the construction of an industrial warehouse building with associated tractor-trailer loading docks, parking, and infrastructure (Figure 2.0–3).

Principal Investigator Brian F. Smith directed the cultural resources survey of the project. The archaeological survey was completed on November 16, 2021. The survey was conducted by field archaeologist Charles Callahan in five to 10-meter interval transects, and ground visibility was moderate. Andrew J. Garrison and Brian Smith prepared the technical report. Andrew Garrison created the report graphics and Summer Forsman conducted technical editing and report production. Qualifications of key personnel are provided in Appendix A.

2.1 Previous Work

An archaeological records search for the project and the surrounding area within a one-half-mile radius was requested from the EIC at UCR on November 3, 2021. The records search shows that one resource, RIV-8228, consisting of foundational remains, is recorded within the project, while a historic trash scatter with associated foundational remains, RIV-3444H, are recorded adjacent to the north/northeast. Site RIV-8228 was only minimally studied by Aron and Ewers when recorded in 2007. However, research conducted for this study shows the remains are associated with the early twentieth century E.L. Robertson's fruit drying operation within the project. The EIC search also identified 14 previous reports within one-half-mile of the project. One report does overlap the project, but it is a large overview conducted for the City of Banning's General Plan and does not specifically address the subject property (Tang et al. 2004). A discussion of records search results and additional background research is provided in Section 4.1 of this report.

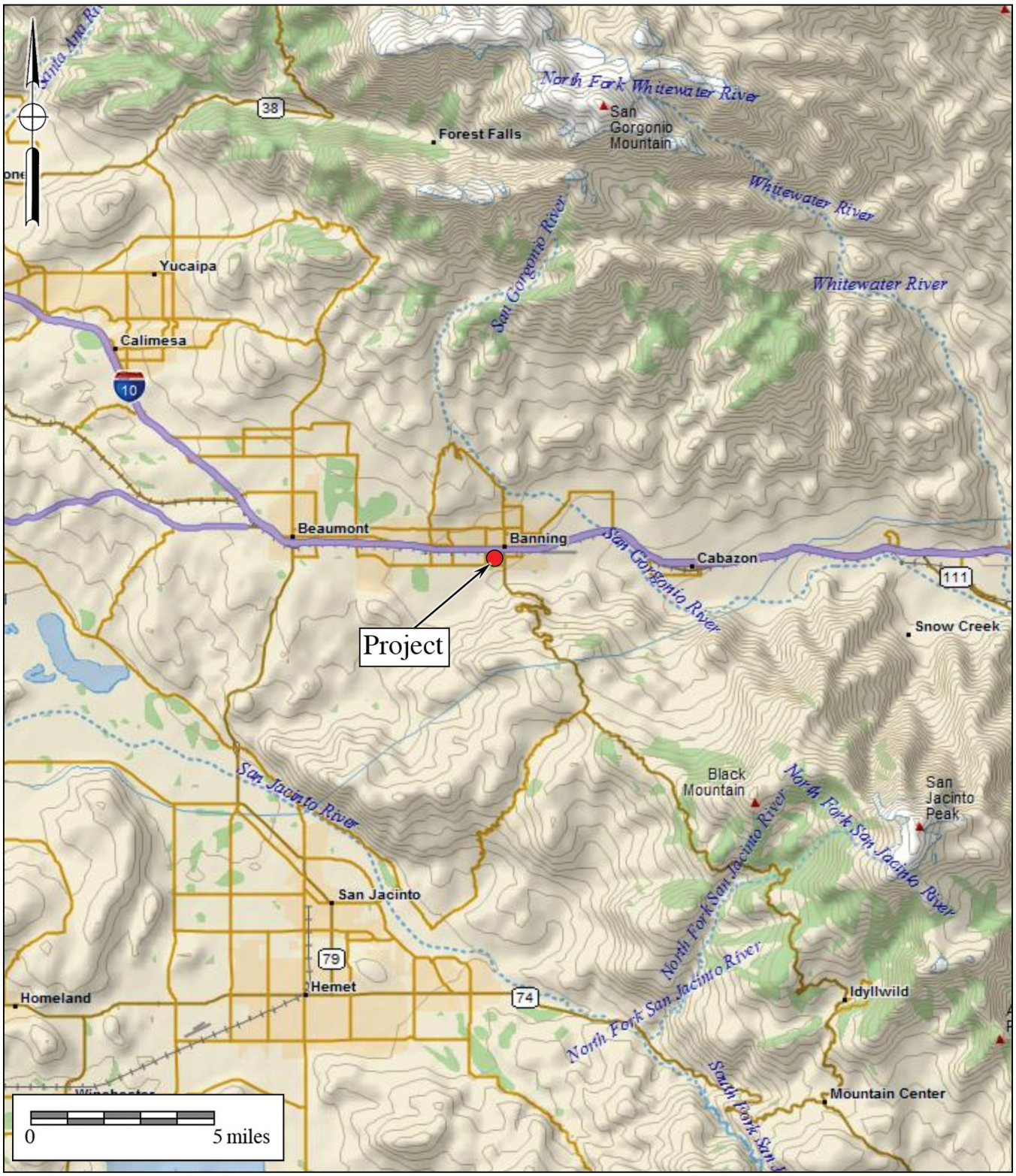


Figure 2.0–1

General Location Map

The Lincoln and 4th Street Project

DeLorme (1:250,000)

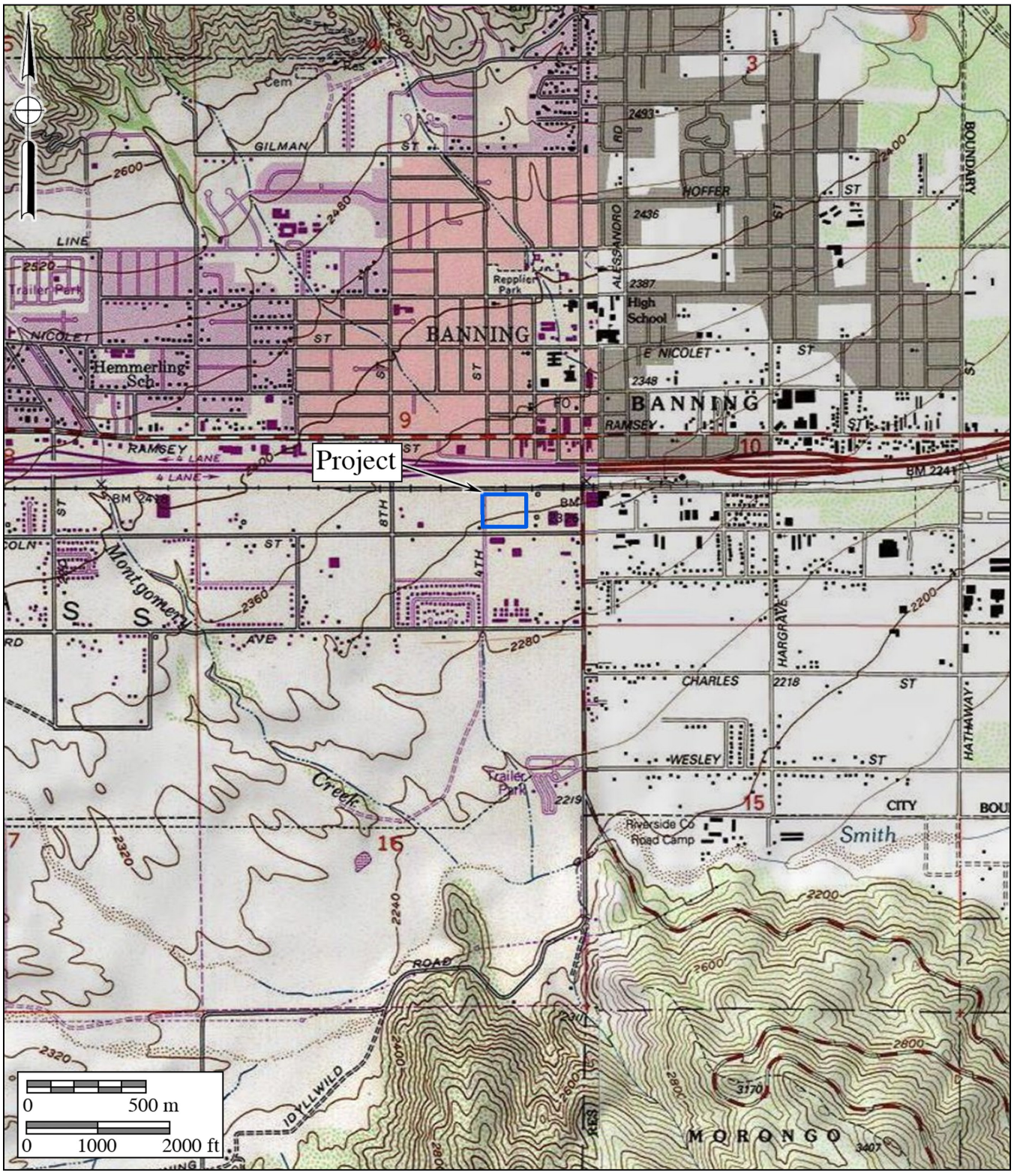


Figure 2.0–2

Project Location Map

The Lincoln and 4th Street Project

USGS *Beaumont* Quadrangle (7.5-minute series)

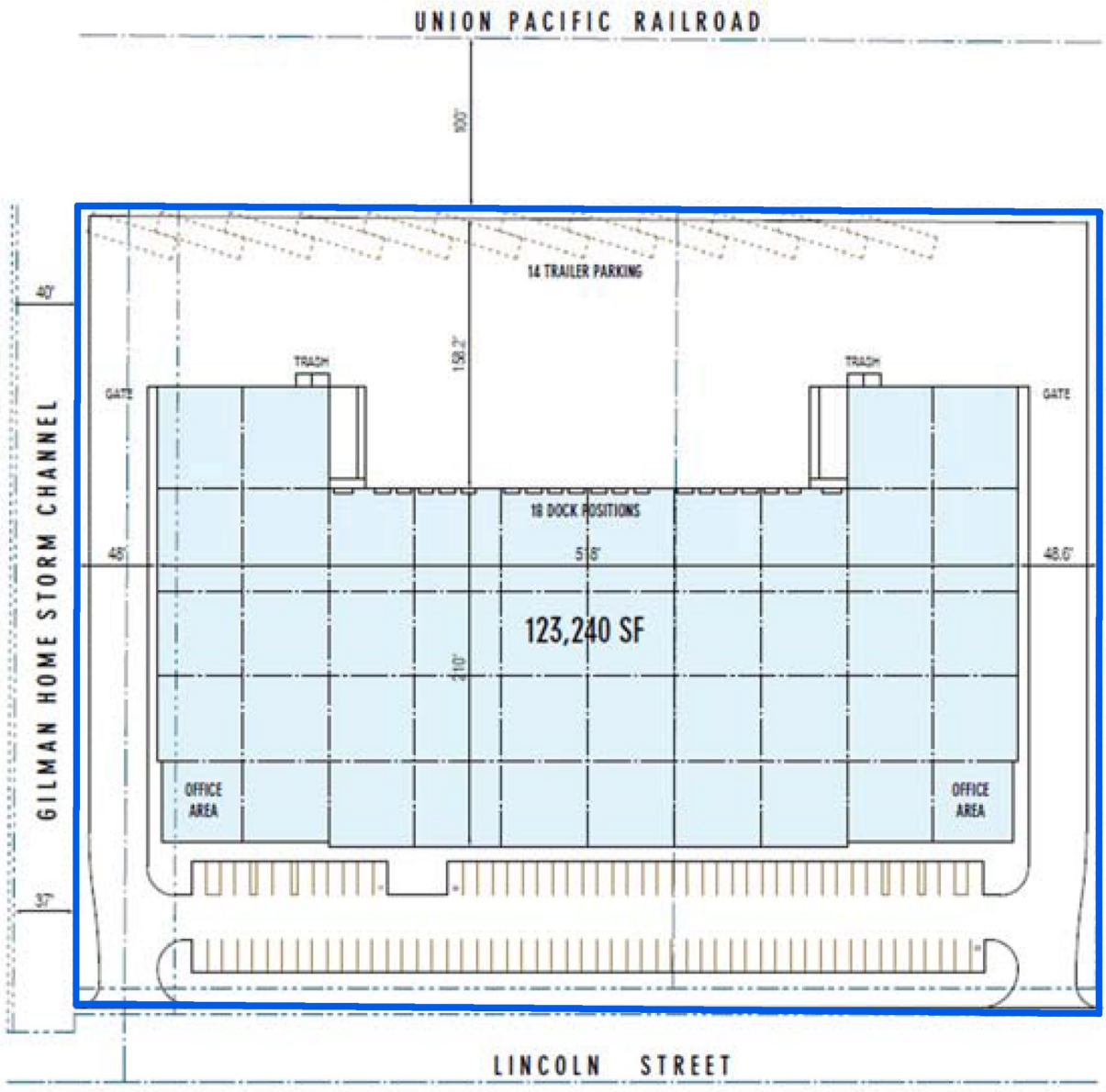


Figure 2.0–3

Preliminary Site Plan

The Lincoln and 4th Street Project

2.2 Project Setting

Riverside County lies in the Peninsular Ranges Geologic Province of southern California. The range, which lies in a northwest to southeast trend through the county, extends some 1,000 miles from the Raymond-Malibu Fault Zone in western Los Angeles County to the southern tip of Baja California.

Regionally, the project lies within the Banning Pass in the greater San Gorgonio Pass fault zone valley that separates the granitic mountain blocks of the San Bernardino Mountains to the north and the San Jacinto Mountains to the southeast. This region of the Banning Pass, and most of the project, is characterized by sediments mapped as Holocene to late Pleistocene (present day to approximately 120,000 years ago [Cohen and Gibbard 2011]) young alluvial fan deposits (Lancaster et al. 2012). The deposits are composed of "unconsolidated to slightly consolidated, undissected to slightly dissected boulder, cobble, gravel, sand, and silt deposits" (Lancaster et al. 2012). Mapped at the southern one-fourth of the project are late to middle Pleistocene (a time span of approximately 11,700 to 780,000 years ago [Cohen and Gibbard 2011]) old alluvial fan sediments, described as "slightly to moderately consolidated, moderately dissected boulder, cobble, gravel, sand, and silt deposits" (Lancaster et al. 2012). These sediments have been shed off the topographic highs of the San Bernardino Mountains and deposited onto the valley floor below by the intermittent flows of several creeks and washes in the valley

The property is generally flat with elevations ranging from 2310 to 2325 feet above mean sea level. Presently, the subject property is vacant with vegetation primarily consisting of sparse non-native weeds and grasses along with some eucalyptus trees. During the prehistoric period, vegetation in the general area of the project provided sufficient food resources to support prehistoric human occupants. The animals that inhabited the project during prehistoric times included mammals such as rabbits, squirrels, gophers, mice, rats, deer, and coyotes, in addition to a variety of reptiles and amphibians. Intermittent streams found throughout the area, Smith and Montgommery creeks, and the San Gorgonio River, would have provided easily accessible sources of fresh water.

2.3 Cultural Setting

The archaeological perspective seeks to reconstruct past cultures based upon the material remains left behind. This is done using a range of scientific methodologies, almost all of which draw from evolutionary theory as the base framework. Archaeology allows one to look deeper into history or prehistory to see where the beginnings of ideas manifest themselves via analysis of material culture, allowing for the understanding of outside forces that shape social change. Thus, the archaeological perspective allows one to better understand the consequences of the history of a given culture upon modern cultures. Archaeologists seek to understand the effects of past contexts of a given culture on this moment in time, not culture in context *in* the moment.

Despite this, a distinction exists between "emic" and "etic" ways of understanding material culture, prehistoric lifeways, and cultural phenomena in general (Harris 1991). While "emic"

perspectives serve the subjective ways in which things are perceived and interpreted by the participants within a culture, "etic" perspectives are those of an outsider looking in hopes of attaining a more scientific or "objective" understanding of the given phenomena. Archaeologists, by definition, will almost always serve an etic perspective as a result of the very nature of their work. As indicated by Laylander et al. (2014), it has sometimes been suggested that etic understanding, and therefore an archaeological understanding, is an imperfect and potentially ethnocentric attempt to arrive at emic understanding. In contract to this, however, an etic understanding of material culture, cultural phenomena, and prehistoric lifeways can address significant dimensions of culture that lie entirely beyond the understanding or interest of those solely utilizing an emic perspective. As Harris (1991:20) appropriately points out, "Etic studies often involve the measurement and juxtaposition of activities and events that native informants find inappropriate or meaningless." This is also likely true of archaeological comparisons and juxtapositions of material culture. However, culture as a whole does not occur in a vacuum and is the result of several millennia of choices and consequences influencing everything from technology, to religions, to institutions. Archaeology allows for the ability to not only see what came before, but to see how those choices, changes, and consequences affect the present. Where possible, archaeology should seek to address both emic and etic understandings to the extent that they may be recoverable from the archaeological record as manifestations of patterned human behavior (Laylander et al. 2014).

To that point, the culture history offered herein is primarily based upon archaeological (etic) and ethnographic (partially emic and partially etic) information. It is understood that the ethnographic record and early archaeological records were incompletely and imperfectly collected. In addition, in most cases, more than a century of intensive cultural change and cultural evolution had elapsed since the terminus of the prehistoric period. Coupled with the centuries and millennia of prehistoric change separating the "ethnographic present" from the prehistoric past, this has affected the emic and etic understandings of prehistoric cultural settings. Regardless, there remains a need to present the changing cultural setting within the region under investigation. As a result, both archaeological and Native American perspectives are offered when possible.

2.3.1 Introduction

Paleo Indian, Archaic Period Milling Stone Horizon, and the Late Prehistoric Takic groups are the three general cultural periods represented in the far eastern portion of Riverside County. The following discussion of the cultural history of this area of Riverside County references the Lake Mojave Complex, Pinto Period, Gypsum Period, Greven Knoll Complex, and Saratoga Springs Period, since these culture sequences have been used to describe archaeological manifestations in the region. The Late Prehistoric component present in this area of Riverside County was primarily represented by the Cahuilla, Gabrielino, and Luiseño Indians.

Absolute chronological information, where possible, will be incorporated into this archaeological discussion to examine the effectiveness of continuing to interchangeably use these

terms. Reference will be made to the geological framework that divides the archaeologically-based culture chronology of the area into four segments: the late Pleistocene (20,000 to 10,000 years before the present [YBP]), the early Holocene (10,000 to 6,650 YBP), the middle Holocene (6,650 to 3,350 YBP), and the late Holocene (3,350 to 200 YBP).

2.3.2 Paleo Indian Period (Late Pleistocene: 11,500 to circa 9,000 YBP)

Archaeologically, the Paleo Indian Period is associated with the terminus of the late Pleistocene (12,000 to 10,000 YBP). The environment during the late Pleistocene was cool and moist, which allowed for glaciation in the mountains and the formation of deep, pluvial lakes in the deserts and basin lands (Moratto 1984). However, by the terminus of the late Pleistocene, the climate became warmer, which caused the glaciers to melt, sea levels to rise, greater coastal erosion, large lakes to recede and evaporate, extinction of Pleistocene megafauna, and major vegetation changes (Moratto 1984; Martin 1967, 1973; Fagan 1991). The coastal shoreline at 10,000 YBP, depending upon the particular area of the coast, was near the 30-meter isobath, or two to six kilometers further west than its present location (Masters 1983).

Paleo Indians were likely attracted to multiple habitat types, including mountains, marshlands, estuaries, and lakeshores. These people likely subsisted using a more generalized hunting, gathering, and collecting adaptation utilizing a variety of resources including birds, mollusks, and both large and small mammals (Erlandson and Colten 1991; Moratto 1984; Moss and Erlandson 1995).

2.3.3 Lake Mojave Period (Late Pleistocene: 10,000 to 7,000 YBP)

The earliest documented evidence of human occupation in the Mojave Desert and surrounding areas comes from the Paleo Indian Period, a cultural expression referred to as the Western Pluvial Lakes Tradition (WPLT). The WPLT occurred in the western Great Basin and covered an area that stretched from the now arid lands of southern California to Oregon. A cultural adaptation to pluvial conditions (e.g., lakes, marshes, and grasslands) flourished for thousands of years after approximately 9000 B.C., but disappeared in response to the warming and drying trends of the Altithermal climatic period (Moratto 1984). One of the most well known expressions of the WPLT is the Lake Mojave Complex, which is thought to have covered a vast area including parts of the southwestern Great Basin and the Mojave Desert, and may have reached as far south as the San Diego area. Artifacts indicative of the Lake Mojave Complex include foliated points and knives, Lake Mojave points, Silver Lake points, and flaked-stone crescents. Similar artifacts have been subsequently recorded along the shoreline of many other pluvial lakes in the Mojave Desert. Archaeological studies by Mark Sutton (1988) suggested that, at the time of the Lake Mojave Complex, much of Antelope and Fremont valleys may have been covered by Pleistocene Lake Thompson. In her 1978 work, Davis (1978) argues that the wetlands generated as a result of such Pliestocene lakes would have been a great attraction to the region's early occupants. This would result in an adaptive strategy that was more generalized, focusing on hunting and the overall

exploitation of wetland resources. In general, it is clear that cultures across California adapted to wetland environments generated by pluvial lake ecological systems (Moratto 1984).

2.3.4 Pinto Period (Early and Middle Holocene: 7,000 to 4,000 YBP)

The Pinto Period dates to the end of the Pleistocene, when the severe and dramatic environmental change from pluvial to arid conditions began (Moratto 1984). Pinto Period sites are found mostly near ephemeral lakes and now dry streams and springs, suggesting that as the region began to dry, new subsistence adaptations were necessary. Projectile points associated with the Pinto Period are characterized as larger atlatl dart points, as opposed to arrowhead points, which were introduced later. This period has been described as a highly mobile desert economy, with an emphasis on hunting, supplemented by the use of processed seeds (Moratto 1984). However, the collections believed to represent the Pinto Period are largely lacking in well-developed milling technologies according to Moratto (1984). Pinto Period artifacts have been interpreted as indications of temporary or seasonal occupations by small groups of people. Sites of this period are generally small in scale and are typically absent of a developed midden. More recent studies (Sutton et al. 2007) suggest that the Pinto Period may have actually started in the early Holocene, overlapping the Lake Mojave Period. A series of radiocarbon dates from Little Lake, Pinto Basin, Twentynine Palms and Fort Irwin suggest Pinto sites with antiquity of upwards of 9,000 years (Sutton et al. 2007), indicating these sites may be of greater antiquity than previously suggested.

2.3.5 Gypsum Period (Middle to Late Holocene: 4,000 to 1,500 YBP)

The presence of Humboldt Concave Base, Gypsum Cave, Elko Eared, or Elko corner-notched points are believed to be indicative of the Gypsum Period (radiocarbon dated from 4,000 to 1,500 YBP). The Gypsum Period reflects a more intensive desert occupation as temperatures began to regulate during the First Neoglacial episode at the beginning of the late Holocene (Warren 1984; Sutton et al. 2007). During this time, indications of trade with coastal populations are evidenced by the presence of shell beads in the archaeological record. An increase in milling stones and manos has been found in association with this period, which indicates an increased use of hard seeds (Moratto 1984; Warren 1984; Sutton et al. 2007). In comparison to sites from the preceding periods, Gypsum Period sites are generally smaller, higher in frequency, and distributed across a range of environments. Further, Gypsum Period sites also display evidence of exploitation of *artiodactyls*, rabbits, and rodents, as well as a wide range of seeds. Adaptations resulting from better adapted technologies combined with what was likely more complex social organization likely facilitated the ease of adaptation to the warming and drying conditions that initiated circa 2,000 years ago. The continued use of the region during the Gypsum Period indicates an overall more successful adaptation to the warm and dry conditions during this period (Warren 1984; Sutton et al. 2007).

Several scholars associate this period with the division of the Uto-Aztecan language,

approximately 3,000 to 2,500 years ago (Moratto 1984; Warren 1984; Sutton et al. 2007). The major language groups that emerged from this division are Numic, spoken by the Kawaiisu and Piute; Takic, spoken by the Kitanemuk, Serrano, Gabrielino, and other southern California Shoshonean speakers; Hopic, spoken in the southwest; and Tubatulabalic, spoken by the Tubatulabal in the southern Sierra Nevada Mountains. A shift in settlement patterns toward a more sedentary lifestyle occurred during this period, characterized by the emergence of large permanent or semi-permanent village sites and associated cemeteries.

More recent work by Sutton has identified a more localized complex known as the Greven Knoll Complex. The Greven Knoll Complex is a redefined northern inland expression of the Encinitas Tradition first put forth by Mark Sutton and Jill Gardner (2010) that likely overlaps into the current project area. Sutton and Gardner (2010:25) state that "[t]he early millingstone archaeological record in the northern portion of the interior southern California was not formally named but was often referred to as 'Inland Millingstone,' 'Encinitas,' or even 'Topanga.'" Therefore, they proposed that all expressions of the inland Milling Stone in southern California north of San Diego County be grouped together in the Greven Knoll Complex.

The Greven Knoll Complex, as postulated by Sutton and Gardner (2010), is broken into three phases and obtained its name from the type-site Greven Knoll located in Yucaipa, California. Presently, the Greven Knoll Site is part of the Yukaipa't Site (SBR-1000) and was combined with the adjacent Simpson Site. Excavations at Greven Knoll recovered manos, metates, projectile points, discoidal cogged stones, and a flexed inhumation with a possible cremation (Kowta 1969:39). It is believed that the Greven Knoll Site was occupied between 5,000 and 3,500 YBP. The Simpson Site contained mortars, pestles, side-notched points, and stone and shell beads. Based upon the data recovered at these sites, Kowta (1969:39) suggested that "coastal Milling Stone Complexes extended to and interdigitated with the desert Pinto Basin Complex in the vicinity of the Cajon Pass."

Phase I of the Greven Knoll Complex is generally dominated by the presence of manos and metates, core tools, hammerstones, large dart points, flexed inhumations, and occasional cremations. Mortars and pestles are absent from this early phase, and the subsistence economy emphasized hunting. Sutton and Gardner (2010:26) propose that the similarity of the material culture of Greven Knoll Phase I and that found in the Mojave Desert at Pinto Period sites indicates that the Greven Knoll Complex was influenced by neighbors to the north at that time. Accordingly, Sutton and Gardner (2010) believe that Greven Knoll Phase I may have appeared as early as 9,400 YBP and lasted until about 4,000 YBP.

Greven Knoll Phase II is associated with a period between 4,000 and 3,000 YBP. Artifacts common to Greven Knoll Phase II include manos and metates, Elko points, core tools, and discoidals. Pestles and mortars are present; however, they are only represented in small numbers. Finally, there is an emphasis upon hunting and gathering for subsistence (Sutton and Gardner 2010:8).

Greven Knoll Phase III includes manos, metates, Elko points, scraper planes, choppers,

hammerstones, and discoidals. Again, small numbers of mortars and pestles are present. Greven Knoll Phase III spans from approximately 3,000 to 1,000 YBP and shows a reliance upon seeds and yucca. Hunting is still important, but bones seem to have been processed to obtain bone grease more often in this later phase (Sutton and Gardner 2010:8).

The shifts in food processing technologies during each of these phases indicate a change in subsistence strategies; although people were still hunting for large game, plant-based foods eventually became the primary dietary resource (Sutton 2011a). Sutton's (2011b) argument posits that the development of mortars and pestles during the middle Holocene can be attributed to the year-round exploitation of acorns as a main dietary provision. Additionally, the warmer and drier climate may have been responsible for groups from the east moving toward coastal populations, which is archaeologically represented by the interchange of coastal and eastern cultural traits (Sutton 2011a).

2.3.6 Saratoga Springs Period (Late Holocene: 1,500 to 800 YBP)

The Saratoga Springs Period is characterized by a transition from larger dart points to smaller arrow points. The presence of arrow points suggest that the bow and arrow were introduced to the Mojave Desert during the Saratoga Springs Period. This, combined with evidence from rock art motifs, leads scholars to argue for a shift from atlatls to use of the bow and arrow either during the end of the Gypsum Period or the beginning of the Saratoga Springs Period. This technological advancement likely improved overall hunting efficiency and possibly the carrying capacity for local population (Warren 1984). This in turn may have resulted in a significant increase in population as suggested by archaeological data. During this period, the development of large village sites with cemeteries and well-developed middens indicate long-term occupations in comparison to previous periods. This period saw an increase in trade with Arizona and other areas of the southwest. Evidence in the archaeological record shows that Brown and Buff wares (pottery styles), characteristic of Arizona, made their way to the California desert by 900 A.D. It is also believed that the Anasazi mined turquoise in the eastern California desert about this time. While the presence of Hakataya influence may have extended as far north and west as the eastern Antelope Valley (Warren 1984), influence in the western Mojave appear to have been minimal. During the second half of the Saratoga Springs Period, the rise in temperatures and return to xeric conditions around A.D. 700 likely led to population decline, and eventually the terminus of the Saratoga Springs complex circa A.D. 1100 (Sutton et al. 2007).

2.3.7 Late Prehistoric Period (Late Holocene: 800 YBP to 1790)

Many Native American groups in the region hold the world view that as a population, they were created in southern California; however, archaeological and anthropological data proposes a scientific/archaeological perspective. Archaeological and anthropological evidence suggests that at approximately 1,350 YBP, Takic-speaking groups from the Great Basin region moved into Riverside County, marking the transition to the Late Prehistoric Period. An analysis of the Takic

expansion by Sutton (2009) indicates that inland southern California was occupied by "proto-Yuman" populations before 1,000 YBP. The comprehensive, multi-phase model offered by Sutton (2009) employs linguistic, ethnographic, archaeological, and biological data to solidify a reasonable argument for population replacement of Takic groups to the north by Penutians (Laylander 1985). As a result, it is believed that Takic expansion occurred starting around 3,500 YBP moving toward southern California, with the Gabrielino language diffusing south into neighboring Yuman (Hokan) groups around 1,500 to 1,000 YBP, possibly resulting in the Luiseño dialect.

Based upon Sutton's model, the final Takic expansion would not have occurred until about 1,000 YBP, resulting in Vanyume, Serrano, Cahuilla, and Cupeño dialects. The model suggests that the Luiseño did not simply replace Hokan speakers, but were rather a northern San Diego County/southern Riverside County Yuman population who adopted the Takic language. This period is characterized by higher population densities and elaborations in social, political, and technological systems. Economic systems diversified and intensified during this period with the continued elaboration of trade networks, the use of shell-bead currency, and the appearance of more labor-intensive, yet effective, technological innovations. Technological developments during this period included the introduction of the bow and arrow between A.D. 400 and 600 and the introduction of ceramics. Atlatl darts were replaced by smaller arrow darts, including Cottonwood series points. Other hallmarks of the Late Prehistoric Period include extensive trade networks as far-reaching as the Colorado River Basin and cremation of the dead.

2.3.8 Protohistoric Period (Late Holocene: 1790 to Present)

Ethnohistoric and ethnographic evidence indicates that primarily three Takic-speaking groups occupied portions of Riverside County: the Cahuilla, the Gabrielino, and the Luiseño. However, the project is also located near the territory known to have been occupied by the Serrano. The geographic boundaries between these groups in pre- and proto-historic times are difficult to place, but the project primarily appears to fall within Cahuilla territory. Ethnographic data for the three groups is presented below.

Cahuilla: An Archaeological and Ethnographic Perspective

According to Bean (1978) and Kroeber (1976), at the time of Spanish contact in the sixteenth century, the Cahuilla occupied territory that included the San Bernardino Mountains, the Orocopia Mountains, and the Chocolate Mountains to the east, Salton Sea and Borrego Springs to the south, Palomar Mountain and Lake Mathews to the west, and the Santa Ana River to the north. According to Bean et al. (1992) the Cahuilla were centered around the San Jacinto and Santa Rosa mountains. While Milanovich, quoting the Late Cahuilla elder Alvino Siva, states, "The Cahuilla boundaries existed as far west as Colton, north to the San Bernadino Mountains, east to the Chocolate Mountains, and south to Palomar Mountain" (Milanovich 2021).

The Cahuilla are a Takic-speaking people closely related to their Gabrielino and Luiseño

neighbors, although relations with the Gabrielino were more intense than with the Luiseño. They differ from the Luiseño and Gabrielino in that their religion is more similar to the Mohave tribes of the eastern deserts than the Chingichngish religious group of the Luiseño and Gabrielino. The following is a summary of ethnographic data regarding this group (Bean 1978; Kroeber 1976).

Subsistence and Settlement

Cahuilla villages were typically permanent and located on low terraces within canyons in proximity to water sources. These locations proved to be rich in food resources and also afforded protection from prevailing winds. Villages had areas that were publicly owned and areas that were privately owned by clans, families, or individuals. Each village was associated with a particular lineage and series of sacred sites that included unique petroglyphs and pictographs. Villages were occupied throughout the year; however, during a several-week period in the fall, most of the village members relocated to mountain oak groves to take part in acorn harvesting (Bean 1978; Kroeber 1976).

The Cahuilla's use of plant resources is well documented. Plant foods harvested by the Cahuilla included valley oak acorns and single-leaf pinyon pine nuts. Other important plant species included bean and screw mesquite, agave, Mohave yucca, cacti, palm, chia, quail brush, yellowray goldfield, goosefoot, manzanita, catsclaw, desert lily, mariposa lily, and a number of other species such as grass seed. A number of agricultural domesticates were acquired from the Colorado River tribes including corn, bean, squash, and melon grown in limited amounts. Animal species taken included deer, bighorn sheep, pronghorn antelope, rabbit, hare, rat, quail, dove, duck, roadrunner, and a variety of rodents, reptiles, fish, and insects (Bean 1978; Kroeber 1976).

Social Organization

The Cahuilla was not a political nation, but rather a cultural nationality with a common language. Two non-political, non-territorial patrimoieties were recognized: the Wildcats (túktem) and the Coyotes (?ístam). Lineage and kinship were memorized at a young age among the Cahuilla, providing a backdrop for political relationships. Clans were composed of three to 10 lineages; each lineage owned a village site and specific resource areas. Lineages within a clan cooperated in subsistence activities, defense, and rituals (Bean 1978; Kroeber 1976).

A system of ceremonial hierarchy operated within each lineage. The hierarchy included the lineage leader, who was responsible for leading subsistence activities, guarding the sacred bundle, and negotiating with other lineage leaders in matters concerning land use, boundary disputes, marriage arrangements, trade, warfare, and ceremonies. The ceremonial assistant to the lineage leader was responsible for organizing ceremonies. A ceremonial singer possessed and performed songs at rituals and trained assistant singers. The shaman cured illnesses through supernatural powers, controlled natural phenomena, and was the guardian of ceremonies, keeping evil spirits away. The diviner was responsible for finding lost objects, telling future events, and locating game and other food resources. Doctors were usually older women who cured various

ailments and illnesses with their knowledge of medicinal herbs. Finally, certain Cahuilla specialized as traders, who ranged as far west as Santa Catalina and as far east as the Gila River (Bean 1978; Kroeber 1976).

Marriages were arranged by parents from opposite moieties. When a child was born, an alliance formed between the families, which included frequent reciprocal exchanges. The Cahuilla kinship system extended to relatives within five generations. Important economic decisions, primarily the distribution of goods, operated within this kinship system (Bean 1978; Kroeber 1976).

Material Culture

Cahuilla houses were dome-shaped or rectangular, thatched structures. The home of the lineage leader was the largest, located near the ceremonial house with the best access to water. Other structures within the village included the men's sweathouse and granaries (Bean 1978; Kroeber 1976).

Cahuilla clothing, like other groups in the area, was minimal. Men typically wore a loincloth and sandals; women wore skirts made from mesquite bark, animal skin, or tules. Babies wore mesquite bark diapers. Rabbit skin cloaks were worn in cold weather (Bean 1978; Kroeber 1976).

Hunting implements included the bow and arrow, throwing sticks, and clubs. Grinding tools used in food processing included manos, metates, and wood mortars. The Cahuilla were known to use long grinding implements made from wood to process mesquite beans; the mortar was typically a hollowed log buried in the ground. Other tools included steatite arrow shaft straighteners (Bean 1978; Kroeber 1976).

Baskets were made from rush, deer grass, and skunkbrush. Different species and leaves were chosen for different colors in the basket design. Coiled-ware baskets were either flat (for plates, trays, or winnowing), bowl-shaped (for food serving), deep, inverted, and cone-shaped (for transporting), or rounded and flat-bottomed for storing utensils and personal items (Bean 1978; Kroeber 1976).

Cahuilla pottery was made from a thin, red-colored ceramic ware that was often painted and incised. Four basic vessel types are known for the Cahuilla: small-mouthed jars, cooking pots, bowls, and dishes. Additionally, smoking pipes and flutes were fashioned from ceramic (Bean 1978; Kroeber 1976).

Serrano: An Archaeological and Ethnographic Perspective

Aboriginally, the Serrano occupied an area east of present-day Los Angeles. According to Bean and Smith (1978b), definitive boundaries are difficult to place for the Serrano due to their sociopolitical organization and a lack of reliable data:

> The Serrano were organized into autonomous localized lineages occupying definite, favored territories, but rarely claiming any territory far removed from the lineage's home base. Since the entire dialectical group was neither politically united nor amalgamated into supralineage groups, as many of their neighbors were, one must speak in terms of generalized areas of usage rather than pan-tribal holdings. (Strong [1971] in Bean and Smith 1978b)

However, researchers place the Serrano in the San Bernardino Mountains, east of Cajon Pass, and at the base of and north of the mountains near Victorville, east to Twentynine Palms, and south to the Yucaipa Valley (Bean and Smith 1978b). Serrano has been used broadly for languages in the Takic family including Serrano, Kitanemuk, Vanyume, and Tataviam.

Subsistence and Settlement

Serrano village locations were typically located near water sources. Individual family dwellings were likely circular, domed structures. Daily household activities would either take place outside of the house out in the open, or under a ramada constructed of a thatched willow pole roof held up by four or more poles inserted into the ground. Families could consist of a husband, wife/wives, unmarried female children, married male children, the husband's parents, and/or widowed aunts and uncles. Rarely, an individual would occupy his own house, typically in the mountains. Serrano villages also included a large ceremonial house where the lineage leader would live, which served as the religious center for lineages or lineage-sets, granaries, and sweathouses (Bean and Smith 1978b).

The Serrano were primarily hunters and gatherers. Vegetal staples varied with locality. Acorns and piñon nuts were found in the foothills, and mesquite, yucca roots, cacti fruits, and piñon nuts were found in or near the desert regions. Diets were supplemented with other roots, bulbs, shoots, and seeds (Heizer 1978). Deer, mountain sheep, antelopes, rabbits, and other small rodents were among the principal food packages. Various game birds, especially quail, were also hunted. The bow and arrow were used for large game, while smaller game and birds were killed with curved throwing sticks, traps, and snares. Occasionally, game was hunted communally, often during mourning ceremonies (Benedict 1924; Drucker 1937; Heizer 1978). Earth ovens were used to cook meat, bones were boiled to extract marrow, and blood was either drunk cold or cooked to a thicker consistency and then eaten. Some meat and vegetables were sun-dried and stored. Food acquisition and processing required the manufacture of additional items such as knives, stone, or bone scrapers, pottery trays and bowls, bone or horn spoons, and stirrers. Mortars, made of either stone or wood, and metates were also manufactured (Strong 1971; Drucker 1937; Benedict 1924).

Social Organization

The Serrano were part of "exogamous clans, which in turn were affiliated with one of two exogamous moieties, *tuk^{w}utam* (Wildcat) and *wahiʔiam* (Coyote)" (Bean and Smith 1978b).

According to Strong (1971), details such as number, structure, and function of the clans are unknown. Instead, he states that clans were not political, but were rather structured based upon "economic, marital, or ceremonial reciprocity, a pattern common throughout Southern California" (Bean and Smith 1978b). The Serrano formed alliances amongst their own clans and with Cahuilla, Chemehuevi, Gabrielino, and Cupeño clans (Bean and Smith 1978b). Clans were large, autonomous, political, and landholding units formed patrilineally, with all males descending from a common male ancestor, including all wives and descendants of the males. However, even after marriage, women would still keep their original lineage, and would still participate in those ceremonies (Bean and Smith 1978b).

According to Bean and Smith (1978b), the cosmogony and cosmography of the Serrano are very similar to those of the Cahuilla:

> There are twin creator gods, a creation myth told in "epic poem" style, each local group having its own origin story, water babies whose crying foretells death, supernatural beings of various kinds and on various hierarchically arranged power-access levels, an Orpheus-like myth, mythical deer that no one can kill, and tales relating the adventures (and misadventures) of Coyote, a tragicomic trickster-transformer culture hero. (Bean [1962-1972] and Benedict [1924] in Bean and Smith 1978b)

The Serrano had a shaman, a person who acquired their powers through dreams, which were induced through ingestion of the hallucinogen datura. The shaman was mostly a curer/healer, using herbal remedies and "sucking out the disease-causing agents" (Bean and Smith 1978b).

Material Culture

The Serrano were very similar technologically to the Cahuilla. In general, manufactured goods included baskets, some pottery, rabbit-skin blankets, awls, arrow straighteners, sinew-backed bows, arrows, fire drills, stone pipes, musical instruments (rattles, rasps, whistles, bull-roarers, and flutes), feathered costumes, mats for floor and wall coverings, bags, storage pouches, cordage (usually comprised of yucca fiber), and nets (Heizer 1978).

Gabrielino: An Archaeological and Ethnographic Perspective

The territory of the Gabrielino at the time of Spanish contact covers much of present-day Los Angeles and Orange counties. The southern extent of this culture area is bounded by Aliso Creek, the eastern extent is located east of present-day San Bernardino along the Santa Ana River, the northern extent includes the San Fernando Valley, and the western extent includes portions of the Santa Monica Mountains. The Gabrielino also occupied several Channel Islands including Santa Barbara Island, Santa Catalina Island, San Nicholas Island, and San Clemente Island. Because of their access to certain resources, including a steatite source from Santa Catalina Island,

this group was among the wealthiest and most populous aboriginal groups in all of southern California. Trade of materials and resources controlled by the Gabrielino extended as far north as the San Joaquin Valley, as far east as the Colorado River, and as far south as Baja California (Bean and Smith 1978a; Kroeber 1976).

Subsistence and Settlement

The Gabrielino lived in permanent villages and occupied smaller resource-gathering camps at various times of the year depending upon the seasonality of the resource. Larger villages were comprised of several families or clans, while smaller, seasonal camps typically housed smaller family units. The coastal area between San Pedro and Topanga Canyon was the location of primary subsistence villages, while secondary sites were located near inland sage stands, oak groves, and pine forests. Permanent villages were located along rivers and streams and in sheltered areas along the coast. As previously mentioned, the Channel Islands were also the locations of relatively large settlements (Bean and Smith 1978a; Kroeber 1976).

Resources procured along the coast and on the islands were primarily marine in nature and included tuna, swordfish, ray and shark, California sea lion, Stellar sea lion, harbor seal, northern elephant seal, sea otter, dolphin and porpoise, various waterfowl species, numerous fish species, purple sea urchin, and mollusks, such as rock scallop, California mussel, and limpet. Inland resources included oak acorn, pine nut, Mohave yucca, cacti, sage, grass nut, deer, rabbit, hare, rodent, quail, duck, and a variety of reptiles such as western pond turtle and numerous snake species (Bean and Smith 1978a; Kroeber 1976).

Social Organization

The social structure of the Gabrielino is little known; however, there appears to have been at least three social classes: 1) the elite, which included the rich, chiefs, and their immediate family; 2) a middle class, which included people of relatively high economic status or long-established lineages; and 3) a class of people that included most other individuals in the society. Villages were politically autonomous units comprised of several lineages. During times of the year when certain seasonal resources were available, the village would divide into lineage groups and move out to exploit them, returning to the village between forays (Bean and Smith 1978; Kroeber 1976).

Each lineage had its own leader, with the village chief coming from the dominant lineage. Several villages might be allied under a paramount chief. Chiefly positions were of an ascribed status, most often passed to the eldest son. Chiefly duties included providing village cohesion, leading warfare and peace negotiations with other groups, collecting tribute from the village(s) under his jurisdiction, and arbitrating disputes within the village(s). The status of the chief was legitimized by his safekeeping of the sacred bundle, a representation of the link between the material and spiritual realms and the embodiment of power (Bean and Smith 1978a; Kroeber 1976).

Shamans were leaders in the spirit realm. The duties of the shaman included conducting

healing and curing ceremonies, guarding the sacred bundle, locating lost items, identifying and collecting poisons for arrows, and making rain (Bean and Smith 1978a; Kroeber 1976).

Marriages were made between individuals of equal social status and, in the case of powerful lineages, marriages were arranged to establish political ties between the lineages (Bean and Smith 1978a; Kroeber 1976).

Men conducted the majority of the heavy labor, hunting, fishing, and trading with other groups. Women's duties included gathering and preparing plant and animal resources, and making baskets, pots, and clothing (Bean and Smith 1978a; Kroeber 1976).

Material Culture

Gabrielino houses were domed, circular structures made of thatched vegetation. Houses varied in size and could house from one to several families. Sweathouses (semicircular, earth-covered buildings) were public structures used in male social ceremonies. Other structures included menstrual huts and a ceremonial structure called a yuvar, an open-air structure built near the chief's house (Bean and Smith 1978a; Kroeber 1976).

Clothing was minimal; men and children most often went naked, while women wore deerskin or bark aprons. In cold weather, deerskin, rabbit fur, or bird skin (with feathers intact) cloaks were worn. Island and coastal groups used sea otter fur for cloaks. In areas of rough terrain, yucca fiber sandals were worn. Women often used red ochre on their faces and skin for adornment or protection from the sun. Adornment items included feathers, fur, shells, and beads (Bean and Smith 1978a; Kroeber 1976).

Hunting implements included wood clubs, sinew-backed bows, slings, and throwing clubs. Maritime implements included rafts, harpoons, spears, hook and line, and nets. A variety of other tools included deer scapulae saws, bone and shell needles, bone awls, scrapers, bone or shell flakers, wedges, stone knives and drills, metates, mullers, manos, shell spoons, bark platters, and wood paddles and bowls. Baskets were made from rush, deer grass, and skunkbush. Baskets were fashioned for hoppers, plates, trays, and winnowers for leaching, straining, and gathering. Baskets were also used for storing, preparing, and serving food, and for keeping personal and ceremonial items (Bean and Smith 1978a; Kroeber 1976).

The Gabrielino had exclusive access to soapstone, or steatite, procured from Santa Catalina Island quarries. This highly prized material was used for making pipes, animal carvings, ritual objects, ornaments, and cooking utensils. The Gabrielino profited well from trading steatite since it was valued so much by groups throughout southern California (Bean and Smith 1978a; Kroeber 1976).

Luiseño: An Archaeological and Ethnographic Perspective

When contacted by the Spanish in the sixteenth century, the Luiseño occupied a territory bounded on the west by the Pacific Ocean, on the east by the Peninsular Ranges mountains at San Jacinto (including Palomar Mountain to the south and Santiago Peak to the north), on the south by

Agua Hedionda Lagoon, and on the north by Aliso Creek in present-day San Juan Capistrano. The Luiseño were a Takic-speaking people more closely related linguistically and ethnographically to the Cahuilla, Gabrielino, and Cupeño to the north and east rather than the Kumeyaay who occupied territory to the south. The Luiseño differed from their neighboring Takic speakers in having an extensive proliferation of social statuses, a system of ruling families that provided ethnic cohesion within the territory, a distinct worldview that stemmed from the use of datura (a hallucinogen), and an elaborate religion that included the creation of sacred sand paintings depicting the deity Chingichngish (Bean and Shipek 1978; Kroeber 1976).

Subsistence and Settlement

The Luiseño occupied sedentary villages most often located in sheltered areas in valley bottoms, along streams, or along coastal strands near mountain ranges. Villages were located near water sources to facilitate acorn leaching and in areas that offered thermal and defensive protection. Villages were composed of areas that were publicly and privately (by family) owned. Publicly owned areas included trails, temporary campsites, hunting areas, and quarry sites. Inland groups had fishing and gathering sites along the coast that were intensively used from January to March when inland food resources were scarce. During October and November, most of the village would relocate to mountain oak groves to harvest acorns. The Luiseño remained at village sites for the remainder of the year, where food resources were within a day's travel (Bean and Shipek 1978; Kroeber 1976).

The most important food source for the Luiseño was the acorn, six different species of which were used (*Quercus californica, Quercus agrifolia, Quercus chrysolepis, Quercus dumosa, Quercus engelmannii,* and *Quercus wislizenii*). Seeds, particularly of grasses, flowering plants, and mints, were also heavily exploited. Seed-bearing species were encouraged through controlled burns, which were conducted at least every third year. A variety of other stems, leaves, shoots, bulbs, roots, and fruits were also collected. Hunting augmented this vegetal diet. Animal species taken included deer, rabbit, hare, woodrat, ground squirrel, antelope, quail, duck, freshwater fish from mountain streams, marine mammals, and other sea creatures such as fish, crustaceans, and mollusks (particularly abalone, or *Haliotis* sp.). In addition, a variety of snakes, small birds, and rodents were eaten (Bean and Shipek 1978; Kroeber 1976).

Social Organization

Social groups within the Luiseño nation consisted of patrilinear families or clans, which were politically and economically autonomous. Several clans comprised a religious party, or nota, which was headed by a chief who organized ceremonies and controlled economics and warfare. The chief had assistants who specialized in particular aspects of ceremonial or environmental knowledge and who, with the chief, were part of a religion-based social group with special access to supernatural power, particularly that of Chingichngish. The positions of chief and assistants were hereditary, and the complexity and multiplicity of these specialists' roles likely increased in

coastal and larger inland villages (Bean and Shipek 1978; Kroeber 1976; Strong 1929).

Marriages were arranged by the parents, often made to forge alliances between lineages. Useful alliances included those between groups of differing ecological niches and those that resulted in territorial expansion. Residence was patrilocal (Bean and Shipek 1978; Kroeber 1976). Women were primarily responsible for plant gathering and men principally hunted, although, at times, particularly during acorn and marine mollusk harvests, there was no division of labor. Elderly women cared for children and elderly men participated in rituals, ceremonies, and political affairs. They were also responsible for manufacturing hunting and ritual implements. Children were taught subsistence skills at the earliest age possible (Bean and Shipek 1978; Kroeber 1976).

Material Culture

House structures were conical, partially subterranean, and thatched with reeds, brush, or bark. Ramadas were rectangular, protected workplaces for domestic chores such as cooking. Ceremonial sweathouses were important in purification rituals; these were round and partially subterranean thatched structures covered with a layer of mud. Another ceremonial structure was the wámkis (located in the center of the village, serving as the place of rituals), where sand paintings and other rituals associated with the Chingichngish religious group were performed (Bean and Shipek 1978; Kroeber 1976).

Clothing was minimal; women wore a cedar-bark and netted twine double apron and men wore a waist cord. In cold weather, cloaks or robes of rabbit fur, deerskin, or sea otter fur were worn by both sexes. Footwear included deerskin moccasins and sandals fashioned from yucca fibers. Adornments included bead necklaces and pendants made of bone, clay, stone, shell, bear claw, mica, deer hooves, and abalone shell. Men wore ear and nose piercings made from cane or bone, which were sometimes decorated with beads. Other adornments were commonly decorated with semiprecious stones including quartz, topaz, garnet, opal, opalite, agate, and jasper (Bean and Shipek 1978; Kroeber 1976).

Hunting implements included the bow and arrow. Arrows were tipped with either a carved, fire-hardened wood tip or a lithic point, usually fashioned from locally available metavolcanic material or quartz. Throwing sticks fashioned from wood were used in hunting small game, while deer head decoys were used during deer hunts. Coastal groups fashioned dugout canoes for nearshore fishing and harvested fish with seines, nets, traps, and hooks made of bone or abalone shell (Bean and Shipek 1978; Kroeber 1976).

The Luiseño had a well-developed basket industry. Baskets were used in resource gathering, food preparation, storage, and food serving. Ceramic containers were shaped by paddle and anvil and fired in shallow, open pits to be used for food storage, cooking, and serving. Other utensils included wood implements, steatite bowls, and ground stone manos, metates, mortars, and pestles (Bean and Shipek 1978; Kroeber 1976). Additional tools such as knives, scrapers, choppers, awls, and drills were also used. Shamanistic items include soapstone or clay smoking pipes and crystals made of quartz or tourmaline (Bean and Shipek 1978; Kroeber 1976).

2.3.9 Ethnohistoric Period (1769 to Present)

Traditionally, the history of the state of California has been divided into three general periods: the Spanish Period (1769 to 1821), the Mexican Period (1822 to 1846), and the American Period (1848 to present) (Caughey 1970). The American Period is often further subdivided into additional phases: the nineteenth century (1848 to 1900), the early twentieth century (1900 to 1950), and the Modern Period (1950 to present). From an archaeological standpoint, all of these phases can be referred to together as the Ethnohistoric Period. This provides a valuable tool for archaeologists, as ethnohistory is directly concerned with the study of indigenous or non-Western peoples from a combined historical/anthropological viewpoint, which employs written documents, oral narrative, material culture, and ethnographic data for analysis.

European exploration along the California coast began in 1542 with the landing of Juan Rodriguez Cabrillo and his men at San Diego Bay. Sixty years after the Cabrillo expeditions, an expedition under Sebastian Viscaíno made an extensive and thorough exploration of the Pacific coast. Although the voyage did not extend beyond the northern limits of the Cabrillo track, Viscaíno had the most lasting effect upon the nomenclature of the coast. Many of his place names have survived, whereas practically every one of the names created by Cabrillo have faded from use. For instance, Cabrillo named the first (now) United States port he stopped at "San Miguel"; 60 years later, Viscaíno changed it to "San Diego" (Rolle 1969). The early European voyages observed Native Americans living in villages along the coast but did not make any substantial, long-lasting impact. At the time of contact, the Luiseño population was estimated to have ranged from 4,000 to as many as 10,000 individuals (Bean and Shipek 1978; Kroeber 1976).

The historic background of the project area began with the Spanish colonization of Alta California. The first Spanish colonizing expedition reached southern California in 1769 with the intention of converting and civilizing the indigenous populations, as well as expanding the knowledge of and access to new resources in the region (Brigandi 1998). As a result, by the late eighteenth century, a large portion of southern California was overseen by the Spanish at Mission San Luis Rey (San Diego County), Mission San Juan Capistrano (Orange County), and Mission San Gabriel (Los Angeles County), who began colonization of the region and surrounding areas (Chapman 1921).

Up until this time, the only known way to feasibly travel from Sonora to Alta California was by sea. In 1774, Juan Bautista de Anza, an army captain at Tubac, requested and was given permission by the governor of the Mexican State of Sonora to establish an overland route from Sonora to Monterey (Chapman 1921). In doing so, Juan Bautista de Anza passed through Riverside County and described the area in writing for the first time (Caughey 1970; Chapman 1921). In 1797, Father Presidente Lausen (of Mission San Diego de Alcalá), Father Norberto de Santiago, and Corporal Pedro Lisalde (of Mission San Juan Capistrano) led an expedition through southwestern Riverside County in search of a new mission site to establish a presence between San Diego and San Juan Capistrano (Engelhardt 1921). Their efforts ultimately resulted in the establishment of Mission San Luis Rey in Oceanside, California.

Through the mission system, the Spanish gained power with the support of a large, subjugated Native American workforce. The subjugation also included assigning labels to the Native population as it relates to the mission at which they were located. As such, many of the names used for the Native groups in the area and later by ethnographers are not the original names the people had called themselves. As the missions grew, livestock holdings increased and became increasingly vulnerable to theft. In order to protect their interests, the southern California missions began to expand inland to try and provide additional security (Beattie and Beattie 1939; Caughey 1970). In order to meet their needs, the Spaniards embarked on a formal expedition in 1806 to find potential locations within what is now the San Bernardino Valley. As a result, by 1810, Father Francisco Dumetz of Mission San Gabriel had succeeded in establishing a religious site, or capilla, at a Cahuilla rancheria called Guachama (Beattie and Beattie 1939). San Bernardino Valley received its name from this site, which was dedicated to San Bernardino de Siena by Father Dumetz. The Guachama rancheria was located in present-day Bryn Mawr in San Bernardino County.

These early colonization efforts were followed by the establishment of estancias at Puente (circa 1816) and San Bernardino (circa 1819) near Guachama (Beattie and Beattie 1939). These efforts were soon mirrored by the Spaniards from Mission San Luis Rey, who in turn established a presence in what is now Lake Elsinore, Temecula, and Murrieta (Chapman 1921). The indigenous groups who occupied these lands were recruited by missionaries, converted, and put to work in the missions (Pourade 1961). Throughout this period, the Native American populations were decimated by introduced diseases, a drastic shift in diet resulting in poor nutrition, and social conflicts due to the introduction of an entirely new social order (Cook 1976).

Mexico achieved independence from Spain in 1822 and became a federal republic in 1824. As a result, both Baja and Alta California became classified as territories (Rolle 1969). Shortly thereafter, the Mexican Republic sought to grant large tracts of private land to its citizens to begin to encourage immigration to California and to establish its presence in the region. Part of the establishment of power and control included the secularization of the missions circa 1832. These same missions were also located on some of the most fertile land in California and, as a result, were considered highly valuable. The resulting land grants, known as "ranchos," covered expansive portions of California and by 1846, more than 600 land grants had been issued by the Mexican government. Rancho Jurupa was the first rancho to be established and was issued to Juan Bandini in 1838. Although Bandini primarily resided in San Diego, Rancho Jurupa was located in what is now Riverside County (Pourade 1963). A review of Riverside County place names quickly illustrates that many of the ranchos in Riverside County lent their names to present-day locations, including Jurupa, El Rincon, La Sierra, El Sobrante de San Jacinto, La Laguna (Lake Elsinore), Santa Rosa, Temecula, Pauba, San Jacinto Nuevo y Potrero, and San Jacinto Viejo (Gunther 1984). As was typical of many ranchos, these were all located in the valley environments within western Riverside County.

The treatment of Native Americans grew worse during the Rancho Period. Most of the

Native Americans were forced off of their land or put to work on the now privately-owned ranchos, most often as slave labor. In light of the brutal ranchos, the degree to which Native Americans had become dependent upon the mission system is evident when, in 1838, a group of Native Americans from Mission San Luis Rey petitioned government officials in San Diego to relieve suffering at the hands of the rancheros:

> We have suffered incalculable losses, for some of which we are in part to be blamed for because many of us have abandoned the Mission … We plead and beseech you … to grant us a Rev. Father for this place. We have been accustomed to the Rev. Fathers and to their manner of managing the duties. We labored under their intelligent directions, and we were obedient to the Fathers according to the regulations, because we considered it as good for us. (Brigandi 1998:21)

Native American culture had been disrupted to the point where they could no longer rely upon prehistoric subsistence and social patterns. Further, many Native Americans had had their traditional lands taken from them and moved to land that was not adequate for them to maintain their lifeways. Not only does this illustrate how dependent the Native Americans had become upon the missionaries, but it also indicates a marked contrast in the way the Spanish treated the Native Americans compared to the Mexican and United States ranchers. Spanish colonialism (missions) is based upon utilizing human resources while integrating them into their society. The Mexican and American ranchers did not accept Native Americans into their social order and used them specifically for the extraction of labor, resources, and profit. Rather than being incorporated, they were either subjugated or exterminated (Cook 1976).

By 1846, tensions between the United States and Mexico had escalated to the point of war (Rolle 1969). In order to reach a peaceful agreement, the Treaty of Guadalupe Hidalgo was put into effect in 1848, which resulted in the annexation of California to the United States. Once California opened to the United States, waves of settlers moved in searching for gold mines, business opportunities, political opportunities, religious freedom, and adventure (Rolle 1969; Caughey 1970). By 1850, California had become a state and was eventually divided into 27 separate counties. While a much larger population was now settling in California, this was primarily in the central valley, San Francisco, and the Gold Rush region of the Sierra Nevada mountain range (Rolle 1969; Caughey 1970). During this time, southern California grew at a much slower pace than northern California and was still dominated by the cattle industry established during the earlier rancho period. However, by 1859, the first United States Post Office in what would eventually become Riverside County was set up at John Magee's store on the Temecula Rancho (Gunther 1984).

During the same decade, the Native Americans of southern Riverside County, including the Cahuilla, Cupeño, Luiseño, and Serrano, thought they had signed a treaty resulting in their ownership of all lands from Temecula to Aguanga east to the desert, including the San Jacinto

Valley and the San Gorgonio Pass. Milanovich (2021) notes that "The treaty commissioners told the tribal leaders to sign the treaties, or face annihilation through war, settlement, relocation, and forced removal". The Treaty of Temecula was signed on January 5, 1852, while a similar treaty known as the Treaty of Santa Ysabel was signed with the Kumeyaay two days later (Milanovich 2021). However, Congress never ratified these treaties, and the promises laid out in them were rejected during a "secret session" (Brigandi 1998; Milanovich 2021). As a result, Native Americans were able to be evicted from their lands which were desired by American citizens. "The United States chose not to act on the issue until twenty-three years later when President Ulysses S. Grant began to establish reservations through executive orders in Southern California" (Phillips 2014; Milanovich 2021).

With the completion of the Southern Pacific Railroad in 1869, southern California saw its first major population expansion. The population boom continued circa 1874 with the completion of connections between the Southern Pacific Railroad in Sacramento to the transcontinental Central Pacific Railroad in Los Angeles (Rolle 1969; Caughey 1970). The population influx brought farmers, land speculators, and prospective developers to the region. As the Jurupa area became more and more populated, circa 1870, Judge John Wesley North and a group of associates founded the city of Riverside on part of the former rancho.

Although the first orange trees were planted in Riverside County circa 1871, it was not until a few years later when a small number of Brazilian navel orange trees were established that the citrus industry truly began in the region (Patterson 1971). The Brazilian navel orange was well suited to the climate of Riverside County and thrived with assistance from several extensive irrigation projects. At the close of 1882, an estimated half a million citrus trees were present in California. It is estimated that nearly half that was in Riverside County. Population growth and 1880s tax revenue from the booming citrus industry prompted the official formation of Riverside County in 1893 out of portions of what was once San Bernardino County (Patterson 1971).

Shortly thereafter, with the start of World War I, the United States began to develop a military presence in Riverside County with the construction of March Air Reserve Base. During World War II, Camp Haan was constructed in what is now the current location of the National Veteran's Cemetery. In the decades that followed, populations spread throughout the county into Lake Elsinore, Corona, Norco, Murrieta, and Wildomar. However, a significant portion of the county remained largely agricultural well into the 1970s. Following the 1970s, Riverside saw a period of dramatic population increase as the result of new development, more than doubling the population of the county with a population of over 1.3 million residents (Patterson 1971).

2.3.10 General History of the City of Banning

The project falls within the city of Banning, which historically was influenced by the "Smith Ranch" and "Rancho de San Gorgonio." Rancho de San Gorgonio was never actually formally recorded as a Mexican land grant due to paperwork being lost in transit on the way to Washington, D.C. (Holmes 1912; Lech 2004). Paulino Weaver, a trapper from Tennessee, was

one of the first to reside within the area of the San Gorgonio Pass, petitioning Governor Pio Pico for the land grant. Weaver lived in an adobe north of present-day Beaumont into the 1850s (Hughes 1938). Weaver and Colonel Isaac Julian Williams owned much of the land within the San Gorgonio Pass (Robinson 2005). Although they did not have an official land grant, Weaver and Williams maintained ownership by selling off portions of the land in the mid-1800s (Holmes 1912). Dr. Isaac Smith purchased a portion of Weaver's holdings in 1853 (Robinson 2005), establishing Smith Ranch (Gunther 1984). Smith was elected to the California State Assembly in 1857. Smith, along with Stephen St. John and Alfred Bybee, were appointed to lay out Bradshaw Trail. The goal of this task was to create a more reliable access route through the pass to connect with the Los Angeles Basin and the Colorado Desert (Robinson 2005). The road transected Smith's property, and the Smith ranch became known as Smith's Station and functioned as a prominent stagecoach stop.

Smith's Station operated as a stage stop through the 1860s. From 1864 to 1866, the Bradshaw Trail through Smith's Station was the single connecting line for passenger, mail, and express travel from southern California to the east (Highland Springs Ranch and Inn 2017). In 1871, James Marshall Gilman, a businessman from New Hampshire, married Smith's daughter, Martha Benoist Smith. Gilman operated another large ranch also along the Bradshaw Trail just southeast of Smith's Station.

The Southern Pacific Railroad was built through the area during the 1870s, providing a more desirable mode of transportation (Gunther 1984). This route was known as the Sunset Route, which extended between Los Angeles and New Orleans. The line was constructed by many different companies but consolidated under the Southern Pacific Railroad. The Sunset Route had major advantages over other routes as it was the first all-weather transcontinental rail line (Library of Congress n.d.; Southern Pacific Historical & Technical Society n.d.). As such, the Sunset Route was important to the migration of people and transportation of goods through the San Gorgonio Pass. Although the railroad did diminish the number of people using the stage lines for travel, the railroad ultimately increased the overall traffic through the region (Brunzell 2006).

The community of Banning was originally called "Moore City" after Ransom B. Moore. Moore operated a large cattle ranch in the area and the nearby San Gorgonio Mountains in the early 1860s (Gunther 1984). The community was eventually renamed "Banning" in the late 1870s in honor of General Phineas Banning, an influential southern California businessman and friend of Moore's. It is generally thought that Moore dedicated the community to his friend in hopes that Banning "would do something nice for the town in return" (Hughes 1938:21). It is believed that in return for the town being named for him, Banning contributed to the building fund for the construction of the town's Baptist church (Gunther 1984).

The Banning post office was established on October 11, 1877 (Gunther 1984). In 1883, Moore sold all 500 acres of his holdings, including his water rights, to C.W. Filkes, Riverside's postmaster, and George W. Bryant of Carson, Nevada (Gunther 1984). Included in the sale was Water Canyon, known then as Johnny Moore Canyon, as well as water flumes built previously by

the San Gorgonio Fluming Company. Filkes and Bryant worked to bring water from Johnny Moore Canyon through eight miles of pipes and flumes to the reservoirs in the valley for the residents of the area. In 1884, the town was subdivided, and the population continued to grow steadily throughout the late nineteenth century due to its prominent location to transportation routes such as the Bradshaw Trail and the Southern Pacific Railroad, which pass through the town, as well as its new access to convenient water sources.

By 1890, the town had grown to include a school, a church, a hotel, two grocery stores, a meat market, several stables, a blacksmith, a post office, and a train depot; despite this, however, the economy of the town relied heavily on agriculture and cattle grazing (City of Banning 2016). Deciduous fruit trees dominated the agricultural development of the area with a focus on almonds, peaches, apricots, plums, cherries, and prunes. In 1912, Elmer Wallace Holms wrote:

> [I]n 1911, nearly twenty-five hundred and fifty tons of green and dried fruit and nuts were shipped out of Banning. The fruit was dried at small establishments in the early days, or shipped fresh, but with the growth of the output larger establishments sprang up, and at present there are several large driers doing business, and two fresh fruit packing houses.

Given the scope of the fruit industry in the area and the proximity to land held by Morongo, many Native Americans whose family members had initially gained farming experience at the Assistencia of San Bernardino worked within the agricultural industry of the region (Morongo Nation n.d.). Further, there were Indian management groups formed to sell, process, ship, and package crops grown within the Morongo lands.

> In 1919, when Morongo became individually allotted, the established agricultural business model faulted considerably. As the large farming parcels of land became partitioned into smaller parcels, commercial farming became unfeasible. To address this issue, multiple property owners agreed to merge their lands in order to form areas big enough to accommodate large-scale farming. The Malki Fruit Association was the most successful of these adaptations. This cooperative group enabled allottees to continue living as farmers, by allowing them to pool their resources and maximize their assets (Bean 1978, 182-185). The Malki Fruit Association operated for nearly 20 years. (Morongo Nation n.d.)

The agricultural industry of the city of Banning continued to be a driving economic force into the 1940s; however, it rapidly declined during the second half of the twentieth century (*Daily Banning Record* 1959; *The Press-Enterprise* 1977).

The town of Banning was incorporated on February 6, 1913 but still relied heavily on rural industries. During World War II, the Desert Training Center, located to the east of the city in the

Sonoran Desert, brought an influx of new supportive infrastructure. One of these buildings was the Banning General Hospital which was constructed in 1943 and first used by the United States Army until 1944. It was then transferred to the Navy and renamed Naval Convalescent Hospital, Banning (City of Banning 2016). Many of the service personnel who had been brought to the region stayed in the area, contributing to a postwar population growth (City of Banning 2016). Banning continued to grow throughout the twentieth century transforming the rural community with the development of subdivisions for single-family homes. The growth in population continued through the early 2000s turning the town into a burgeoning bedroom community (City of Banning 2016).

2.3.11 Project Specific History

The subject property is just south of the Southern Pacific Railroad and was originally developed as part of the late nineteenth and early twentieth century fruit industry within the region. In 1890, the subject property was subdivided by the Banning Land Company and shown on the map as a series of residential lots within Block 232 and Block 220 (Figure 2.3–1). At the time, the Banning Land Company was run by Charles Omar Barker who was instrumental in the development of the city of Banning.

Charles Omar Barker came to the region in 1883 and originally worked for the Banning Colony Land Company before becoming a schoolteacher and later the manager of the Banning Land Company (*Desert Sun* 1935).

Barker was influential in the acquisition of land from the Morongo Band of Mission Indians, the United States government, and the Southern Pacific Railroad to establish adequate "water-bearing land" for the newly established Banning Water Company (*Desert Sun* 1935). After being elected to the California Assembly, Barker introduced Assembly Bill No. 130 which, after passing, created Riverside County (*Desert Sun* 1935).

In addition to subdividing land for sale throughout the San Gorgonio Pass region, Barker also raised cattle and planted fruit trees, eventually forming the Banning Canning Company and the Banning Almond Growers Association (*Desert Sun* 1935; Brunzell 2015). Barker continued to contribute to the development of Banning until his death in 1935 (*Desert Sun* 1935). Based upon the photo archives at the Banning Library, Barker had a large home on Murray Street, and most of his fruit and almond operations were originally located west of the current project at the intersection of Westward and Lovell avenues.

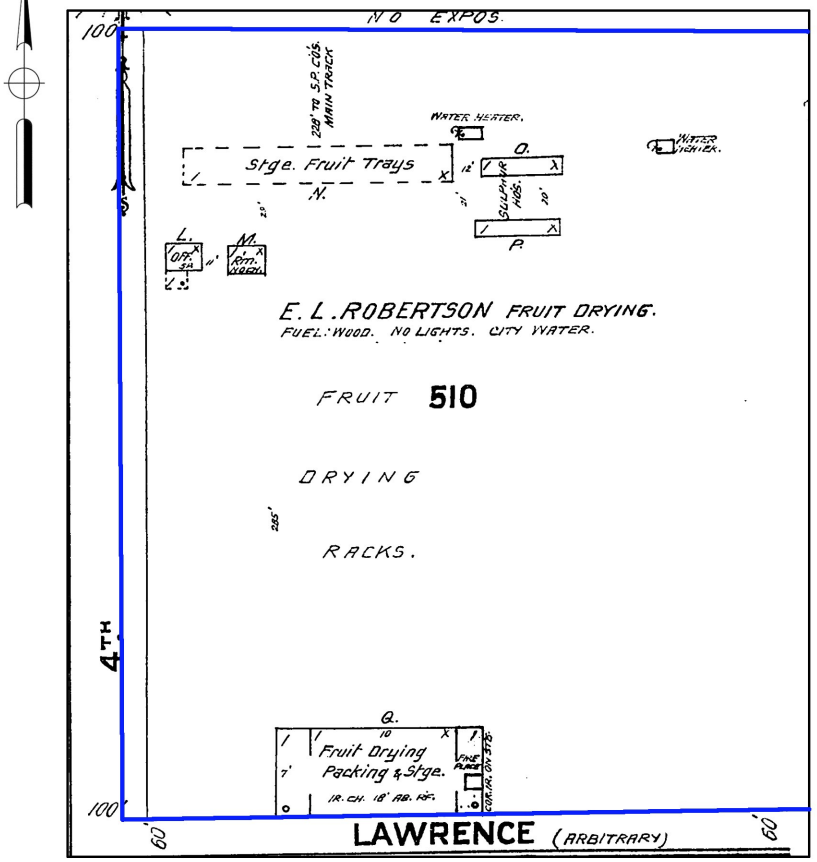
According to the Banning Library Local History Collection, Eugene Lewis (E.L.) Robertson, another prominent fruit grower and partner of Barker, had established a fruit drying operation within the project as early as 1910 (Calisphere n.d.). Riverside County Assessor's records show E L. Robertson acquired the property in 1901, while Sanborn Fire Insurance maps from 1911 through 1936 confirm the property was developed by Robertson for his fruit drying business. Plate 2.3–1 shows the fruit drying facility circa 1910 and Figure 2.3–2 shows the operation on the 1911 Sanborn map.



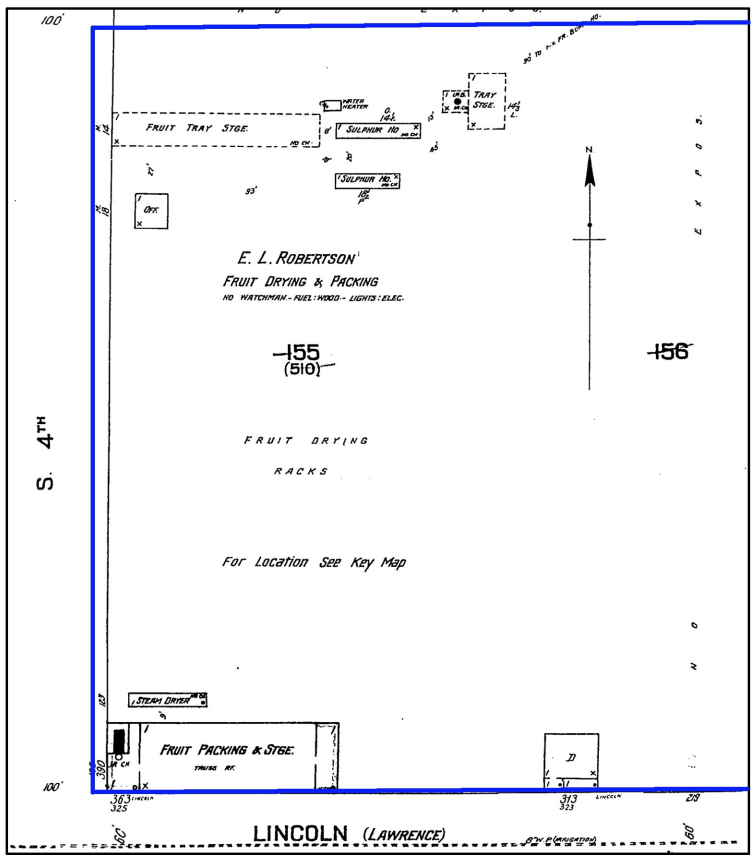
Figure 2.3–1

1890 Subdivsion Map

The Lincoln and 4th Street Project



1911



1926-1936

Legend

Project Boundary

Figure 2.3–2

1911 through 1936 Sanborn Maps

The Lincoln and 4th Street Project

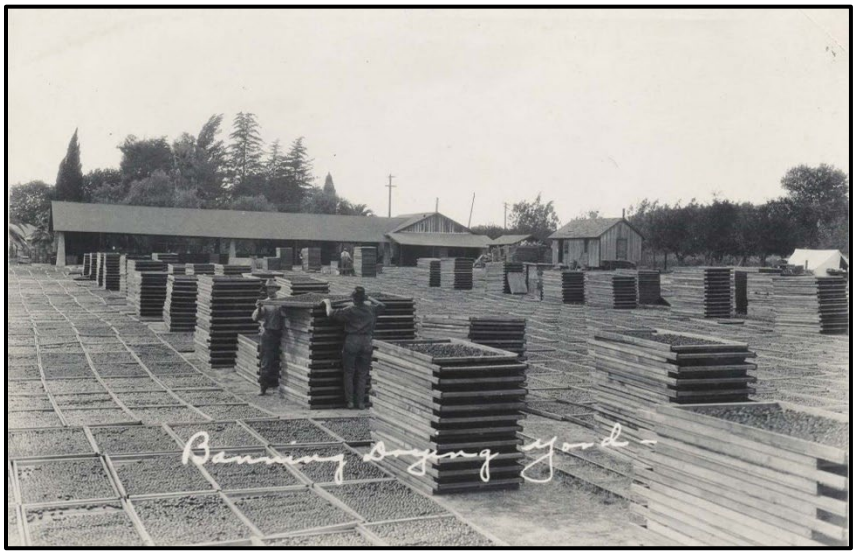


Plate 2.3–1: The fruit drying facility circa 1910.
(Photo courtesy of Calisphere.)

E.L. Robertson was born on April 12, 1871 and came to the Banning area in 1894 (Ancestry.com n.d.; *Palm Springs News and Palm Springs Limelight* 1950). In addition to fruit drying, Robertson, along with Barker and D.H. Gates, started the Banning Canning Company in 1913 (*Daily Banning Record* 1959; *Daily Banning Record* 1963). Robertson served as the president of the Banning Canning Company which had its main operation on 4th Street just north of the railroad (*Daily Banning Record* 1964) (Plate 2.3–2). Further, the 1917 directory for Banning also lists him as the Vice President of the Banning Water Company and City Water Company (Ancestry.com n.d.).



Plate 2.3–2: The Banning Canning Company circa 1920s.
(Photo courtesy of Calisphere.)

Census records show that in 1930, Robertson was listed at 204 West Lincoln Avenue, a residence that was located directly across the street from the current project parcels. In 1936, Robertson is listed by the California Department of Agriculture as a "dried fruit packer" (Carey 1935). Robertson's operation continued into the 1940s, and in 1941, he is listed as handling a large apricot crop at the subject property (*Daily Banning Record* 1964). Robertson passed away in 1950 (Ancestry.com n.d.; *Palm Springs News and Palm Springs Limelight* 1950). Based upon aerial photographs (discussed further in Section 4.1), the fruit drying operation within the project was removed between 1962 and 1967.

2.4 Research Goals

The primary goal of the research design is to attempt to understand the ways in which humans have used the land and resources within the project area through time, as well as to aid in the determination of resource significance. For the current project, the area under investigation is the western portion of Riverside County. The scope of work for the archaeological program conducted for the Lincoln and 4th Project included the survey of the 6.12-acre project parcel. Given the area involved, and the narrow focus of the cultural resources study, the research design for this project was necessarily limited and general in nature. Since the main objective of the investigation was to identify the presence of and potential impacts to cultural resources, the goal here is not necessarily to answer wide-reaching theories regarding the development of early southern California, but to investigate the role and importance of the identified resources. Although survey-level investigations are limited in terms of the amount of information available, several specific research questions were developed that could be used to guide the initial investigations of any observed cultural resources. The following research questions take into account the size and location of the project.

Research Questions:

- Can located cultural resources be situated with a specific time period, population, or individual?
- Do the types of located cultural resources allow a site activity/function to be determined from a preliminary investigation? What are the site activities? What is the site function? What resources were exploited?
- How do the located sites compare to others reported from different surveys conducted in the area?
- How do the located sites fit existing models of settlement and subsistence for valley environments of the region?

Data Needs

At the survey level, the principal research objective is a generalized investigation of changing settlement patterns in both the prehistoric and historic periods within the study area. The

overall goal is to understand settlement and resource procurement patterns of the project area occupants. Therefore, adequate information on site function, context, and chronology from an archaeological perspective is essential for the investigation. The fieldwork and archival research were undertaken with these primary research goals in mind:

1) To identify cultural resources occurring within the project;
2) To determine, if possible, site type and function, context of the deposit, and chronological placement of each cultural resource identified;
3) To place each cultural resource identified within a regional perspective; and
4) To provide recommendations for the treatment of each of the cultural resources identified.

3.0 METHODOLOGY

The archaeological program for the Lincoln and 4th Project consisted of an institutional records search, a SLF search, an intensive pedestrian survey of the approximately 6.12-acre project parcel, and preparation of a technical study. This archaeological study conformed to the statutory requirements of CEQA and subsequent legislation (Section 15064.5) was followed in evaluating the significance of cultural resources. Specific definitions for archaeological resource type(s) used in this report are those established by the State Historic Preservation Office (SHPO 1995).

3.1 Archaeological Records Search

An archaeological records search was requested from the EIC on November 3, 2021. The records search results indicate that 81 resources are located within a one-half-mile radius of the current project, one of which, the fragmented foundational remains of the E.L. Robertson fruit drying facility (RIV-8228), is recorded within the subject property. Land Patent records held by the Bureau of Land Management (BLM) and accessible through the BLM General Land Office (GLO) website were also reviewed for pertinent project information. In addition, archival research was conducted utilizing historic maps, aerial photographs, newspapers, and ancestry.com. Further, the BFSA research library was also consulted for any relevant historical information.

3.2 Field Methodology

In accordance with the City and CEQA review requirements, an intensive pedestrian reconnaissance was conducted that employed a series of parallel survey transects spaced at five to 10-meter intervals to locate archaeological sites within the project. The archaeological survey of the project was completed on November 16, 2021. The entire project was covered by the survey process and photographs were taken to document project conditions during the survey (see Section 4.2). Visibility throughout the property was generally good. However, ground visibility was obscurred in a few locations by pockets of non-native weeds and grasses. No other constraints were encountered during the field survey.

3.3 Report Preparation and Recordation

This report contains information regarding previous studies, statutory requirements for the project, a brief description of the setting, research methods employed, and the overall results of the survey. The report includes all appropriate illustrations and tabular information needed to make a complete and comprehensive presentation of these activities, including the methodologies employed and the personnel involved. A copy of this report will be placed at the EIC at UCR.

3.4 Native American Consultation

BFSA requested a review of the SLF by the NAHC to determine if any recorded Native American sacred sites or locations of religious or ceremonial importance are present near the

project. The NAHC SLF results were negative for the presence of recorded sacred sites or locations of religious or ceremonial importance within the project.

3.5 Applicable Regulations

Resource importance is assigned to districts, sites, buildings, structures, and objects that possess exceptional value or quality illustrating or interpreting the heritage of Riverside County in history, architecture, archaeology, engineering, and culture. A number of criteria are used in demonstrating resource importance. Specifically, criteria outlined in CEQA provide the guidance for making such a determination. The following sections detail the CEQA criteria that a resource must meet in order to be determined important.

3.5.1 California Environmental Quality Act

According to CEQA (§15064.5a), the term "historical resource" includes the following:

1) A resource listed in, or determined to be eligible by the State Historical Resources Commission for listing in, the CRHR (Public Resources Code [PRC] SS5024.1, Title 14 CCR. Section 4850 et seq.).
2) A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the PRC or identified as significant in an historical resource survey meeting the requirements of Section 5024.1(g) of the PRC, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
3) Any object, building, structure, site, area, place, record, or manuscript, which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the CRHR (PRC SS5024.1, Title 14, Section 4852) including the following:

    a) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
    b) Is associated with the lives of persons important in our past;
    c) 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
    d) Has yielded, or may be likely to yield, information important in prehistory or

history.

4) The fact that a resource is not listed in, or determined eligible for listing in the CRHR, not included in a local register of historical resources (pursuant to Section 5020.1[k] of the PRC), or identified in an historical resources survey (meeting the criteria in Section 5024.1[g] of the PRC) does not preclude a lead agency from determining that the resource may be an historical resource as defined in PRC Section 5020.1(j) or 5024.1.

According to CEQA (§15064.5b), a project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. CEQA defines a substantial adverse change as:

1) Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.
2) The significance of an historical resource is materially impaired when a project:

    a) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the CRHR; or
    b) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or,
    c) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its eligibility for inclusion in the CRHR as determined by a lead agency for purposes of CEQA.

Section 15064.5(c) of CEQA applies to effects on archaeological sites and contains the following additional provisions regarding archaeological sites:

1) When a project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource, as defined in subsection (a).
2) If a lead agency determines that the archaeological site is an historical resource, it shall

refer to the provisions of Section 21084.1 of the PRC, Section 15126.4 of the guidelines, and the limits contained in Section 21083.2 of the PRC do not apply.

3) If an archaeological site does not meet the criteria defined in subsection (a), but does meet the definition of a unique archaeological resource in Section 21083.2 of the PRC, the site shall be treated in accordance with the provisions of Section 21083.2. The time and cost limitations described in PRC Section 21083.2 (c-f) do not apply to surveys and site evaluation activities intended to determine whether the project location contains unique archaeological resources.
4) If an archaeological resource is neither a unique archaeological nor historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the Initial Study or Environmental Impact Report, if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process.

Section 15064.5 (d) and (e) contain additional provisions regarding human remains. Regarding Native American human remains, paragraph (d) provides:

(d) When an initial study identifies the existence of, or the probable likelihood, of Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the NAHC as provided in PRC SS5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans as identified by the NAHC. Action implementing such an agreement is exempt from:

1) The general prohibition on disinterring, disturbing, or removing human remains from any location other than a dedicated cemetery (Health and Safety Code Section 7050.5).
2) The requirement of CEQA and the Coastal Act.

4.0 RESULTS

4.1 Records Search Results

An archaeological records search for the project and the surrounding area within a one-half-mile radius was conducted by the EIC at UCR. The search results identified 81 cultural resources located within one-half-mile of the project (Table 4.1–1). The EIC records indicated that one of these sites, RIV-8228 (P-33-015848), is located within the subject property. Site RIV-8228 was recorded in 2007 by LSA Associates, Inc. (LSA) as a concrete pad lined by a small concrete cobble retaining wall and disconnected poured concrete steps. The site form contains very little detail. Additional property research was not conducted nor was the resource formally evaluated in 2007 (Aron and Ewers 2007). Aron and Ewers (2007) postulated that the resource most likely were the remains of a residence; however, the remains are associated with the E.L. Robertson's fruit drying operation.

In addition to Site RIV-8228, the records search shows Site RIV-3444H (P-33-003444), consisting of a historic trash scatter and two foundations, situated adjacent to the north/northeast of the project (Apple et al. 1988). Apple et al. (1988) tied Site RIV-3444H to the mapped location of the Banning Station and the Railroad as shown on the 1886 GLO Plat map of the area. Of the remaining resources identified within one-half-mile of the project, one is a single prehistoric isolate. The remaining resources are all historic and consist of residences, a multi-family property, hotels, a high school, commercial buildings, buildings, churches, engineering structures, foundations/structure pads, a commercial development, a flood control canal, an ancillary structure, a highway trail, and a multicomponent site consisting of foundations/structure pads, walls/fences, trash scatters, and water conveyance system.

Table 4.1–1
Resources Located Within a One-Half-Mile
Radius of the Lincoln and 4th Project

Site	Description
RIV-254	Prehistoric isolate
RIV-3444H	Historic trash scatter and two foundations
P-33-008332; P-33-008333; P-33-008334; P-33-008336; P-33-008352; P-33-008355; P-33-008363; P-33-009096; P-33-009098; P-33-009099; P-33-009104; P-33-009105; P-33-009106; P-33-009107; P-33-009108; P-33-009110; P-33-009112; P-33-009113; P-33-009115; P-33-009116; P-33-009117; P-33-009118; P-33-009119; P-33-009120; P-33-009121; P-33-009122; P-33-009137; P-33-009150; P-33-009157; P-33-009158; P-33-009177; P-33-	Historic residence

Site	Description
009178; P-33-009179; P-33-015189; P-33-015190; P-33-015191; P-33-015193; P-33-015194; P-33-023524; P-33-023532; and P-33-023550	
P-33-015195	Historic multi-family property
P-33-007880 and P-33-008358	Historic hotel
P-33-008360	Historic Banning High School
P-33-007879; P-33-008362; P-33-009129; P-33-009130; P-33-009131; P-33-009132; P-33-009134; P-33-009153; P-33-009155; P-33-009159; P-33-009163; P-33-009164; P-33-009165; and P-33-023533	Historic commercial building
P-33-008351; P-33-008356; P-33-008357; P-33-009097; P-33-009154; P-33-009156; and P-33-015802	Historic building
P-33-009109; P-33-009111; P-33-009133; and P-33-015192	Historic church
P-33-015843 and P-33-023484	Historic engineering structure
RIV-8227	Historic foundation/structure pads
RIV-8228*	Historic concrete pad lined by a small concrete cobble retaining wall and disconnected poured concrete steps
RIV-8229	Historic foundations/structure pads, walls/fences, trash scatters, and water conveyance system
P-33-012425	Historic commercial development consisting of 10 historic sites and two structures
P-33-016025	Historic flood control canal
P-33-016026	Historic ancillary structure
P-33-028614	Historic highway/trail

**Located within the project.*

The records search results also indicated that there has been a total of 14 cultural resource studies conducted within a one-half-mile radius of the project (Table 4.1–2). One of the previously conducted studies overlaps the subject property (Tang et al. 2004). The Tang et al. (2004) study consists of a cultural resources overview completed by CRM Tech for the City of Banning General Plan. The CRM Tech study did not include a formal field survey and only consisted of a literature and records search of the area and the spot-checking of already-documented sites (Tang et al. 2004).

Table 4.1–2
Reports Within a One-Half-Mile
Radius of the Lincoln and 4th Project

Billat, Lorna
2009 Letter Report: Proposed Cellular Tower Project(s) in Riverside County, California, Site Number(s)/Name(s): LA-3237A/ TCO Vreeken Proprty TCNS# 53845. Earth Touch, Inc. Unpublished report on file at the Eastern Information Center at the University of California at Riverside, Riverside, California.

Bonner, Wayne H., Marnie Aislin-Kay, and Kathleen A. Crawford
2010 Cultural Resource Records Search and Site Visit Results for TowerCo Candidate CA2971 (Vreeken Property), 60 South Alola Street, Banning, Riverside County, California. Michael Brandman Associates. Unpublished report on file at the Eastern Information Center at the University of California at Riverside, Riverside, California.

Brunzell, David
2013 Cultural Resources Assessment Rancho San Gorgonio Planned Community Project City of Banning, Riverside County, Riverside County, California. BCR Consulting. Unpublished report on file at the Eastern Information Center at the University of California at Riverside, Riverside, California.

Hudlow, Scott M.
2007 Phase I Cultural Resource Survey for Global Premiere, APN 541-10-024 and -025, Williams and Alessandro Streets in the City of Banning, California. Hudlow Cultural Resource Associates. Unpublished report on file at the Eastern Information Center at the University of California at Riverside, Riverside, California.

McCorkle Apple, Rebecca and Jane E. Wooley
1988 MCI Rialto to El Paso Fiber Optics Project - Intensive Cultural Resource Survey - San Bernardino and Riverside Counties, California. Dames & Moore. Unpublished report on file at the Eastern Information Center at the University of California at Riverside, Riverside, California.

McLean, Roderic, Shannon Carmack, Jay Michalsky, and Judith Marvin
2006 A Study of the Past in San Timoteo Canyon and San Gorgonio Pass: Cultural Resource Assessment Oak Valley Substation Project, Riverside County. LSA. Unpublished report on file at the Eastern Information Center at the University of California at Riverside, Riverside, California.

McLean, Roderic, Shannon Carmack, Jay Michalsky, and Judith Marvin
2008 Final Cultural Resources Assessment, Study Of The Past In San Timoteo Canyon and San Gorgonio Pass: Oak Valley Substation Project Riverside County. LSA. Unpublished report on file at the Eastern Information Center at the University of California at Riverside, Riverside, California.

McLean, Roderic, Shannon Carmack, Phil Fulton, Maria Aron, Jay Michalsky, Daniel Ewers, Casey Tibbet, and Brook Smith

2008 Supplemental Cultural Resource Assessment, Oak Valley Substation Project, San Bernadino and Riverside Counties. LSA. Unpublished report on file at the Eastern Information Center at the University of California at Riverside, Riverside, California.

Pollock, Katherine H. and Michael K. Lerch

2005 Archaeological Survey of the Stubby and Townhall Transmission Lines, Banning to Desert Hot Springs, Riverside County, California. Statistical Research, Inc. Unpublished report on file at the Eastern Information Center at the University of California at Riverside, Riverside, California.

Tang, Bai "Tom"

2011 Letter Report: Historic Building Evaluation 280 E. Ramsey Street, Assessor's Parcel No. 541-183-004 City of Banning, Riverside County, California, CRM TECH Contract No. 2518. CRM Tech. Unpublished report on file at the Eastern Information Center at the University of California at Riverside, Riverside, California.

Tang, Bai "Tom", Josh Smallwood, and Melissa Hernandez

2007 Identification and Evaluation of Historic Poperties: Wastewater Treatment Plant Expansion and Recycled Water System, City of Banning, Riverside, California. CRM Tech. Unpublished report on file at the Eastern Information Center at the University of California at Riverside, Riverside, California.

Tang, Bai "Tom," Michael Hogan, Josh Smallwood, and Terri Jacquemain

2004 Cultural Resources Technical Report City of Banning General Plan. CRM Tech. Unpublished report on file at the Eastern Information Center at the University of California at Riverside, Riverside, California.

Taniguchi, Christeen

2004 Letter Report: Records Search Results and Site Visit for Sprint Telecommunications Facility Candidate RV60XC847A (Vreeken Property) 60 South Aola Street, Banning, Riverside County, CA. Michael Brandman Associates. Unpublished report on file at the Eastern Information Center at the University of California at Riverside, Riverside, California.

Willis, Carrie D.

2014 Cultural Resources Records Search and Site Visit Results for Verizon Wireless Candidate 'Monroe', 1170 West Ramsey Street, Banning, Riverside County, California, EBI Project No. 61140883. Michael Brandman Associates. Unpublished report on file at the Eastern Information Center at the University of California at Riverside, Riverside, California.

BFSA also reviewed the following sources to help facilitate a better understanding of the historic use of the property:

- The National Register of Historic Places (NRHP) Index
- The OHP Built Environment Resources Directory (BERD)
- County of Riverside Assessor's property owners' data
- BLM GLO land records
- The *Banning*, *California* 15' topographic quadrangle (1942) and *Beaumont*, *California* 7.5' topographic quadrangle (1953 and 1962)
- Historic aerial photographs (1936, 1939, 1953, 1962, 1967, 1972, 1996)

No properties listed in the NRHP or the BERD are located within the project boundary.

The BLM GLO records indicate that the subject property was orginally granted to the Southern Pacific Railroad Company in 1879 as part of a large 51,318-acre land patent. The 1880 GLO Plat map for the region shows trails near the property but no structures. Likewise, the 1889 GLO Plat map does not show any structures within the project but does show the Banning Station to the northeast. Again, the 1911 Sanborn map presented previously shows that by that time, Robertson's fruit drying operation was already located within the project (see previous Figure 2.3–2). Further, County Assessor's Lot Books confirm the property was owned by Robertson during this period beginning in 1901. The 1936 historic aerial shows the E.L. Robertson's fruit drying operation previously identified within the property.

The 1936 aerial also shows development to the north of the subject property, in the general location of RIV-3444H. However, based upon the 1911 Sanborn maps, no buildings north of the project are associated with E.L. Robertson's fruit drying operation (Plate 4.1-1). Rather, maps found at the Robert J. Fitch Riverside County Archives show that this area directly north of the project was tied to the railroad with the 1926 through 1932 Assessor's Lot Book labeling the location of RIV-344H as "Southern Pacific R.R. Depot Grounds."

The subject property is more visible on the 1939 aerial and shows additional structures within the property not previously identified on the Sanborn maps. As such, the 1939 aerial shows structures in the southwestern, southeastern, and northwestern corners of the project (Plate 4.1-2). Both the 1936 and 1939 photos show 4th Street represented as a dirt road along the western boundary of the project. Structures continue to be visible within and directly adjacent to the subject property on the historic aerial photographs and maps through 1962. By 1967, it appears the structures within the project had been removed; however, foundations are still visible on the project as late as 1972 (Plate 4.1-3). Sometime between 1972 and 1994, the Gilman Storm Drain Channel was constructed adjacent to the western boundary of the project, and the dirt alignment of 4th Street within the subject property was paved.

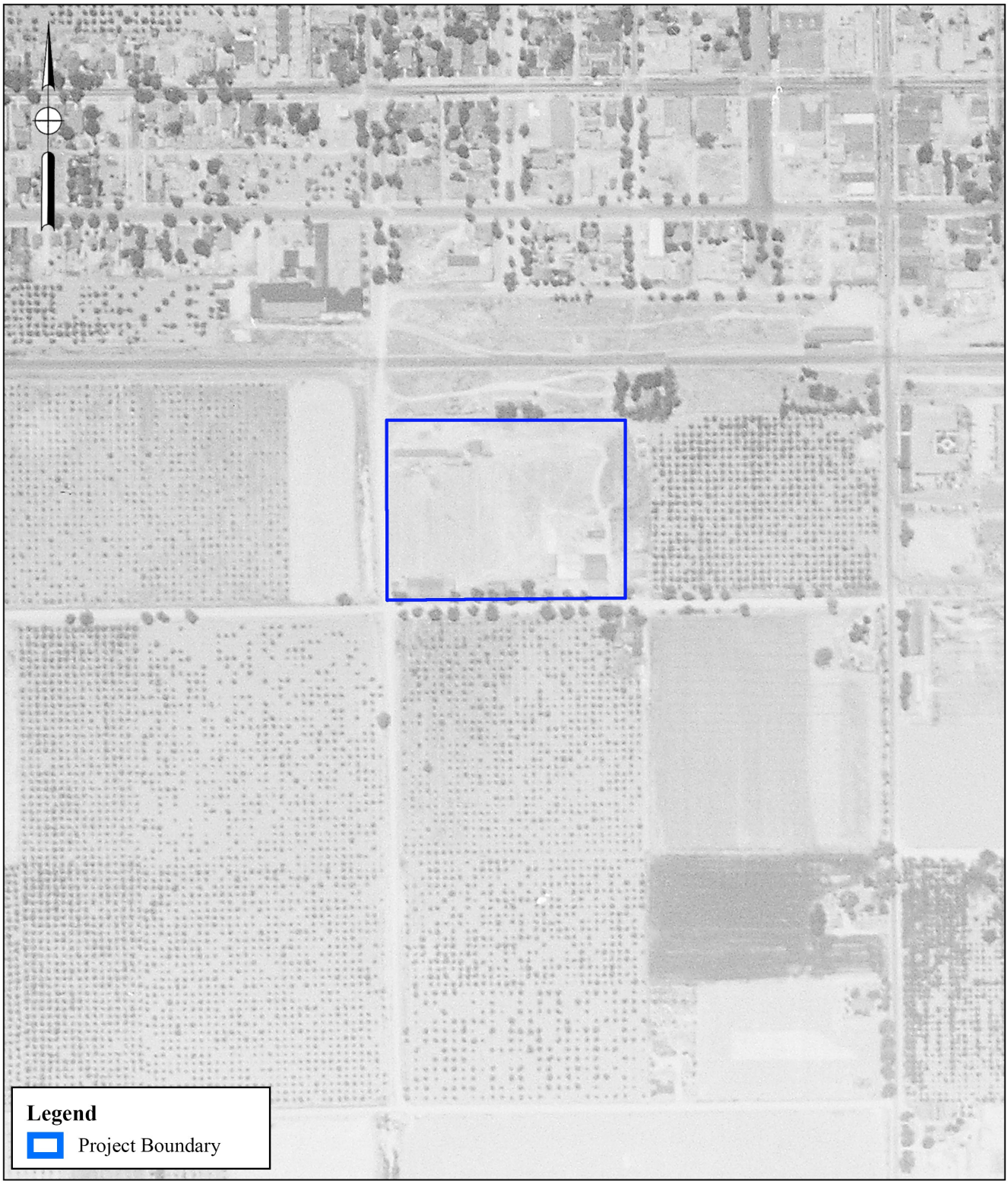


Plate 4.1–1

1936 Aerial Photograph

The Lincoln and 4th Street Project

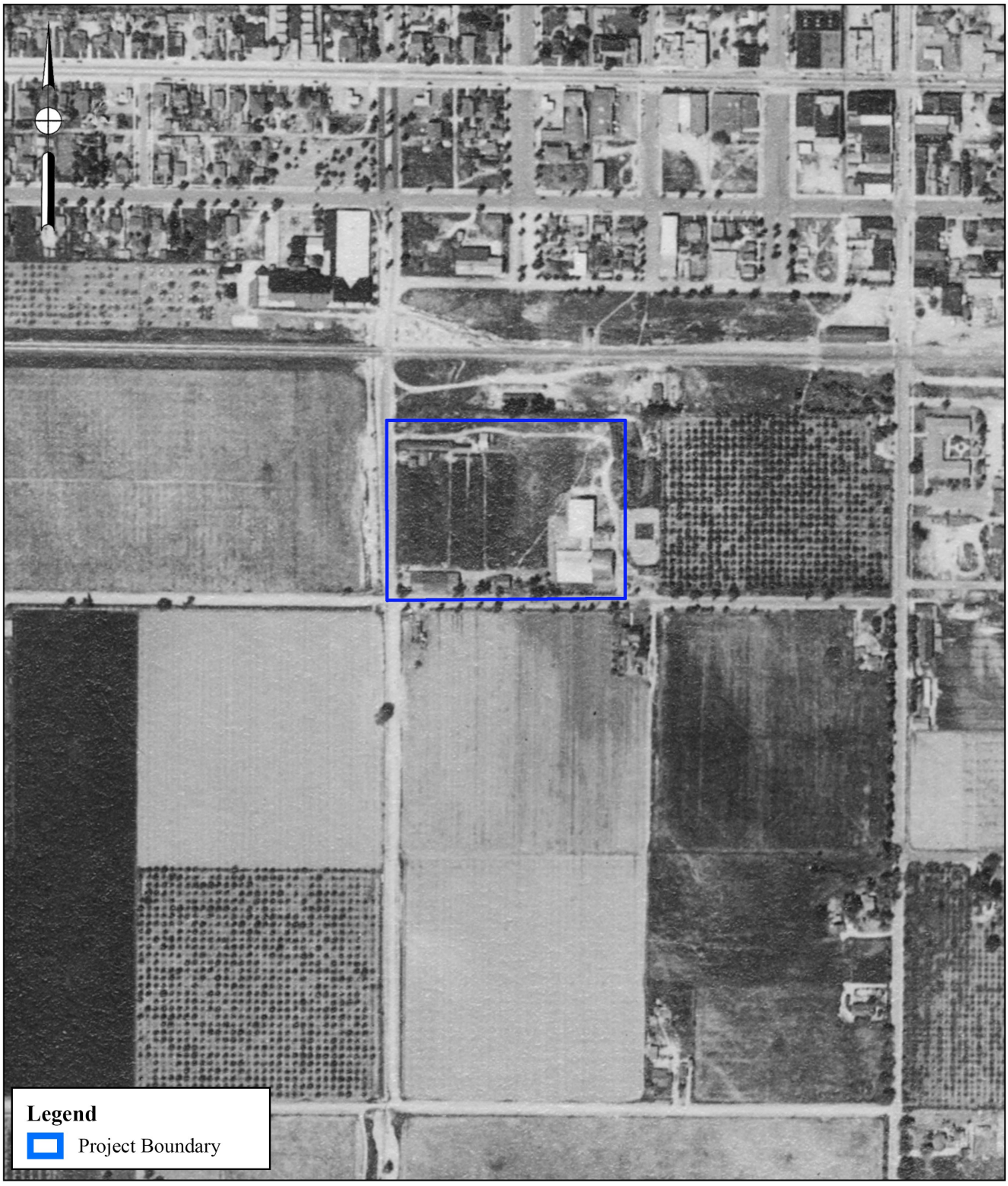


Plate 4.1–2

1939 Aerial Photograph

The Lincoln and 4th Street Project



Plate 4.1–3

1967 Aerial Photograph

The Lincoln and 4th Street Project

BFSA also requested a records search of the SLF of the NAHC, and the results were negative for the presence of recorded sacred sites or locations of religious or ceremonial importance within the project. All correspondence is provided in Appendix D.

4.2 Results of the Field Survey

Principal Investigator Brian Smith directed the cultural resources survey of the project. The archaeological survey was completed by field archaeologist Charles Callahan on November 16, 2021. Aerial photographs, maps, and a compass permitted orientation and location of project boundaries. The property was surveyed in five to 10-meter transects, and visibility throughout the subject property was generally good but occasionally limited due to small pockets of non-native vegetation. A survey form, field notes, and photographs documented the survey work undertaken. All exposed ground surfaces, including rodent burrows and disturbed areas, were carefully inspected. Overviews of the project can be found in Plate 4.2–1.



Plate 4.2–1: Overview of the project from the southwestern corner.

At the time of the survey, the property was characterized as flat, former agricultural land. The pedestrian survey confirmed that the property has been disturbed by previous land modifications resulting from the agricultural use of the property. During the survey, no signs of the adjacent Site RIV-3444H were identified within the subject property. However, Site RIV-8228 was revisited. All that could be located at Site RIV-8228 were the fragmented remnants of a 15 by 20-foot rock and mortar lined foundation within the southwestern corner of the property. The previously identified poured concrete steps could not be relocated.

According to the Sanborn maps, the site is located generally where a fruit packing and storage building was originally located (Plate 4.2–2). In addition, the asphalt paved 4th Street alignment was also noted; however, the street has been vacated, fenced off, and unmaintained (Plate 4.2–3). Based upon the aerial photographs, 4th Street, along the western boundary, was primarily a dirt road until sometime between 1972 and 1996; however, the alignment itself is older.



Plate 4.2–2: Overview of the fragmented remnants of a 15 by 20-foot rock and mortar lined foundation.



Plate 4.2–3: Overview of the asphalt paved 4th street alignment.

Both the road alignment and the remnant foundation are features previously identified on the historic aerials and older than 50 years and associated with the historic use of the project (Figures 4.2–1 and 4.2–2). As such, the site form for RIV-8228 was updated according to the OHP's manual, *Instructions for Recording Historical Resources,* using DPR forms (Appendix B).

Although the features at Site RIV-8228 are over 50 years old, they would not qualify as significant resources under CEQA. The property is associated with the fruit industry and E.L. Robertson, tying it to events and individuals that can be considered locally significant. However, the foundation remnant and 4th Street alignment no longer possess the level of integrity necessary to qualify for the CRHR. The street has been paved and neglected, and all that is left of the structures, which had comprised a portion of E.L. Robertson's fruit drying operation, is the fragmented remnants of a 15 by 20-foot rock and mortar lined foundation. Further, the remnant foundation does not appear to be the work of a master builder or architect. In addition, it is unlikely that Site RIV-8228 would be able to provide any further research potential.

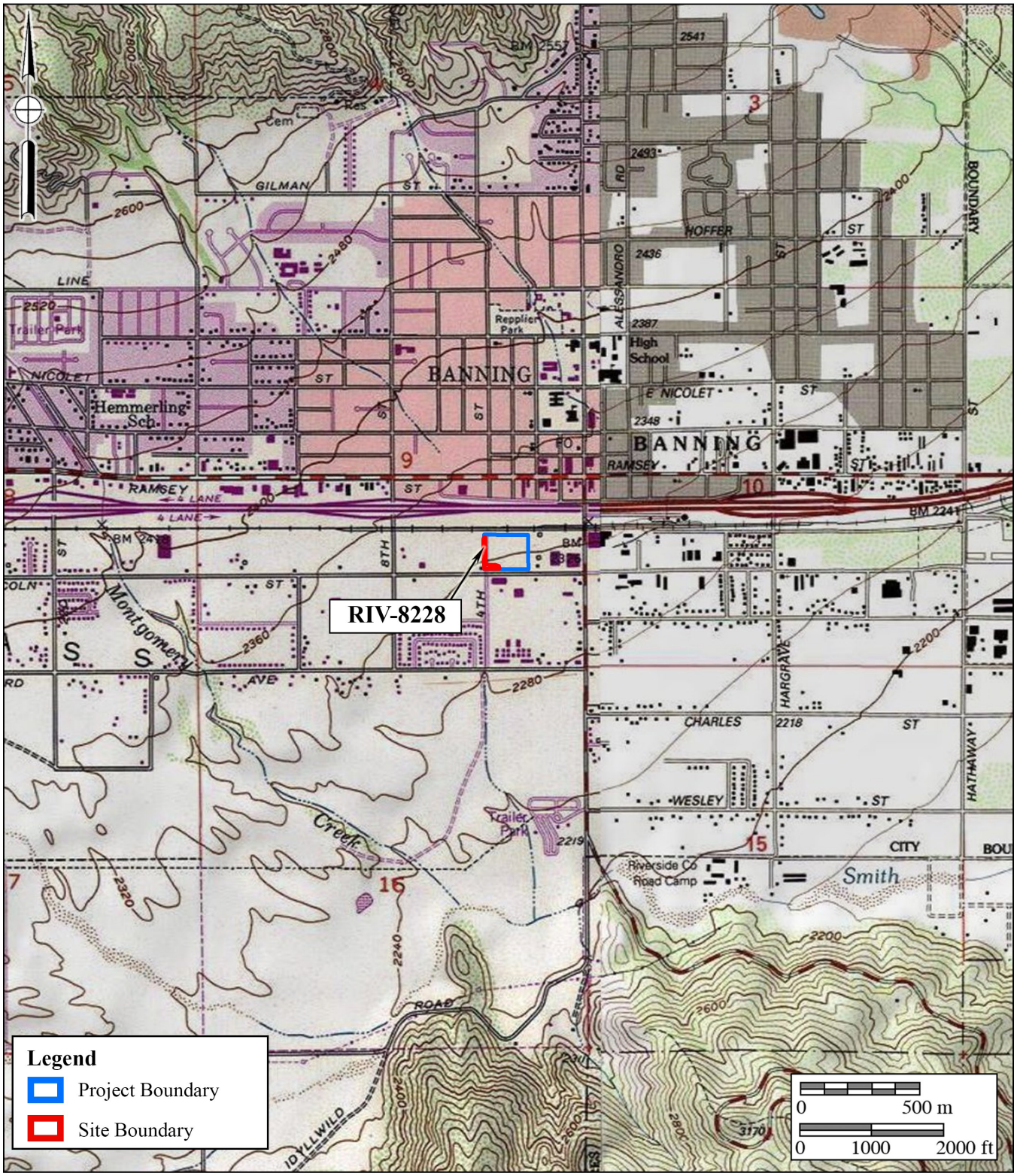


Figure 4.2–1

Historic Resource Location Map

The Lincoln and 4th Street Project

USGS *Beaumont* Quadrangle (7.5-minute series)

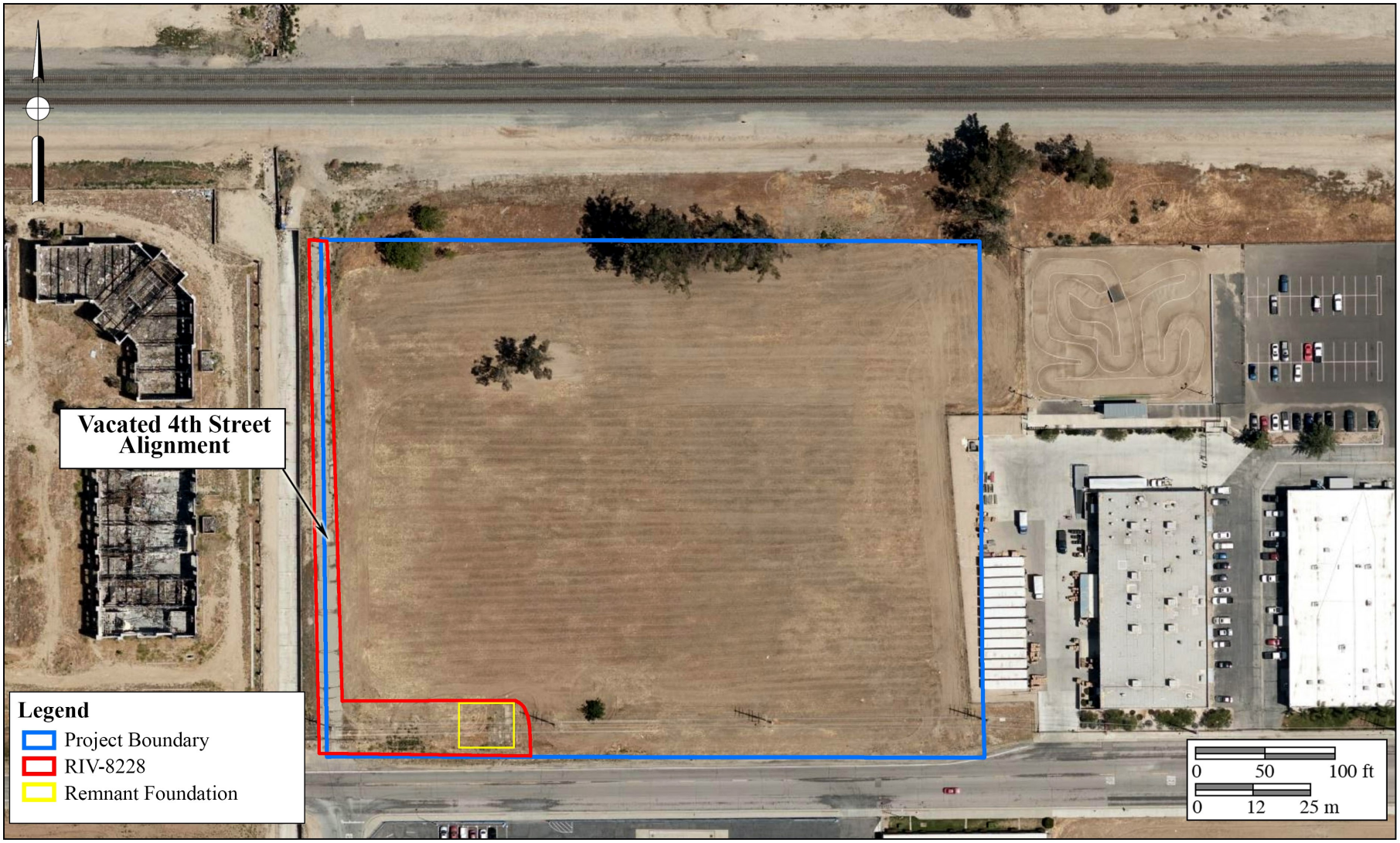


Figure 4.2–2

Historic Resource Location On Current Aerial

The Lincoln and 4th Project Project

5.0 RECOMMENDATIONS

The Phase I cultural resources survey of the Lincoln and 4th Project did not identify any prehistoric archaeological sites; however, one historic resource, Site RIV-8228, was revisited and updated (Appendix B). Site RIV-8228 consists of the alignment of 4th street along the western edge of the project and the fragmented remnants of a rock and mortar lined foundation. Based upon the historic aerial photographs and archival research, Site RIV-8228 is associated with E.L. Robertson and the early twentieth century agricultural use of the subject property. However, Site RIV-8228 is evaluated as not significant under CEQA, as the limited remains of the once bustling fruit drying operation lacks integrety, is not the work of a master builder or architect, and is unlikley to provide any further research potential.

As Site RIV-8228 is evaluated as not significant and ineligible for listing on the CRHR, no additional research or survey tasks will be required. However, based upon the presence of historic resources within the property, as well as the documented historic development and decades of disturbance within the parcel, there remains a potential for buried or masked archaeological deposits to be present within the project boundaries. Based upon the potential to encounter buried or masked cultural deposits, it is recommended that a MMRP be implemented as a condition of project approval. The MMRP should include archaeological monitoring of all excavation and grading activities associated with the project, in addition to a testing and significance evaluation should historic or prehistoric resources be encountered.

Mitigation Monitoring and Reporting Program (MMRP)

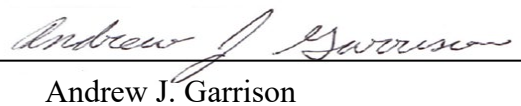
A MMRP to mitigate potential impacts to undiscovered buried cultural resources within the Lincoln and 4th Project shall be implemented to the satisfaction of the lead agency. This program shall include, but not be limited to, the following actions:

1) Prior to issuance of a grading permit, the applicant shall provide written verification in the form of a letter from the project archaeologist to the lead agency stating that a certified archaeologist has been retained to implement the monitoring program.
2) The certified archaeologist shall attend the pre-grading meeting with the contractors to explain and coordinate the requirements of the monitoring program.
3) During the original cutting of previously undisturbed deposits, the archaeological monitor(s) shall be on-site, as determined by the consulting archaeologist, to perform periodic inspections of the excavations. The frequency of inspections will depend upon the rate of excavation, the materials excavated, and the presence and abundance of artifacts and features. The consulting archaeologist shall have the authority to modify the monitoring program if the potential for cultural resources appears to be more or less than anticipated.
5) Isolates and clearly non-significant deposits will be minimally documented in the field so the monitored grading can proceed.

6) In the event that previously unidentified cultural resources are discovered, the archaeologist shall have the authority to divert or temporarily halt ground disturbance operation in the area of discovery to allow for the evaluation of potentially significant cultural resources. The archaeologist shall contact the lead agency at the time of discovery. The archaeologist, in consultation with the lead agency, shall determine the significance of the discovered resources. The lead agency must concur with the evaluation before construction activities will be allowed to resume in the affected area. For significant cultural resources, a Research Design and Data Recovery Program to mitigate impacts shall be prepared by the consulting archaeologist and approved by the lead agency before being carried out using professional archaeological methods. If any human bones are discovered, the county coroner and lead agency shall be contacted. In the event that the remains are determined to be of Native American origin, the Most Likely Descendant (MLD), as identified by the NAHC, shall be contacted in order to determine proper treatment and disposition of the remains.
7) Before construction activities are allowed to resume in the affected area, the artifacts shall be recovered and features recorded using professional archaeological methods. The project archaeologist shall determine the amount of material to be recovered for an adequate artifact sample for analysis.
8) All cultural material collected during the grading monitoring program shall be processed and curated according to the current professional repository standards. The collections and associated records shall be transferred, including title, to an appropriate curation facility, to be accompanied by payment of the fees necessary for permanent curation.
9) A report documenting the field and analysis results and interpreting the artifact and research data within the research context shall be completed and submitted to the satisfaction of the lead agency prior to the issuance of any building permits. The report will include DPR Primary and Archaeological Site Forms.

6.0 CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this archaeological report, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.



May 18, 2022

Andrew J. Garrison
M.A., RPA

Date

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APPENDIX A

Qualifications of Key Personnel

Brian F. Smith, MA

Owner, Principal Investigator

Brian F. Smith and Associates, Inc.
14010 Poway Road • Suite A •
Phone: (858) 679-8218 • Fax: (858) 679-9896 • E-Mail: bsmith@bfsa-ca.com

Education

Master of Arts, History, University of San Diego, California **1982**

Bachelor of Arts, History, and Anthropology, University of San Diego, California **1975**

Professional Memberships

Society for California Archaeology

Experience

Principal Investigator **1977–Present**
Brian F. Smith and Associates, Inc. **Poway, California**

Brian F. Smith is the owner and principal historical and archaeological consultant for Brian F. Smith and Associates. Over the past 32 years, he has conducted over 2,500 cultural resource studies in California, Arizona, Nevada, Montana, and Texas. These studies include every possible aspect of archaeology from literature searches and large-scale surveys to intensive data recovery excavations. Reports prepared by Mr. Smith have been submitted to all facets of local, state, and federal review agencies, including the US Army Corps of Engineers, the Bureau of Land Management, the Bureau of Reclamation, the Department of Defense, and the Department of Homeland Security. In addition, Mr. Smith has conducted studies for utility companies (Sempra Energy) and state highway departments (CalTrans).

Professional Accomplishments

These selected major professional accomplishments represent research efforts that have added significantly to the body of knowledge concerning the prehistoric life ways of cultures once present in the Southern California area and historic settlement since the late 18th century. Mr. Smith has been principal investigator on the following select projects, except where noted.

Downtown San Diego Mitigation and Monitoring Reporting Programs: Large numbers of downtown San Diego mitigation and monitoring projects, some of which included Broadway Block (2019), 915 Grape Street (2019), 1919 Pacific Highway (2018), Moxy Hotel (2018), Makers Quarter Block D (2017), Ballpark Village (2017), 460 16th Street (2017), Kettner and Ash (2017), Bayside Fire Station (2017), Pinnacle on the Park (2017), IDEA1 (2016), Blue Sky San Diego (2016), Pacific Gate (2016), Pendry Hotel (2015), Cisterra Sempra Office Tower (2014), 15th and Island (2014), Park and G (2014), Comm 22 (2014), 7th and F Street Parking (2013), Ariel Suites (2013), 13th and Marker (2012), Strata (2008), Hotel Indigo (2008), Lofts at 707 10th Avenue Project (2007), Breeza (2007), Bayside at the Embarcadero (2007), Aria (2007), Icon (2007), Vantage Pointe (2007), Aperture (2007), Sapphire Tower (2007), Lofts at 655 Sixth Avenue (2007), Metrowork (2007), The Legend (2006), The Mark (2006), Smart Corner (2006), Lofts at 677 7th Avenue (2005), Aloft on Cortez Hill (2005), Front and Beech Apartments (2003), Bella Via Condominiums (2003), Acqua Vista Residential Tower (2003), Northblock Lofts (2003), Westin Park Place Hotel (2001), Parkloft

Apartment Complex (2001), Renaissance Park (2001), and Laurel Bay Apartments (2001).

1900 and 1912 Spindrift Drive: An extensive data recovery and mitigation monitoring program at the Spindrift Site, an important prehistoric archaeological habitation site stretching across the La Jolla area. The project resulted in the discovery of over 20,000 artifacts and nearly 100,000 grams of bulk faunal remains and marine shell, indicating a substantial occupation area (2013-2014).

San Diego Airport Development Project: An extensive historic assessment of multiple buildings at the San Diego International Airport and included the preparation of Historic American Buildings Survey documentation to preserve significant elements of the airport prior to demolition (2017-2018).

Citracado Parkway Extension: A still-ongoing project in the city of Escondido to mitigate impacts to an important archaeological occupation site. Various archaeological studies have been conducted by BFSA resulting in the identification of a significant cultural deposit within the project area.

Westin Hotel and Timeshare (Grand Pacific Resorts): Data recovery and mitigation monitoring program in the city of Carlsbad consisted of the excavation of 176 one-square-meter archaeological data recovery units which produced thousands of prehistoric artifacts and ecofacts, and resulted in the preservation of a significant prehistoric habitation site. The artifacts recovered from the site presented important new data about the prehistory of the region and Native American occupation in the area (2017).

The Everly Subdivision Project: Data recovery and mitigation monitoring program in the city of El Cajon resulted in the identification of a significant prehistoric occupation site from both the Late Prehistoric and Archaic Periods, as well as producing historic artifacts that correspond to the use of the property since 1886. The project produced an unprecedented quantity of artifacts in comparison to the area encompassed by the site, but lacked characteristics that typically reflect intense occupation, indicating that the site was used intensively for food processing (2014-2015).

Ballpark Village: A mitigation and monitoring program within three city blocks in the East Village area of San Diego resulting in the discovery of a significant historic deposit. Nearly 5,000 historic artifacts and over 500,000 grams of bulk historic building fragments, food waste, and other materials representing an occupation period between 1880 and 1917 were recovered (2015-2017).

Archaeology at the Padres Ballpark: Involved the analysis of historic resources within a seven-block area of the "East Village" area of San Diego, where occupation spanned a period from the 1870s to the 1940s. Over a period of two years, BFSA recovered over 200,000 artifacts and hundreds of pounds of metal, construction debris, unidentified broken glass, and wood. Collectively, the Ballpark Project and the other downtown mitigation and monitoring projects represent the largest historical archaeological program anywhere in the country in the past decade (2000-2007).

4S Ranch Archaeological and Historical Cultural Resources Study: Data recovery program consisted of the excavation of over 2,000 square meters of archaeological deposits that produced over one million artifacts, containing primarily prehistoric materials. The archaeological program at 4S Ranch is the largest archaeological study ever undertaken in the San Diego County area and has produced data that has exceeded expectations regarding the resolution of long-standing research questions and regional prehistoric settlement patterns.

Charles H. Brown Site: Attracted international attention to the discovery of evidence of the antiquity of man in North America. Site located in Mission Valley, in the city of San Diego.

Del Mar Man Site: Study of the now famous Early Man Site in Del Mar, California, for the San Diego Science Foundation and the San Diego Museum of Man, under the direction of Dr. Spencer Rogers and Dr. James R. Moriarty.

Old Town State Park Projects: Consulting Historical Archaeologist. Projects completed in the Old Town State Park involved development of individual lots for commercial enterprises. The projects completed in Old Town include Archaeological and Historical Site Assessment for the Great Wall Cafe (1992), Archaeological Study for the Old Town Commercial Project (1991), and Cultural Resources Site Survey at the Old San Diego Inn (1988).

Site W-20, Del Mar, California: A two-year-long investigation of a major prehistoric site in the Del Mar area of the city of San Diego. This research effort documented the earliest practice of religious/ceremonial activities in San Diego County (circa 6,000 years ago), facilitated the projection of major non-material aspects of the La Jolla Complex, and revealed the pattern of civilization at this site over a continuous period of 5,000 years. The report for the investigation included over 600 pages, with nearly 500,000 words of text, illustrations, maps, and photographs documenting this major study.

City of San Diego Reclaimed Water Distribution System: A cultural resource study of nearly 400 miles of pipeline in the city and county of San Diego.

Master Environmental Assessment Project, City of Poway: Conducted for the City of Poway to produce a complete inventory of all recorded historic and prehistoric properties within the city. The information was used in conjunction with the City's General Plan Update to produce a map matrix of the city showing areas of high, moderate, and low potential for the presence of cultural resources. The effort also included the development of the City's Cultural Resource Guidelines, which were adopted as City policy.

Draft of the City of Carlsbad Historical and Archaeological Guidelines: Contracted by the City of Carlsbad to produce the draft of the City's historical and archaeological guidelines for use by the Planning Department of the City.

The Mid-Bayfront Project for the City of Chula Vista: Involved a large expanse of undeveloped agricultural land situated between the railroad and San Diego Bay in the northwestern portion of the city. The study included the analysis of some potentially historic features and numerous prehistoric

Cultural Resources Survey and Test of Sites Within the Proposed Development of the Audie Murphy Ranch, Riverside County, California: Project manager/director of the investigation of 1,113.4 acres and 43 sites, both prehistoric and historic—included project coordination; direction of field crews; evaluation of sites for significance based on County of Riverside and CEQA guidelines; assessment of cupule, pictograph, and rock shelter sites, co-authoring of cultural resources project report. February- September 2002.

Cultural Resources Evaluation of Sites Within the Proposed Development of the Otay Ranch Village 13 Project, San Diego County, California: Project manager/director of the investigation of 1,947 acres and 76 sites, both prehistoric and historic—included project coordination and budgeting; direction of field crews; assessment of sites for significance based on County of San Diego and CEQA guidelines; co-authoring of cultural resources project report. May-November 2002.

Cultural Resources Survey for the Remote Video Surveillance Project, El Centro Sector, Imperial County: Project manager/director for a survey of 29 individual sites near the U.S./Mexico Border for proposed video surveillance camera locations associated with the San Diego Border barrier Project—project coordination and budgeting; direction of field crews; site identification and recordation; assessment of potential impacts to cultural resources; meeting and coordinating with U.S. Army Corps of Engineers, U.S. Border Patrol, and other government agencies involved; co-authoring of cultural resources project report. January, February, and July 2002.

Cultural Resources Survey and Test of Sites Within the Proposed Development of the Menifee West GPA, Riverside County, California: Project manager/director of the investigation of nine sites, both prehistoric and historic—included project coordination and budgeting; direction of field crews; assessment of sites

for significance based on County of Riverside and CEQA guidelines; historic research; co-authoring of cultural resources project report. January-March 2002.

Cultural Resources Survey and Test of Sites Within the Proposed French Valley Specific Plan/EIR, Riverside County, California: Project manager/director of the investigation of two prehistoric and three historic sites—included project coordination and budgeting; survey of project area; Native American consultation; direction of field crews; assessment of sites for significance based on CEQA guidelines; cultural resources project report in prep. July-August 2000.

Cultural Resources Survey and Test of Sites Within the Proposed Development of the Menifee Ranch, Riverside County, California: Project manager/director of the investigation of one prehistoric and five historic sites—included project coordination and budgeting; direction of field crews; feature recordation; historic structure assessments; assessment of sites for significance based on CEQA guidelines; historic research; co-authoring of cultural resources project report. February-June 2000.

Salvage Mitigation of a Portion of the San Diego Presidio Identified During Water Pipe Construction for the City of San Diego, California: Project archaeologist/director—included direction of field crews; development and completion of data recovery program; management of artifact collections cataloging and curation; data synthesis and authoring of cultural resources project report in prep. April 2000.

Enhanced Cultural Resource Survey and Evaluation for the Tyrian 3 Project, La Jolla, California: Project manager/director of the investigation of a single-dwelling parcel—included project coordination; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. April 2000.

Enhanced Cultural Resource Survey and Evaluation for the Lamont 5 Project, Pacific Beach, California: Project manager/director of the investigation of a single-dwelling parcel—included project coordination; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. April 2000.

Enhanced Cultural Resource Survey and Evaluation for the Reiss Residence Project, La Jolla, California: Project manager/director of the investigation of a single-dwelling parcel—included project coordination; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. March-April 2000.

Salvage Mitigation of a Portion of Site SDM-W-95 (CA-SDI-211) for the Poinsettia Shores Santalina Development Project and Caltrans, Carlsbad, California: Project archaeologist/ director—included direction of field crews; development and completion of data recovery program; management of artifact collections cataloging and curation; data synthesis and authoring of cultural resources project report in prep. December 1999-January 2000.

Survey and Testing of Two Prehistoric Cultural Resources for the Airway Truck Parking Project, Otay Mesa, California: Project archaeologist/director—included direction of field crews; development and completion of testing recovery program; assessment of site for significance based on CEQA guidelines; authoring of cultural resources project report, in prep. December 1999-January 2000.

Cultural Resources Phase I and II Investigations for the Tin Can Hill Segment of the Immigration and Naturalization Services Triple Fence Project Along the International Border, San Diego County, California: Project manager/director for a survey and testing of a prehistoric quarry site along the border—NRHP eligibility assessment; project coordination and budgeting; direction of field crews; feature recordation; meeting and coordinating with U.S. Army Corps of Engineers; co-authoring of cultural resources project report. December 1999-January 2000.

Mitigation of a Prehistoric Cultural Resource for the Westview High School Project for the City of San Diego, California: Project archaeologist/ director—included direction of field crews; development and completion of data recovery program including collection of material for specialized faunal and botanical analyses; assessment of sites for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; co-authoring of cultural resources project report, in prep. October 1999-January 2000.

Mitigation of a Prehistoric Cultural Resource for the Otay Ranch SPA-One West Project for the City of Chula Vista, California: Project archaeologist/director—included direction of field crews; development of data recovery program; management of artifact collections cataloging and curation; assessment of site for significance based on CEQA guidelines; data synthesis; authoring of cultural resources project report, in prep. September 1999-January 2000.

Monitoring of Grading for the Herschel Place Project, La Jolla, California: Project archaeologist/ monitor—included monitoring of grading activities associated with the development of a single- dwelling parcel. September 1999.

Survey and Testing of a Historic Resource for the Osterkamp Development Project, Valley Center, California: Project archaeologist/ director—included direction of field crews; development and completion of data recovery program; budget development; assessment of site for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; authoring of cultural resources project report. July-August 1999.

Survey and Testing of a Prehistoric Cultural Resource for the Proposed College Boulevard Alignment Project, Carlsbad, California: Project manager/director —included direction of field crews; development and completion of testing recovery program; assessment of site for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; authoring of cultural resources project report, in prep. July-August 1999.

Survey and Evaluation of Cultural Resources for the Palomar Christian Conference Center Project, Palomar Mountain, California: Project archaeologist—included direction of field crews; assessment of sites for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; authoring of cultural resources project report. July-August 1999.

Survey and Evaluation of Cultural Resources at the Village 2 High School Site, Otay Ranch, City of Chula Vista, California: Project manager/director —management of artifact collections cataloging and curation; assessment of site for significance based on CEQA guidelines; data synthesis; authoring of cultural resources project report. July 1999.

Cultural Resources Phase I, II, and III Investigations for the Immigration and Naturalization Services Triple Fence Project Along the International Border, San Diego County, California: Project manager/director for the survey, testing, and mitigation of sites along border—supervision of multiple field crews, NRHP eligibility assessments, Native American consultation, contribution to Environmental Assessment document, lithic and marine shell analysis, authoring of cultural resources project report. August 1997- January 2000.

Phase I, II, and II Investigations for the Scripps Poway Parkway East Project, Poway California: Project archaeologist/project director—included recordation and assessment of multicomponent prehistoric and historic sites; direction of Phase II and III investigations; direction of laboratory analyses including prehistoric and historic collections; curation of collections; data synthesis; coauthorship of final cultural resources report. February 1994; March-September 1994; September-December 1995.

Andrew J. Garrison, MA, RPA

Project Archaeologist

Brian F. Smith and Associates, Inc.
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Education

Master of Arts, Public History, University of California, Riverside **2009**

Bachelor of Science, Anthropology, University of California, Riverside **2005**

Bachelor of Arts, History, University of California, Riverside **2005**

Professional Memberships

Register of Professional Archaeologists
Society for California Archaeology
Society for American Archaeology
California Council for the Promotion of History
Society of Primitive Technology
Lithic Studies Society
California Preservation Foundation
Pacific Coast Archaeological Society

Experience

Project Archaeologist **June 2017–Present**
Brian F. Smith and Associates, Inc. **Poway, California**

Project management of all phases of archaeological investigations for local, state, and federal agencies including National Register of Historic Places (NRHP) and California Environmental Quality Act (CEQA) level projects interacting with clients, sub-consultants, and lead agencies. Supervise and perform fieldwork including archaeological survey, monitoring, site testing, comprehensive site records checks, and historic building assessments. Perform and oversee technological analysis of prehistoric lithic assemblages. Author or co-author cultural resource management reports submitted to private clients and lead agencies.

Senior Archaeologist and GIS Specialist **2009–2017**
Scientific Resource Surveys, Inc. **Orange, California**

Served as Project Archaeologist or Principal Investigator on multiple projects, including archaeological monitoring, cultural resource surveys, test excavations, and historic building assessments. Directed projects from start to finish, including budget and personnel hours proposals, field and laboratory direction, report writing, technical editing, Native American consultation, and final report submittal. Oversaw all GIS projects including data collection, spatial analysis, and map creation.

Preservation Researcher **2009**
City of Riverside Modernism Survey **Riverside, California**

Completed DPR Primary, District, and Building, Structure and Object Forms for five sites for a grant-funded project to survey designated modern architectural resources within the City of Riverside.

Information Officer **2005, 2008–2009**
Eastern Information Center (EIC), University of California, Riverside **Riverside, California**

Processed and catalogued restricted and unrestricted archaeological and historical site record forms. Conducted research projects and records searches for government agencies and private cultural resource firms.

Reports/Papers

2019 A Class III Archaeological Study for the Tuscany Valley (TM 33725) Project National Historic Preservation Act Section 106 Compliance, Lake Elsinore, Riverside County, California. Contributing author. Brian F. Smith and Associates, Inc.

2019 A Phase I and II Cultural Resources Assessment for the Jack Rabbit Trail Logistics Center Project, City of Beaumont, Riverside County, California. Brian F. Smith and Associates, Inc.

2019 A Phase I Cultural Resources Assessment for the 10575 Foothill Boulevard Project, Rancho Cucamonga, California. Brian F. Smith and Associates, Inc.

2019 Cultural Resources Study for the County Road and East End Avenue Project, City of Chino, San Bernardino County, California. Brian F. Smith and Associates, Inc.

2019 Phase II Cultural Resource Study for the McElwain Project, City of Murrieta, California. Contributing author. Brian F. Smith and Associates, Inc.

2019 A Section 106 (NHPA) Historic Resources Study for the McElwain Project, City of Murrieta, Riverside County, California. Brian F. Smith and Associates, Inc.

2018 Cultural Resource Monitoring Report for the Sewer Group 818 Project, City of San Diego. Brian F. Smith and Associates, Inc.

2018 Phase I Cultural Resource Survey for the Stone Residence Project, 1525 Buckingham Drive, La Jolla, California 92037. Brian F. Smith and Associates, Inc.

2018 A Phase I Cultural Resources Assessment for the Seaton Commerce Center Project, Riverside County, California. Brian F. Smith and Associates, Inc.

2017 A Phase I Cultural Resources Assessment for the Marbella Villa Project, City of Desert Hot Springs, Riverside County, California. Brian F. Smith and Associates, Inc.

2017 Phase I Cultural Resources Survey for TTM 37109, City of Jurupa Valley, County of Riverside. Brian F. Smith and Associates, Inc.

2017 A Phase I Cultural Resources Assessment for the Winchester Dollar General Store Project, Riverside County, California. Brian F. Smith and Associates, Inc.

2016 John Wayne Airport Jet Fuel Pipeline and Tank Farm Archaeological Monitoring Plan. Scientific Resource Surveys, Inc. On file at the County of Orange, California.

2016 Historic Resource Assessment for 220 South Batavia Street, Orange, CA 92868 Assessor's Parcel Number 041-064-4. Scientific Resource Surveys, Inc. Submitted to the City of Orange as part of

Mills Act application.

2015 Historic Resource Report: 807-813 Harvard Boulevard, Los Angeles. Scientific Resource Surveys, Inc. On file at the South Central Coastal Information Center, California State University, Fullerton.

2015 Exploring a Traditional Rock Cairn: Test Excavation at CA-SDI-13/RBLI-26: The Rincon Indian Reservation, San Diego County, California. Scientific Resource Surveys, Inc.

2014 Archaeological Monitoring Results: The New Los Angeles Federal Courthouse. Scientific Resource Surveys, Inc. On file at the South Central Coastal Information Center, California State University, Fullerton.

2012 Bolsa Chica Archaeological Project Volume 7, Technological Analysis of Stone Tools, Lithic Technology at Bolsa Chica: Reduction Maintenance and Experimentation. Scientific Resource Surveys, Inc.

Presentations

2017 "Repair and Replace: Lithic Production Behavior as Indicated by the Debitage Assemblage from CA-MRP-283 the Hackney Site." Presented at the Society for California Archaeology Annual Meeting, Fish Camp, California.

2016 "Bones, Stones, and Shell at Bolsa Chica: A Ceremonial Relationship?" Presented at the Society for California Archaeology Annual Meeting, Ontario, California.

2016 "Markers of Time: Exploring Transitions in the Bolsa Chica Assemblage." Presented at the Society for California Archaeology Annual Meeting, Ontario, California.

2016 "Dating Duress: Understanding Prehistoric Climate Change at Bolsa Chica." Presented at the Society for California Archaeology Annual Meeting, Ontario, California.

2014 "New Discoveries from an Old Collection: Comparing Recently Identified OGR Beads to Those Previously Analyzed from the Encino Village Site." Presented at the Society for California Archaeology Annual Meeting, Visalia, California.

2012 Bolsa Chica Archaeology: Part Seven: Culture and Chronology. Lithic demonstration of experimental manufacturing techniques at the April meeting of The Pacific Coast Archaeological Society, Irvine, California.

APPENDIX B

Site Forms

(Deleted for Public Review; Bound Separately)

APPENDIX C

Archaeological Records Search Results

(Deleted for Public Review; Bound Separately)

APPENDIX D

NAHC Sacred Lands File Search Results

(Deleted for Public Review; Bound Separately)

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APPENDIX E

GEOTECHICAL INVESTIGATION

GEOTECHNICAL INVESTIGATION
PROPOSED WAREHOUSE

NEC Lincoln Avenue and 4th Street
Banning, California
for
First Industrial Realty Trust, Inc.



SOUTHERN
CALIFORNIA
GEOTECHNICAL
A California Corporation

December 17, 2021

First Industrial Realty Trust, Inc.
898 N. Pacific Coast Highway. Suite 175
El Segundo, CA 90245

Attention: Mr. Matt Pioli
Investment Officer

Project No.: **21G271-1**

Subject: **Geotechnical Investigation**
Proposed Warehouse
NEC Lincoln Avenue and 4th Street
Banning, California

Mr. Pioli:

In accordance with your request, we have conducted a geotechnical investigation at the subject site. We are pleased to present this report summarizing the conclusions and recommendations developed from our investigation.

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

Pablo Montes Jr.
Staff Engineer

Robert G. Trazo, M.Sc., GE 2655
Principal Engineer

REGISTERED PROFESSIONAL ENGINEER
ROBERT TRAZO
No. 2655
GEOTECHNICAL
STATE OF CALIFORNIA

Distribution: (1) Addressee

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APPENDICES

A Plate 1: Site Location Map
Plate 2: Boring Location Plan
B Boring Logs
C Laboratory Test Results
D Grading Guide Specifications
E Seismic Design Parameters

1.0 EXECUTIVE SUMMARY

Presented below is a brief summary of the conclusions and recommendations of this investigation. Since this summary is not all inclusive, it should be read in complete context with the entire report.

Geotechnical Design Considerations

- The subject site is located in a mapped liquefaction hazard zone. However, based on the subsurface conditions encountered during our geotechnical exploration, including the lack of groundwater within the upper 50 feet, liquefaction is not considered a design concern for this project.
- Artificial fill soils were encountered at the ground surface at all of the boring locations, extending to depths of 2½ to 5½± feet below the existing site grades.
- The fill soils possess relatively low strengths with varying densities, and are considered to represent undocumented fill. The near-surface alluvial soils, within the upper 2½ to 8± feet, are porous and possess a moderate potential for collapse when infiltrated by water. These soils, in their present condition, are not considered suitable for support of the foundation loads of the new structure.
- At greater depths, the native materials are comprised of moderate strength older alluvium.
- Remedial grading is considered warranted within the proposed building area in order to remove all of the undocumented fill soils in their entirety and the upper portion of the near-surface native alluvial soils, and replace these materials as compacted structural fill soils.

Site Preparation Recommendations

- Initial site preparation should include stripping of any surficial vegetation. The surficial vegetation, and any organic soils should be properly disposed of off-site.
- Remedial grading is recommended to be performed within the proposed building area in order to remove all of the undocumented fill soils in their entirety, and the upper portion of the near-surface native alluvial soils. The soils within the proposed building area should be overexcavated to a depth of 6 feet below existing grade and to a depth of at least 4 feet below proposed building pad subgrade elevations, whichever is greater.
- The depth of overexcavation should also be sufficient to remove any existing fill soils. The proposed foundation influence zones should be overexcavated to a depth of at least 3 feet below proposed foundation bearing grade, and to an extent equal to the depth of fill placed below the foundation bearing grade, whichever is greater.
- Following completion of the overexcavation, the exposed soils should be scarified to a depth of at least 12 inches and moisture treated to 0 to 4 percent above optimum moisture content. The subgrade soils should then be recompacted to at least 90 percent of the ASTM D-1557 maximum dry density. The previously excavated soils may then be replaced as compacted structural fill.
- The new pavement and flatwork subgrade soils are recommended to be scarified to a depth of 12± inches, thoroughly moisture conditioned and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density.

Building Foundation Recommendations

- Spread footing foundations, supported in newly placed structural fill soils.

- Maximum, net allowable soil bearing pressure: 2,500 lbs/ft^2.
- Reinforcement consisting of at least four (4) No. 5 rebars (2 top and 2 bottom) in strip footings. Additional reinforcement may be necessary for structural considerations.

Building Floor Slab Recommendations

- Conventional slab-on-grade, at least 6 inches thick
- Modulus of subgrade reaction: k = 125 psi/in
- Reinforcement is not considered to be necessary for geotechnical considerations.
- The actual thickness and reinforcement of the floor slabs should be determined by the structural engineer, based on the imposed slab loading.

Pavements

ASPHALT PAVEMENTS (R=40)					
Materials	**Thickness (inches)**				
	Auto Parking and Auto Drive Lanes (TI = 4.0 to 5.0)	Truck Traffic			
		TI = 6.0	TI = 7.0	TI = 8.0	TI = 9.0
Asphalt Concrete	3	3½	4	5	5½
Aggregate Base	4	6	7	8	10
Compacted Subgrade	12	12	12	12	12

PORTLAND CEMENT CONCRETE PAVEMENTS (R = 40)				
Materials	**Thickness (inches)**			
	Autos and Light Truck Traffic (TI = 6.0)	Truck Traffic		
		TI =7.0	TI = 8.0	TI = 9.0
PCC	5	5½	6½	8
Compacted Subgrade (95% minimum compaction)	12	12	12	12

2.0 SCOPE OF SERVICES

The scope of services performed for this project was in accordance with our Proposal No. 21P476, dated November 4, 2021. The scope of services included a visual site reconnaissance, subsurface exploration, field and laboratory testing, and geotechnical engineering analysis to provide criteria for preparing the design of the building foundations, building floor slab, and parking lot pavements along with site preparation recommendations and construction considerations for the proposed development. Based on the location of this site, this investigation also included a site-specific liquefaction evaluation. The evaluation of the environmental aspects of this site was beyond the scope of services for this geotechnical investigation.

3.0 SITE AND PROJECT DESCRIPTION

3.1 Site Conditions

The subject site is located at the northeast corner of Lincoln Street and 4th Street in Banning, California. The site is bounded to the north by a railroad easement, to the west by Gilman Home Storm Channel, to the south by Lincoln Street, and to the east by an existing commercial/industrial building. The general location of the site is illustrated on the Site Location Map, enclosed as Plate 1 in Appendix A of this report.

The site is comprised to two (2) contiguous parcels totaling 6.23± acres in size. The site is currently vacant and undeveloped and appears to have been recently disced, or tilled, and cleared of heavy vegetation. Several large trees are located along the northern boundary of the site. Ground surface cover for currently consists of exposed soil with negligible native grass and weed growth.

Topographic information was included in the conceptual site plan provided by Stantec. Based on the review of this plan, the overall site topography slopes downward to the south to southeast at a gradient of approximately 2½ percent. There is up to 16± feet of elevation differential across the subject site. The site appears to be 4 to 7± feet higher in elevation than the adjacent commercial lot located to the southeast. A descending slope, separates the project site from the adjacent commercial property.

3.2 Proposed Development

SCG was provided with a preliminary site plan which was prepared by Stantec. Based on the site plan, the site will be developed with one (1) warehouse. The warehouse will be located in the central area of the site and will be 118,786± ft² in size. Dock-high doors will be constructed along a portion of the northern building wall. The building is assumed to be surrounded by asphaltic concrete pavements in the parking and drive areas, Portland cement concrete pavements in the truck court areas, and limited areas of concrete flatwork and landscape planters.

Detailed structural information has not been provided. It is assumed that the new building will be a single-story structure of tilt-up concrete construction, typically supported on conventional shallow foundations with a concrete slab-on-grade floor. Based on the assumed construction, maximum column and wall loads are expected to be on the order of 100 kips and 4 to 7 kips per linear foot, respectively.

No significant amounts of below-grade construction, such as basements or crawl spaces, are expected to be included in the proposed development. Based on the assumed topography, cuts and fills of 4 to 7± feet are expected to be necessary to achieve the proposed site grades.

4.0 SUBSURFACE EXPLORATION

4.1 Scope of Exploration/Sampling Methods

The subsurface exploration conducted for this project consisted of five (5) borings (identified as Boring Nos. B-1 through B-5) advanced to depths of 20 to 50± feet below the existing site grades. Two (2) of the borings were advanced to a depth of 50± feet as a part of the liquefaction evaluation. All of the borings were logged during drilling by a member of our staff.

The borings were advanced with hollow-stem augers, by a conventional truck-mounted drilling rig. Representative bulk and relatively undisturbed soil samples were taken during drilling. Relatively undisturbed soil samples were taken with a split barrel "California Sampler" containing a series of one inch long, 2.416± inch diameter brass rings. This sampling method is described in ASTM Test Method D-3550. In-situ samples were also taken using a 1.4± inch inside diameter split spoon sampler, in general accordance with ASTM D-1586. Both of these samplers are driven into the ground with successive blows of a 140-pound weight falling 30 inches. The blow counts obtained during driving are recorded for further analysis. Bulk samples were collected in plastic bags to retain their original moisture content. The relatively undisturbed ring samples were placed in molded plastic sleeves that were then sealed and transported to our laboratory.

The approximate locations of the borings are indicated on the Boring Location Plan, included as Plate 2 in Appendix A of this report. The Boring Logs, which illustrate the conditions encountered at the boring locations, as well as the results of some of the laboratory testing, are included in Appendix B.

4.2 Geotechnical Conditions

Artificial Fill

Artificial fill soils were encountered at the ground surface at all of the boring locations, extending to depths of 2½ to 5½± feet below the existing site grades. The fill soils generally consist of medium dense silty fine sands with varying medium to coarse sand and fine gravel content. These materials possess pinhole porosity with some fine root fibers. The fill soils possess a disturbed appearance, resulting in their classification as artificial fill.

Alluvium

Native alluvium was encountered beneath the fill soils at all of the boring locations. The near-surface alluvium generally consists of medium dense silty fine sands, clayey fine sands and fine sandy silts with varying medium to coarse sand, fine gravel and varying clay content, extending to depths of 20 to 32± feet. The near-surface alluvium possesses pinhole porosity and some Calcareous nodules and veining. Below these materials, Boring Nos. B-1 and B-4 encountered older alluvium, extending to at least the maximum depth explored of 50± feet. The older alluvium

generally consists of medium dense to very dense fine to coarse sands with varying silt and fine to coarse gravel content.

Groundwater

Free water was not encountered during the drilling of any of the borings. Based on the lack of any water within the borings, and the moisture contents of the recovered soil samples, the static groundwater table is considered to have existed at a depth in excess of 50± feet at the time of the subsurface exploration.

As a part of our research, we reviewed available groundwater data in order to determine groundwater levels for the site. Water level data was obtained from the California Department of Water Resources Water Data Library website, https://wdl.water.ca.gov/waterdatalibrary/. The nearest monitoring well on record is located 1,500± feet southeast of the site. Water level readings within this monitoring well indicate a groundwater level of 500± feet below the ground surface in December 2005.

5.0 LABORATORY TESTING

The soil samples recovered from the subsurface exploration were returned to our laboratory for further testing to determine selected physical and engineering properties of the soils. The tests are briefly discussed below. It should be noted that the test results are specific to the actual samples tested, and variations could be expected at other locations and depths.

Classification

All recovered soil samples were classified using the Unified Soil Classification System (USCS), in accordance with ASTM D-2488. The field identifications were then supplemented with additional visual classifications and/or by laboratory testing. The USCS classifications are shown on the Boring Logs and are periodically referenced throughout this report.

Density and Moisture Content

The density has been determined for selected relatively undisturbed ring samples. These densities were determined in general accordance with the method presented in ASTM D-2937. The results are recorded as dry unit weight in pounds per cubic foot. The moisture contents are determined in accordance with ASTM D-2216, and are expressed as a percentage of the dry weight. These test results are presented on the Boring Logs.

Consolidation

Selected soil samples were tested to determine their consolidation potential, in accordance with ASTM D-2435. The testing apparatus is designed to accept either natural or remolded samples in a one-inch high ring, approximately 2.416 inches in diameter. Each sample is then loaded incrementally in a geometric progression and the resulting deflection is recorded at selected time intervals. Porous stones are in contact with the top and bottom of the sample to permit the addition or release of pore water. The samples are typically inundated with water at an intermediate load to determine their potential for collapse or heave. The results of the consolidation testing are plotted on Plates C-1 through C-4 in Appendix C of this report.

Maximum Dry Density and Optimum Moisture Content

A representative bulk sample has been tested for its maximum dry density and optimum moisture content. The results have been obtained using the Modified Proctor procedure, per ASTM D-1557 and are presented on Plate C-5 in Appendix C of this report. This test is generally used to compare the in-situ densities of undisturbed field samples, and for later compaction testing. Additional testing of other soil types or soil mixes may be necessary at a later date.

Expansion Index

The expansion potential of the on-site soils was determined in general accordance with ASTM D-4829. The testing apparatus is designed to accept a 4-inch diameter, 1-in high, remolded sample. The sample is initially remolded to 50± 1 percent saturation and then loaded with a surcharge equivalent to 144 pounds per square foot. The sample is then inundated with water, and allowed

to swell against the surcharge. The resultant swell or consolidation is recorded after a 24-hour period. The result of the EI testing is as follows:

Sample Identification	Expansion Index	Expansive Potential
B-1 @ 0 to 5 feet	8	Very Low

Soluble Sulfates

A representative sample of the near-surface soil was submitted to a subcontracted analytical laboratory for determination of soluble sulfate content. Soluble sulfates are naturally present in soils, and if the concentration is high enough, can result in degradation of concrete which comes into contact with these soils. The results of the soluble sulfate testing are presented below, and are discussed further in a subsequent section of this report.

Sample Identification	Soluble Sulfates (%)	Sulfate Classification
B-3 @ 0 to 5 feet	<0.001	Not Applicable (S0)

Corrosivity Testing

One representative bulk sample of the near-surface soils was submitted to a subcontracted corrosion engineering laboratory to identify potentially corrosive characteristics with respect to common construction materials. The corrosivity testing included a determination of the electrical resistivity, pH, and chloride and nitrate concentrations of the soils, as well as other tests. The results of some of these tests are presented below.

Sample Identification	Saturated Resistivity (ohm-cm)	pH	Chlorides (mg/kg)	Nitrates (mg/kg)
B-3 @ 0 to 5 feet	4,800	7.4	4.6	7.0

Grain Size Analysis

Limited grain size analyses have been performed on several selected samples, in accordance with ASTM D-1140. These samples were washed over a #200 sieve to determine the percentage of fine-grained material in each sample, which is defined as the material which passes the #200 sieve. The weight of the portion of the sample retained on each screen is recorded and the percentage finer or coarser of the total weight is calculated. The results of these laboratory tests are shown on the attached boring logs.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our review, field exploration, laboratory testing and geotechnical analysis, the proposed development is considered feasible from a geotechnical standpoint. The recommendations contained in this report should be taken into the design, construction, and grading considerations.

The recommendations are contingent upon all grading and foundation construction activities being monitored by the geotechnical engineer of record. The recommendations are provided with the assumption that an adequate program of client consultation, construction monitoring, and testing will be performed during the final design and construction phases to verify compliance with these recommendations. Maintaining Southern California Geotechnical, Inc., (SCG) as the geotechnical consultant from the beginning to the end of the project will provide continuity of services. The geotechnical engineering firm providing testing and observation services shall assume the responsibility of Geotechnical Engineer of Record.

The Grading Guide Specifications, included as Appendix D, should be considered part of this report, and should be incorporated into the project specifications. The contractor and/or owner of the development should bring to the attention of the geotechnical engineer any conditions that differ from those stated in this report, or which may be detrimental for the development.

6.1 Seismic Design Considerations

The subject site is located in an area which is subject to strong ground motions due to earthquakes. The performance of a site-specific seismic hazards analysis was beyond the scope of this investigation. However, numerous faults capable of producing significant ground motions are located near the subject site. Due to economic considerations, it is not generally considered reasonable to design a structure that is not susceptible to earthquake damage. Therefore, significant damage to structures may be unavoidable during large earthquakes. The proposed structure should, however, be designed to resist structural collapse and thereby provide reasonable protection from serious injury, catastrophic property damage and loss of life.

Faulting and Seismicity

Research of available maps indicates that the subject site is not located within an Alquist-Priolo Earthquake Fault Zone. In addition, our review of the Riverside County RCIT GIS website indicates that the site is not located within a Riverside County fault zone. Furthermore, SCG did not identify any evidence of faulting during the geotechnical investigation. Therefore, the possibility of significant fault rupture on the site is considered to be low Therefore, the possibility of significant fault rupture on the site is considered to be low.

Seismic Design Parameters

The 2019 California Building Code (CBC) provides procedures for earthquake resistant structural design that include considerations for on-site soil conditions, occupancy, and the configuration of the structure including the structural system and height. The seismic design parameters

presented below are based on the soil profile and the proximity of known faults with respect to the subject site.

Based on standards in place at the time of this report, the proposed development is expected to be designed in accordance with the requirements of the 2019 edition of the California Building Code (CBC), which was adopted on January 1, 2020.

The 2019 CBC Seismic Design Parameters have been generated using the SEAOC/OSHPD Seismic Design Maps Tool, a web-based software application available at the website www.seismicmaps.org. This software application calculates seismic design parameters in accordance with several building code reference documents, including ASCE 7-16, upon which the 2019 CBC is based. The application utilizes a database of risk-targeted maximum considered earthquake (MCE_R) site accelerations at 0.01-degree intervals for each of the code documents. The table below was created using data obtained from the application. The output generated from this program is included as Plate E-1 in Appendix E of this report.

The 2019 CBC requires that a site-specific ground motion study be performed in accordance with Section 11.4.8 of ASCE 7-16 for Site Class D sites with a mapped S_1 value greater than 0.2. However, Section 11.4.8 of ASCE 7-16 also indicates an exception to the requirement for a site-specific ground motion hazard analysis for certain structures on Site Class D sites. The commentary for Section 11 of ASCE 7-16 (Page 534 of Section C11 of ASCE 7-16) indicates that "In general, this exception effectively limits the requirements for site-specific hazard analysis to very tall and or flexible structures at Site Class D sites." **Based on our understanding of the proposed development, the seismic design parameters presented below were calculated assuming that the exception in Section 11.4.8 applies to the proposed structure at this site. However, the structural engineer should verify that this exception is applicable to the proposed structure.** Based on the exception, the spectral response accelerations presented below were calculated using the site coefficients (F_a and F_v) from Tables 1613.2.3(1) and 1613.2.3(2) presented in Section 16.4.4 of the 2019 CBC.

2019 CBC SEISMIC DESIGN PARAMETERS

Parameter		Value
Mapped Spectral Acceleration at 0.2 sec Period	S_S	2.096
Mapped Spectral Acceleration at 1.0 sec Period	S_1	0.734
Site Class	---	D
Site Modified Spectral Acceleration at 0.2 sec Period	S_{MS}	2.096
Site Modified Spectral Acceleration at 1.0 sec Period	S_{M1}	1.248
Design Spectral Acceleration at 0.2 sec Period	S_{DS}	1.398
Design Spectral Acceleration at 1.0 sec Period	S_{D1}	0.832

It should be noted that the site coefficient F_v and the parameters S_{M1} and S_{D1} were not included in the SEAOC/OSHPD Seismic Design Maps Tool output for the 2019 CBC. We calculated these parameters-based on Table 1613.2.3(2) in Section 16.4.4 of the 2019 CBC using the value of S_1 obtained from the Seismic Design Maps Tool, assuming that a site-specific ground motion hazards analysis is not required for the proposed building at this site.

Liquefaction

Liquefaction is the loss of the strength in generally cohesionless, saturated soils when the pore-water pressure induced in the soil by a seismic event becomes equal to or exceeds the overburden pressure. The primary factors which influence the potential for liquefaction include groundwater table elevation, soil type and grain size characteristics, relative density of the soil, initial confining pressure, and intensity and duration of ground shaking. The depth within which the occurrence of liquefaction may impact surface improvements is generally identified as the upper 50 feet below the existing ground surface. Liquefaction potential is greater in saturated, loose, poorly graded fine sands with a mean (d_{50}) grain size in the range of 0.075 to 0.2 mm (Seed and Idriss, 1971). Clayey (cohesive) soils or soils which possess clay particles (d<0.005mm) in excess of 20 percent (Seed and Idriss, 1982) are generally not considered to be susceptible to liquefaction, nor are those soils which are above the historic static groundwater table.

The Riverside County GIS website indicates that the subject site is located within a zone of moderate liquefaction susceptibility. However, the subsurface conditions encountered at the boring locations are not considered to be conducive to liquefaction. These conditions consist of moderate to high strength older native alluvial soils and no evidence of a long-term groundwater table within the upper 50± feet from the ground surface. Based on these considerations, liquefaction is not considered to be a design concern for this project.

6.2 Geotechnical Design Considerations

General

All of the borings encountered artificial fill materials, extending to depths of 2½ to 5½± feet below the existing site grades. No documentation regarding the placement of these soils is considered to be available. Therefore, these soils are considered to consist of undocumented fill, and are not suitable for the support of the foundation loads of the proposed building. The artificial fill soils are underlain by younger alluvial soils. Results of laboratory testing indicate the upper 6 to 8 feet of the near-surface alluvium to possess a high potential for hydrocollapse when inundated with water. Therefore, the upper portion of the near-surface soils, in their present condition, are not considered suitable to support the foundation loads of the new structure. The native soils at greater depths generally possess medium dense to very dense relative densities and possess more favorable consolidation/collapse characteristics. Based on these conditions, remedial grading is considered warranted within the proposed building area in order to remove all of the undocumented fill soils in their entirety and the upper portion of the near-surface native alluvial soils, and replace these materials as compacted structural fill soils.

Settlement

The recommended remedial grading will remove the existing undocumented fill soils and a portion of the near-surface native alluvial soils and replace these materials as compacted structural fill. The native soils that will remain in place below the recommended depth of overexcavation will not be subject to significant stress increases from the foundations of the new structure. Therefore, following completion of the recommended grading, post-construction settlements are expected to be within tolerable limits.

Expansion

Laboratory testing performed on a representative sample of the near-surface soils indicates that these materials possess a very low expansion potential (EI = 8). Based on the presence of expansive soils at this site, care should be given to proper moisture conditioning of all building pad subgrade soils to a moisture content of 0 to 4 percent above the ASTM D-1557 optimum during site grading.

Soluble Sulfates

The results of the laboratory testing indicate that the sulfate concentrations of the selected sample of the on-site soils corresponds to Class S0 with respect to the American Concrete Institute (ACI) Publication 318-14 Building Code Requirements for Structural Concrete and Commentary, Section 4.3. Therefore, specialized concrete mix designs are not considered to be necessary, with regard to sulfate protection purposes. It is, however, recommended that additional soluble sulfate testing be conducted at the completion of rough grading to verify the soluble sulfate concentration of the soils which are present at pad grade within the building area.

Corrosion Potential

The results of laboratory testing indicate that the tested sample of the on-site soils possesses a saturated resistivity value of 4,800 ohm-cm, and a pH value of 7.4. These test results have been evaluated in accordance with guidelines published by the Ductile Iron Pipe Research Association (DIPRA). The DIPRA guidelines consist of a point system by which characteristics of the soils are used to quantify the corrosivity characteristics of the site. Resistivity and pH are two of the five factors that enter into the evaluation procedure. Redox potential, relative soil moisture content and sulfides are also included. Although sulfide testing was not part of the scope of services for this project, we have evaluated the corrosivity characteristics of the on-site soils using resistivity, pH and moisture content. Based on these factors, and utilizing the DIPRA procedure, the on-site soils are not considered to be corrosive to ductile iron pipe.

A relatively low concentration (4.6 mg/kg) of chlorides was detected in the sample submitted for corrosivity testing. In general, soils possessing chloride concentrations in excess of 500 parts per million (ppm) are considered to be corrosive with respect to steel reinforcement within reinforced concrete. Based on the lack of any significant chlorides in the tested sample, the site is considered to have a C1 chloride exposure in accordance with the American Concrete Institute (ACI) Publication 318 Building Code Requirements for Structural Concrete and Commentary. Therefore, a specialized concrete mix design for reinforced concrete for protection against chloride exposure is not considered warranted.

Nitrates present in soil can be corrosive to copper tubing at concentrations greater than 50 mg/kg. The tested sample possesses a nitrate concentration of 7.0 mg/kg. Based on this test result, the on-site soils are not considered to be corrosive to copper pipe.

Since SCG does not practice in the area of corrosion engineering, the client may wish to contact a corrosion engineer to provide a more thorough evaluation.

Shrinkage/Subsidence

Removal and recompaction of the artificial fill and near-surface native soils is estimated to result in an average shrinkage of 10 to 18 percent. Shrinkage estimates for the individual samples range between 6 and 28 percent based on the results of density testing and the assumption that the onsite soils will be compacted to about 92 percent of the ASTM D-1557 maximum dry density. It should be noted that the shrinkage estimate is based on the results of dry density testing performed on small-diameter samples of the existing soils taken at the boring locations. If a more accurate and precise shrinkage estimate is desired, SCG can perform a shrinkage study involving several excavated test-pits where in-place densities are determined using in-situ testing methods instead of laboratory density testing on small-diameter samples. Please contact SCG for details and a cost estimate regarding a shrinkage study, if desired.

Minor ground subsidence is expected to occur in the soils below the zone of removal, due to settlement and machinery working. The subsidence is estimated to be 0.1 feet. This estimate may be used for grading in areas that are underlain by native alluvial soils.

These estimates are based on previous experience and the subsurface conditions encountered at the boring locations. The actual amount of subsidence is expected to be variable and will be dependent on the type of machinery used, repetitions of use, and dynamic effects, all of which are difficult to assess precisely.

Grading and Foundation Plan Review

Grading and foundation plans were not available at the time of this report. It is therefore recommended that we be provided with copies of the preliminary grading and foundation plans, when they become available, for review with regard to the conclusions, recommendations, and assumptions contained within this report.

6.3 Site Grading Recommendations

The grading recommendations presented below are based on the subsurface conditions encountered at the boring locations, and our understanding of the proposed development. We recommend that all grading activities be completed in accordance with the Grading Guide Specifications included as Appendix D of this report, unless superseded by site-specific recommendations presented below.

Site Stripping and Demolition

Initial site stripping should include removal of any surficial vegetation, as well as any underlying topsoil or other organic materials. Based on conditions encountered at the time of the subsurface exploration, stripping of the existing grass may not be necessary. The actual extent of site stripping should be determined in the field by the geotechnical engineer, based on the organic content and stability of the materials encountered.

Treatment of Existing Soils: Building Pad

Remedial grading should be performed within the proposed building area in order to remove the existing undocumented fill soils, any soils disturbed during demolition, and a portion of the near-surface native alluvium. Based on conditions encountered at the boring locations, the existing soils within the proposed building area are recommended to be overexcavated to a depth of at least 6 feet below existing grades and to a depth of at least 4 feet below proposed building pad subgrade elevation, whichever is greater. The depth of the overexcavation should also extend to a depth sufficient to remove all undocumented fill soils. Within the influence zones of the new foundations, the overexcavation should extend to a depth of at least 3 feet below proposed foundation bearing grade.

The overexcavation areas should extend at least 5 feet beyond the building and foundation perimeters, and to an extent equal to the depth of fill placed below the foundation bearing grade, whichever is greater. If the proposed structure incorporates any exterior columns (such as for a canopy or overhang) the area of overexcavation should also encompass these areas.

Following completion of the overexcavation, the subgrade soils within the building area should be evaluated by the geotechnical engineer to verify their suitability to serve as the structural fill subgrade, as well as to support the foundation loads of the new structure. This evaluation should include proofrolling and probing to identify any soft, loose or otherwise unstable soils that must be removed. Some localized areas of deeper excavation may be required if additional fill materials or loose, porous, or low-density native soils are encountered at the base of the overexcavation. **Based on the presence of loose, collapsible soils, additional overexcavation, extending to depths of 6 to 8± feet below the existing site grades, may be necessary where highly collapsible and/or porous soils are present at the planned bottom of overexcavation at the time of grading.**

After a suitable overexcavation subgrade has been achieved, the exposed soils should be scarified to a depth of at least 12 inches and moisture conditioned to achieve a moisture content of 0 to 4 percent above optimum moisture content. The subgrade soils should then be recompacted to at least 90 percent of the ASTM D-1557 maximum dry density. The building pad area may then be raised to grade with previously excavated soils or imported structural fill.

Treatment of Existing Soils: Retaining Walls and Site Walls

The existing soils within the areas of any proposed retaining walls and site walls should be overexcavated to a depth of 3 feet below foundation bearing grade and replaced as compacted structural fill as discussed above for the proposed building pad. Any undocumented fill soils or disturbed native alluvium within any of these foundation areas should be removed in their entirety. The overexcavation areas should extend at least 5 feet beyond the foundation perimeters, and to an extent equal to the depth of fill below the new foundations. Any erection pads for tilt-up concrete walls are considered to be part of the foundation system. Therefore, these overexcavation recommendations are applicable to erection pads. The overexcavation subgrade soils should be evaluated by the geotechnical engineer prior to scarifying, moisture conditioning to within 0 to 4 percent above the optimum moisture content, and recompacting the upper 12 inches of exposed subgrade soils. The previously excavated soils may then be replaced as compacted structural fill.

If the full lateral recommended remedial grading cannot be completed for the proposed retaining walls and site walls located along property lines, the foundations for those walls should be designed using a reduced allowable bearing pressure. Furthermore, the contractor should take necessary precautions to protect the adjacent improvements during rough grading. Specialized grading techniques, such as A-B-C slot cuts, will likely be required during remedial grading. The geotechnical engineer of record should be contacted if additional recommendations, such as shoring design recommendations, are required during grading.

Treatment of Existing Soils: Parking and Drive Areas

Based on economic considerations, overexcavation of the existing near-surface existing soils in the new flatwork, parking and drive areas is not considered warranted, with the exception of areas where lower strength or unstable soils are identified by the geotechnical engineer during grading. Subgrade preparation in the new flatwork, parking and drive areas should initially consist of removal of all soils disturbed during stripping and demolition operations.

The geotechnical engineer should then evaluate the subgrade to identify any areas of additional unsuitable soils. Any such materials should be removed to a level of firm and unyielding soil. The exposed subgrade soils should then be scarified to a depth of 12± inches, moisture conditioned to 0 to 4 percent above the optimum moisture content, and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density. Based on the presence of variable strength surficial soils throughout the site, it is expected that some isolated areas of additional overexcavation may be required to remove zones of lower strength, unsuitable soils.

The grading recommendations presented above for the proposed flatwork, parking and drive areas assume that the owner and/or developer can tolerate minor amounts of settlement within these areas. The grading recommendations presented above do not mitigate the extent of undocumented fill or compressible/collapsible native alluvium in the flatwork, parking and drive areas. As such, some settlement and associated pavement distress could occur. Typically, repair of such distressed areas involves significantly lower costs than completely mitigating these soils at the time of construction. If the owner cannot tolerate the risk of such settlements, the flatwork, parking and drive areas should be overexcavated to a depth of 2 feet below proposed pavement subgrade elevation, with the resulting soils replaced as compacted structural fill.

Fill Placement

- Fill soils should be placed in thin (6± inches), near-horizontal lifts, moisture conditioned to 0 to 4 percent above the optimum moisture content, and compacted.
- On-site soils may be used for fill provided they are cleaned of any debris to the satisfaction of the geotechnical engineer.
- All grading and fill placement activities should be completed in accordance with the requirements of the 2019 CBC and the grading code of the city of Banning.
- All fill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density.
- Compaction tests should be performed periodically by the geotechnical engineer as random verification of compaction and moisture content. These tests are intended to aid the contractor. Since the tests are taken at discrete locations and depths, they may not

be indicative of the entire fill and therefore should not relieve the contractor of his responsibility to meet the job specifications.

Imported Structural Fill

All imported structural fill should consist of very low expansive (EI < 20), well graded soils possessing at least 10 percent fines (that portion of the sample passing the No. 200 sieve). Additional specifications for structural fill are presented in the Grading Guide Specifications, included as Appendix D.

Utility Trench Backfill

In general, all utility trench backfill should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. As an alternative, a clean sand (minimum Sand Equivalent of 30) may be placed within trenches and compacted in place (jetting or flooding is not recommended). Compacted trench backfill should conform to the requirements of the local grading code, and more restrictive requirements may be indicated by the city of Banning. All utility trench backfills should be witnessed by the geotechnical engineer. The trench backfill soils should be compaction tested where possible; probed and visually evaluated elsewhere.

Utility trenches which parallel a footing, and extending below a 1h:1v (horizontal to vertical) plane projected from the outside edge of the footing should be backfilled with structural fill soils, compacted to at least 90 percent of the ASTM D-1557 standard. Pea gravel backfill should not be used for these trenches.

Any soils used to backfill voids around subsurface utility structures, such as manholes or vaults, should be placed as compacted structural fill. If it is not practical to place compacted fill in these areas, then such void spaces may be backfilled with lean concrete slurry. Uncompacted pea gravel or sand is not recommended for backfilling these voids since these materials have a potential to settle and thereby cause distress of pavements placed around these subterranean structures.

6.4 Construction Considerations

Excavation Considerations

The near-surface soils generally consist of silty sands and clayey sands. These materials will be subject to caving within shallow excavations. Where caving occurs within shallow excavations, flattened excavation slopes may be sufficient to provide excavation stability. On a preliminary basis, temporary excavation slopes should be made no steeper than 2h:1v. Maintaining adequate moisture content within the near-surface soils will improve excavation stability. All excavation activities on this site should be conducted in accordance with Cal-OSHA regulations.

Moisture Sensitive Subgrade Soils

Some of the near-surface soils possess appreciable silt and clay content and may become unstable if exposed to significant moisture infiltration or disturbance by construction traffic. In addition, based on their granular content, some of the on-site soils will also be susceptible to erosion. The

site should, therefore, be graded to prevent ponding of surface water and to prevent water from running into excavations.

If the construction schedule dictates that site grading will occur during a period of wet weather, allowances should be made for costs and delays associated with drying the on-site soils or import of a drier, less moisture sensitive fill material. Grading during wet or cool weather may also increase the depth of overexcavation in the pad areas as well as the need for and/or the thickness of the crushed stone stabilization layer.

Expansive Soils

The near-surface on-site soils have been determined to possess a very low expansion potential. Therefore, care should be given to proper moisture conditioning all building pad subgrade soils to a moisture content of 0 to 4 percent above the Modified Proctor optimum during site grading. All imported fill soils should have very low expansive (EI < 20) characteristics.

Groundwater

The static groundwater table is considered to have existed at a depth in excess of 50± feet at the time of the subsurface exploration. Therefore, groundwater is not expected to impact the grading or foundation construction activities.

6.5 Foundation Design and Construction

Based on the preceding grading recommendations, it is assumed that the new building pad will be underlain by structural fill soils used to replace existing undocumented fill soils and a portion of the near-surface alluvial soils. These new structural fill soils are expected to extend to a depth of at least 3 feet below proposed foundation bearing grade, underlain by 1± foot of additional soil that has been densified and moisture conditioned in place. Based on this subsurface profile, the proposed structure may be supported on conventional shallow foundations.

Foundation Design Parameters

New square and rectangular footings may be designed as follows:

- Maximum, net allowable soil bearing pressure: 2,500 lbs/ft^2.
- Minimum wall/column footing width: 14 inches/24 inches.
- Minimum longitudinal steel reinforcement within strip footings: Four (4) No. 5 rebars (2 top and 2 bottom).
- Minimum foundation embedment: 12 inches into suitable structural fill soils, and at least 18 inches below adjacent exterior grade. Interior column footings may be placed immediately beneath the floor slab.

- It is recommended that the perimeter building foundations be continuous across all exterior doorways. Any flatwork adjacent to the exterior doors should be doweled into the perimeter foundations in a manner determined by the structural engineer.

The allowable bearing pressures presented above may be increased by 1/3 when considering short duration wind or seismic loads. The minimum steel reinforcement recommended above is based on geotechnical considerations; additional reinforcement may be necessary for structural considerations. The actual design of the foundations should be determined by the structural engineer.

Foundation Construction

The foundation subgrade soils should be evaluated at the time of overexcavation, as discussed in Section 6.3 of this report. It is further recommended that the foundation subgrade soils be evaluated by the geotechnical engineer immediately prior to steel or concrete placement. Soils suitable for direct foundation support should consist of newly placed structural fill, compacted to at least 90 percent of the ASTM D-1557 maximum dry density. Any unsuitable materials should be removed to a depth of suitable bearing compacted structural fill, with the resulting excavations backfilled with compacted fill soils. As an alternative, lean concrete slurry (500 to 1,500 psi) may be used to backfill such isolated overexcavations.

The foundation subgrade soils should also be properly moisture conditioned to 0 to 4 percent above the Modified Proctor optimum, to a depth of at least 12 inches below bearing grade. Since it is typically not feasible to increase the moisture content of the floor slab and foundation subgrade soils once rough grading has been completed, care should be taken to maintain the moisture content of the building pad subgrade soils throughout the construction process.

Estimated Foundation Settlements

Post-construction total and differential settlements of shallow foundations designed and constructed in accordance with the previously presented recommendations are estimated to be less than 1.0 and 0.5 inches, respectively. Differential movements are expected to occur over a 30-foot span, thereby resulting in an angular distortion of less than 0.002 inches per inch.

Lateral Load Resistance

Lateral load resistance will be developed by a combination of friction acting at the base of foundations and slabs and the passive earth pressure developed by footings below grade. The following friction and passive pressure may be used to resist lateral forces:

- Passive Earth Pressure: 300 lbs/ft^3
- Friction Coefficient: 0.30

These are allowable values, and include a factor of safety. When combining friction and passive resistance, the passive pressure component should be reduced by one-third. These values assume that footings will be poured directly against compacted structural fill. The maximum allowable passive pressure is 2,500 lbs/ft^2.

6.6 Floor Slab Design and Construction

Subgrades which will support new floor slab should be prepared in accordance with the recommendations contained in the ***Site Grading Recommendations*** section of this report. Based on the anticipated grading which will occur at this site, the floor of the new structure may be constructed as a conventional slab-on-grade supported on newly placed structural fill soils. These fill soils are expected to extend to a depth of at least 4 feet below finished pad grade. Based on geotechnical considerations, the floor slab may be designed as follows:

- Minimum slab thickness: 6 inches.

- Modulus of subgrade reaction: k = 125 psi/in

- Minimum slab reinforcement: Reinforcement is not required for geotechnical conditions. The actual floor slab reinforcement should be determined by the structural engineer, based upon the imposed loading.

- Slab underlayment: If moisture sensitive floor coverings will be used then minimum slab underlayment should consist of a moisture vapor barrier constructed below the entire area of the proposed slab where such moisture sensitive floor coverings are anticipated. The moisture vapor barrier should meet or exceed the Class A rating as defined by ASTM E 1745-97 and have a permeance rating less than 0.01 perms as described in ASTM E 96-95 and ASTM E 154-88. A polyolefin material such as a 15-mil Stego® Wrap Vapor Barrier or equivalent will meet these specifications. The moisture vapor barrier should be properly constructed in accordance with all applicable manufacturer specifications. Given that a rock free subgrade is anticipated and that a capillary break is not required, sand below the barrier is not required. The need for sand and/or the amount of sand above the moisture vapor barrier should be specified by the structural engineer or concrete contractor. The selection of sand above the barrier is not a geotechnical engineering issue and hence outside our purview. Where moisture sensitive floor coverings are not anticipated, the vapor barrier may be eliminated.

- Moisture condition the floor slab subgrade soils to 0 to 4 percent above the Modified Proctor optimum moisture content, to a depth of 12 inches. The moisture content of the floor slab subgrade soils should be verified by the geotechnical engineer within 24 hours prior to concrete placement.

- Proper concrete curing techniques should be utilized to reduce the potential for slab curling or the formation of excessive shrinkage cracks.

The actual design of the floor slabs should be completed by the structural engineer to verify adequate thickness and reinforcement.

6.7 Retaining Wall Design and Construction

Small retaining walls are expected to be necessary in the area of the new truck loading docks and may also be required to facilitate the new site grades. The parameters recommended for use in the design of these walls are presented below.

Retaining Wall Design Parameters

Based on the soil conditions encountered at the boring locations, the following parameters may be used in the design of new retaining walls for this site. We have provided parameters assuming the use of on-site soils for retaining wall backfill. The on-site soils generally consist of silty sands and clayey sands. Based on their classification, these materials are expected to possess a friction angle of at least 30 degrees when compacted to at least 90 percent of the ASTM D-1557 maximum dry density.

If desired, SCG could provide design parameters for an alternative select backfill material behind the retaining walls. The use of select backfill material could result in lower lateral earth pressures. In order to use the design parameters for the imported select fill, this material must be placed within the entire active failure wedge. This wedge is defined as extending from the heel of the retaining wall upwards at an angle of approximately 60° from horizontal. If select backfill material behind the retaining wall is desired, SCG should be contacted for supplementary recommendations.

RETAINING WALL DESIGN PARAMETERS

Design Parameter		**Soil Type**
		On-Site Silty Sands and Clayey Sands
Internal Friction Angle (ϕ)		30°
Unit Weight		129 lbs/ft^3
Equivalent Fluid Pressure:	Active Condition (level backfill)	43 lbs/ft^3
	Active Condition (2h:1v backfill)	70 lbs/ft^3
	At-Rest Condition (level backfill)	65 lbs/ft^3

The walls should be designed using a soil-footing coefficient of friction of 0.30 and an equivalent passive pressure of 300 lbs/ft^3. The structural engineer should incorporate appropriate factors of safety in the design of the retaining walls.

The active earth pressure may be used for the design of retaining walls that do not directly support structures or support soils that in turn support structures and which will be allowed to deflect. The at-rest earth pressure should be used for walls that will not be allowed to deflect such as those which will support foundation bearing soils, or which will support foundation loads directly.

Where the soils on the toe side of the retaining wall are not covered by a "hard" surface such as a structure or pavement, the upper 1 foot of soil should be neglected when calculating passive resistance due to the potential for the material to become disturbed or degraded during the life of the structure.

Retaining Wall Foundation Design

The retaining wall foundations should be underlain by at least 3 feet of newly placed structural fill. Foundations to support new retaining walls should be designed in accordance with the general Foundation Design Parameters presented in a previous section of this report.

Seismic Lateral Earth Pressures

In accordance with the 2019 CBC, any retaining walls more than 6 feet in height must be designed for seismic lateral earth pressures. If walls 6 feet or more are required for this site, the geotechnical engineer should be contacted for supplementary seismic lateral earth pressure recommendations.

Backfill Material

On-site soils may be used to backfill the retaining walls. However, all backfill material placed within 3 feet of the back-wall face should have a particle size no greater than 3 inches. The retaining wall backfill materials should be well graded.

It is recommended that a minimum 1-foot thick layer of free-draining granular material (less than 5 percent passing the No. 200 sieve) be placed against the face of the retaining walls. This material should extend from the top of the retaining wall footing to within 1 foot of the ground surface on the back side of the retaining wall. This material should be approved by the geotechnical engineer. In lieu of the 1-foot thick layer of free-draining material, a properly installed prefabricated drainage composite such as the MiraDRAIN 6000XL (or approved equivalent), which is specifically designed for use behind retaining walls, may be used. If the layer of free-draining material is not covered by an impermeable surface, such as a structure or pavement, a 12-inch thick layer of a low permeability soil should be placed over the backfill to reduce surface water migration to the underlying soils. The layer of free draining granular material should be separated from the backfill soils by a suitable geotextile, approved by the geotechnical engineer.

All retaining wall backfill should be placed and compacted under engineering controlled conditions in the necessary layer thicknesses to ensure an in-place density between 90 and 93 percent of the maximum dry density as determined by the Modified Proctor test (ASTM D1557-91). Care should be taken to avoid over-compaction of the soils behind the retaining walls, and the use of heavy compaction equipment should be avoided.

Subsurface Drainage

As previously indicated, the retaining wall design parameters are based upon drained backfill conditions. Consequently, some form of permanent drainage system will be necessary in conjunction with the appropriate backfill material. Subsurface drainage may consist of either:

- A weep hole drainage system typically consisting of a series of 2-inch diameter holes in the wall situated slightly above the ground surface elevation on the exposed side of the wall and at an approximate 10-foot on-center spacing. Alternatively, 4-inch diameter holes at an approximate 20-foot on-center spacing can be used for this type of drainage system. In addition, the weep holes should include a 2 cubic foot pocket of open graded gravel, surrounded by an approved geotextile fabric, at each weep hole location.

- A 4-inch diameter perforated pipe surrounded by 2 cubic feet of gravel per linear foot of drain placed behind the wall, above the retaining wall footing. The gravel layer should be wrapped in a suitable geotextile fabric to reduce the potential for migration of fines. The footing drain should be extended to daylight or tied into a storm drainage system. The actual design of this type of system should be determined by the civil engineer to verify that the drainage system possesses the adequate capacity and slope for its intended use.

6.8 Pavement Design Parameters

Site preparation in the pavement area should be completed as previously recommended in the ***Site Grading Recommendations*** section of this report. The subsequent pavement recommendations assume proper drainage and construction monitoring, and are based on either PCA or CALTRANS design parameters for a twenty (20) year design period. However, these designs also assume a routine pavement maintenance program to obtain the anticipated 20-year pavement service life.

Pavement Subgrades

It is anticipated that the new pavements will be primarily supported on a layer of compacted structural fill, consisting of scarified, thoroughly moisture conditioned and recompacted existing soils. The near-surface soils generally consist of silty sands and clayey sands. Based on their classification, these materials are expected to possess good pavement support characteristics, with R-values in the range of 40 to 50. Since R-value testing was not included in the scope of services for this project, the subsequent pavement design is based upon an assumed R-value of 40. Any fill material imported to the site should have support characteristics equal to or greater than that of the on-site soils and be placed and compacted under engineering controlled conditions. It is recommended that R-value testing be performed after completion of rough grading. Depending upon the results of the R-value testing, it may be feasible to use thinner pavement sections in some areas of the site.

Asphaltic Concrete

Presented below are the recommended thicknesses for new flexible pavement structures consisting of asphaltic concrete over a granular base. The pavement designs are based on the traffic indices (TI's) indicated. The client and/or civil engineer should verify that these TI's are representative of the anticipated traffic volumes. If the client and/or civil engineer determine that the expected traffic volume will exceed the applicable traffic index, we should be contacted for supplementary recommendations. The design traffic indices equate to the following approximate daily traffic volumes over a 20-year design life, assuming six operational traffic days per week.

Traffic Index	No. of Heavy Trucks per Day
4.0	0
5.0	1
6.0	3
7.0	11
8.0	35
9.0	93

For the purpose of the traffic volumes indicated above, a truck is defined as a 5-axle tractor trailer unit with one 8-kip axle and two 32-kip tandem axles. All of the traffic indices allow for 1,000 automobiles per day.

ASPHALT PAVEMENTS (R = 40)					
Materials	**Thickness (inches)**				
	Auto Parking and Auto Drive Lanes (TI = 4.0 to 5.0)	Truck Traffic			
		TI = 6.0	TI = 7.0	TI = 8.0	TI = 9.0
Asphalt Concrete	3	3½	4	5	5½
Aggregate Base	4	6	7	8	10
Compacted Subgrade	12	12	12	12	12

The aggregate base course should be compacted to at least 95 percent of the ASTM D-1557 maximum dry density. The asphaltic concrete should be compacted to at least 95 percent of the batch plant-reported maximum density. The aggregate base course may consist of crushed aggregate base (CAB) or crushed miscellaneous base (CMB), which is a recycled gravel, asphalt and concrete material. The gradation, R-Value, Sand Equivalent, and Percentage Wear of the CAB or CMB should comply with appropriate specifications contained in the current edition of the "Greenbook" Standard Specifications for Public Works Construction.

Portland Cement Concrete

The preparation of the subgrade soils within concrete pavement areas should be performed as previously described for proposed asphalt pavement areas. The minimum recommended thicknesses for the Portland Cement Concrete pavement sections are as follows:

PORTLAND CEMENT CONCRETE PAVEMENTS (R = 40)				
Materials	**Thickness (inches)**			
	Autos and Light Truck Traffic (TI = 6.0)	Truck Traffic		
		TI =7.0	TI = 8.0	TI = 9.0
PCC	5	5½	6½	8
Compacted Subgrade (95% minimum compaction)	12	12	12	12

The concrete should have a 28-day compressive strength of at least 3,000 psi. The maximum joint spacing within all of the PCC pavements is recommended to be equal to or less than 30 times the pavement thickness. Any reinforcement within the PCC pavements should be determined by the project structural engineer.

7.0 GENERAL COMMENTS

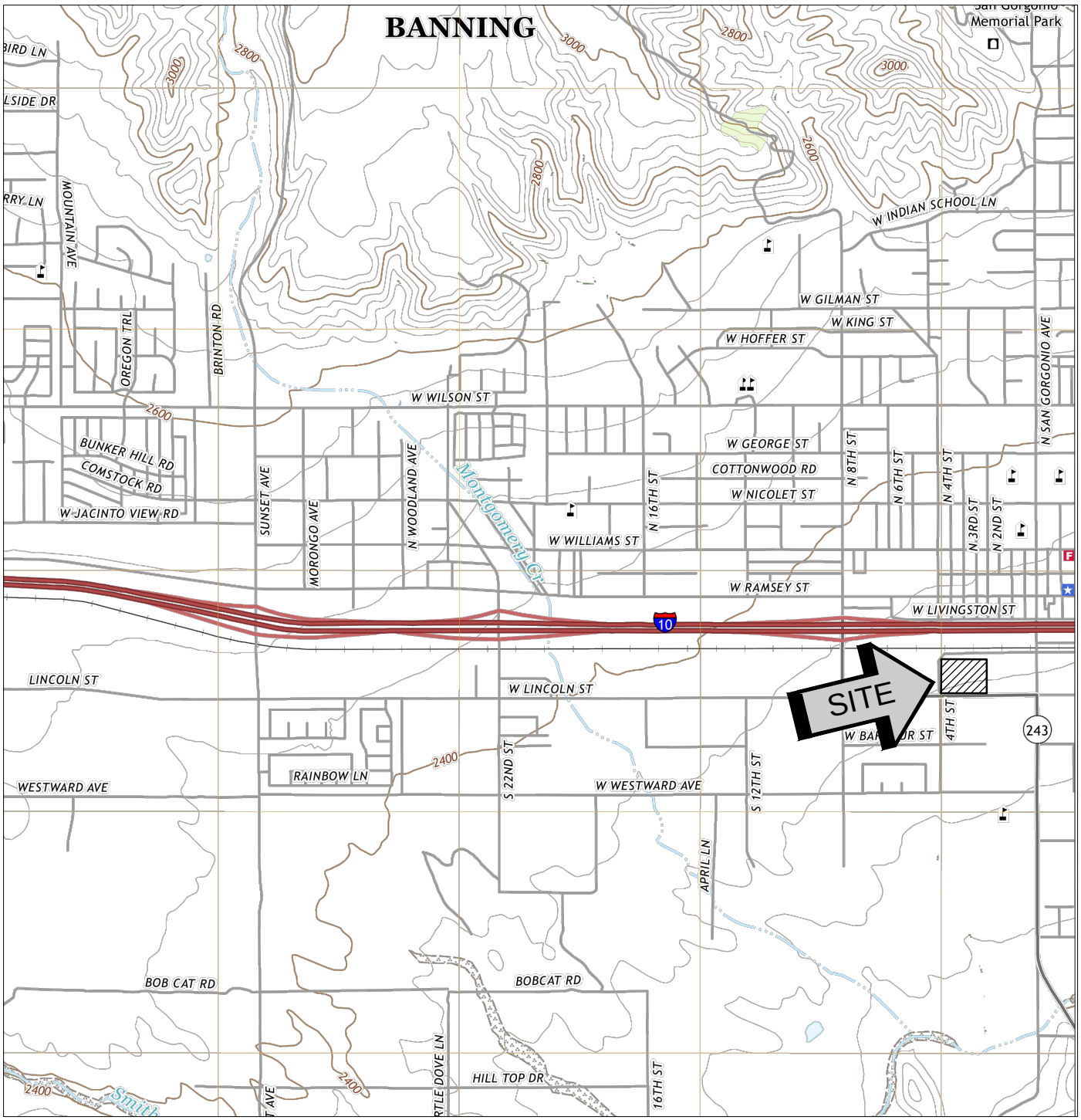
This report has been prepared as an instrument of service for use by the client, in order to aid in the evaluation of this property and to assist the architects and engineers in the design and preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, civil engineer, and/or structural engineer. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur. The client(s)' reliance upon this report is subject to the Engineering Services Agreement, incorporated into our proposal for this project.

The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between boring locations and sample depths. If the conditions encountered during construction vary significantly from those detailed herein, we should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted.

The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

APPENDIX A



SOURCE: USGS TOPOGRAPHIC MAP OF THE BEAUMONT QUADRANGLE, RIVERSIDE COUNTY, CALIFORNIA, 2018

SITE LOCATION MAP

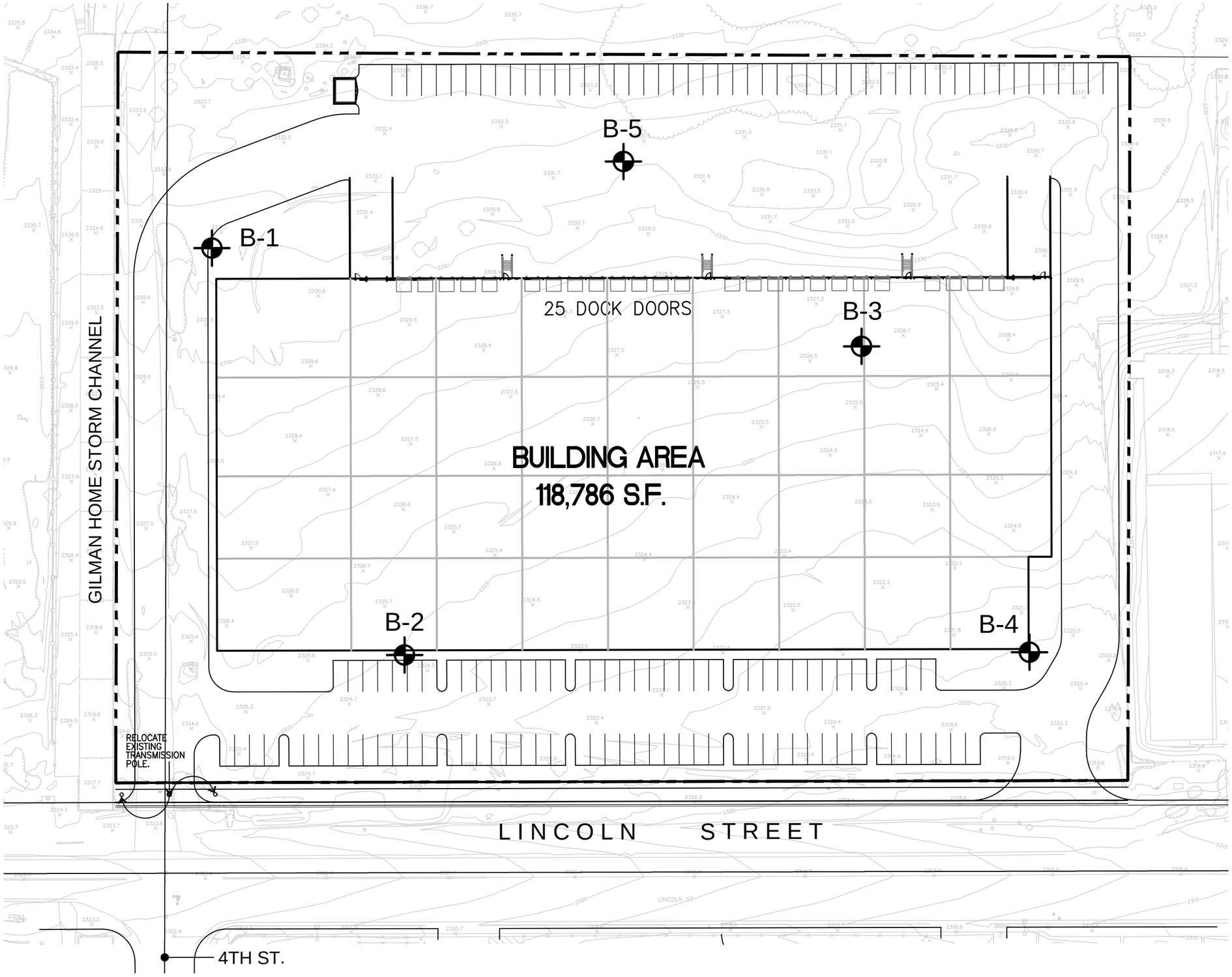
PROPOSED WAREHOUSE

BANNING, CALIFORNIA

SCALE: 1" = 2000'	
DRAWN: PM CHKD: RGT	
SCG PROJECT 21G271-1	
PLATE 1	

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



GEOTECHNICAL LEGEND

APPROXIMATE BORING LOCATION

NOTE: BASE SITE PLAN PREPARED BY STANTEC.

BORING LOCATION PLAN

PROPOSED WAREHOUSE

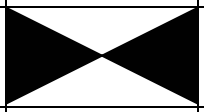
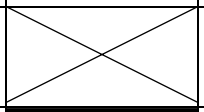
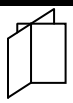
BANNING, CALIFORNIA

SCALE: 1" = 60'	
DRAWN: PM CHKD: RGT	
SCG PROJECT 21G271-1	
PLATE 2	

SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX B

BORING LOG LEGEND

SAMPLE TYPE	GRAPHICAL SYMBOL	SAMPLE DESCRIPTION
AUGER		SAMPLE COLLECTED FROM AUGER CUTTINGS, NO FIELD MEASUREMENT OF SOIL STRENGTH. (DISTURBED)
CORE		ROCK CORE SAMPLE: TYPICALLY TAKEN WITH A DIAMOND-TIPPED CORE BARREL. TYPICALLY USED ONLY IN HIGHLY CONSOLIDATED BEDROCK.
GRAB		SOIL SAMPLE TAKEN WITH NO SPECIALIZED EQUIPMENT, SUCH AS FROM A STOCKPILE OR THE GROUND SURFACE. (DISTURBED)
CS		CALIFORNIA SAMPLER: 2-1/2 INCH I.D. SPLIT BARREL SAMPLER, LINED WITH 1-INCH HIGH BRASS RINGS. DRIVEN WITH SPT HAMMER. (RELATIVELY UNDISTURBED)
NSR		NO RECOVERY: THE SAMPLING ATTEMPT DID NOT RESULT IN RECOVERY OF ANY SIGNIFICANT SOIL OR ROCK MATERIAL.
SPT		STANDARD PENETRATION TEST: SAMPLER IS A 1.4 INCH INSIDE DIAMETER SPLIT BARREL, DRIVEN 18 INCHES WITH THE SPT HAMMER. (DISTURBED)
SH		SHELBY TUBE: TAKEN WITH A THIN WALL SAMPLE TUBE, PUSHED INTO THE SOIL AND THEN EXTRACTED. (UNDISTURBED)
VANE		VANE SHEAR TEST: SOIL STRENGTH OBTAINED USING A 4 BLADED SHEAR DEVICE. TYPICALLY USED IN SOFT CLAYS-NO SAMPLE RECOVERED.

COLUMN DESCRIPTIONS

DEPTH: Distance in feet below the ground surface.

SAMPLE: Sample Type as depicted above.

BLOW COUNT: Number of blows required to advance the sampler 12 inches using a 140 lb hammer with a 30-inch drop. 50/3" indicates penetration refusal (>50 blows) at 3 inches. WH indicates that the weight of the hammer was sufficient to push the sampler 6 inches or more.

POCKET PEN.: Approximate shear strength of a cohesive soil sample as measured by pocket penetrometer.

GRAPHIC LOG: Graphic Soil Symbol as depicted on the following page.

DRY DENSITY: Dry density of an undisturbed or relatively undisturbed sample in lbs/ft^3.

MOISTURE CONTENT: Moisture content of a soil sample, expressed as a percentage of the dry weight.

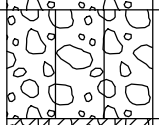
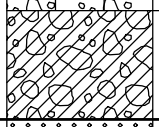
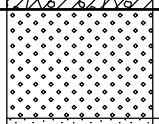
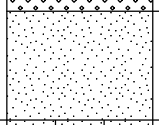
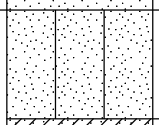
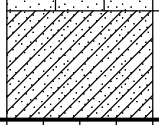
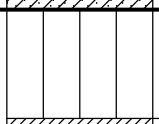
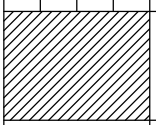
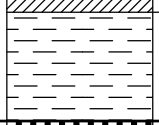
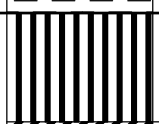
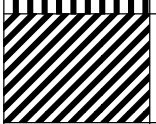
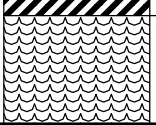
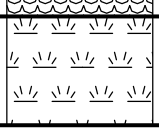
LIQUID LIMIT: The moisture content above which a soil behaves as a liquid.

PLASTIC LIMIT: The moisture content above which a soil behaves as a plastic.

PASSING #200 SIEVE: The percentage of the sample finer than the #200 standard sieve.

UNCONFINED SHEAR: The shear strength of a cohesive soil sample, as measured in the unconfined state.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-1

JOB NO.: 21G271-1
PROJECT: Proposed Warehouse
LOCATION: Banning California

DRILLING DATE: 11/9/21
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Oscar Sandoval

WATER DEPTH: Dry
CAVE DEPTH: 27 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		27			FILL: Light Brown Silty fine Sand, trace medium Sand, trace fine foot fibers, some pinhole porosity, medium dense-damp	109	3					EI = 8 @ 0 to 5 feet
		19			ALLUVIUM: Gray Brown Clayey fine to medium Sand, trace coarse Sand, little Silt, some pinhole porosity, trace fine root fibers, medium dense-damp	86	5					
5		21				92	5					
		31			Brown fine Sandy Silt, trace medium Sand, trace Iron oxide staining, medium dense-damp	103	5					
		18				100	3					
10												
		17			Light Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, medium dense-dry to damp		2			22		
15												
		18					2			7		
20					Brown fine Sandy Silt, little Calcareous veining, trace medium to coarse Sand, medium dense-damp		7					
		19			Light Brown Silty fine Sand, trace medium to coarse Sand, trace fine Gravel, little Clay, medium dense-damp to moist		6			24		
25												
		12					8			25		
30												
		50/3"			OLDER ALLUVIUM: Red Brown Clayey fine Sand, trace medium to coarse sand, trace Silt, dense to very dense-damp		7					

TBL 21G271-1.GPJ SOCALGEO.GDT 12/15/21

TEST BORING LOG

PLATE B-1a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-1

JOB NO.: 21G271-1
PROJECT: Proposed Warehouse
LOCATION: Banning California

DRILLING DATE: 11/9/21
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Oscar Sandoval

WATER DEPTH: Dry
CAVE DEPTH: 27 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					OLDER ALLUVIUM: Red Brown Clayey fine Sand, trace medium to coarse sand, trace Silt, dense to very dense-damp							
		36					7					
40												
		85/11"			@ 43½ feet, little fine to coarse Gravel, dry		2					
45												
					Boring Terminated at 45' due to very dense soils							

TBL 21G271-1.GPJ SOCALGEO.GDT 12/15/21

TEST BORING LOG

PLATE B-1b

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-2

JOB NO.: 21G271-1
PROJECT: Proposed Warehouse
LOCATION: Banning California

DRILLING DATE: 11/9/21
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Oscar Sandoval

WATER DEPTH: Dry
CAVE DEPTH: 14 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		14			FILL: Light Gray Brown Silty fine Sand, trace medium to trace coarse Sand, trace fine Gravel, trace fine root fibers, medium dense-damp		4					
		15			FILL: Light Gray Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, trace fine root fibers, medium dense-damp		3					
5		14			ALLUVIUM: Light Brown fine Sandy Silt, trace medium Sand, little Clay, trace fine Gravel, trace Calcareous veining, medium dense-dry to damp		5					
		21					6					
10												
		22					2					
15												
		29			Light Brown Silty fine to medium Sand, trace fine Gravel, medium dense-damp		3					
20					Boring Terminated at 20'							

TBL 21G271-1.GPJ SOCALGEO.GDT 12/15/21

TEST BORING LOG

PLATE B-2

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-3

JOB NO.: 21G271-1
PROJECT: Proposed Warehouse
LOCATION: Banning California

DRILLING DATE: 11/9/21
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Oscar Sandoval

WATER DEPTH: Dry
CAVE DEPTH: 17 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		19			FILL: Light Brown Silty fine Sand, trace medium to coarse Sand, trace fine root fibers, medium dense-damp		3					
5		16			ALLUVIUM: Light Brown Silty fine to medium Sand, little coarse Sand, trace fine Gravel, medium dense-dry to damp		2					No Sample Recovery
		10					2					
		17			Light Brown fine Sandy Silt, trace Clay, trace Calcareous nodules and veining, medium dense-damp to moist		8					
10												
		11					8					
15												
		16			Brown Silty fine Sand, trace medium Sand, medium dense-damp		4					
20												
		18			Brown fine Sandy Silt, little Clay, trace Calcareous veining, medium dense-damp to moist		9					
25					Boring Terminated at 25'							

TBL 21G271-1.GPJ SOCALGEO.GDT 12/15/21

TEST BORING LOG

PLATE B-3

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-4

JOB NO.: 21G271-1
PROJECT: Proposed Warehouse
LOCATION: Banning California

DRILLING DATE: 11/9/21
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Oscar Sandoval

WATER DEPTH: Dry
CAVE DEPTH: 27 feet
READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		28			FILL: Light Gray Brown Silty fine Sand, trace medium to coarse Sand, trace fine foot fibers, trace fine Gravel, trace metal fragments, medium dense-dry to damp	99	4					
		32				107	2					
5		25			ALLUVIUM: Gray Brown Silty fine to medium Sand, trace coarse Sand, trace fine root fibers, medium dense-dry to damp	112	2					
		27			Light Brown Silty fine Sand, little medium to coarse Sand, trace Calcareous nodules and veining, medium dense-dry to damp	113	2					
10		29			Light Brown fine Sandy Silt, little Clay, little Calcareous veining, medium dense-damp to moist	99	6			57		
15		21					8					
20		25			Light Brown Silty fine to medium Sand, trace coarse Sand, trace to little fine to coarse Gravel, medium dense-dry to damp		2			17		
25		19					3			24		
30		13			Light Brown fine Sandy Silt, trace medium Sand, trace to little Clay, medium dense-damp		5			50		
		23			OLDER ALLUVIUM: Gray fine to coarse Sand, trace to little Silt, little fine to coarse Gravel, medium dense to very dense-dry to damp		2			12		

TBL 21G271-1.GPJ SOCALGEO.GDT 12/15/21

TEST BORING LOG

PLATE B-4a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-4

JOB NO.: 21G271-1
PROJECT: Proposed Warehouse
LOCATION: Banning California

DRILLING DATE: 11/9/21
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Oscar Sandoval

WATER DEPTH: Dry
CAVE DEPTH: 27 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
40		50/5"			OLDER ALLUVIUM: Gray fine to coarse Sand, trace to little Silt, little fine to coarse Gravel, medium dense to very dense-dry to damp		1					
45		52					2					
50		50/5"					6					
					Boring Terminated at 50'							

TBL 21G271-1.GPJ SOCALGEO.GDT 12/15/21

TEST BORING LOG

PLATE B-4b

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-5

JOB NO.: 21G271-1
PROJECT: Proposed Warehouse
LOCATION: Banning California

DRILLING DATE: 11/9/21
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Oscar Sandoval

WATER DEPTH: Dry
CAVE DEPTH: 14 feet
READING TAKEN: At Completion

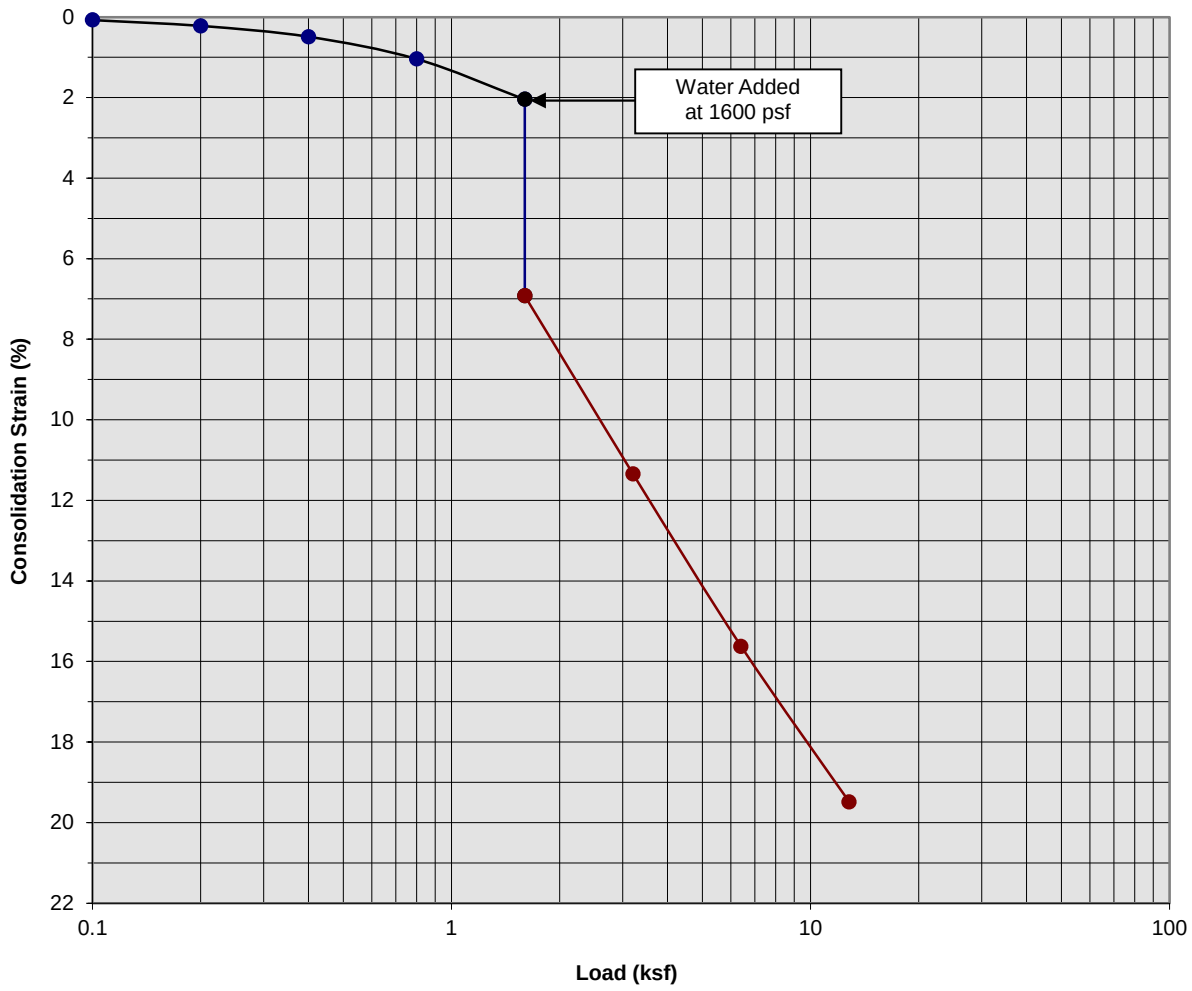
FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		29			FILL: Light Gray Brown Silty fine Sand, trace to little medium to coarse Sand, trace fine foot fibers, medium dense-dry		1					
		22			ALLUVIUM: Light Gray Brown Silty fine to medium Sand, little coarse Sand, trace fine root fibers, medium dense-dry to damp		2					
5		16					2					
		16			Light Brown fine Sandy Silt, trace medium Sand, trace to little Clay, trace Calcareous veining, medium dense-damp		6					
10					Light Brown Silty fine Sand, trace medium to coarse Sand, medium dense-damp							
		25					4					
15												
		17					3					
20					Boring Terminated at 20'							

TBL 21G271-1.GPJ SOCALGEO.GDT 12/15/21

TEST BORING LOG **PLATE B-5**

APPENDIX C

Consolidation/Collapse Test Results



Classification: Gray Brown Clayey fine to medium Sand, trace coarse Sand, little Silt

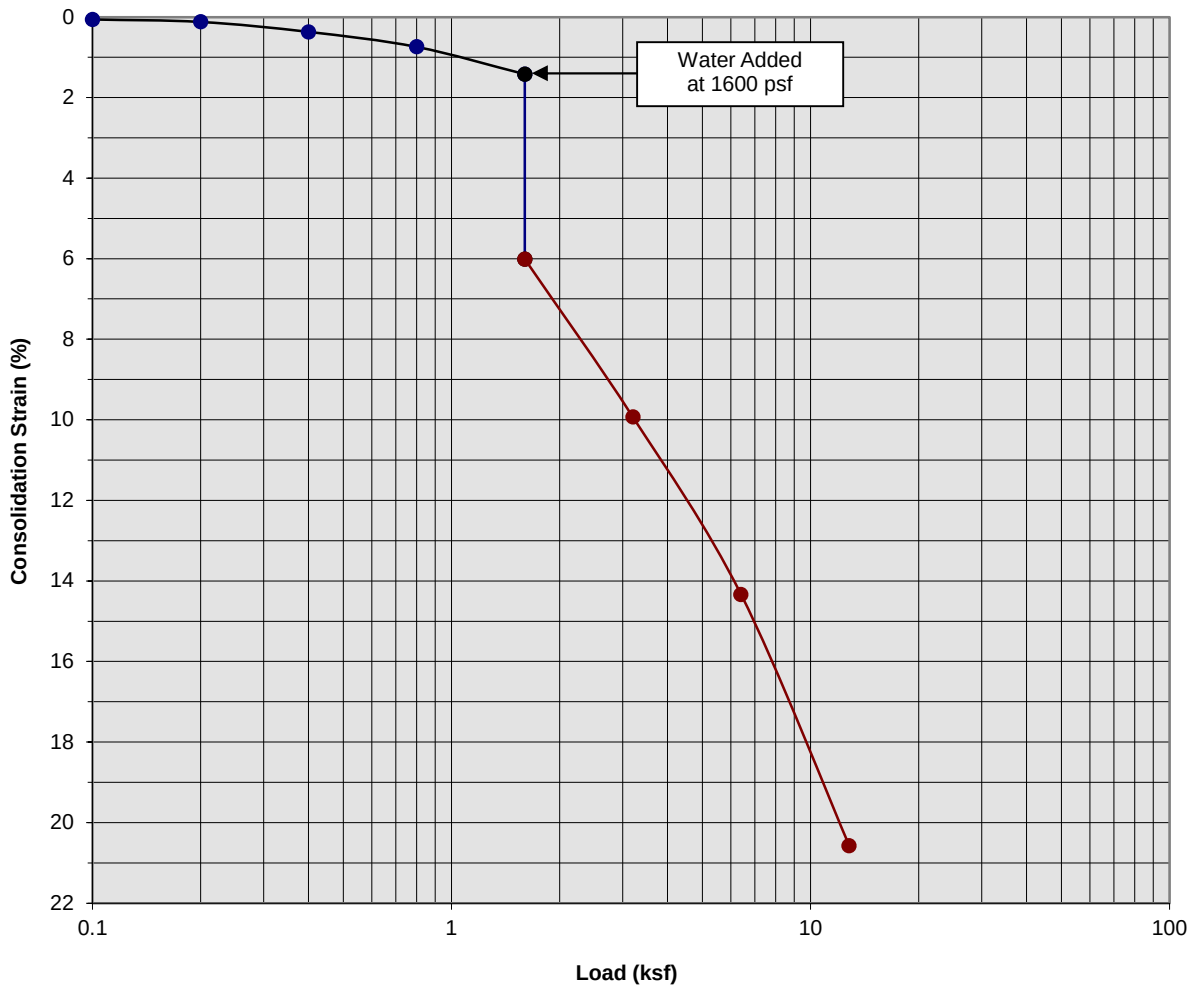
Boring Number:	B-1	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	16
Depth (ft)	3 to 4	Initial Dry Density (pcf)	86.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	106.7
Specimen Thickness (in)	1.0	Percent Collapse (%)	4.88

Proposed Warehouse
Banning, California
Project No. 21G271-1

PLATE C- 1

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Gray Brown Clayey fine to medium Sand, trace coarse Sand, little Silt

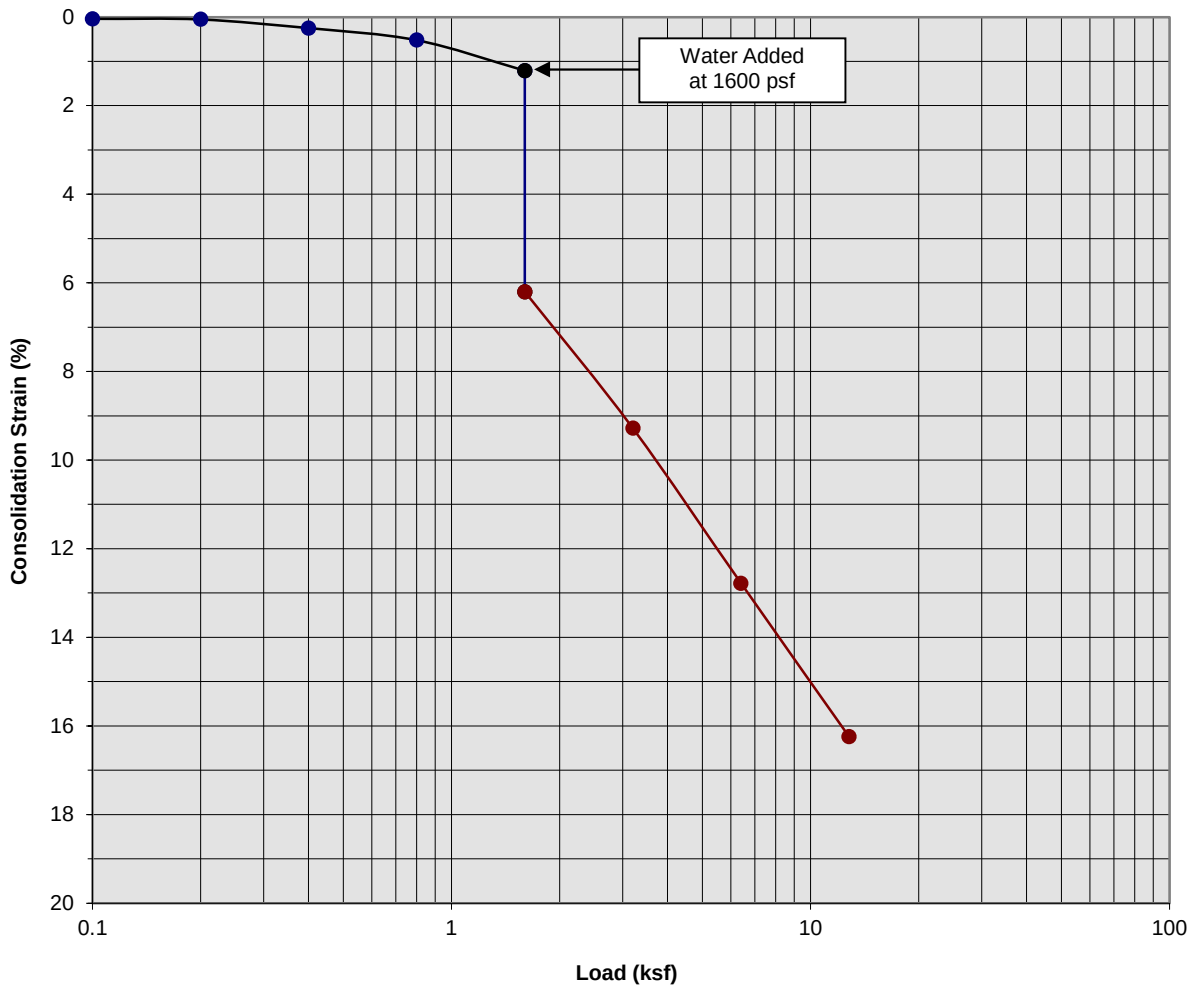
Boring Number:	B-1	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	17
Depth (ft)	5 to 6	Initial Dry Density (pcf)	92.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	115.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	4.59

Proposed Warehouse
Banning, California
Project No. 21G271-1

PLATE C- 2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Brown fine Sandy Silt, trace medium Sand

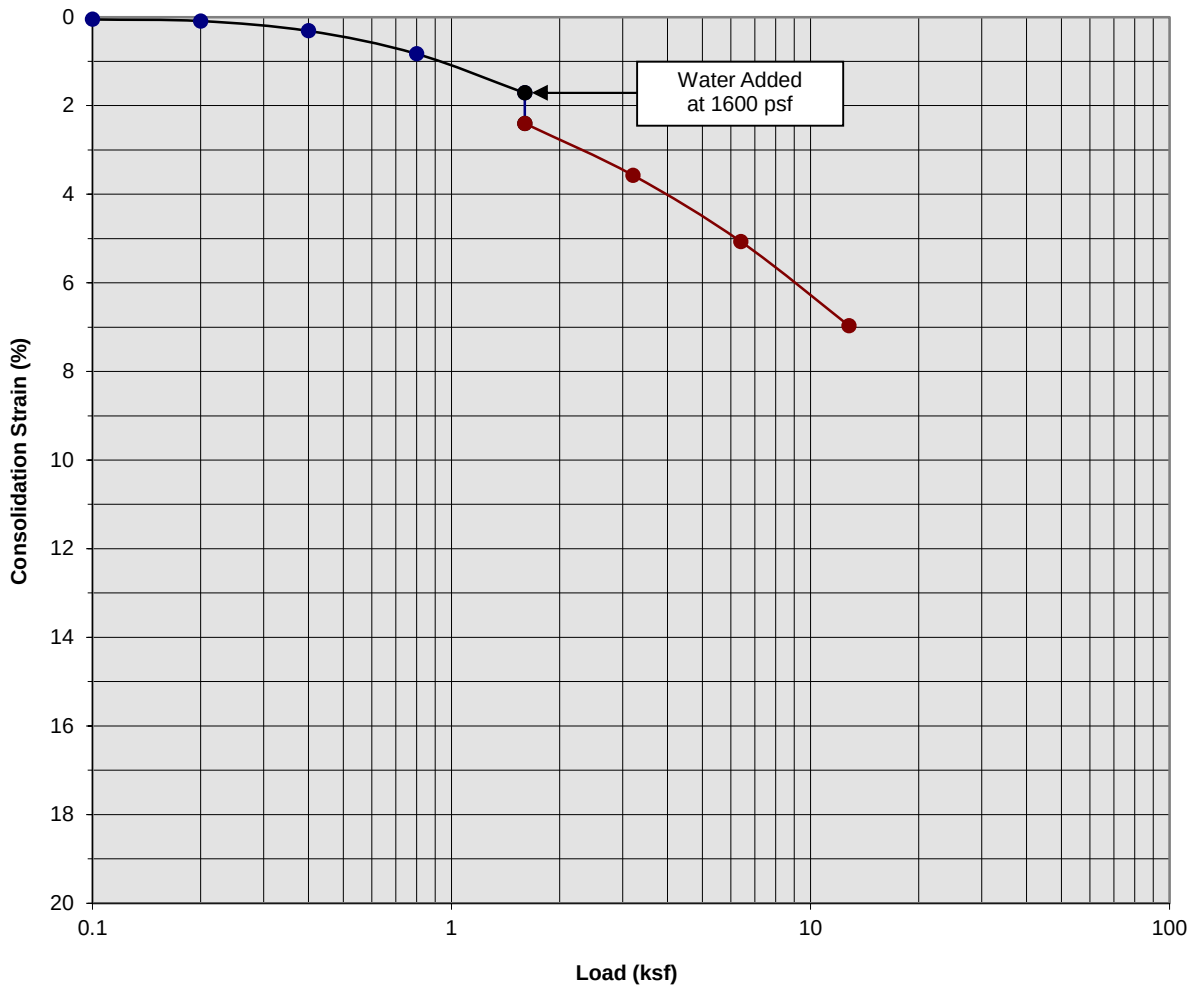
Boring Number:	B-1	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	17
Depth (ft)	7 to 8	Initial Dry Density (pcf)	103.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	122.8
Specimen Thickness (in)	1.0	Percent Collapse (%)	4.99

Proposed Warehouse
Banning, California
Project No. 21G271-1

PLATE C- 3

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



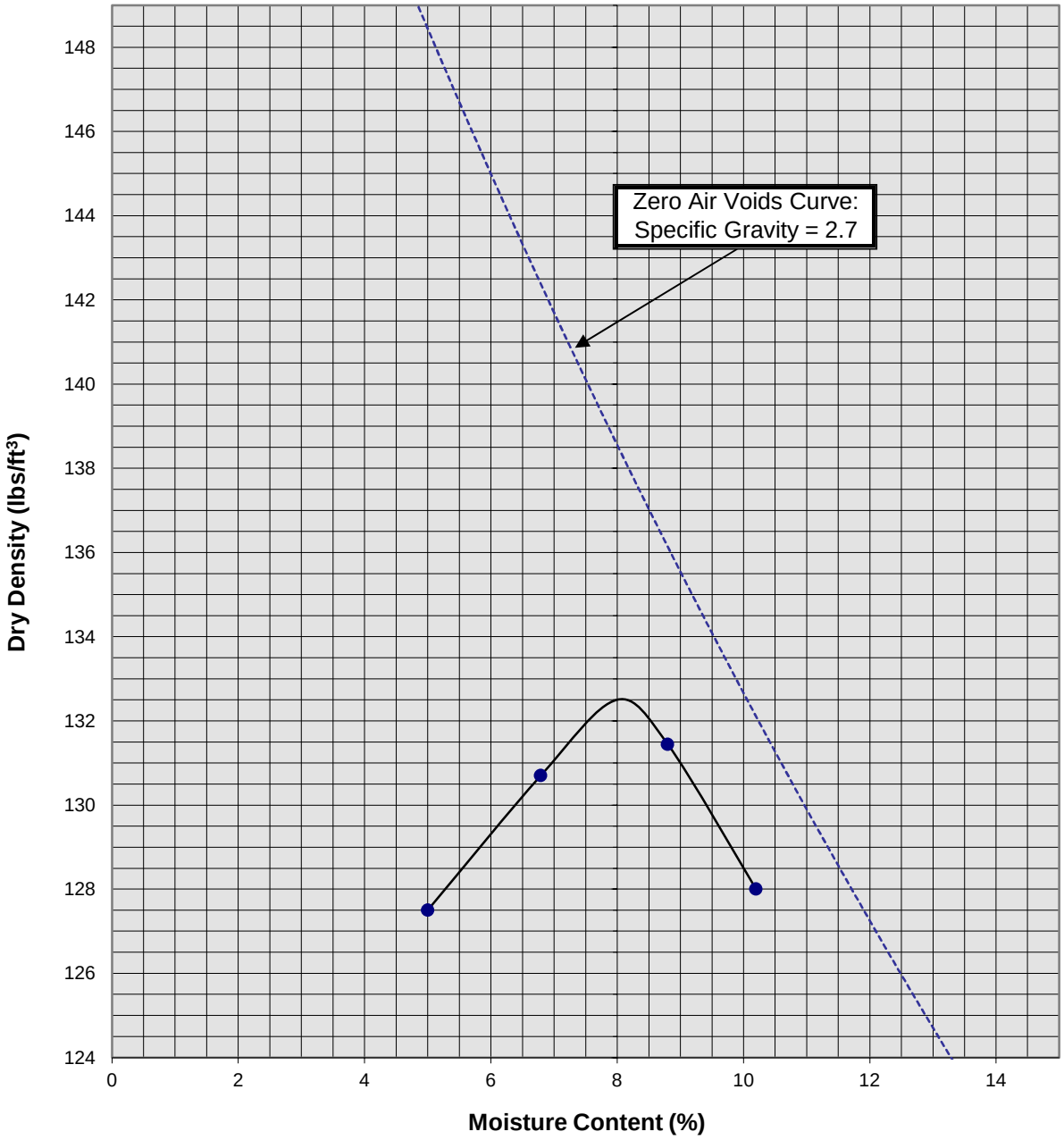
Classification: Brown fine Sandy Silt, trace medium Sand

Boring Number:	B-1	Initial Moisture Content (%)	3
Sample Number:	---	Final Moisture Content (%)	17
Depth (ft)	9 to 10	Initial Dry Density (pcf)	100.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	107.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.69

Proposed Warehouse
Banning, California
Project No. 21G271-1
PLATE C- 4

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Moisture/Density Relationship
ASTM D-1557



Soil ID Number	B-1 @ 0-5'
Optimum Moisture (%)	8
Maximum Dry Density (pcf)	130.5
Soil Classification	Brown Silty fine Sand, trace medium Sand, trace to little Clay

Proposed Warehouse
Banning, California
Project No. 21G271-1

PLATE C-5

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

APPENDIX D

GRADING GUIDE SPECIFICATIONS

These grading guide specifications are intended to provide typical procedures for grading operations. They are intended to supplement the recommendations contained in the geotechnical investigation report for this project. Should the recommendations in the geotechnical investigation report conflict with the grading guide specifications, the more site specific recommendations in the geotechnical investigation report will govern.

General

- The Earthwork Contractor is responsible for the satisfactory completion of all earthwork in accordance with the plans and geotechnical reports, and in accordance with city, county, and applicable building codes.

- The Geotechnical Engineer is the representative of the Owner/Builder for the purpose of implementing the report recommendations and guidelines. These duties are not intended to relieve the Earthwork Contractor of any responsibility to perform in a workman-like manner, nor is the Geotechnical Engineer to direct the grading equipment or personnel employed by the Contractor.

- The Earthwork Contractor is required to notify the Geotechnical Engineer of the anticipated work and schedule so that testing and inspections can be provided. If necessary, work may be stopped and redone if personnel have not been scheduled in advance.

- The Earthwork Contractor is required to have suitable and sufficient equipment on the job-site to process, moisture condition, mix and compact the amount of fill being placed to the approved compaction. In addition, suitable support equipment should be available to conform with recommendations and guidelines in this report.

- Canyon cleanouts, overexcavation areas, processed ground to receive fill, key excavations, subdrains and benches should be observed by the Geotechnical Engineer prior to placement of any fill. It is the Earthwork Contractor's responsibility to notify the Geotechnical Engineer of areas that are ready for inspection.

- Excavation, filling, and subgrade preparation should be performed in a manner and sequence that will provide drainage at all times and proper control of erosion. Precipitation, springs, and seepage water encountered shall be pumped or drained to provide a suitable working surface. The Geotechnical Engineer must be informed of springs or water seepage encountered during grading or foundation construction for possible revision to the recommended construction procedures and/or installation of subdrains.

Site Preparation

- The Earthwork Contractor is responsible for all clearing, grubbing, stripping and site preparation for the project in accordance with the recommendations of the Geotechnical Engineer.

- If any materials or areas are encountered by the Earthwork Contractor which are suspected of having toxic or environmentally sensitive contamination, the Geotechnical Engineer and Owner/Builder should be notified immediately.

- Major vegetation should be stripped and disposed of off-site. This includes trees, brush, heavy grasses and any materials considered unsuitable by the Geotechnical Engineer.

- Underground structures such as basements, cesspools or septic disposal systems, mining shafts, tunnels, wells and pipelines should be removed under the inspection of the Geotechnical Engineer and recommendations provided by the Geotechnical Engineer and/or city, county or state agencies. If such structures are known or found, the Geotechnical Engineer should be notified as soon as possible so that recommendations can be formulated.

- Any topsoil, slopewash, colluvium, alluvium and rock materials which are considered unsuitable by the Geotechnical Engineer should be removed prior to fill placement.

- Remaining voids created during site clearing caused by removal of trees, foundations basements, irrigation facilities, etc., should be excavated and filled with compacted fill.

- Subsequent to clearing and removals, areas to receive fill should be scarified to a depth of 10 to 12 inches, moisture conditioned and compacted

- The moisture condition of the processed ground should be at or slightly above the optimum moisture content as determined by the Geotechnical Engineer. Depending upon field conditions, this may require air drying or watering together with mixing and/or discing.

Compacted Fills

- Soil materials imported to or excavated on the property may be utilized in the fill, provided each material has been determined to be suitable in the opinion of the Geotechnical Engineer. Unless otherwise approved by the Geotechnical Engineer, all fill materials shall be free of deleterious, organic, or frozen matter, shall contain no chemicals that may result in the material being classified as “contaminated,” and shall be very low to non-expansive with a maximum expansion index (EI) of 50. The top 12 inches of the compacted fill should have a maximum particle size of 3 inches, and all underlying compacted fill material a maximum 6-inch particle size, except as noted below.

- All soils should be evaluated and tested by the Geotechnical Engineer. Materials with high expansion potential, low strength, poor gradation or containing organic materials may require removal from the site or selective placement and/or mixing to the satisfaction of the Geotechnical Engineer.

- Rock fragments or rocks less than 6 inches in their largest dimensions, or as otherwise determined by the Geotechnical Engineer, may be used in compacted fill, provided the distribution and placement is satisfactory in the opinion of the Geotechnical Engineer.

- Rock fragments or rocks greater than 12 inches should be taken off-site or placed in accordance with recommendations and in areas designated as suitable by the Geotechnical Engineer. These materials should be placed in accordance with Plate D-8 of these Grading Guide Specifications and in accordance with the following recommendations:

    - Rocks 12 inches or more in diameter should be placed in rows at least 15 feet apart, 15 feet from the edge of the fill, and 10 feet or more below subgrade. Spaces should be left between each rock fragment to provide for placement and compaction of soil around the fragments.

    - Fill materials consisting of soil meeting the minimum moisture content requirements and free of oversize material should be placed between and over the rows of rock or

concrete. Ample water and compactive effort should be applied to the fill materials as they are placed in order that all of the voids between each of the fragments are filled and compacted to the specified density.

- Subsequent rows of rocks should be placed such that they are not directly above a row placed in the previous lift of fill. A minimum 5-foot offset between rows is recommended.

- To facilitate future trenching, oversized material should not be placed within the range of foundation excavations, future utilities or other underground construction unless specifically approved by the soil engineer and the developer/owner representative.

- Fill materials approved by the Geotechnical Engineer should be placed in areas previously prepared to receive fill and in evenly placed, near horizontal layers at about 6 to 8 inches in loose thickness, or as otherwise determined by the Geotechnical Engineer for the project.

- Each layer should be moisture conditioned to optimum moisture content, or slightly above, as directed by the Geotechnical Engineer. After proper mixing and/or drying, to evenly distribute the moisture, the layers should be compacted to at least 90 percent of the maximum dry density in compliance with ASTM D-1557-78 unless otherwise indicated.

- Density and moisture content testing should be performed by the Geotechnical Engineer at random intervals and locations as determined by the Geotechnical Engineer. These tests are intended as an aid to the Earthwork Contractor, so he can evaluate his workmanship, equipment effectiveness and site conditions. The Earthwork Contractor is responsible for compaction as required by the Geotechnical Report(s) and governmental agencies.

- Fill areas unused for a period of time may require moisture conditioning, processing and recompaction prior to the start of additional filling. The Earthwork Contractor should notify the Geotechnical Engineer of his intent so that an evaluation can be made.

- Fill placed on ground sloping at a 5-to-1 inclination (horizontal-to-vertical) or steeper should be benched into bedrock or other suitable materials, as directed by the Geotechnical Engineer. Typical details of benching are illustrated on Plates D-2, D-4, and D-5.

- Cut/fill transition lots should have the cut portion overexcavated to a depth of at least 3 feet and rebuilt with fill (see Plate D-1), as determined by the Geotechnical Engineer.

- All cut lots should be inspected by the Geotechnical Engineer for fracturing and other bedrock conditions. If necessary, the pads should be overexcavated to a depth of 3 feet and rebuilt with a uniform, more cohesive soil type to impede moisture penetration.

- Cut portions of pad areas above buttresses or stabilizations should be overexcavated to a depth of 3 feet and rebuilt with uniform, more cohesive compacted fill to impede moisture penetration.

- Non-structural fill adjacent to structural fill should typically be placed in unison to provide lateral support. Backfill along walls must be placed and compacted with care to ensure that excessive unbalanced lateral pressures do not develop. The type of fill material placed adjacent to below grade walls must be properly tested and approved by the Geotechnical Engineer with consideration of the lateral earth pressure used in the design.

Foundations

- The foundation influence zone is defined as extending one foot horizontally from the outside edge of a footing, and proceeding downward at a ½ horizontal to 1 vertical (0.5:1) inclination.

- Where overexcavation beneath a footing subgrade is necessary, it should be conducted so as to encompass the entire foundation influence zone, as described above.

- Compacted fill adjacent to exterior footings should extend at least 12 inches above foundation bearing grade. Compacted fill within the interior of structures should extend to the floor subgrade elevation.

Fill Slopes

- The placement and compaction of fill described above applies to all fill slopes. Slope compaction should be accomplished by overfilling the slope, adequately compacting the fill in even layers, including the overfilled zone and cutting the slope back to expose the compacted core

- Slope compaction may also be achieved by backrolling the slope adequately every 2 to 4 vertical feet during the filling process as well as requiring the earth moving and compaction equipment to work close to the top of the slope. Upon completion of slope construction, the slope face should be compacted with a sheepsfoot connected to a sideboom and then grid rolled. This method of slope compaction should only be used if approved by the Geotechnical Engineer.

- Sandy soils lacking in adequate cohesion may be unstable for a finished slope condition and therefore should not be placed within 15 horizontal feet of the slope face.

- All fill slopes should be keyed into bedrock or other suitable material. Fill keys should be at least 15 feet wide and inclined at 2 percent into the slope. For slopes higher than 30 feet, the fill key width should be equal to one-half the height of the slope (see Plate D-5).

- All fill keys should be cleared of loose slough material prior to geotechnical inspection and should be approved by the Geotechnical Engineer and governmental agencies prior to filling.

- The cut portion of fill over cut slopes should be made first and inspected by the Geotechnical Engineer for possible stabilization requirements. The fill portion should be adequately keyed through all surficial soils and into bedrock or suitable material. Soils should be removed from the transition zone between the cut and fill portions (see Plate D-2).

Cut Slopes

- All cut slopes should be inspected by the Geotechnical Engineer to determine the need for stabilization. The Earthwork Contractor should notify the Geotechnical Engineer when slope cutting is in progress at intervals of 10 vertical feet. Failure to notify may result in a delay in recommendations.

- Cut slopes exposing loose, cohesionless sands should be reported to the Geotechnical Engineer for possible stabilization recommendations.

- All stabilization excavations should be cleared of loose slough material prior to geotechnical inspection. Stakes should be provided by the Civil Engineer to verify the location and dimensions of the key. A typical stabilization fill detail is shown on Plate D-5.

- Stabilization key excavations should be provided with subdrains. Typical subdrain details are shown on Plates D-6.

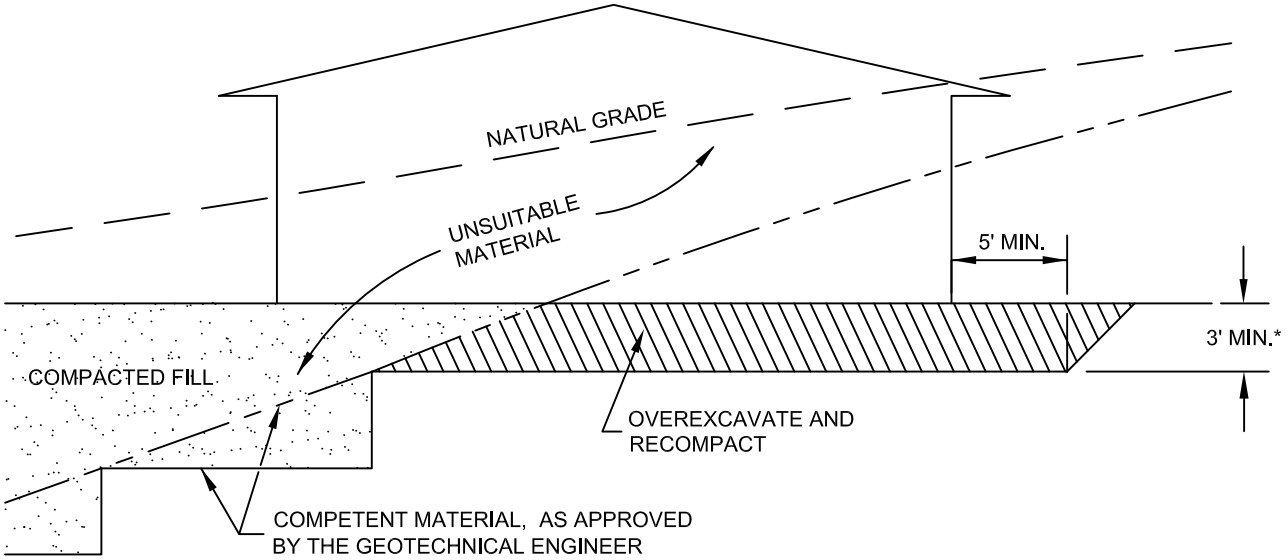
Subdrains

- Subdrains may be required in canyons and swales where fill placement is proposed. Typical subdrain details for canyons are shown on Plate D-3. Subdrains should be installed after approval of removals and before filling, as determined by the Soils Engineer.

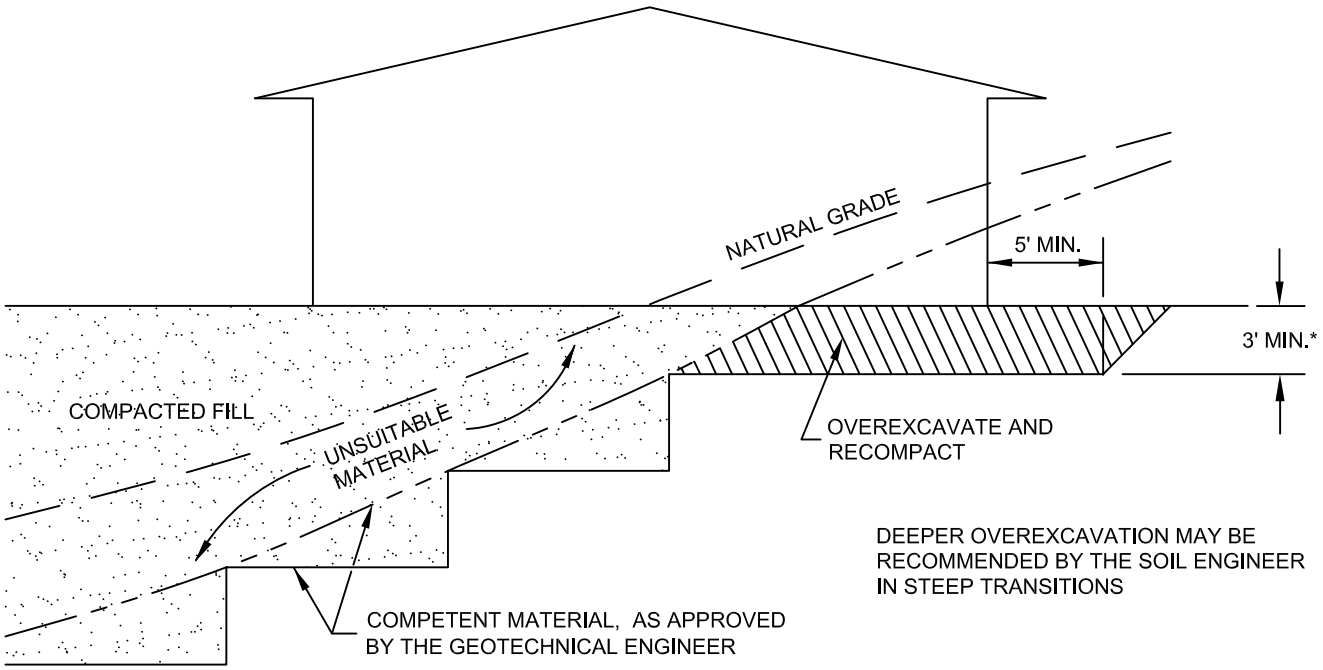
- Plastic pipe may be used for subdrains provided it is Schedule 40 or SDR 35 or equivalent. Pipe should be protected against breakage, typically by placement in a square-cut (backhoe) trench or as recommended by the manufacturer.

- Filter material for subdrains should conform to CALTRANS Specification 68-1.025 or as approved by the Geotechnical Engineer for the specific site conditions. Clean ¾-inch crushed rock may be used provided it is wrapped in an acceptable filter cloth and approved by the Geotechnical Engineer. Pipe diameters should be 6 inches for runs up to 500 feet and 8 inches for the downstream continuations of longer runs. Four-inch diameter pipe may be used in buttress and stabilization fills.

CUT LOT



CUT/FILL LOT (TRANSITION)



*SEE TEXT OF REPORT FOR SPECIFIC RECOMMENDATION. ACTUAL DEPTH OF OVEREXCAVATION MAY BE GREATER.

TRANSITION LOT DETAIL

GRADING GUIDE SPECIFICATIONS

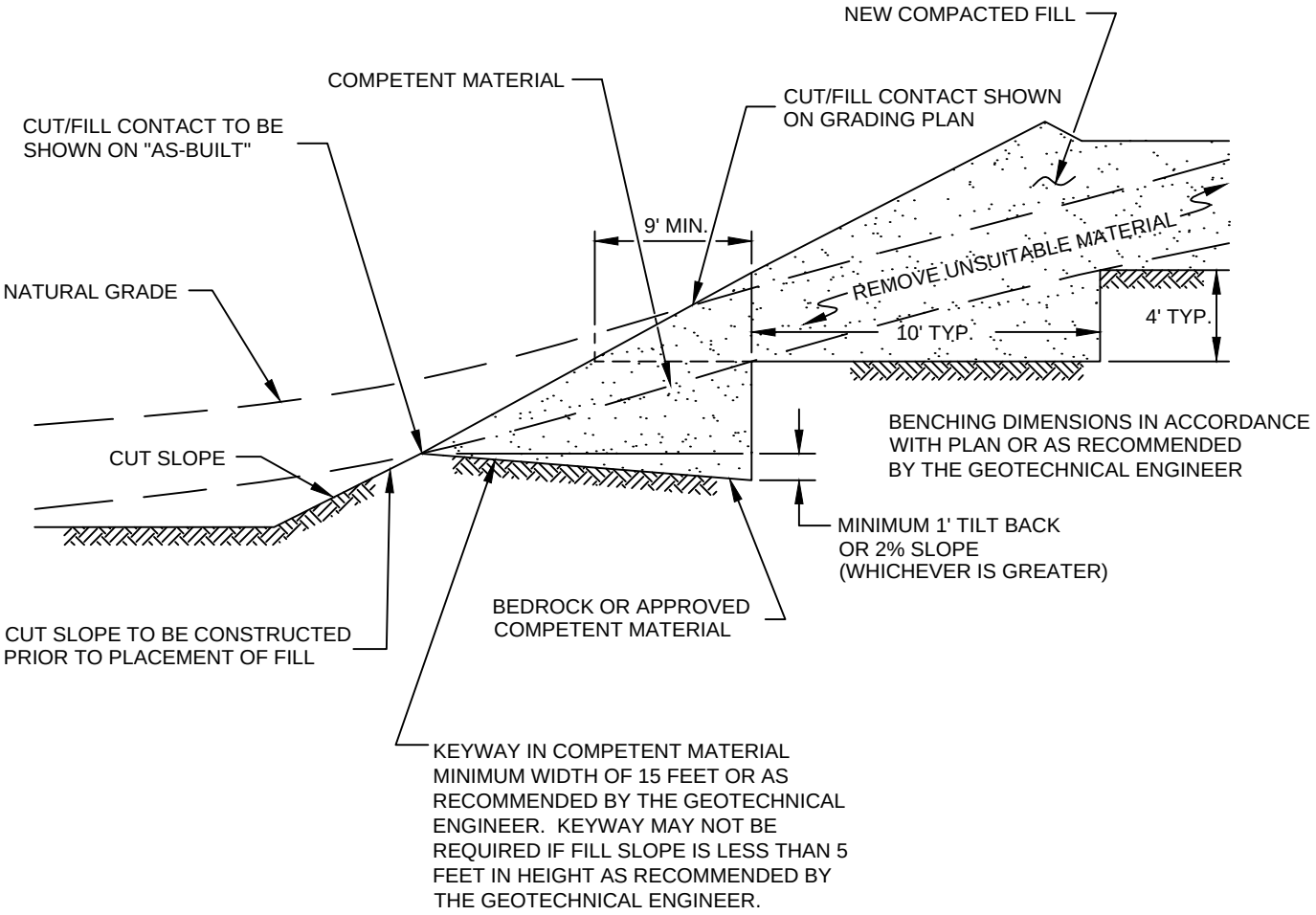
NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-1

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



FILL ABOVE CUT SLOPE DETAIL

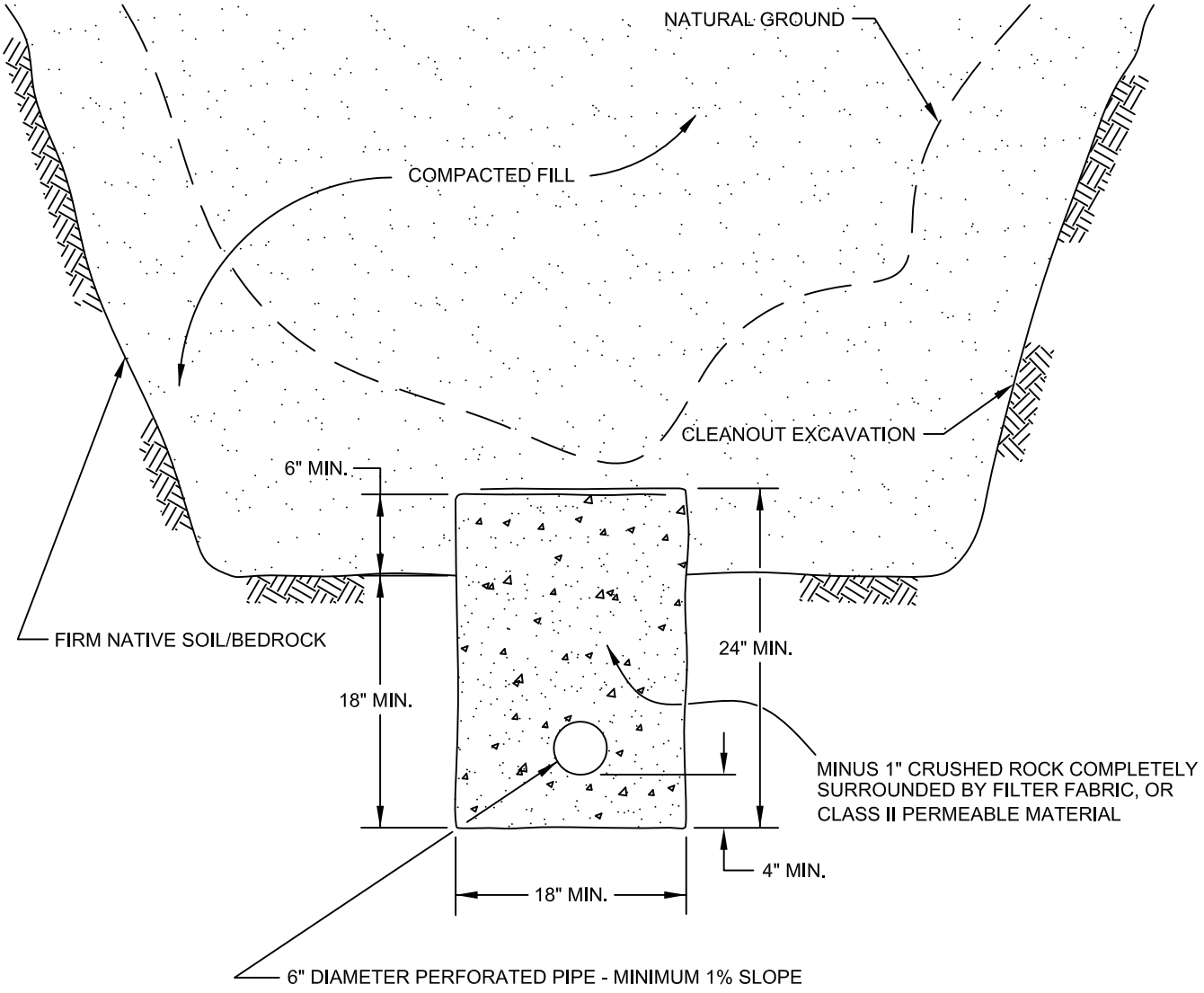
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



PIPE MATERIAL	DEPTH OF FILL OVER SUBDRAIN
ADS (CORRUGATED POLETHYLENE)	8
TRANSITE UNDERDRAIN	20
PVC OR ABS: SDR 35	35
SDR 21	100

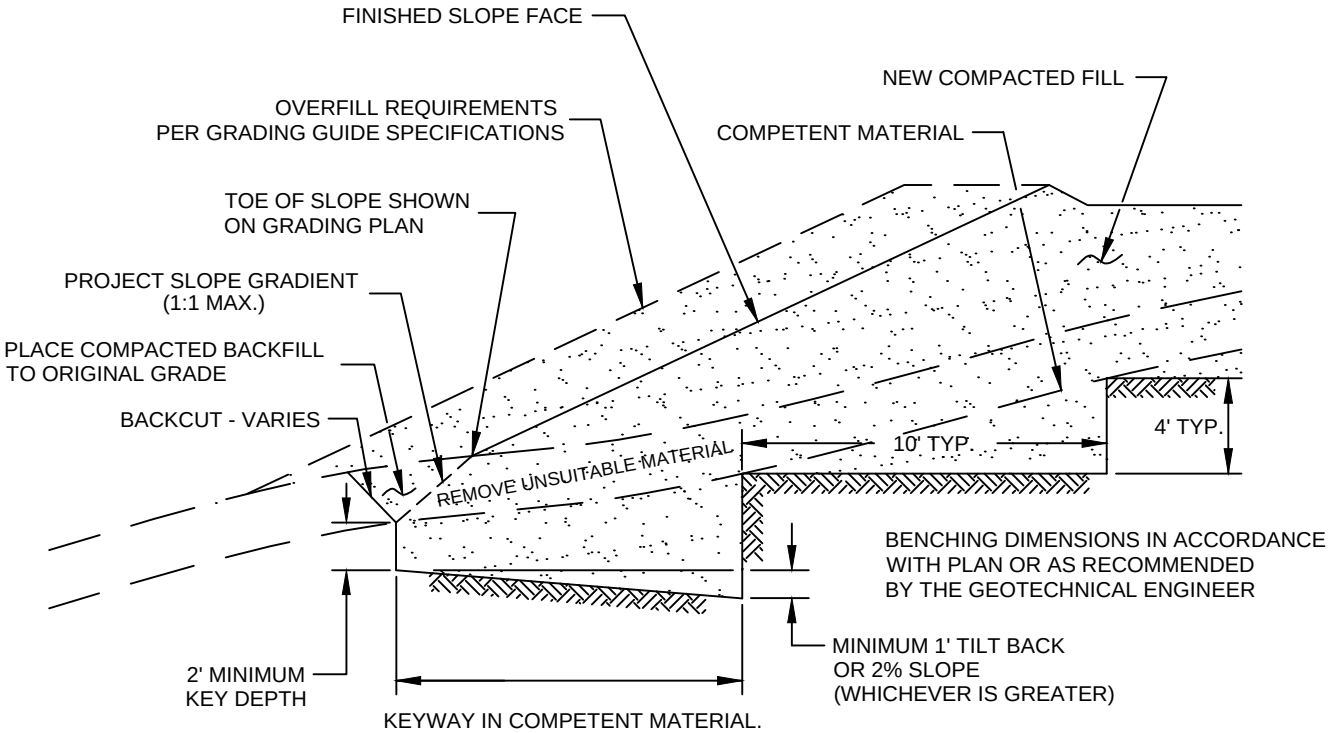
SCHEMATIC ONLY
NOT TO SCALE

CANYON SUBDRAIN DETAIL
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE
DRAWN: JAS
CHKD: GKM

PLATE D-3

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



NOTE:
BENCHING SHALL BE REQUIRED WHEN NATURAL SLOPES ARE EQUAL TO OR STEEPER THAN 5:1 OR WHEN RECOMMENDED BY THE GEOTECHNICAL ENGINEER.

FILL ABOVE NATURAL SLOPE DETAIL

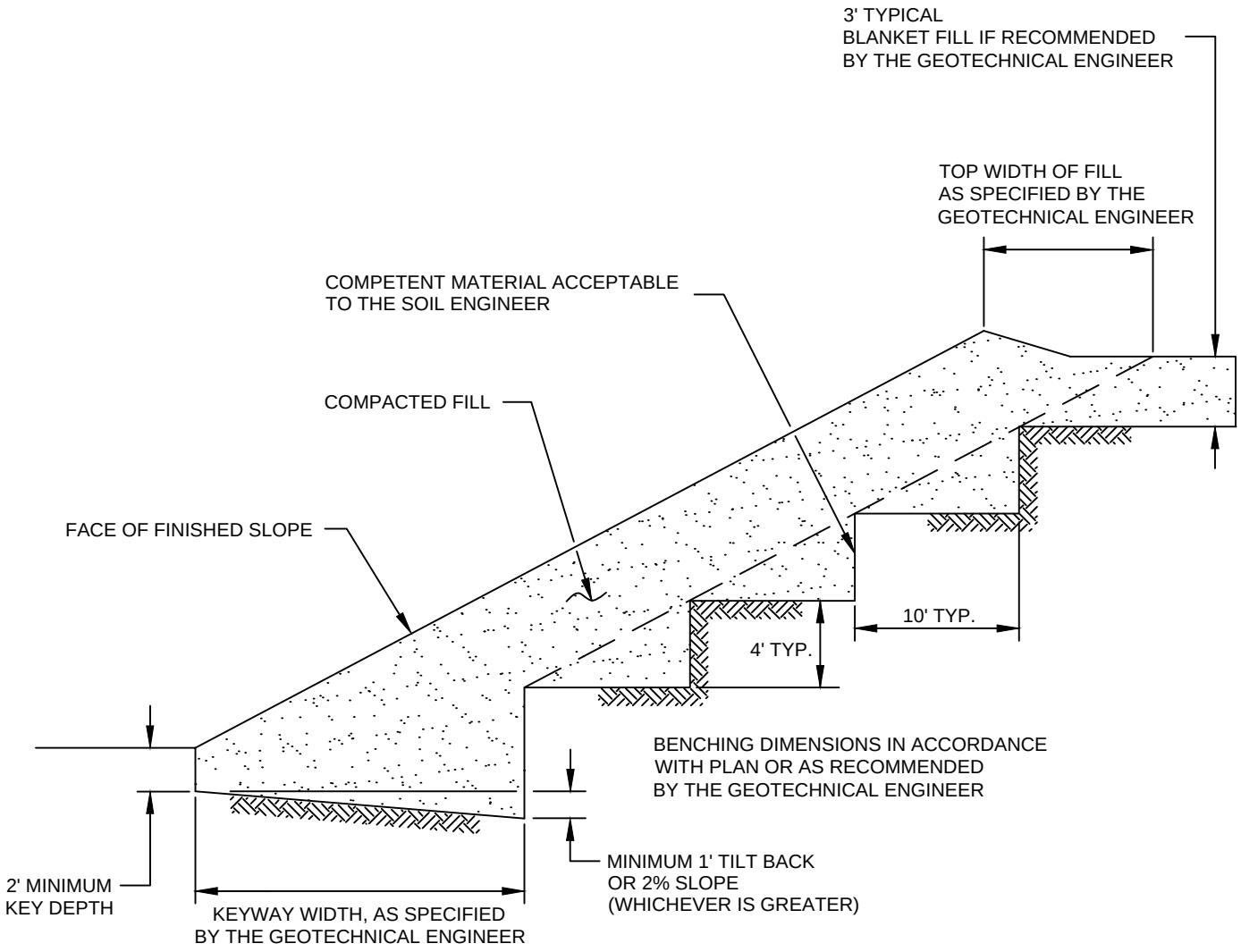
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-4

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



STABILIZATION FILL DETAIL

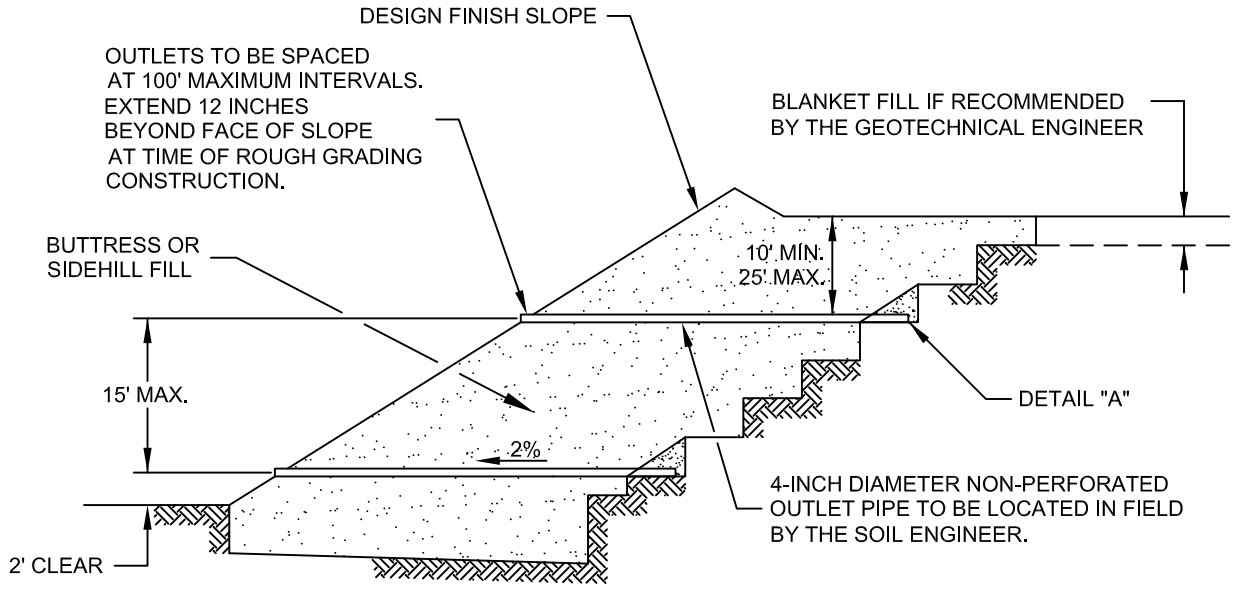
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-5

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



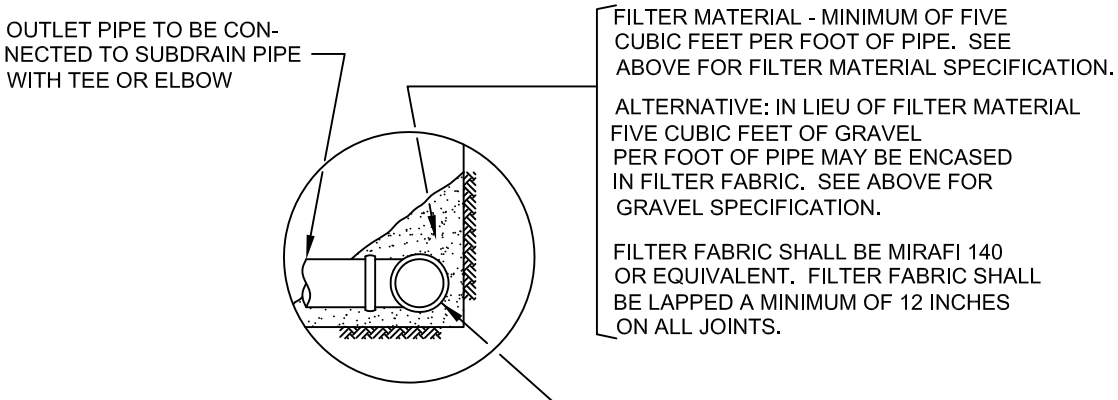
"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50



DETAIL "A"

NOTES:
1. TRENCH FOR OUTLET PIPES TO BE BACKFILLED WITH ON-SITE SOIL.

SLOPE FILL SUBDRAINS

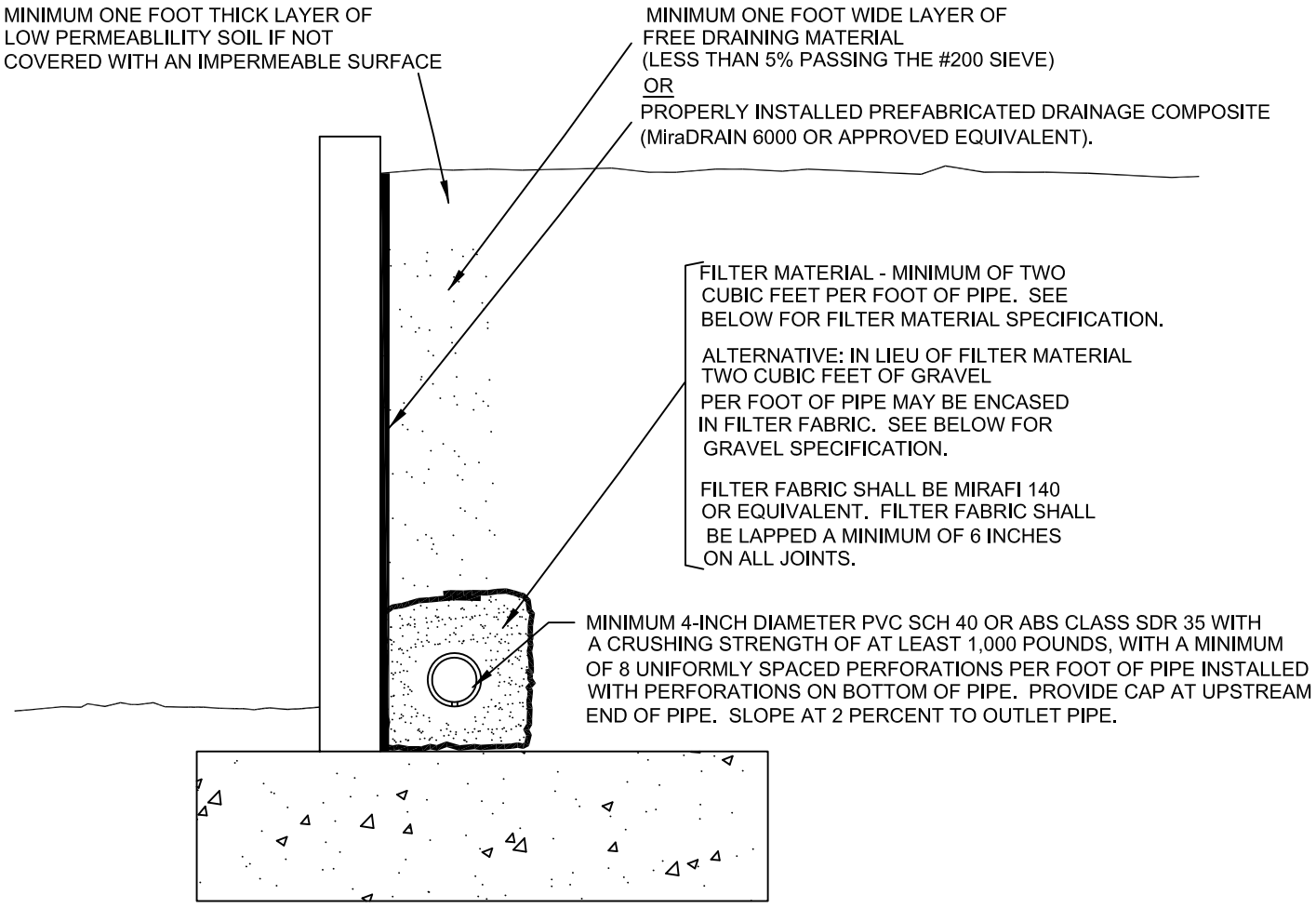
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-6

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50

RETAINING WALL BACKDRAINS

GRADING GUIDE SPECIFICATIONS

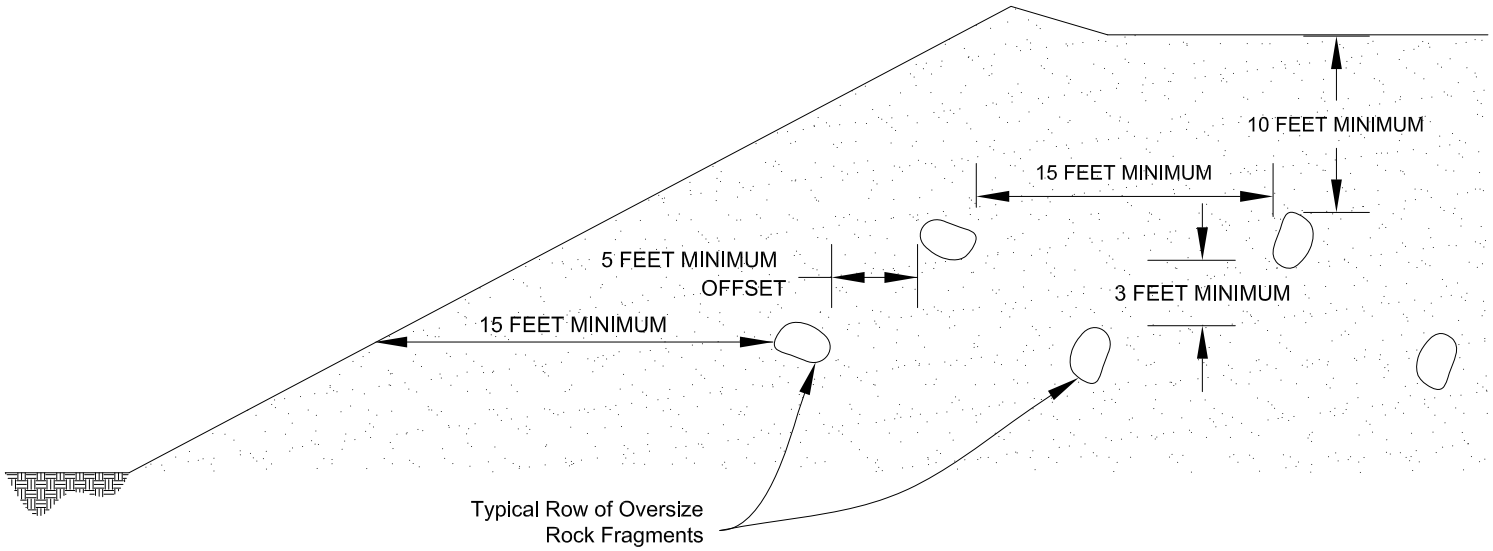
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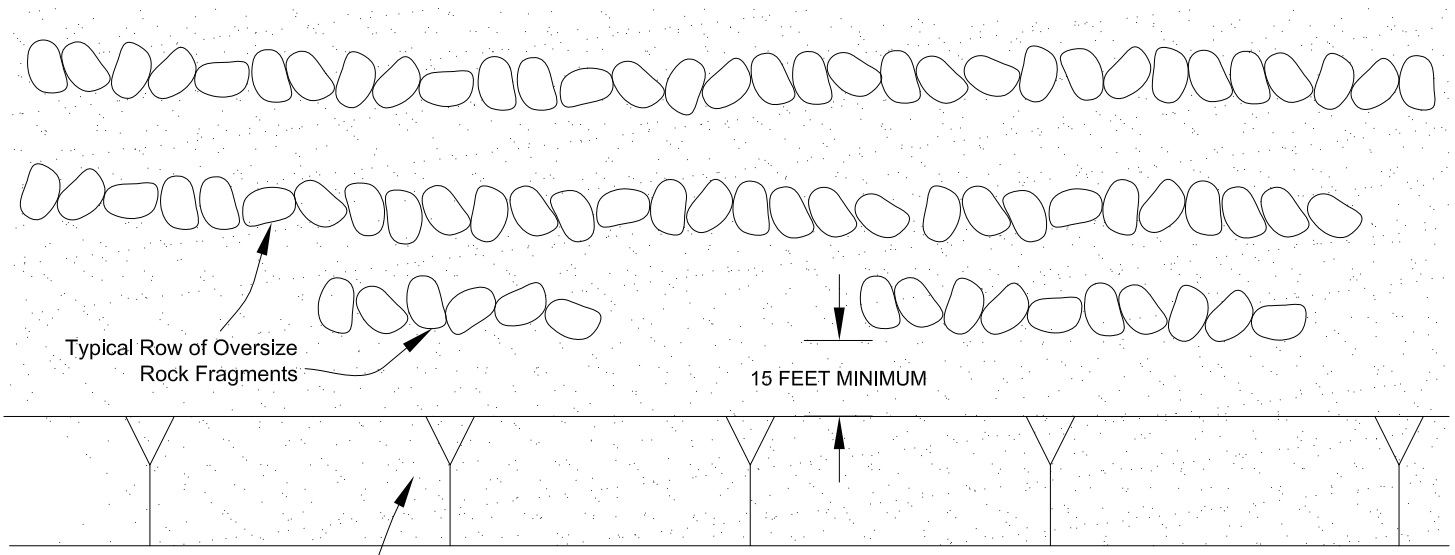
PLATE D-7

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



Section View



Plan View

PLACEMENT OF OVERSIZED MATERIAL

GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: PM
CHKD: GKM

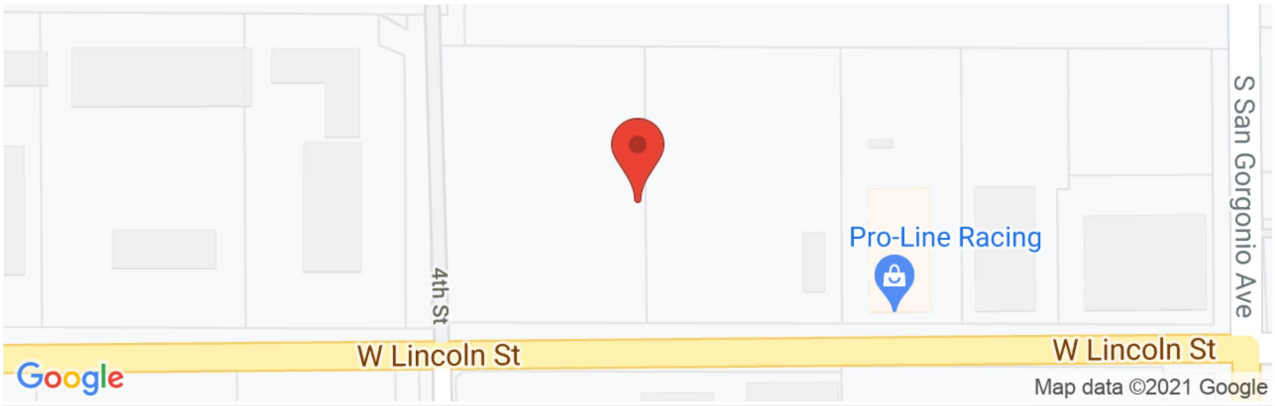
PLATE D-8

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX E

Latitude, Longitude: 33.92238102, -116.87999597



Date	12/14/2021, 10:14:18 AM
Design Code Reference Document	ASCE7-16
Risk Category	II
Site Class	D - Stiff Soil

Type	Value	Description
S_S	2.096	MCE_R ground motion. (for 0.2 second period)
S_1	0.734	MCE_R ground motion. (for 1.0s period)
S_{MS}	2.096	Site-modified spectral acceleration value
S_{M1}	null -See Section 11.4.8	Site-modified spectral acceleration value
S_{DS}	1.398	Numeric seismic design value at 0.2 second SA
S_{D1}	null -See Section 11.4.8	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	null -See Section 11.4.8	Seismic design category
F_a	1	Site amplification factor at 0.2 second
F_v	null -See Section 11.4.8	Site amplification factor at 1.0 second
PGA	0.856	MCE_G peak ground acceleration
F_{PGA}	1.1	Site amplification factor at PGA
PGA_M	0.941	Site modified peak ground acceleration
T_L	8	Long-period transition period in seconds
SsRT	2.333	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	2.549	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	2.096	Factored deterministic acceleration value. (0.2 second)
S1RT	0.892	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	1	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.734	Factored deterministic acceleration value. (1.0 second)
PGAd	0.856	Factored deterministic acceleration value. (Peak Ground Acceleration)
C_{RS}	0.915	Mapped value of the risk coefficient at short periods
C_{R1}	0.892	Mapped value of the risk coefficient at a period of 1 s

SOURCE: SEAOC/OSHPD Seismic Design Maps Tool
<https://seismicmaps.org/>

SEISMIC DESIGN PARAMETERS - 2019 CBC
PROPOSED WAREHOUSE
BANNING, CALIFORNIA

DRAWN: PM
CHKD: RGT
SCG PROJECT 21G271-1
PLATE E-1

SOUTHERN CALIFORNIA GEOTECHNICAL

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APPENDIX F

PALEONTOLOGICAL RESOURCES ASSESSEMNT

PALEONTOLOGICAL ASSESSMENT FOR THE LINCOLN AND 4TH STREET PROJECT

CITY OF BANNING, COUNTY OF RIVERSIDE

APNs 540-210-009 and -020

Prepared on Behalf of:

First Industrial Realty Trust, Inc.;
First Industrial, LP;
First Industrial Acquisitions II, LLC
One North Wacker Drive, Suite 4200
Chicago, Illinois 60606

Prepared for:

City of Banning
Community Development Department
99 East Ramsey Street
Banning, California 92220

Prepared by:

Brian F. Smith and Associates, Inc.
14010 Poway Road, Suite A
Poway, California 92064

January 18, 2022

Paleontological Database Information

Author:	Todd A. Wirths, M.S., Senior Paleontologist, California Professional Geologist No. 7588
Consulting Firm:	Brian F. Smith and Associates, Inc. 14010 Poway Road, Suite A Poway, California 92064 (858) 679-8218
Report Date:	January 18, 2022
Report Title:	Paleontological Assessment for the Lincoln and 4th Street Project, City of Banning, County of Riverside
Prepared on Behalf of:	First Industrial Realty Trust, Inc.; First Industrial, LP; First Industrial Acquisitions II, LLC One North Wacker Drive, Suite 4200 Chicago, Illinois 60606
Prepared for:	City of Banning Community Development Department 99 East Ramsey Street Banning, California 92220
Prepared by:	Brian F. Smith and Associates, Inc. 14010 Poway Road, Suite A Poway, California 92064
Assessor's Parcel Numbers:	540-210-009 and -020
USGS Quadrangle:	Section 9, Township 3 South, Range 1 East, San Bernardino Baseline and Meridian of the USGS *Beaumont, California* (7.5 minute) topographic quadrangle.
Study Area:	6.12 acres
Key Words:	Paleontological assessment; Pleistocene alluvial fan deposits; city of Banning; part-time paleontological monitoring.

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I. INTRODUCTION AND LOCATION

A paleontological resource assessment has been completed for the Lincoln and 4th Street Project ("project") (Assessor's Parcel Numbers [APNs] 540-210-009 and -020), located northeast of the intersection of West Lincoln and 4th streets in the city of Banning, Riverside County, California (Figures 1 and 2). On the U.S. Geological Survey, 7.5-minute, 1:24,000-scale *Beaumont, California* topographic quadrangle map, the project is located within Section 9, Township 3 South, Range 1 East, of the San Bernardino Baseline and Meridian (see Figure 2). The 6.12-acre development will include the construction of a 123,240 square-foot warehouse building with office space, and associated parking and hardscape. The project properties are currently vacant, the surfaces of which have been previously disturbed.

As the lead agency, the City of Banning has required the preparation of a paleontological assessment to evaluate the project's potential to yield paleontological resources. The paleontological assessment of the project included a review of paleontological literature and records of fossil localities in the area; a review of the underlying geology; and recommendations to mitigate impacts to potential paleontological resources, if necessary. A paleontological site survey was not conducted, since the project properties are relatively flat and previously disturbed.

II. REGULATORY SETTING

The California Environmental Quality Act (CEQA), which is patterned after the National Environmental Policy Act, is the overriding environmental regulation that sets the requirement for protecting California's paleontological resources. CEQA mandates that governing permitting agencies (lead agencies) set their own guidelines for the protection of nonrenewable paleontological resources under their jurisdiction.

State of California

Under "Guidelines for Implementation of the California Environmental Quality Act," as amended in December 2018 (California Code of Regulations [CCR] Title 14, Division 6, Chapter 3, Sections 15000 et seq.), procedures define the types of activities, persons, and public agencies required to comply with CEQA. Section 15063 of the CCR provides a process by which a lead agency may review a project's potential impact to the environment, whether the impacts are significant, and provide recommendations, if necessary.

In CEQA's Environmental Checklist Form, one of the questions to answer is, "Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?" (Appendix G, Section VII, Part f). This is to ensure compliance with California Public Resources Code Section 5097.5, the law by which protects nonrenewable resources including fossils, which is paraphrased below:

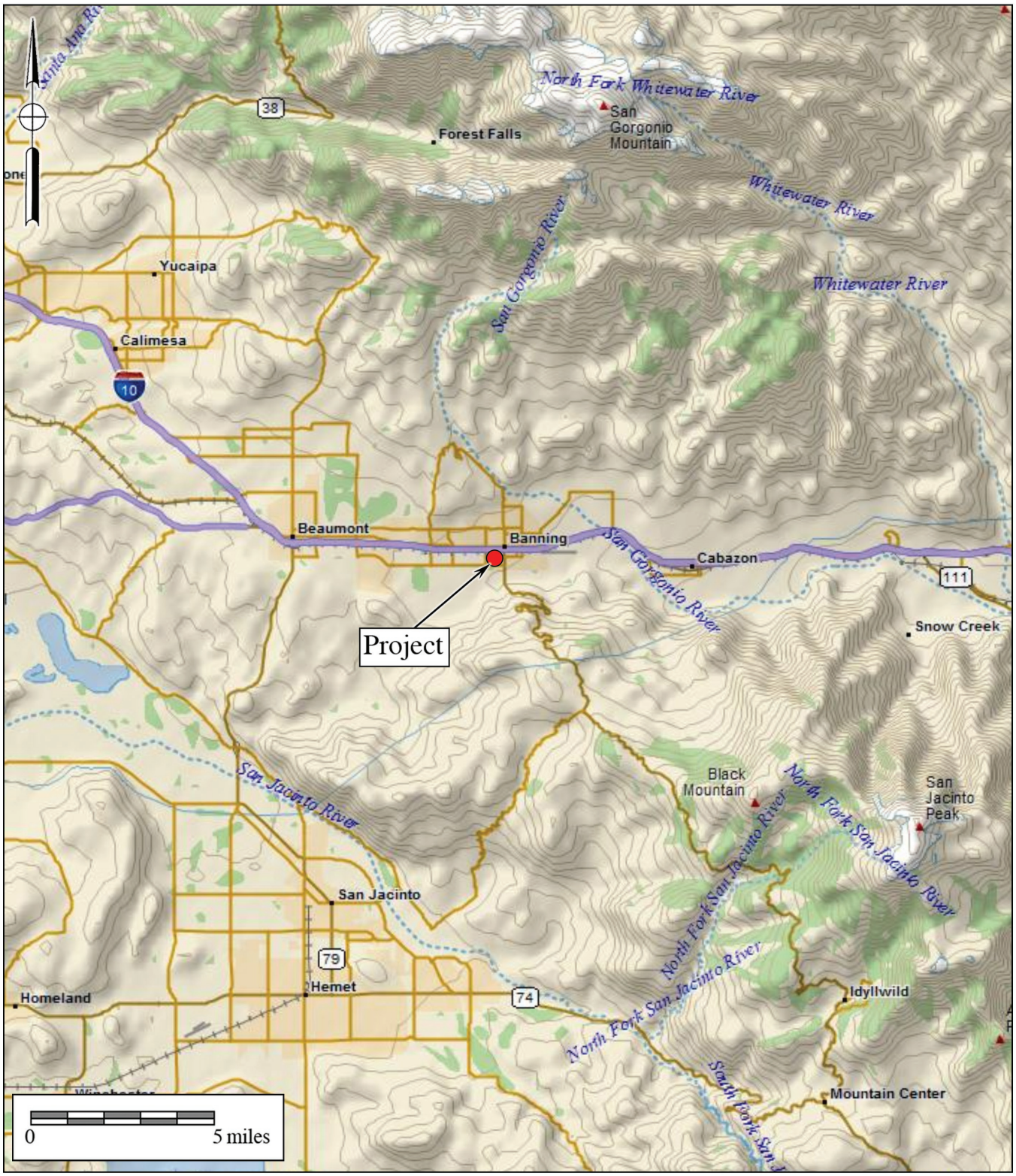


Figure 1

General Location Map

The Lincoln and 4th Street Project

DeLorme (1:250,000)

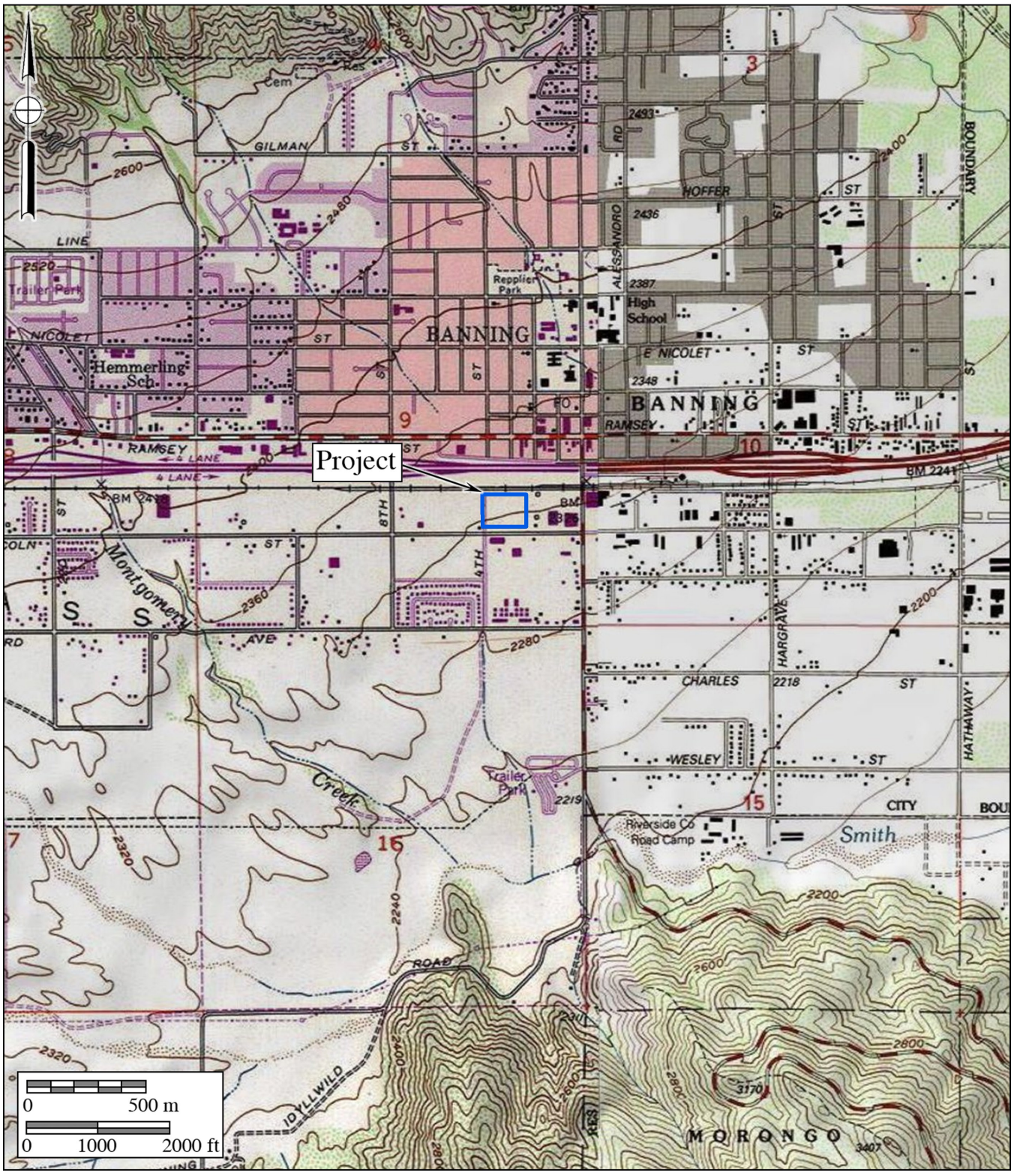


Figure 2

Project Location Map

The Lincoln and 4th Street Project

USGS *Beaumont* Quadrangle (7.5-minute series)

a) A person shall not knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands.
b) As used in this section, "public lands" means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof.
c) A violation of this section is a misdemeanor.

City of Banning

Under Chapter 17.24.070 of the City of Banning Code of Ordinances:

All development proposals shall be reviewed for compliance with [CEQA]. If the proposal is determined to qualify as a project under CEQA, the project proponent may be required to submit specialized studies to determine the effect on specific resources and hazards, including, but not limited to, biological resources, cultural resources, geotechnical hazards, hydrology, air quality, noise, and traffic. No project shall be approved without first satisfying the requirements of CEQA. (Municode 2020)

III. GEOLOGY

Regionally, the project lies within Banning Pass in the greater San Gorgonio Pass fault zone valley that separates the granitic mountain blocks of the San Bernardino Mountains to the north and the San Jacinto Mountains to the southeast. This region of Banning Pass, and most of the project, is characterized by sediments mapped as Holocene to late Pleistocene (present day to approximately 120,000 years ago [Cohen and Gibbard 2011]) young alluvial fan deposits (labeled "Qyf" in Figures 3A and 3B, after Lancaster et al. 2012). The deposits are composed of "unconsolidated to slightly consolidated, undissected to slightly dissected boulder, cobble, gravel, sand, and silt deposits" (Lancaster et al. 2012). Mapped at the southern one-fourth of the project are late to middle Pleistocene (a time span of approximately 11,700 to 780,000 years ago [Cohen and Gibbard 2011]) old alluvial fan sediments (labeled "Qof" in Figures 3A and 3B), described as "slightly to moderately consolidated, moderately dissected boulder, cobble, gravel, sand, and silt deposits" (Lancaster et al. 2012). These sediments have been shed off the topographic highs of the San Bernardino Mountains and deposited onto the valley floor below by the intermittent flows of several creeks and washes in the valley.

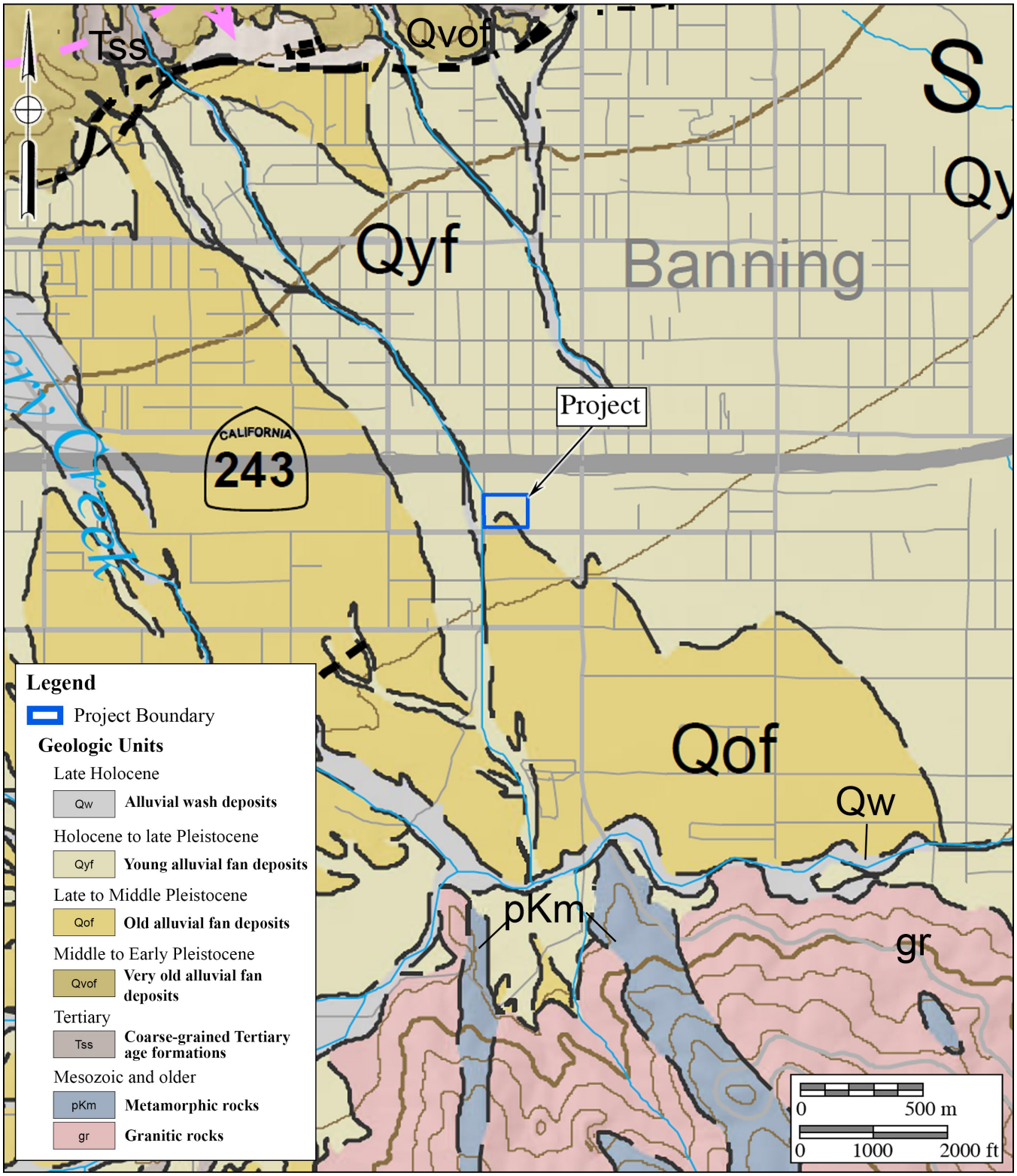


Figure 3

Geologic Map

The Lincoln and 4th Street Project

Geology after Lancaster et al. (2012)

IV. PALEONTOLOGICAL RESOURCES

Definition

Paleontological resources are the remains of prehistoric life that have been preserved in geologic strata. These remains are called fossils and include bones, shells, teeth, and plant remains (including their impressions, casts, and molds) in the sedimentary matrix, as well as trace fossils such as footprints and burrows. Fossils are considered older than 5,000 years of age (Society of Vertebrate Paleontology 2010) but may include younger remains (subfossils), for example, when viewed in the context of local extinction of the organism or habitat. Fossils are considered a nonrenewable resource under state and local policies (see Section II of this report).

Fossil Locality Records Search

A fossil locality records search was performed for the nearby [First] Hathaway Banning Project by the paleontological collections manager of the Western Science Center in Hemet in Riverside County and is attached in Appendix B (Radford 2021). The Hathaway Banning Project is located approximately one mile northeast of the current project. Although no fossil localities are documented by the Western Science Center from within the Hathaway Banning Project or in the vicinity of said project, the records search indicated that the Pleistocene alluvial fan deposits that underlie the Hathaway Banning Project, and similarly, the current project, are analogous to other deposits of the same age in Riverside County that have yielded numerous fossil localities. In addition:

> Pleistocene alluvial deposits in southern California are well documented and known to contain abundant fossil resources including those associated with Columbian mammoth (*Mammuthus columbi*), Pacific mastodon (*Mammut pacificus*), Sabertooth cat (*Smilodon fatalis*), Ancient horse (*Equus* sp.) and many other Pleistocene megafauna.
>
> While the presence of any fossil material is unlikely in Holocene alluvial deposits, if excavation activity disturbs deeper sediment dating to the earliest parts of the Holocene or Late Pleistocene periods, the material would be scientifically significant. (Radford 2021)

The nearest-known Pleistocene-aged fossil locality is about five to six miles west-northwest of the project, between Beaumont and Calimesa, consisting of a specimen of *Bison antiquus*, an extinct species of bison (Jefferson 1986, 1991).

V. PALEONTOLOGICAL SENSITIVITY

Overview

The degree of paleontological sensitivity of any particular area is based on a number of factors, including the documented presence of fossiliferous resources on a site or in nearby areas, the presence of documented fossils within a particular geologic formation or lithostratigraphic unit, and whether or not the original depositional environment of the sediments is one that might have been conducive to the accumulation of organic remains that might have become fossilized over time. Holocene alluvium is generally considered to be geologically too young to contain significant, nonrenewable paleontological resources (*i.e.,* fossils) and, therefore, is typically assigned a low paleontological sensitivity. Pleistocene (more than 11,700 years old) alluvial and alluvial fan deposits in the Inland Empire, however, often yield important Ice Age terrestrial vertebrate fossils, such as extinct mammoths, mastodons, giant ground sloths, extinct species of horse, bison, and camel, saber-toothed cats, and others (Jefferson 1991). Therefore, these Pleistocene deposits are accorded a high paleontological resource sensitivity.

Professional Standards

The Society of Vertebrate Paleontology (SVP) has drafted guidelines that include four categories of paleontological sensitivity for geologic units (formations) that might be impacted by a proposed project, as listed below (SVP 2010):

- *High Potential:* Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered.
- *Undetermined Potential:* Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment, and that further study is needed to determine the potential of the rock unit.
- *Low Potential:* Rock units that are poorly represented by fossil specimens in institutional collections or based upon a general scientific consensus that only preserve fossils in rare circumstances.
- *No Potential:* Rock units that have no potential to contain significant paleontological resources, such as high-grade metamorphic rocks and plutonic igneous rocks.

Using these criteria, based on the geologically young age of the young alluvial fan deposits mapped at the project and no known nearby fossils, a low potential to yield significant paleontological resources may be assigned. However, an undetermined potential to yield significant paleontological resources may be assigned to the old alluvial fan deposits, based on their age and record of yielding vertebrate fossils in the region.

VI. CONCLUSIONS AND RECOMMENDATIONS

Research has revealed the presence of Holocene to late Pleistocene young alluvial fan deposits mapped at the project. Within western Riverside County, young alluvial fan deposits rarely produce terrestrial vertebrate fossils. Paleontological monitoring is not recommended during mass grading, trenching, and excavation activities in undisturbed young alluvial fan deposits at the project. However, if paleontological resources are inadvertently discovered, a Paleontological Resources Impact Mitigation Program (PRIMP) should be implemented at the project.

Research has revealed the presence of late to middle Pleistocene old alluvial fan deposits mapped at the southern portion of the project. In western Riverside County, old alluvial fan deposits are known to yield terrestrial vertebrate fossils. A PRIMP should be implemented for earth disturbance impacts to the Pleistocene old alluvial fan deposits. Part-time "spot-check" paleontological monitoring is recommended, beginning at a depth of five feet where these deposits are mapped within the project ("Qof" on Figure 3A). In addition, old alluvial fan deposits likely underlie the surficial young alluvial fan deposits at the project, at unknown depths. If identified by the monitor, the old alluvial fan deposits that underlie the young alluvial fan deposits should be monitored on a part-time basis starting at a depth of five feet below the surface, if present. The duration of paleontological monitoring during earth disturbance activities will be based on the observed geological conditions; adjustments to the intensity and appropriateness of monitoring shall be at the discretion of the project paleontologist. If significant fossils are found, full-time monitoring should be implemented.

A proposed PRIMP is detailed below. When implemented with the provisions of CEQA and the guidelines of the SVP (2010), this PRIMP would mitigate any adverse impacts (loss or destruction) to potential nonrenewable paleontological resources (fossils), if present, to a level below significant.

Proposed PRIMP

1. Monitoring of mass grading and excavation activities in areas identified as likely to contain paleontological resources shall be performed by a qualified paleontologist or paleontological monitor. Starting at a depth of five feet, monitoring will be conducted part-time in areas of grading or excavation in undisturbed sediments of Pleistocene old alluvial fan deposits. The duration of paleontological monitoring during earth disturbance activities will be based on the observed geological conditions; adjustments to the intensity and appropriateness of monitoring shall be at the discretion of the project paleontologist. If significant fossils are found, full-time monitoring should be implemented.
2. If a fossil(s) is found at a shallower depth, or anywhere within young alluvial fan deposits where mapped at the project, earth disturbance activities should be halted

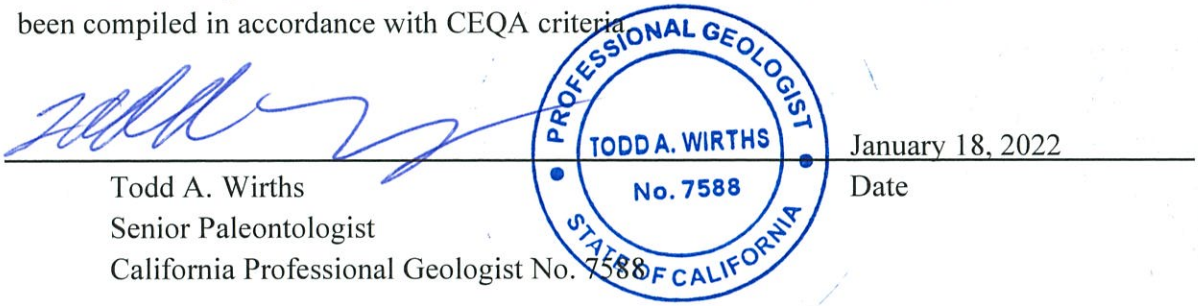
within a radius of 50 feet from the location of the fossil, and a project-level paleontologist shall be consulted to determine the significance of the fossilized remains. If the fossil is deemed significant by the project paleontologist, full-time monitoring should be initiated at the project.

3. Monitoring may be reduced if the potentially fossiliferous units are not present in the subsurface or, if present, are determined by qualified paleontological personnel upon exposure and examination to have a low potential to contain or yield fossil resources.
4. Paleontological monitors will be equipped to salvage fossils as they are unearthed to avoid construction delays and to remove samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. The monitor must be empowered to temporarily halt or divert equipment to allow for the removal of abundant or large specimens in a timely manner.
5. Paleontological salvage during trenching and boring activities is typically from the generated spoils and does not delay the trenching or drilling activities. Fossils will be collected and placed in cardboard flats or plastic buckets and identified by field number, collector, and date collected. Notes will be taken on the map location and stratigraphy of the discovery site, and the discovery site will be photographed before it is vacated and the fossils are removed to a safe place.
6. Particularly small invertebrate fossils typically represent multiple specimens of a limited number of organisms, and a scientifically suitable sample can be obtained from buckets of fossiliferous sediment. If it is possible in the field, concentrated samples may be dry-screened for the presence of small bone fragments within the sediments. If present, multiple buckets of sediment may be collected and returned to a separate facility to wet-screen the sediment. In the laboratory, individual fossils are cleaned of extraneous matrix, any breaks are repaired, and the specimen, if needed, is stabilized by soaking in an archivally approved acrylic hardener (*e.g.,* a solution of acetone and Paraloid B-72).
7. Recovered specimens will be prepared to a point of identification and permanent preservation, including screen-washing sediments to recover small vertebrates and invertebrates if indicated by the results of test sampling. Preparation of any individual vertebrate fossils is often more time-consuming than that of invertebrate fossils.
8. All fossils must be deposited in an accredited institution (university or museum) that maintains collections of paleontological materials. All costs of the paleontological monitoring and mitigation program, including any one-time charges by the receiving institution, are the responsibility of the developer. Typically, the Western Science Center in Hemet is the preferred repository for fossils found in Riverside County.
9. A final monitoring and mitigation report documenting findings and significance will be prepared, including lists of all fossils recovered and necessary maps and graphics

to accurately record their original location(s). A letter documenting receipt and acceptance of all fossil collections by the receiving institution must be included in the final report. The report, when submitted to and accepted by the appropriate lead agency (*e.g.,* the City of Banning), will signify satisfactory completion of the project program to mitigate impacts to any nonrenewable paleontological resources.

VII. CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this paleontological report, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief, and have been compiled in accordance with CEQA criteria.



January 18, 2022

Todd A. Wirths
Senior Paleontologist
California Professional Geologist No. 7588

Date

VIII. REFERENCES

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APPENDIX A

Qualifications of Key Personnel

Todd A. Wirths, MS, PG No. 7588

Senior Paleontologist

Brian F. Smith and Associates, Inc.
14010 Poway Road • Suite A •
Phone: (858) 679-8218 • Fax: (858) 679-9896 • E-Mail: twirths@bfsa-ca.com

Education

Master of Science, Geological Sciences, San Diego State University, California **1995**

Bachelor of Arts, Earth Sciences, University of California, Santa Cruz **1992**

Professional Certifications

California Professional Geologist #7588, 2003
Riverside County Approved Paleontologist
San Diego County Qualified Paleontologist
Orange County Certified Paleontologist
OSHA HAZWOPER 40-hour trained; current 8-hour annual refresher

Professional Memberships

Board member, San Diego Geological Society
San Diego Association of Geologists; past President (2012) and Vice President (2011)
South Coast Geological Society
Southern California Paleontological Society

Experience

Mr. Wirths has more than a dozen years of professional experience as a senior-level paleontologist throughout southern California. He is also a certified California Professional Geologist. At BFSA, Mr. Wirths conducts on-site paleontological monitoring, trains and supervises junior staff, and performs all research and reporting duties for locations throughout Los Angeles, Ventura, San Bernardino, Riverside, Orange, San Diego, and Imperial Counties. Mr. Wirths was formerly a senior project manager conducting environmental investigations and remediation projects for petroleum hydrocarbon-impacted sites across southern California.

Selected Recent Reports

2019 *Paleontological Assessment for the 10575 Foothill Boulevard Project, City of Rancho Cucamonga, San Bernardino County, California*. Prepared for T&B Planning, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2019 *Paleontological Assessment for the MorningStar Marguerite Project, Mission Viejo, Orange County, California.* Prepared for T&B Planning. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2019 *Paleontological Monitoring Report for the Nimitz Crossing Project, City of San Diego.* Prepared for Voltaire 24, LP. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2019 *Paleontological Resource Impact Mitigation Program (PRIMP) for the Jack Rabbit Trail Logistics Center Project, City of Beaumont, Riverside County, California.* Prepared for JRT BP 1, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2020 *Paleontological Monitoring Report for the Oceanside Beachfront Resort Project, Oceanside, San California.* Prepared for S.D. Malkin Properties. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2020 *Paleontological Resource Impact Mitigation Program for the Nakase Project, Lake Forest, Orange County, San California.* Prepared for Glenn Lukos Associates, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2020 *Paleontological Resource Impact Mitigation Program for the Sunset Crossroads Project, Banning, Riverside County*. Prepared for NP Banning Industrial, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2020 *Paleontological Assessment for the Ortega Plaza Project, Lake Elsinore, Riverside County*. Prepared for Empire Design Group. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2020 *Paleontological Resource Record Search Update for the Green River Ranch III Project, Green River Ranch Specific Plan SP00-001, City of Corona, California*. Prepared for Western Realco. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2020 *Paleontological Assessment for the Cypress/Slover Industrial Center Project, City of Fontana, San Bernardino County, California*. Prepared for T&B Planning, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2020 *Paleontological Monitoring Report for the Imperial Landfill Expansion Project (Phase VI, Segment C-2), Imperial County, California*. Prepared for Republic Services, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2021 *Paleontological Assessment for the Manitou Court Logistics Center Project, City of Jurupa Valley, Riverside County, California*. Prepared for Link Industrial. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2021 *Paleontological Resource Impact Mitigation Program for the Del Oro (Tract 36852) Project, Menifee, Riverside County*. Prepared for D.R. Horton. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2021 *Paleontological Assessment for the Alessandro Corporate Center Project (Planning Case PR-2020-000519), City of Riverside, Riverside County, California*. Prepared for OZI Alessandro, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2021 *Paleontological Monitoring Report for the Boardwalk Project, La Jolla, City of San Diego*. Prepared for Project Management Advisors, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

APPENDIX B

Paleontological Records Search

WESTERN SCIENCE CENTER

Brian F. Smith and Associates March 17, 2021
Todd Wirths
14010 Poway Road,
Poway, CA 92064

Dear Mr. Wirths,

This letter presents the results of a record search conducted for the Hathaway Banning Project (21-043) in the city of Banning, Riverside County, California. The project site is located north of Interstate 10, east of Hathaway Street in Section 11 of Township 3 South and Range 1 East on the Cabazon and Beaumont, CA USGS 7.5 minute topographic quadrangle.

The geologic unit underlying the project area is mapped entirely as alluvial fan deposits with depositional dates varied depending on the geologic map sources. The 2004 *Geologic Map of the Cabazon Quadrangle, Riverside County, California* by Thomas W. Dibblee has the entire area mapped as alluvial fan dating to the Pleistocene epoch. The 2012 *Preliminary Geologic Map of Quaternary Deposits of Southern California, Palm Springs 30 x 60 Quadrangle* by Jeremy T. Lancaster et al. has the same area mapped as alluvial fan deposits dating from the Holocene to Late Pleistocene. Pleistocene alluvial units are considered to be of high paleontological sensitivity, while Holocene alluvial units are unlikely to produce fossil resources due to the relatively recent dates associated with deposition. The Western Science Center does not have localities within the project area, or within a one mile radius but does have numerous localities within similarly mapped alluvial sediments throughout the region. Pleistocene alluvial deposits in southern California are well documented and known to contain abundant fossil resources including those associated with Columbian mammoth (*Mammuthus columbi*), Pacific mastodon (*Mammut pacificus*), Sabertooth cat (*Smilodon fatalis*), Ancient horse (*Equus sp.)* and many other Pleistocene megafauna.

While the presence of any fossil material is unlikely in Holocene alluvial deposits, if excavation activity disturbs deeper sediment dating to the earliest parts of the Holocene or Late Pleistocene periods, the material would be scientifically significant.

If you have any questions or would like further information, please feel free to contact me at dradford@westerncentermuseum.org

Sincerely,



2345 Searl Parkway ♦ Hemet, CA 92543 ♦ phone 951.791.0033 ♦ fax 951.791.0032 ♦ WesternScienceCenter.org

WESTERN SCIENCE CENTER
Darla Radford
Collections Manager

2345 Searl Parkway ♦ Hemet, CA 92543 ♦ phone 951.791.0033 ♦ fax 951.791.0032 ♦ WesternScienceCenter.org

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APPENDIX G

PHASE I ENVIRONMENTAL SITE ASSESSMENT



Phase I Environmental Site Assessment

Northeast Corner of W Lincoln Street and 4th Street
Banning, California 92220

November 30, 2021

First Industrial Realty Trust, Inc., First Industrial Acquisitions II, LLC,
and First Industrial, L.P.
One North Wacker Drive, Suite 4200
Chicago, IL 60606

Project Number 21-11-003

Prepared by:

Weis ENVIRONMENTAL

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(760) 585-7070
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November 30, 2021

Jacob Kentnich
First Industrial Realty Trust, Inc.
One North Wacker Drive, Suite 4200
Chicago, IL 60606

Subject: Phase I Environmental Site Assessment
Northeast Corner of W Lincoln Street and 4th Street
Banning, California 92220
Project Number 21-11-003

Dear Mr. Kentnich:

Weis Environmental, LLC has completed the contracted environmental consulting services for the above-referenced project. The services were performed in accordance with our proposal and agreement fully executed by all parties. The Phase I Environmental Site Assessment has been performed in accordance with American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, ASTM Designation E1527-13 and Title 40 of the Code of Federal Regulations (40 CFR) Part 312. This assessment was also completed in accordance with the First Industrial Realty Trust Scope of Work for Phase I ESAs. We appreciate the opportunity to be of service to you on this project. Please contact us if you have any questions or comments regarding this report or if we can be of further assistance.

Sincerely,

Weis Environmental, LLC



Daniel Weis. R.E.H.S.
Environmental Manager

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1.0 INTRODUCTION

This report presents the methods and findings of a Phase I Environmental Site Assessment (ESA) of the subject property located at the northeast corner of W Lincoln Street and 4th Street and identified by Riverside County Assessor's Parcel Numbers (APNs) 540-210-009 and 540-210-020 in the City of Banning, Riverside County, California (Site). The assessment was performed in conformance with the contract/agreement for this assignment and the scope and limitations of ASTM Standard Practice E1527-13 and United States Environmental Protection Agency (EPA) Standards and Practices for All Appropriate Inquiries (AAI) as published in 40 Code of Federal Regulations (CFR) Part 312. EPA promulgated the AAI rule that became effective in November 2006 and has indicated that the ASTM E1527-13 practice is consistent with the requirements of AAI and may be used to comply with the provisions of the AAI rule. This assessment was also completed in accordance with the First Industrial Realty Trust Scope of Work for Phase I ESAs.

1.1 Purpose

The purpose of the ASTM E1527-13 practice (framework for this Phase I ESA) is to define good commercial and customary practice in the United States of America for conducting an ESA of a parcel of real estate with respect to the range of contaminants within the scope of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (Title 42 United States Code (U.S.C.) Section 9601)) and petroleum products. As such, this practice is intended to permit a user to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations on CERCLA 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. Section 9601(35)(B).

In defining a standard of good commercial and customary practice for conducting this Phase I ESA of the Site, the goal of the processes established by the ASTM E1527-13 practice is to identify, to the extent feasible, recognized environmental conditions. The term recognized environmental conditions is defined 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. In addition, controlled recognized environmental conditions, historical recognized environmental conditions and/or de minimis conditions, if identified during the completion of the assessment, are discussed herein. Definitions of these terms and other key terminology relevant to the practice are included in Section 14.0 of this report.

1.2 Scope of the Assessment

In general terms, this Phase I ESA included the acquisition of readily available/accessible and practically reviewable regulatory records and historical information, a site reconnaissance, interviews and preparation of this written report of findings. A more detailed description of the four primary components of the Phase I ESA is presented below.

Records Review - A review of Federal, State, Tribal and local standard ASTM and non-ASTM regulatory databases for a myriad of environmental identifiers including but not limited to properties with underground storage tanks (USTs), properties with leaking USTs, properties that have reported

spills/releases that did not occur from a leaking UST, businesses that utilize hazardous materials and/or generate hazardous waste and hazardous waste disposal locations. The regulatory review may also include public records requests with one or more Federal, State, Tribal and/or local agencies. A review of historical sources is also completed to help ascertain previous land uses of the property in question and in the surrounding area.

Site Reconnaissance - A property inspection and viewing of adjacent and surrounding properties for conditions that could be recognized environmental conditions.

Interviews - Interviews with present and past owners, operators and/or occupants of a property and local government officials.

Reporting - Evaluation of the information gathered during the completion of the Phase I ESA and the subsequent preparation of a written report.

1.3 Limitations and Exceptions

Concerns regarding liability under the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. 9601 et seq. (CERCLA) and analogous State laws, have been a primary driver for Phase I ESA assignments in commercial real estate transactions. While the ASTM E1527-13 practice can be used in many contexts, a familiarity with CERCLA and its potential LLPs is critical in understanding and applying the ASTM E1527-13 practice. We advise consultation with legal counsel if further inquiry or information is desired.

AAI represents the minimum level of inquiry necessary to support the LLPs. However, it is important to understand that additional inquiry ultimately may be necessary or desirable for legal as well as business reasons depending upon the outcome of this inquiry and the particular risk tolerances of a given user. For example, additional inquiry may assist a user of a Phase I ESA in determining whether he or she would have continuing obligations in the event he or she acquires a given property and may also assist the user in defining the scope of future steps to be taken to satisfy such obligations. In addition, a user may be concerned about business environmental risks or non-scope ASTM considerations that do not fall within the definition of a recognized environmental condition. In addition, this assessment did not include subsurface or other invasive exploration, unless specifically documented herein. Users are also cautioned that Federal, State, Tribal and local laws may impose environmental assessment obligations that are beyond the scope of the ASTM E1527-13 practice.

The evaluation, opinion and conclusions presented herein are based solely on visual observations and regulatory, historical and personal knowledge related information that existed at the time our assessment was completed. The use of the gathered information is exclusively for the purposes outlined in this report and only for the Site. Our firm can make no warranty, either express or implied, except that the services conducted were performed in accordance with generally accepted environmental assessment practices applicable at the time and location of the assessment and that the conclusions of the assessment have been based in part on professional judgment/experience, an interpretation of readily available data and the standard of care normally followed by similar professionals practicing in a similar locale and under similar circumstances. Any opinions presented cannot apply to Site changes of which our firm is unaware and has not had the opportunity to evaluate. In addition, this report cannot feasibly include any evaluation of undocumented activities at the Site or on adjacent or nearby properties. Lastly, a Phase I ESA meeting or exceeding this practice and completed less than 180 days prior to the date of acquisition of a given property or (for transactions not involving an acquisition) the date of the intended transaction is presumed to be valid.

1.4 Special Terms and Conditions

This Phase I ESA was prepared in accordance with the terms and conditions of the contract/agreement for the work as executed between our firm and the client. There are no other special terms and conditions established between our firm and the client pertinent to the findings of this ESA or methodology used to complete this assessment. In addition, our firm has no final or other vested interest in the Site or adjacent/surrounding properties, or in any entity that owns or occupies the Site or adjacent/surrounding properties.

1.5 Limiting Conditions and Deviations

There were no significant limiting conditions that would inhibit our ability to identify recognized environmental conditions noted during the completion of this assessment. In addition, there were no deviations from the ASTM E1527-13 standard noted during the completion of this assessment. Any limiting conditions that are not considered to be ones that would inhibit our ability to identify recognized environmental conditions at the Site are referenced in applicable sections of this report.

1.6 Data Failure and Data Gaps

No instances of data failure were encountered during the completion of this assessment. In addition, no data gaps of significance (i.e., those that would inhibit our ability to identify recognized environmental conditions) were identified during the completion of this assessment. Any data gaps that are not considered to be ones that would inhibit our ability to identify recognized environmental conditions at the Site are referenced in applicable sections of this report.

1.7 Reliance

This report has been prepared for the exclusive use of First Industrial Realty Trust, Inc., First Industrial, L.P. and First Industrial Acquisitions II, LLC (User). This report may not be relied upon by any other person or entity without the written consent of both our firm and our client. The scope of services performed for this assessment may not be appropriate to satisfy the specific needs of other users, and any use or reuse of this document would be at the sole risk of said users. Any other party seeking liability protection under CERCLA must take independent action to accomplish its objective.

2.0 SITE DESCRIPTION

2.1 Location and Legal Description

The Site is a reported 6.12 acres and is located to the northeast of the intersection of W Lincoln Street and 4th Street in the City of Banning, Riverside County, California. No physical addresses has been assigned to the Site. The Site is further identified by Riverside County APNs 540-210-009 and 540-210-020. A Vicinity Map is included as Figure 1. A Site Plan is included as Figure 2.

2.2 Site and Vicinity Characteristics

The Site and the surrounding vicinity are situated in the City of Banning that consists primarily of vacant land, commercial development and residential properties. Additional details pertaining to the Site and its adjoining properties are provided in the sections below.

2.3 Current Use of the Site

The Site is currently vacant and undeveloped. A portion of an asphalt paved road (extension of 4th Street) is present along the western Site boundary.

2.4 Description of Site Improvements

There are no habitable structures present at the Site. As stated previously, a portion of an asphalt paved road (extension of 4th Street) is present along the western Site boundary. Power poles and lines are present along the southern Site boundary. Areas of chain-link fencing are present along the southern and western Site boundaries. Some indicators of subsurface utility systems are present on the Site.

2.5 Utilities

Utilities that are reported to be present at the Site or provide service in the surrounding area are noted below along with their municipal provider where applicable.

Utility	Provider (Where Applicable)
Potable Water	City of Banning
Sewage Maintenance	City of Banning
Electrical	City of Banning
Natural Gas	SoCal Gas Company
Solid Waste Disposal	Waste Management

2.6 Description of Adjoining Properties

Adjoining properties are defined as any real property or properties, the border of which is contiguous or partially contiguous with that of the subject property of a Phase I ESA, or that would be contiguous or partially contiguous with that of a subject property but for a street, road, or other public thoroughfare separating them. To the extent feasible, our firm performed a visual inspection of adjoining properties from the Site boundaries and along public right of ways. We did not encroach on to adjoining private property during the completion of this assessment. The following table identifies the adjoining property uses:

Direction	Adjoining Property Use
North	Train tracks, then Bryant Street followed by Interstate 10.
South	W Lincoln Street, then Class A Motorhome Rentals.net LLC (494 4th Street) and Precision Material Handling Inc. (268 W Lincoln Street).
East	Pro-Line Racing (201 W Lincoln Street).
West	4th Street, then a vacant lot.

2.7 Summary Relative to Environmental Concerns

No recognized environmental conditions were noted in connection with the land use of the Site and improvements at the Site. In addition, the land uses of adjoining properties and properties in the vicinity of the Site do not represent recognized environmental conditions to the Site.

3.0 PHYSICAL SETTING

3.1 Topography

The Site is depicted on the United States Geological Survey (USGS) topographic map for the Beaumont, California 7.5-minute quadrangle. The Site is shown on the map as being situated at an elevation of approximately 2,300 feet above mean sea level. The Site and surrounding area appear to trend slightly to the southeast. There are no improvements or structures depicted on-Site on the map. Adjoining and surrounding roadways are depicted on the map. The Site as depicted on a topographic map is included as Figure 3.

3.2 Hydrology

The Site is situated within the Banning Hydrologic Subarea of the San Gorgonio Hydrologic Area of the Whitewater Hydrologic Unit. There are no known substantial hydrologic features at the Site including major storm drain inlets or obvious drainages, channels, or surface waters. A concrete lined drainage channel is present off-Site along the western Site boundary. Infiltration of precipitation can be expected at the Site due to its primarily unimproved nature. Any excess water would appear to flow as surface runoff to streets/roadways and surrounding areas of lower elevation. The Site does not appear to receive significant drainage from off-Site properties.

3.3 Geology

General geologic information pertaining to the Site is presented in the table below.

Geologic Consideration	Details
California Geomorphic Province	Peninsular Ranges.
Mapped Soils or Formation	Early Pleistocene, old alluvial fan deposits.
Description of Soils or Formation	Unconsolidated silts, sands, and clays.
Distance/Direction to Mapped Faults	No known faults are mapped on the Site.

3.4 Hydrogeology

General hydrogeologic information pertaining to the Site is presented in the table below.

Hydrogeologic Consideration	Details
Groundwater Basin or Unit	Banning Hydrologic Subarea
Beneficial Uses	Municipal, agricultural, and industrial.
Estimated Depth to Groundwater	Anticipated to be greater than 100 feet below the surface.
Estimated Flow of Groundwater	Southeast.

Hydrogeologic Consideration	Details
Known Site or Regional Groundwater Contamination Issues	None.

3.5 Oil and Gas Exploration

According to online resources provided by the California Department of Conservation, Geologic Energy Management Division (CalGEM), there are no oil, gas or geothermal wells located on the Site or its adjacent properties.

3.6 Summary Relative to Environmental Concerns

No recognized environmental conditions were noted in connection with Site physical setting considerations. In addition, physical setting considerations related to the adjoining properties and properties in the vicinity of the Site do not represent recognized environmental conditions to the Site.

4.0 USER PROVIDED INFORMATION

A representative of the User of this report was interviewed during the completion of this assessment. The questions posed during the interview are defined by the ASTM E1527-13 practice. A copy of a completed questionnaire is included in Appendix A. The User also provided our firm with any land title records and judicial records that may be available for the Site as part of the required evaluation for environmental liens and activity and use limitations (AULs) in connection with the subject property of a Phase I ESA. As stated in the ASTM E1527-13 practice, it is the responsibility of the user of the report to provide any available records pertaining to environmental liens and AULs that may exist in connection with a given property. Any land title and judicial records provided to our firm are discussed below. If such information is not discussed in the sections below, it was not provided by the user of the report.

In addition to the contact information obtained, the user of the report was also asked if they are aware of other useful documents that may exist and if so whether copies can be provided to the environmental professional within reasonable time and cost constraints. A list of typical useful documents is included in Section 10.8.1 of the ASTM E1527-13 practice and include but are not limited to environmental assessment reports, compliance audits and permits, registrations for tank and other aboveground or underground systems, safety plans, spill prevention and other facility related plans and geological/geotechnical studies and environmental governmental agency notices and/or correspondence.

4.1 Title Records

An ALTA Commitment for Title Insurance report issued by First American Title Insurance Company and dated September 29, 2021 was provided for our review. No environmental liens or AULs are referenced in the report. A copy of the title report is included in Appendix B.

4.2 Environmental Liens

The User is unaware of environmental liens in connection with the Site.

4.3 Activity and Use Limitations

The User is unaware of AULs in connection with the Site.

4.4 Specialized or Actual Knowledge or Experience

The User is unaware of specialized knowledge, actual knowledge or experience that is material to recognized environmental conditions in connection with the Site.

4.5 Commonly Known or Reasonably Ascertainable Information

The User is unaware of commonly known or reasonably ascertainable information within the local community that is material to recognized environmental conditions in connection with the Site.

4.6 Valuation Reduction for Environmental Issues

The User is unaware of information pertaining to an undervalued purchase price of the Site relative to the estimated fair market value of the Site due to the presence of contamination.

4.7 Owner, Property Manager, and Occupant Information

The Site is currently owned and managed by Stepping Stone Properties LLC. The Site is currently vacant and undeveloped land with no known occupants.

4.8 Reason for Performing Phase I ESA

The User has commissioned this Phase I ESA as part of a proposed real estate transaction (acquisition and development). The Phase I ESA is also being completed to assist the client in complying with 40 CFR Part 312.

4.9 Proceedings Involving the Site

The User is unaware of pending, threatened, or past litigation and administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the Site. The client is also unaware of notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products in connection with the Site.

4.10 Other Provided Documents

Our firm was not provided with prior environmental documents pertaining to the Site. We were provided with a geotechnical investigation pertaining to the western portion of the Site dated May 28, 2021. During the investigation, three exploratory trenches were excavated to depths of 12.5 feet. During the exploration activities, alluvial deposits were encountered to the total depth of the trenches and no groundwater was encountered. No staining, odors, debris or other suspect conditions were noted in the trench logs.

4.11 Summary Relative to Environmental Concerns

No recognized environmental conditions were noted in connection with the user provided information.

5.0 REGULATORY RECORDS REVIEW

Our firm commissioned the preparation of a regulatory database report from Environmental Risk Information Services (ERIS) as part of the regulatory records review. ERIS searches a myriad of Federal, State, and local government environmental databases during the preparation of their deliverables. Certain databases are specifically required by the ASTM E1527-13 practice and are referenced as "standard ASTM regulatory databases." Such databases are searched to at least the minimum search distance around a given property as defined in the practice. Other regulatory databases are also searched that are not specifically referenced in ASTM E1527-13. Such databases are referenced as "non-ASTM regulatory databases" and are searched as varying radii around a given property as selected by ERIS.

Descriptions of each database searched and the dates that the regulatory databases were last updated by the applicable agencies are included in the ERIS report. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of an updates. ERIS updates databases in accordance with ASTM E1527-13 which states that government information from nongovernmental sources may be considered current if the source updates the information at least every 90 days, or, for information that is updated less frequently than quarterly by the government agency, within 90 days of the date the government agency makes the information available to the public.

Our firm also reviewed unplottable sites listed in the database report by cross-referencing reasonably ascertainable information pertaining to such properties that may include facility names, street names, zip codes or other information. Unplottable sites are ones that cannot be formally mapped or geocoded due to various reasons, including limited geographic information. Any unplottable sites that we identify within the specified search radii have been evaluated as part of the preparation of this report. A copy of the regulatory database report is included in Appendix C.

5.1 Standard ASTM Regulatory Database Search

The tables below present the standard Federal, State, Tribal and local ASTM databases that were searched by ERIS including the search distances from the Site. Below the tables are descriptions of any listings for the Site that may appear in the databases. In addition, a discussion of adjoining properties or properties in the Site vicinity that are listed in one or more regulatory databases that in our professional judgment and opinion have the potential to adversely impact the Site due to current or former releases of hazardous substances and/or petroleum products that occurred at said properties is presented. This practice of discussing only properties of potential environmental concern to the Site is noted in ASTM E1527-13 which states that the environmental professional may make statements applicable to multiple properties listed in regulatory databases that are not likely to have current or former releases of hazardous substances and/or petroleum products with the potential to migrate to the a given subject property. Our professional judgment and opinions discussed herein are based on several factors including the nature of the regulatory database listings, distance of the off-Site listed properties from the Site, orientation of the listed properties relative to the Site, interpreted the direction of groundwater flow and/or regulatory case status information for the various properties as described in the databases.



The following Federal standard ASTM databases were searched:

Standard Environmental Record Source Name	ERIS Regulatory Database Identification	Search Distance From Site (Miles)
National Priorities List (NPL) Site List	NPL – Proposed NPL – Superfund Record of Decision (ROD)	1.0
Delisted NPL Site List	Deleted NPL	0.5
Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) List	CERCLIS - SEMS – SEMS Archive – ODI – IODI – CERCLIS LIENS – SEMS LIENS	0.5
CERCLIS List	CERCLIS LIENS – SEMS LIENS	Site
CERCLIS No Further Remedial Action Planned (NFRAP) Site List	CERCLIS NFRAP	0.5
Resource Conservation and Recovery Act (RCRA) Corrective Action Sites (CORRACTS) Facilities List	RCRA CORRACTS	1.0
RCRA Non-CORRACTS Treatment, Storage and Disposal (TSD) Facilities List	RCRA TSD	0.5
RCRA Generators List	RCRA LQG – RCRA SQG – RCRA CESQG – RCRA NON-GEN – BULK TERMINAL – REFN – FEMA Underground Storage Tank (UST)	0.25
Institutional Control/Engineering Control Registries	FED ENG – FED INST – FED Brownfields	0.5
Emergency Response Notification System (ERNS) List	ERNS – ERNS 1982 to 1986 – ERNS 1987 to 1989	Site

Site – The Site is not listed on any of the standard Federal ASTM regulatory databases.

Adjoining Properties – Two adjoining properties are listed on the standard Federal ASTM regulatory databases as follows:

- **Matec Instrument Companies Inc** (300 W Lincoln Street) – This south adjoining property is listed on the RCRA NON-GEN database with no reported violations. This property is not listed on databases indicative of releases of hazardous substances or petroleum products to the subsurface.
- **DT Mattson Enterprises Inc and Horizon Hobby LLC dba Pro-Line Racing** (201 W Lincoln Street) – This east adjoining property is listed on the RCRA NON-GEN database with no reported violations. This property is not listed on databases indicative of releases of hazardous substances or petroleum products to the subsurface.

Other Properties – There are 11 listings pertaining to properties in the surrounding area that are identified on the RCRA TSD (one listing), RCRA SQG (three listings) and RCRA NON-GEN (seven listings) Federal ASTM regulatory databases.

None of these properties are considered a recognized environmental condition to the Site. This opinion is based on the distance of the off-Site listed properties from the Site, orientation of the listed properties

relative to the Site, interpreted direction of groundwater flow and/or regulatory case status information for the various properties as described in the databases.

The following State, Tribal and local standard ASTM databases were searched:

Standard Environmental Record Sources Name	ERIS Regulatory Database Identification	Search Distance From Site (Miles)
Equivalent NPL	RESPONSE	1.0
Equivalent CERCLIS	ENVIROSTOR – DELISTED ENVS – HWP - HHSS	0.5
Landfill and/or Solid Waste Disposal Site Lists	SWF/LF – LDS – SWAT – SWRCB SWF	0.5
Leaking Storage Tank Lists	LUST – DELISTED LST – UST CLOSURE – CLEANUP SITES – INDIAN LUST – DELISTED ILST – RIVERSIDE LOP	0.5
Registered Storage Tank Lists	UST – AST – DELISTED TNK – CERS TANK – DELISTED CTNK – HIST TANK – INDIAN UST – DELISTED IUST – DELISTED COUNTY – RIVERSIDE UST	Site and Adjoining Properties
Institutional Control/Engineering Control Registries	LUR – HLUR - DEED	Site
Voluntary Cleanup Sites	VCP	0.5
Brownfield Sites	Not Applicable – No Database Exists	0.5

Site – The Site is not listed on any of the State, Tribal and local standard ASTM regulatory databases.

Adjoining Properties – No adjoining properties are listed on the standard State, Tribal and local standard ASTM regulatory databases.

Other Properties – There are 43 listings pertaining to properties in the surrounding area that are identified on the ENVIROSTOR (eight listings), RECYCLING (two listings), LUST (five listings), UST (two listings), HHSS (three listings), UST SWEEPS (four listings), DELISTED TNK (five listings), CERS TANK (two listings), HIST TANK (three listings), DELISTED COUNTY (two listings), RIVERSIDE LOP (five listings) and RIVERSIDE UST (two listings) State, Tribal and local standard ASTM regulatory databases.

None of these properties are considered a recognized environmental condition to the Site. This opinion is based on the distance of the off-Site listed properties from the Site, orientation of the listed properties relative to the Site, interpreted direction of groundwater flow and/or regulatory case status information for the various properties as described in the databases.

5.2 Non-ASTM Regulatory Database Search

A myriad of non-ASTM regulatory databases was searched by ERIS as noted in the regulatory database report.

Site – The Site is not listed on any of the non-ASTM regulatory databases.



Adjoining Properties – The east adjoining property located at 201 W Lincoln Street is also listed on the CERS HAZ, Riverside HWG and Riverside HZH non-ASTM regulatory databases. This business received some administrative related violations during compliance inspections conducted by the Riverside County Department of Environmental Health. None of the violations pertained to releases of hazardous substances or petroleum products to the subsurface.

Other Properties – There are 21 listings on the non-ASTM regulatory databases pertaining to multiple properties in the surrounding area that are identified on various databases including FED DRYCLEANERS (two listings), DRYCLEANERS (three listings), SCH (four listings), CERS HAZ (one listing), EMISSIONS (10 listings), RIVERSIDE HWG (two listings), RIVERSIDE HZH (two listings) and RIVERSIDE MED WST (two listings).

None of these properties are considered a recognized environmental condition to the Site. This opinion is based on the distance of the off-Site listed properties from the Site, orientation of the listed properties relative to the Site, interpreted direction of groundwater flow and/or regulatory case status information for the various properties as described in the databases. It should also be noted that off-Site properties that are listed on regulatory databases indicative of dry cleaning are situated either to the south of the Site (hydrologically downgradient) or to the north across Interstate-10 and over 500 feet away from the Site. The cleaners related businesses are not considered to be a recognized environmental condition to the Site.

5.3 Regulatory Agency File Reviews

If a property being assessed under a Phase I ESA or any of the adjoining properties are identified on one or more of the above referenced standard environmental record sources, pertinent regulatory files and/or records associated with such listings should be reviewed to assist the environmental professional in evaluating if recognized environmental conditions existing at a given subject property in connection with any listings. However, if in the environmental professional's opinion, such a review is not warranted, file reviews need not be conducted if the environmental professional provides justification for not doing so.

Agency file reviews for the Site completed during this assessment are noted below. No file reviews for adjoining properties or properties in the surrounding area were deemed warranted with the exception of research completed on the State Water Resources Control Board GeoTracker database regarding properties in the surrounding area of the Site. The agency inquiries were performed by way of on-line searches/queries of published databases and/or direct inquiries with public records clerks at one or more agencies. Both Daniel Weis and Samantha Weis of Weis Environmental conducted the agency file reviews during the completion of this assessment. Copies of regulatory agency records are included in Appendix D.

Regulatory Agency	Jurisdiction	Date of Inquiry or Request	Contact	Response or Information From Agency
United States EPA Envirofacts/ECHO/ TRIS	Federal	11/2/2021	Online https://enviro.epa.gov/ https://echo.epa.gov/facilities/facility-search https://www.epa.gov/toxics-release-inventory-tri-program	No Records Identified
California DTSC	State	11/2/2021	Online https://www.envirostor.dtsc.ca.gov/public https://hwts.dtsc.ca.gov/report_list.cfm Public Records Clerk	No Records Identified
State Water Resources Control Board/Regional Water Quality Control Board	State	11/2/2021	Online https://geotracker.waterboards.ca.gov/ https://geotracker.waterboards.ca.gov/historical_ust_facilities Public Records Clerk	No Records Identified
County of Riverside	Local	11/2/2021	Public Records Clerks	No Records Identified
City of Banning	Local	11/2/2021	Public Records Clerk	Records Identified

As shown in the table above, with the exception of the City of Banning, no records pertaining to the Site were identified with the various agencies contacted. City records included a resolution from the Planning Commission from the City of Banning approving a conditional use permit pertaining to the Site for a truck transfer and storage yard.

5.4 Summary Relative to Environmental Concerns

No recognized environmental conditions were noted in connection with the regulatory records searches. In addition, regulatory resources related to the adjoining properties and properties in the vicinity of the Site do not represent recognized environmental conditions to the Site.

6.0 HISTORICAL RESOURCE REVIEW

The objective of consulting historical sources is to develop a history of the previous uses of a property and surrounding area, in order to help identify the likelihood of past uses having led to recognized environmental conditions in connection with a given property. The goal of the historical research is to identify all obvious uses of a subject property from the present, back to the property's first developed use, or back to 1940, whichever is earlier. The environmental professional exercises professional judgment in reviewing only as many of the standard historical sources referenced in ASTM E1527-13 that are deemed necessary, are reasonably ascertainable and are likely to be useful. Historical resources reviewed during the completion of this assessment are referenced below. Copies of the historical resources are included in Appendix E.

6.1 Aerial Photographs

We reviewed historical aerial photographs from the years 1939, 1953, 1962, 1967, 1972, 1979, 1980, 1985, 1990, 1994, 1996, 2002, 2004, 2005, 2006, 2009, 2010, 2012, 2014, 2018 and 2020 provided by Environmental Risk Information Services (ERIS). The table below presents the results of the photograph review.

Photograph Year	Site Observations	Adjoining Property Observations
1938-1962	The Site is developed with commercial buildings in its northern and eastern areas. Other portions of the Site are vacant.	Adjoining properties are vacant or used for agricultural purposes. Adjoining streets/roadways and a railroad are visible.
1967-2020	The Site is vacant and undeveloped.	Adjoining properties are vacant and undeveloped or used for commercial purposes. Increased commercial development is evident over time.

Based on research completed during the completion of a cultural resources assessment of the Site, the Site was previously used by EL Robertson, a prominent fruit grower in the region, for producing dried fruit. The fruit drying operation dates back to as early as 1910 and appears to have remained in business throughout the 1940s. There are no known chemicals of concern associated with fruit drying operations, nor is there information to believe that a release of hazardous substances or petroleum products has occurred in association with former Site operations. No agricultural crop production appears to have been conducted at the Site. No recognized environmental conditions were identified with the aerial photographs/historical use of the Site.

6.2 City Directories

Our firm reviewed city directories dated ranging in date from 1971 to 2020 provided by ERIS. No city directory listings were identified for the Site. Adjoining and nearby properties are referenced as residential (personal names) or for general commercial and light-industrial purposes. None of the listings are considered a recognized environmental condition to the Site.

6.3 Fire Insurance Maps

Our firm reviewed historical fire insurance maps from 1907, 1926 and 1936 provided by ERIS. The Site and its adjoining properties are not depicted on the 1907 map. On the maps from 1926 and 1936, the Site is mapped as the EL Robertson Fruit Drying and Packing facility. The fuel source for the

facility is referenced as “wood.” Structures and other associated features of the facility depicted include a fruit packing and storage building, a residence, a steam dryer, fruit tray storage areas, fruit drying rack areas, a water heater and outbuildings used for the storage of sulfur (noted as sulphur on the maps). Railroad tracks and some structures are depicted to the north of the Site. No features that are considered to be recognized environmental conditions were noted on the maps.

6.4 Other Historical Sources

Other historical sources are referenced in the ASTM E1527-13 practice as any source or sources other than the standard historical sources referenced in the practice that are credible to a reasonable person and that identify past uses of a subject property. This category includes, but is not limited to miscellaneous maps and directories, newspaper archives, internet sites, community organizations, local libraries, historical societies, current owners or occupants of neighboring properties, or records in the files and/or personal knowledge of the property owner and/or occupants. No historical sources other than the standard sources described above were deemed necessary and useful to assist in identifying recognized environmental conditions.

6.5 Summary Relative to Environmental Concerns

No recognized environmental conditions were noted in connection with the historical resources reviewed. In addition, historical resources related to the adjoining properties and properties in the vicinity of the Site did not reveal recognized environmental conditions to the Site.

7.0 SITE RECONAISSANCE

The objective of the Site reconnaissance is to obtain information indicating the likelihood of identifying recognized environmental conditions in connection with a subject property. The Site visit for our assessment was completed on November 19, 2021, by Daniel Weis. We were unaccompanied during the reconnaissance.

7.1 Methodology and Limiting Conditions

The Site reconnaissance consisted of observing the Site on foot via various transects and walking publicly accessible areas surrounding the Site. No significant limiting conditions of the Site inspection were noted. Select photographs of the Site obtained during the Site reconnaissance are included in Appendix F.

7.2 Current General Site and Vicinity Characteristics

The Site and the surrounding vicinity are situated in the City of Banning that consists primarily of vacant land, commercial development and residential properties. The Site is currently vacant and undeveloped. A portion of an asphalt paved road (extension of 4th Street) is present along the western Site boundary. The current use of the Site and adjoining properties are not ones that are indicative of the use, treatment, storage, disposal or generation of hazardous substances or petroleum products that may have impacted the Site.

7.3 Indications of Past Site and Vicinity Uses

There are no material differences between the current and past uses of the Site, adjoining properties and the surrounding area that were visually and/or physically observed during the Site reconnaissance that pertain to recognized environmental conditions.

7.4 Site-Specific Observations

We examined the Site for the features and conditions noted in the table below.

Feature or Condition	Details
General Description of Structures	There are no habitable structures present at the Site. As stated previously, a portion of an asphalt paved road (extension of 4th Street) is present along the western Site boundary. Power poles and lines are present along the southern Site boundary. Areas of chain-link fencing are present along the southern and western Site boundaries. Some indicators of subsurface utility systems are present on the Site.
Drains and Sumps	None observed.
Heating/Cooling Systems	None observed.
Potable Water Supply	City of Banning
Roads	Access to the Site is from W Lincoln Street or 4th Street.
Septic Systems / Sewage Disposal System	City of Banning.

Feature or Condition	Details
Wastewater and Stormwater Discharges	None observed.
Wells	None observed.
Drums, USTs and ASTs	None observed.
Electrical or Hydraulic Equipment Known to Contain PCBs or Likely to Contain PCBs	None observed.
Hazardous Substances and Petroleum Products in Connection with Identified Uses	None observed.
Hazardous Substance and Petroleum Products Not Necessarily in Connection With Identified Uses	None observed.
Odors	None noted.
Pits, Ponds or Lagoons	None observed.
Pools of Liquid	None observed.
Solid Waste (Including Fill Material)	Some household trash and debris is present at the Site. Some areas of concrete rubble, scrap metal and other inert materials are also present. No staining, odors or other suspect conditions were noted.
Stained Soil or Pavement	None observed.
Stains or Corrosion	None observed.
Chemical Storage	None observed.
Stressed Vegetation	None observed.
Unidentified Substance Containers	None observed.

7.5 Summary Relative to Environmental Concerns

No recognized environmental conditions were noted in connection with the current use of the Site during the Site reconnaissance. In addition, no current uses of the adjoining properties or properties in the surrounding area that were visually and/or physically observed during the Site reconnaissance were noted as recognized environmental conditions to the Site.

8.0 INTERVIEWS

8.1 Site Owner

The Site owner is Stepping Stone Properties LLC and has been associated with the Site since 2019. The Site owner is unaware of environmental concerns in connection with the Site.

8.2 Key Site Manager

The Site owner is also considered to be the Key Site Manager. Please refer to Section 8.1 above.

8.3 Current Occupants

The Site is vacant with no known occupants.

8.4 Local Government Official

During the preparation of this assessment, public records clerks from the State of California, County of Riverside, and City of Banning were contacted by our firm regarding the Site. Agency representatives indicated that public records requests should be conducted in order to obtain information known by the agencies regarding the Site. Public records requests were completed by our firm as described in Section 5.3.

8.5 Other Parties

Interviews with other persons were not conducted during the preparation of this assessment. As stated in the ASTM E1527-13 practice, interviews with past owners, operators and occupants of a subject property who are likely to have material information regarding the potential for contamination at a given property shall be conducted to the extent that they have been identified and that the information likely to be obtained is not duplicative of information already obtained from other sources. Interviews with persons with past association with the Site were not deemed warranted during the completion of this assessment.

8.6 Summary Relative to Environmental Concerns

No recognized environmental conditions were noted in connection with the interviews completed during the assessment.

9.0 ADDITIONAL SERVICES – NON-SCOPE ASTM CONSIDERATIONS

Several non-scope ASTM considerations are referenced in the ASTM E1527-13 practice that a user of a report may wish to evaluate. Listed considerations in the practice include asbestos-containing building materials, biological agents, cultural and historic resources, ecological resources, endangered species, health and safety, indoor air quality (unrelated to releases of hazardous substances or petroleum products into the environment), industrial hygiene, lead-based paint, lead in drinking water, mold, radon, regulatory compliance and wetlands. No implication is intended by the practice as to the relative importance of inquiry into such non-scope considerations, and the list of considerations is not intended to be all-inclusive.

Asbestos and Lead-Based Paint – There are no habitable structures present at the Site. Therefore, asbestos and lead assessments were not warranted.

Landmark/Historical/Cultural Significance Review - Archeological/cultural and paleontological assessments of the Site have been completed concurrently with this Phase I ESA. The results of the studies have been provided to the client under separate cover. No significant findings were reported.

Lead in Drinking Water - According to the most recent water quality report prepared by the City of Banning, the drinking water supplied to the area is in compliance with all Federal and State regulations.

National Pollution Discharge Elimination System (NPDES) – We are unaware of current NPDES related requirements that pertain to the Site.

Radon Potential - The Site is located within United States EPA Radon Zone 2 which has predicted average indoor levels of radon between 2 and 4 picocuries per liter. Radon is not considered to be a concern at the Site.

Wetlands and Threatened/Endangered Species - A biological assessment of the Site has been completed concurrently with this Phase I ESA. The results of the study have been provided to the client under separate cover. No wetlands were noted at the Site and no significant biological findings were reported.

No other additional services were completed by our firm during the preparation of this assessment.

10.0 FINDINGS AND OPINIONS

No features and/or conditions indicating the presence or likely presence of hazardous substances and/or petroleum products at the Site that are considered to have the potential to adversely impact the Site were identified during the completion of this assessment.

11.0 CONCLUSIONS AND RECOMMENDATIONS

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM International Practice E1527-13 of the Site located at the northeast corner of W Lincoln Street and 4th Street in the City of Banning, California (Riverside County APNs 540-210-009 and 540-210-020). Any exceptions to, or deletions from, this practice are described in Section 1.5 of this report. This assessment has revealed no evidence of recognized environmental conditions, controlled recognized environmental conditions or historical recognized environmental conditions in connection with the Site. Additional assessment at the Site is not considered to be warranted at this time.

12.0 ENVIRONMENTAL PROFESSIONAL STATEMENT

I declare that, to the best of my professional knowledge and belief, I meet the definition of environmental professional as defined in Section 312.10 of 40 CFR. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Site. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312. Qualifications of personnel involved with the completion of this report are included in Appendix G.



Daniel Weis, R.E.H.S.
Environmental Manager

13.0 ASSUMPTIONS

No Phase I ESA effort can eliminate uncertainty regarding the potential for recognized environmental conditions to exist in connection with a given property. Performance of the ASTM E1527-13 practice may reduce such uncertainty but in no way should the findings and report be misconstrued as insurance or a guarantee regarding the potential for recognized environmental conditions in connection with a given property. The ASTM E1527-13 practice recognizes reasonable limits of time and cost relative to the completion of a Phase I ESA.

During the completion of this ESA, our firm relied on certain information obtained from secondary sources, including but not limited to the user of the report, government agencies, historical research business entities, environmental databases, and interviews with one or more persons. The sources obtained and/or consulted are assumed to be reliable. However, our firm cannot warranty or guarantee that the information provided by these other sources is wholly accurate or complete. Our firm is not responsible for any misrepresentations or false statements that may be provided by others or the lack of pertinent/relevant information that should have been provided/disclosed by others and we assume no responsibility for any consequence as a result of such omissions or withheld information.

Accuracy and completeness of records varies among information sources, including from governmental agencies. As a result, there is a possibility that even with the proper application of the methodologies presented in ASTM E1527-13, conditions may exist that could not be identified within the scope of this assessment or which were not reasonably identifiable from the available information. In addition, any responses received from Federal, State, Tribal, and local regulatory agency secondary sources of information after the issuance of this report may change certain findings and conclusions of this report.

Estimations and opinions regarding the potential for off-Site properties to adversely impact a given subject property is one of the key components of a Phase I ESA. In most cases, recent property-specific or adjacent-property specific measured groundwater data or other hydrogeological information is not reasonably ascertainable. In the absence of such data, reasonable assumptions regarding the depth and flow of groundwater are made based on various sources including comparisons to surface elevations, land topography and available hydrogeological on the State of California Geotracker database. In addition, estimations and opinions regarding potential impacts from off-Site locations may be based on certain assumptions that a hazardous substance or petroleum product may not migrate laterally within unsaturated soil for a substantial distance and that contaminants that have reached saturated soil and groundwater may attenuate over time and/or may decrease in concentration relative to distance from its source. While any interpretations presented herein may be effective in reducing uncertainty regarding potential impacts to a subject property from off-Site locations, in no way should the findings and report be misconstrued as insurance or a guarantee regarding the potential for such impacts to occur. Greater certainty regarding subsurface conditions at a given property can only be achieved by way of a subsurface sampling effort of one or more media.

14.0 DEFINITIONS

Definitions of key terminology relevant to the ASTM E1527-13 practice are presented below.

Recognized Environmental Condition - 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.

Controlled Recognized Environmental Condition - 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).

Data Failure - A failure to achieve the historical research objectives as outlined in the ASTM E1527-13 practice even after reviewing the standard historical sources that are reasonably ascertainable and likely to be useful. Data failure is one type of data gap.

Data Gap - A lack of or inability to obtain information required by this practice despite good faith efforts by the environmental professional to gather such information. Data gaps may result from incompleteness in any of the activities required by the ASTM E1527-13 practice, including, but not limited to site reconnaissance (for example, an inability to conduct the site visit), and interviews (for example, an inability to interview the key site manager, regulatory officials, etc.). Data gaps are only considered to be significant if they affect the ability of the environmental professional to identify recognized environmental conditions.

De Minimis Condition - 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.

Environment - (A) the navigable waters, the waters of the contiguous zone, and the ocean waters of which the natural resources are under the exclusive management authority of the United States under the Magnuson-Stevens Fishery Conservation and Management Act [16 U.S.C. §§ 1801 et seq.], and (B) any other surface water, groundwater, drinking water supply, land surface or subsurface strata, or ambient air within the United States or under the jurisdiction of the United States.

Good Faith - The absence of any intention to seek an unfair advantage or to defraud another party; an honest and sincere intention to fulfill one's obligations in the conduct or transaction concerned.

Hazardous Substance - Includes hazardous substances designated under section 311 of the Clean Water Act (CWA) or Section 102 of CERCLA, any toxic pollutant listed under Section 307(a) of the CWA, any waste that has been listed as a RCRA hazardous waste or possesses a RCRA hazardous waste characteristic, any substance that is identified as a hazardous pollutant under Section 112 of the Clean Air Act (CAA), and any imminently hazardous chemical that EPA has taken action pursuant to Section 7 of the Toxic Substances Control Act (TSCA).

Historical Recognized Environmental Condition - A past release of any hazardous substances or petroleum products that 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 in question to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).

Petroleum Exclusion – While the definition of a CERCLA hazardous substance specifically excludes petroleum products and crude oil, the EPA has determined that the petroleum exclusion applies to petroleum products such as gasoline and other fuels containing lead, benzene or other hazardous substances that are normally added during the refining process. Notwithstanding the existence of the petroleum exclusion, petroleum products are included within the scope of the ASTM E1527-13 practice for multiple reasons. Petroleum products have historically been widely used at commercial properties. In addition, other federal and state laws may impose liability for releases or spills of petroleum products.

Reasonably Ascertainable Information - Information that is (1) publicly available, (2) obtainable from its source within reasonable time and cost constraints and (3) practically reviewable.

Release or Threatened Release - Spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment (including the abandonment or discarding of barrels, containers and other closed receptacles containing any hazardous substance, or pollutant or contaminant).

15.0 REFERENCES

Sources of information consulted during the completion of our Phase I ESA are noted in the sections below.

15.1 Documents, Plans and Reports

- All Appropriate Inquiry" as necessary to satisfy the defenses available under 42 U.S.C. §§ 9607(b)(3), 9607(r)(1), and 9607(q), relying on definitions provided at 42 U.S.C. §§ 9601(35)(B); and as further explained in 40 CFR §§ 312.1 – 312.31.
- ASTM International, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process," ASTM Designation E 1527-13, Published November 2013.
- California Geological Survey, 2002, California Geomorphic Provinces Note 36, Electronic Copy, Revised December.
- California State Water Resources Control Board, Water Quality Control Plan for the Santa Ana River Basin (8), California, Published 2008.
- ERIS Database Report dated November 8, 2021.
- ERIS City Directory Report dated November 9, 2021.
- ERIS Fire Insurance Maps dated November 19, 2021.
- ERIS Historical Aerials dated November 8, 2021.
- USGS topographic map, Beaumont, California Quadrangle (2018).

15.2 Personal Communications

- Public Records Clerks – City of Banning, County of Riverside, State of California
- Designated Client Representative – Jacob Kentnich

15.3 Agencies Consulted

- California Department of Conservation, Geologic Energy Management Division (CalGEM)
- California Department of Toxic Substances Control
- California State Water Resources Control Board
- City of Banning
- County of Riverside
- United States EPA

FIGURES

FIGURE 1
VICINITY MAP

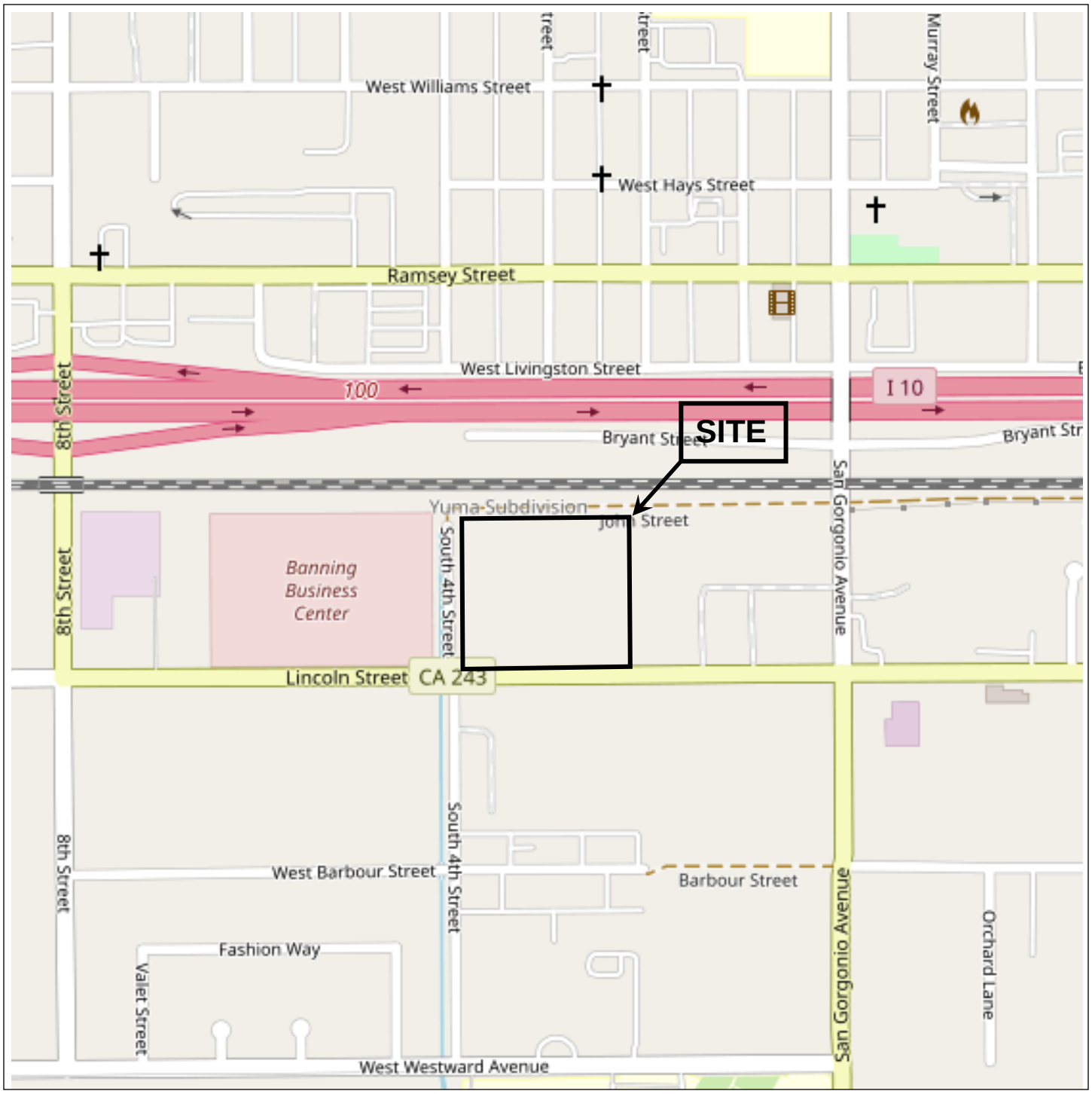


Figure 1 - Vicinity Map

Northeast Corner of W Lincoln Street and 4th Street
Banning, California

N

Prepared by:

Weis Environmental
1938 Kellogg Avenue, Suite 116
Carlsbad, CA 92008

FIGURE 2
SITE PLAN



Figure 2 - Site Plan

Northeast Corner of W Lincoln Street and 4th Street
Banning, California

N

Prepared by:

Weis Environmental
1938 Kellogg Avenue, Suite 116
Carlsbad, CA 92008

Weis ENVIRONMENTAL

FIGURE 3
TOPOGRAPHIC MAP

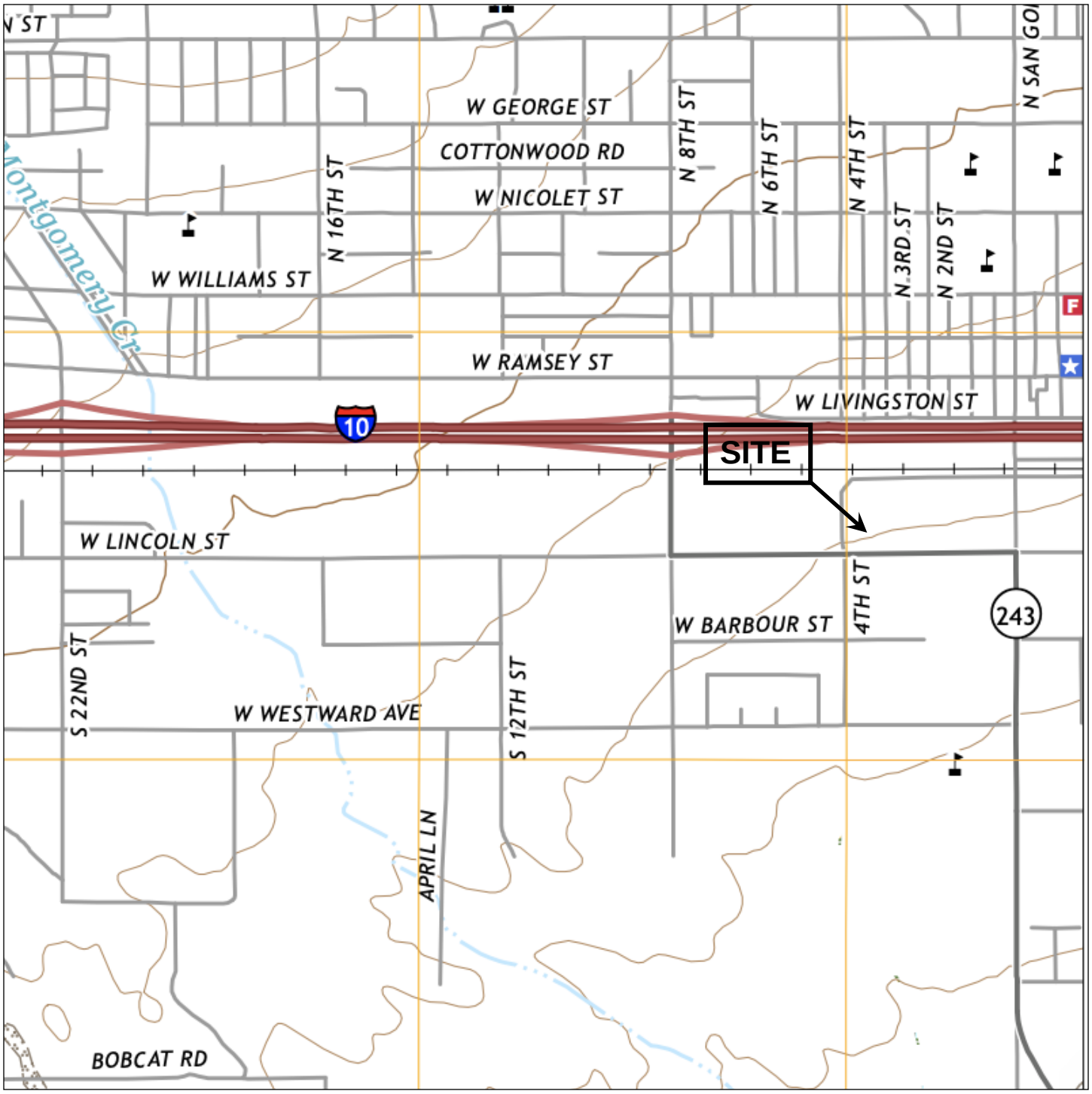


Figure 3 - Topographic Map

Northeast Corner of W Lincoln Street and 4th Street
Banning, California

N

Prepared by:

Weis Environmental
1938 Kellogg Avenue, Suite 116
Carlsbad, CA 92008

Weis ENVIRONMENTAL

APPENDICES

APPENDIX A
USER QUESTIONAIRRE

Due Diligence Environmental Questionnaire - ***User***

Site Name - NEC Lincoln and 4th Street, Banning, California

APN: 540-210-009 and 540-210-010

Return to dw@weisenviro.com

Completed by: Jacob Kentnich

Company or Organization: First Industrial Realty Trust

Title: Environmental Risk Analyst

Date: November 11, 2021

1.) Who is the current owner of the subject property and when was it purchased?

Current owner: Stepping Stone Properties, LLC.
Purchase date: Unknown.

2.) Who are the past owners of the property and years of ownership (if available)?

Unknown.

3.) What was the past use of the subject property?

Unknown.

4.) Are you aware of any environmental cleanup liens that are filed or recorded against the subject property?

No. None identified in Title Commitment.

5.) Are you aware of any activity and land use limitations that are in place on the property that have been filed or recorded in a registry?

No. None identified in Title Commitment.

6.) Are you aware of any specialized knowledge or experience related to the property or nearby properties that is pertinent to potential adverse environmental conditions?

No.

7.) Are you aware of commonly known or reasonably obtainable information that would help us to identify conditions indicative of releases or threatened releases of hazardous wastes/materials at the property? Such information includes knowledge of specific chemicals that are present or were once present on the property, spills or other chemicals releases that may have occurred, underground or aboveground storage tanks and environmental cleanups that have been conducted on the property.

No.

8.) 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?

No.

APPENDIX B
TITLE REPORTS

First American	ALTA Commitment for Title Insurance
Commitment	ISSUED BY **First American Title Insurance Company** File No: NCS-1093310-CHI2

COMMITMENT FOR TITLE INSURANCE

Issued By

FIRST AMERICAN TITLE INSURANCE COMPANY

NOTICE

IMPORTANT-READ CAREFULLY: THIS COMMITMENT IS AN OFFER TO ISSUE ONE OR MORE TITLE INSURANCE POLICIES. ALL CLAIMS OR REMEDIES SOUGHT AGAINST THE COMPANY INVOLVING THE CONTENT OF THIS COMMITMENT OR THE POLICY MUST BE BASED SOLELY IN CONTRACT.

THIS COMMITMENT IS NOT AN ABSTRACT OF TITLE, REPORT OF THE CONDITION OF TITLE, LEGAL OPINION, OPINION OF TITLE, OR OTHER REPRESENTATION OF THE STATUS OF TITLE. THE PROCEDURES USED BY THE COMPANY TO DETERMINE INSURABILITY OF THE TITLE, INCLUDING ANY SEARCH AND EXAMINATION, ARE PROPRIETARY TO THE COMPANY, WERE PERFORMED SOLELY FOR THE BENEFIT OF THE COMPANY, AND CREATE NO EXTRACONTRACTUAL LIABILITY TO ANY PERSON, INCLUDING A PROPOSED INSURED.

THE COMPANY'S OBLIGATION UNDER THIS COMMITMENT IS TO ISSUE A POLICY TO A PROPOSED INSURED IDENTIFIED IN SCHEDULE A IN ACCORDANCE WITH THE TERMS AND PROVISIONS OF THIS COMMITMENT. THE COMPANY HAS NO LIABILITY OR OBLIGATION INVOLVING THE CONTENT OF THIS COMMITMENT TO ANY OTHER PERSON.

COMMITMENT TO ISSUE POLICY

Subject to the Notice; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions; and the Commitment Conditions, ***First American Title Insurance Company***, a Nebraska Corporation (the "Company"), commits to issue the Policy according to the terms and provisions of this Commitment. This Commitment is effective as of the Commitment Date shown in Schedule A for each Policy described in Schedule A, only when the Company has entered in Schedule A both the specified dollar amount as the Proposed Policy Amount and the name of the Proposed Insured.

If all of the Schedule B, Part I-Requirements have not been met within six months after the Commitment Date, this Commitment terminates and the Company's liability and obligation end.

First American Title Insurance Company

Dennis J. Gilmore, President

Greg L. Smith, Secretary

If this jacket was created electronically, it constitutes an original document.

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by First American Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions.

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COMMITMENT CONDITIONS

1. DEFINITIONS

(a) "Knowledge" or "Known": Actual or imputed knowledge, but not constructive notice imparted by the Public Records.
(b) "Land": The land described in Schedule A and affixed improvements that by law constitute real property. The term "Land" does not include any property beyond the lines of the area described in Schedule A, nor any right, title, interest, estate, or easement in abutting streets, roads, avenues, alleys, lanes, ways, or waterways, but this does not modify or limit the extent that a right of access to and from the Land is to be insured by the Policy.
(c) "Mortgage": A mortgage, deed of trust, or other security instrument, including one evidenced by electronic means authorized by law.
(d) "Policy": Each contract of title insurance, in a form adopted by the American Land Title Association, issued or to be issued by the Company pursuant to this Commitment.
(e) "Proposed Insured": Each person identified in Schedule A as the Proposed Insured of each Policy to be issued pursuant to this Commitment.
(f) "Proposed Policy Amount": Each dollar amount specified in Schedule A as the Proposed Policy Amount of each Policy to be issued pursuant to this Commitment.
(g) "Public Records": Records established under state statutes at the Commitment Date for the purpose of imparting constructive notice of matters relating to real property to purchasers for value and without Knowledge.
(h) "Title": The estate or interest described in Schedule A.

2. If all of the Schedule B, Part I—Requirements have not been met within the time period specified in the Commitment to Issue Policy, this Commitment terminates and the Company's liability and obligation end.

3. The Company's liability and obligation is limited by and this Commitment is not valid without:
(a) the Notice;
(b) the Commitment to Issue Policy;
(c) the Commitment Conditions;
(d) Schedule A;
(e) Schedule B, Part I—Requirements; and
(f) Schedule B, Part II—Exceptions.

4. COMPANY'S RIGHT TO AMEND

The Company may amend this Commitment at any time. If the Company amends this Commitment to add a defect, lien, encumbrance, adverse claim, or other matter recorded in the Public Records prior to the Commitment Date, any liability of the Company is limited by Commitment Condition 5. The Company shall not be liable for any other amendment to this Commitment.

5. LIMITATIONS OF LIABILITY

(a) The Company's liability under Commitment Condition 4 is limited to the Proposed Insured's actual expense incurred in the interval between the Company's delivery to the Proposed Insured of the Commitment and the delivery of the amended Commitment, resulting from the Proposed Insured's good faith reliance to:
  (i) comply with the Schedule B, Part I—Requirements;
  (ii) eliminate, with the Company's written consent, any Schedule B, Part II—Exceptions; or
  (iii) acquire the Title or create the Mortgage covered by this Commitment.
(b) The Company shall not be liable under Commitment Condition 5(a) if the Proposed Insured requested the amendment or had Knowledge of the matter and did not notify the Company about it in writing.
(c) The Company will only have liability under Commitment Condition 4 if the Proposed Insured would not have incurred the expense had the Commitment included the added matter when the Commitment was first delivered to the Proposed Insured.
(d) The Company's liability shall not exceed the lesser of the Proposed Insured's actual expense incurred in good faith and described in Commitment Conditions 5(a)(i) through 5(a)(iii) or the Proposed Policy Amount.
(e) The Company shall not be liable for the content of the Transaction Identification Data, if any.
(f) In no event shall the Company be obligated to issue the Policy referred to in this Commitment unless all of the Schedule B, Part I—Requirements have been met to the satisfaction of the Company.
(g) In any event, the Company's liability is limited by the terms and provisions of the Policy.

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6. LIABILITY OF THE COMPANY MUST BE BASED ON THIS COMMITMENT

(a) Only a Proposed Insured identified in Schedule A, and no other person, may make a claim under this Commitment.
(b) Any claim must be based in contract and must be restricted solely to the terms and provisions of this Commitment.
(c) Until the Policy is issued, this Commitment, as last revised, is the exclusive and entire agreement between the parties with respect to the subject matter of this Commitment and supersedes all prior commitment negotiations, representations, and proposals of any kind, whether written or oral, express or implied, relating to the subject matter of this Commitment.
(d) The deletion or modification of any Schedule B, Part II—Exception does not constitute an agreement or obligation to provide coverage beyond the terms and provisions of this Commitment or the Policy.
(e) Any amendment or endorsement to this Commitment must be in writing and authenticated by a person authorized by the Company.
(f) When the Policy is issued, all liability and obligation under this Commitment will end and the Company's only liability will be under the Policy.

7. IF THIS COMMITMENT HAS BEEN ISSUED BY AN ISSUING AGENT

The issuing agent is the Company's agent only for the limited purpose of issuing title insurance commitments and policies. The issuing agent is not the Company's agent for the purpose of providing closing or settlement services.

8. PRO-FORMA POLICY

The Company may provide, at the request of a Proposed Insured, a pro-forma policy illustrating the coverage that the Company may provide. A pro-forma policy neither reflects the status of Title at the time that the pro-forma policy is delivered to a Proposed Insured, nor is it a commitment to insure.

9. ARBITRATION

Arbitration provision intentionally removed.

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Transaction Identification Data for reference only:

Issuing Agent: First American Title Insurance Company National Commercial Services
Commitment No.: NCS-1093310-CHI2
Property Address: NEC Lincoln & 4th Street, Banning, CA 92220
Revision No.:

Issuing Office: 30 North La Salle, Suite 2700, Chicago, IL 60602-3847
Issuing Office File No.: NCS-1093310-CHI2
Escrow Officer/Assistant: /
Phone: /
Email: /
Title Officer/Assistant: /
Phone: /
Email: /

SCHEDULE A

1. Commitment Date: September 29, 2021 at 7:30 AM
2. Policy to be issued:

   (a) ☒ 2006 ALTA® Extended Owner Policy
   Proposed Insured: To Be Determined
   Proposed Policy Amount: $ 2,700,000.00

   (b) ☒ 2006 ALTA® Extended Loan Policy
   Proposed Insured: To Be Determined
   Proposed Policy Amount: $ To Be Determined

   (c) ☐ 2006 ALTA® Policy
   Proposed Insured:
   Proposed Policy Amount: $

3. The estate or interest in the Land described or referred to in this Commitment is

   Fee

4. The Title is, at the Commitment Date, vested in:

   Stepping Stone Properties, LLC, a California limited liability company

5. The Land is described as follows:

   See Exhibit "A" attached hereto and made a part hereof

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by First American Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions.

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Commitment No.: NCS-1093310-CHI2

SCHEDULE B, PART I

Requirements

All of the following Requirements must be met:

A. The Proposed Insured must notify the Company in writing of the name of any party not referred to in this Commitment who will obtain an interest in the Land or who will make a loan on the Land. The Company may then make additional Requirements or Exceptions.

B. Pay the agreed amount for the estate or interest to be insured.

C. Pay the premiums, fees, and charges for the Policy to the Company.

D. Documents satisfactory to the Company that convey the Title or create the Mortgage to be insured, or both, must be properly authorized, executed, delivered, and recorded in the Public Records.

E. Releases(s) or Reconveyance(s) of Item(s): None

F. Other: None

G. You must give us the following information:
   a. Any off record leases, surveys, etc.
   b. Statement(s) of Identity, all parties.
   c. Other: None

The following additional requirements, as indicated by "X", must be met:

[X] H. Provide information regarding any off-record matters, which may include, but are not limited to: leases, recent works of improvement, or commitment statements in effect under the Environmental Responsibility Acceptance Act, Civil Code Section 850, et seq.

The Company's Owner's Affidavit form (as provided by the company) must be completed and submitted prior to close in order to satisfy this requirement. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[X] I. An ALTA/NSPS survey of recent date, which complies with the current minimum standard detail requirements for ALTA/NSPS land title surveys, must be submitted to the Company for review. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by First American Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions.

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[X] J. The following LLC documentation is required from:

(i) a copy of the Articles of Organization
(ii) a copy of the Operating Agreement, if applicable
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Company Consent to the current transaction

[] K. The following partnership documentation is required **:**

(i) a copy of the partnership agreement, including all applicable amendments thereto
(ii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iii) express Partnership Consent to the current transaction

[] L. The following corporation documentation is required:

(i) a copy of the Articles of Incorporation
(ii) a copy of the Bylaws, including all applicable Amendments thereto
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Corporate Resolution consenting to the current transaction

[X] M. Based upon the Company's review of that certain partnership/operating agreement dated **Not disclosed** for the proposed insured herein, the following requirements must be met:
Any further amendments to said agreement must be submitted to the Company, together with an affidavit from one of the general partners or members stating that it is a true copy, that said partnership or limited liability company is in full force and effect, and that there have been no further amendments to the agreement. This Commitment will then be subject to such further requirements as may be deemed necessary.

[] N. A copy of the complete lease, as referenced in Schedule A, #3 herein, together with any amendments and/or assignments thereto, must be submitted to the Company for review, along with an affidavit executed by the present lessee stating that it is a true copy, that the lease is in full force and effect, and that there have been no further amendments to the lease. This Commitment will then be subject to such further requirements as may be deemed necessary.

[X] O. Approval from the Company's Underwriting Department must be obtained for issuance of the policy contemplated herein and any endorsements requested thereunder. This Commitment will then be subject to such further requirements as may be required to obtain such approval.

[] P. Potential additional requirements, if ALTA Extended coverage is contemplated hereunder, and work on the land has commenced prior to close, some or all of the following requirements, and any other requirements which may be deemed necessary, may need to be met:

[] Q. The Company's "Indemnity Agreement I" must be executed by the appropriate parties.

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[] R. Financial statements from the appropriate parties must be submitted to the Company for review.

[] S. A copy of the construction contract must be submitted to the Company for review.

[] T. An inspection of the Land must be performed by the Company for verification of the phase of construction.

[] U. The Company's "Mechanic's Lien Risk Addendum" form must be completed by a Company employee, based upon information furnished by the appropriate parties involved.

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Commitment No.: NCS-1093310-CHI2

SCHEDULE B, PART II

Exceptions

THIS COMMITMENT DOES NOT REPUBLISH ANY COVENANT, CONDITION, RESTRICTION, OR LIMITATION CONTAINED IN ANY DOCUMENT REFERRED TO IN THIS COMMITMENT TO THE EXTENT THAT THE SPECIFIC COVENANT, CONDITION, RESTRICTION, OR LIMITATION VIOLATES STATE OR FEDERAL LAW BASED ON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, GENDER IDENTITY, HANDICAP, FAMILIAL STATUS, OR NATIONAL ORIGIN.

The Policy will not insure against loss or damage resulting from the terms and provisions of any lease or easement identified in Schedule A, and will include the following Exceptions unless cleared to the satisfaction of the Company:

1. Any defect, lien, encumbrance, adverse claim, or other matter that appears for the first time in the Public Records or is created, attaches, or is disclosed between the Commitment Date and the date on which all of the Schedule B, Part I-Requirements are met.

2. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

3. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.

4. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.

5. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.

6. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

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7. General and special taxes and assessments for the fiscal year 2021-2022.

First Installment:	$6,832.60, OPEN
Penalty:	$0.00
Second Installment:	$6,832.60, OPEN
Penalty:	$0.00
Tax Rate Area:	001-020
A. P. No.:	540-210-009

8. The lien of defaulted taxes for the fiscal year 2020-2021, and any subsequent delinquencies.

Tax Rate Area:	001-020
A. P. No.:	540-210-009
Amount to redeem:	$15,799.56
Valid through:	October 2021
Amount to redeem:	$16,002.89
Valid through:	November 2021

Please contact the tax office to verify the payoff amount.

9. General and special taxes and assessments for the fiscal year 2021-2022.

First Installment:	$5,240.76, OPEN
Penalty:	$0.00
Second Installment:	$5,240.76, OPEN
Penalty:	$0.00
Tax Rate Area:	001-020
A. P. No.:	540-210-020

10. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

11. An easement for construction and maintenance of all necessary irrigation ditches, pipes or flumes and incidental purposes, recorded March 19, 1895 in Book 31 of Deeds, Page 50.

In Favor of:	Banning Land Company and Banning Water Company
Affects:	The land

The location of the easement cannot be determined from record information.

12. The rights, if any, of a city, public utility or special district to preserve a public easement in Second, Third and Fourth Street as the same was vacated by documents recorded December 11, 1944 in book 654, page 270 and March 19, 1979 as Instrument No. 53964, both of Official Records.

13. The effect of a map purporting to show the land and other property, filed Book 120, Pages 25-26 of Parcel Maps.

14. The fact that the land lies within the boundaries of the Midway Redevelopment Project Area, as disclosed by the document recorded December 16, 1993 as Instrument No. 500470 of Official Records.

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15. The fact that the land lies within the boundaries of the Merged Downtown and Midway Redevelopment Project Area, as disclosed by the document recorded January 28, 2008 as Instrument No. 2008-0041511 of Official Records.

16. Rights of the public in and to that portion of the land lying within any road, street, alley and/or highway.

17. We find no outstanding voluntary liens of record affecting subject property. An inquiry should be made concerning the existence of any unrecorded lien or other indebtedness which could give rise to any security interest in the subject property.

18. Any facts, rights, interests or claims which would be disclosed by a correct ALTA/NSPS survey.

19. Water rights, claims or title to water, whether or not shown by the Public Records.

20. Rights of parties in possession.

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INFORMATIONAL NOTES

ALERT - CA Senate Bill 2 imposes an additional fee of $75 up to $225 at the time of recording on certain transactions effective January 1, 2018. Please contact your First American Title representative for more information on how this may affect your closing.

1. Supplemental taxes for the fiscal year 2019-2020 assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

First Installment:	$2,606.04, PAID
Penalty:	$0.00
Second Installment:	$2,606.04, PAID
Penalty:	$0.00
Tax Rate Area:	001-020
A. P. No.:	540-210-020

2. The property covered by this report is vacant land.

3. According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

   None

4. This preliminary report/commitment was prepared based upon an application for a policy of title insurance that identified land by street address or assessor's parcel number only. It is the responsibility of the applicant to determine whether the land referred to herein is in fact the land that is to be described in the policy or policies to be issued.

The map attached, if any, may or may not be a survey of the land depicted thereon. First American Title Insurance Company expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of this Commitment or the Policy, if any, to which the map is attached.

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Exhibit A

File No.: NCS-1093310-CHI2

The Land referred to herein below is situated in the City of Banning, County of Riverside, State of California, and is described as follows:

PARCEL 1:

BLOCK 232 OF AMENDED MAP OF BANNING LAND COMPANY, IN THE CITY OF BANNING, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 9, PAGE(S) 44, OF MAPS, OF SAN BERNARDINO COUNTY, CALIFORNIA.

TOGETHER WITH THOSE PORTIONS OF VACATED STREETS AND ALLEYS AS DISCLOSED BY RESOLUTION RECORDED DECEMBER 11, 1944 IN BOOK 654, PAGE 270, OFFICIAL RECORDS AND BY RESOLUTION RECORDED MARCH 19, 1979 AS INSTRUMENT NO. 53964, OFFICIAL RECORDS.

EXCEPTING THEREFROM THE NORTH 10 FEET OF THE SOUTH 40 FEET AS MEASURED FROM THE CENTERLINE OF LINCOLN STREET.

PARCEL 2:

PARCEL "A" AS SHOWN ON LOT LINE ADJUSTMENT NO. LLA 19-5001, AS EVIDENCED BY DOCUMENT RECORDED AS INSTRUMENT NO. 2019-189544 OF OFFICIAL RECORDS BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BLOCK 220 OF AMENDED MAP OF THE BANNING LAND COMPANY, IN THE CITY OF BANNING, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 9, PAGE 44, OF MAPS, OF SAN BERNARDINO COUNTY, CALIFORNIA.

TOGETHER WITH THOSE PORTIONS OF VACATED STREETS AND ALLEYS AS DISCLOSED BY RESOLUTION RECORDED DECEMBER 11, 1944 IN BOOK 654, PAGE 270, OFFICIAL RECORDS OF RIVERSIDE COUNTY AND BY RESOLUTION RECORDED MARCH 19, 1979 AS INSTRUMENT NO. 53964, OFFICIAL RECORDS OF RIVERSIDE COUNTY.

EXCEPTING THEREFROM THAT PORTION OF ABOVE DESCRIBED LAND LYING EASTERLY OF THE FOLLOWING DESCRIBED LINE:

COMMENCING AT THE NORTHWEST CORNER OF PARCEL 1 OF PARCEL MAP 19414, AS PER MAP RECORDED IN BOOK 120, PAGES 25 AND 26 OF PARCEL MAPS IN THE OFFICE OF THE COUNTY RECORDER OF RIVERSIDE COUNTY, STATE OF CALIFORNIA;

THENCE WESTERLY ALONG THE NORTH LINE OF SAID BLOCK 220, NORTH 89°54'06" WEST, 75.29 FEET' TO THE POINT OF BEGINNING OF SAID LINE;

THENCE LEAVING SAID NORTH LINE SOUTH 00°00'37" WEST 454.70 FEET TO THE NORTHERLY RIGHT-OF-WAY LINE OF LINCOLN STREET, SAID RIGHT-OF-WAY BEING 40 FEET NORTH OF THE CENTERLINE OF LINCOLN STREET.

EXCEPTING THEREFROM THE NORTH 10 FEET OF THE SOUTH 40 FEET AS MEASURED FROM THE CENTERLINE OF LINCOLN STREET.

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For conveyancing purposes only: APN 540-210-009 and

540-210-010 (Old APN): 540-210-020 (New APN)

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APPENDIX C
REGULATORY DATABASE REPORT

DATABASE REPORT

Project Property:	*APNs 540-210-009 and 540-210-010* *APNs 540-210-009 and 540-210-010* *Banning CA*
Project No:	
Report Type:	*Database Report*
Order No:	*21110500005*
Requested by:	*Weis Environmental, LLC*
Date Completed:	*November 8, 2021*

Environmental Risk Information Services
A division of Glacier Media Inc.
1.866.517.5204 | info@erisinfo.com | erisinfo.com

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Notice: IMPORTANT LIMITATIONS and YOUR LIABILITY

Reliance on information in Report: This report DOES NOT replace a full Phase I Environmental Site Assessment but is solely intended to be used as database review of environmental records.

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Executive Summary

Property Information:

Project Property:		*APNs 540-210-009 and 540-210-010* *APNs 540-210-009 and 540-210-010 Banning CA*
Project No:		
Coordinates:		
	Latitude:	*33.9224622*
	Longitude:	*-116.88011532*
	UTM Northing:	*3,753,565.26*
	UTM Easting:	*511,081.14*
	UTM Zone:	*11S*
Elevation:		*2,324 FT*

Order Information:

Order No:	*21110500005*
Date Requested:	*November 5, 2021*
Requested by:	*Weis Environmental, LLC*
Report Type:	*Database Report*

Historicals/Products:

Aerial Photographs	*Historical Aerials (with Project Boundaries)*
City Directory Search	*CD - 1 Street Search*
ERIS Xplorer	*ERIS Xplorer*
Excel Add-On	*Excel Add-On*

Executive Summary: Report Summary

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
Standard Environmental Records								
Federal								
DOE FUSRAP	Y	1	0	0	0	0	0	0
NPL	Y	1	0	0	0	0	0	0
PROPOSED NPL	Y	1	0	0	0	0	0	0
DELETED NPL	Y	0.5	0	0	0	0	-	0
SEMS	Y	0.5	0	0	0	0	-	0
ODI	Y	0.5	0	0	0	0	-	0
SEMS ARCHIVE	Y	0.5	0	0	0	0	-	0
CERCLIS	Y	0.5	0	0	0	0	-	0
IODI	Y	0.5	0	0	0	0	-	0
CERCLIS NFRAP	Y	0.5	0	0	0	0	-	0
CERCLIS LIENS	Y	PO	0	-	-	-	-	0
RCRA CORRACTS	Y	1	0	0	0	0	0	0
RCRA TSD	Y	0.5	0	0	**1**	0	-	**1**
RCRA LQG	Y	0.25	0	0	0	-	-	0
RCRA SQG	Y	0.25	0	**1**	**2**	-	-	**3**
RCRA VSQG	Y	0.25	0	0	0	-	-	0
RCRA NON GEN	Y	0.25	0	**8**	**5**	-	-	**13**
FED ENG	Y	0.5	0	0	0	0	-	0
FED INST	Y	0.5	0	0	0	0	-	0
LUCIS	Y	0.5	0	0	0	0	-	0
ERNS 1982 TO 1986	Y	PO	0	-	-	-	-	0
ERNS 1987 TO 1989	Y	PO	0	-	-	-	-	0
ERNS	Y	PO	0	-	-	-	-	0
FED BROWNFIELDS	Y	0.5	0	0	0	0	-	0
FEMA UST	Y	0.25	0	0	0	-	-	0
FRP	Y	0.25	0	0	0	-	-	0
HIST GAS STATIONS	Y	0.25	0	0	0	-	-	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
REFN	Y	0.25	0	0	0	-	-	0
BULK TERMINAL	Y	0.25	0	0	0	-	-	0
SEMS LIEN	Y	PO	0	-	-	-	-	0
SUPERFUND ROD	Y	1	0	0	0	0	0	0
State								
RESPONSE	Y	1	0	0	0	0	0	0
ENVIROSTOR	Y	1	0	0	0	**4**	**4**	**8**
DELISTED ENVS	Y	1	0	0	0	0	0	0
SWF/LF	Y	0.5	0	0	0	0	-	0
SWRCB SWF	Y	0.5	0	0	0	0	-	0
HWP	Y	1	0	0	0	0	0	0
SWAT	Y	0.5	0	0	0	0	-	0
C&D DEBRIS RECY	Y	0.5	0	0	0	0	-	0
RECYCLING	Y	0.5	0	0	**1**	**1**	-	**2**
PROCESSORS	Y	0.5	0	0	0	0	-	0
CONTAINER RECY	Y	0.5	0	0	0	0	-	0
LDS	Y	0.5	0	0	0	0	-	0
LUST	Y	0.5	0	0	**3**	**2**	-	**5**
DELISTED LST	Y	0.5	0	0	0	0	-	0
UST	Y	0.25	0	0	**2**	-	-	**2**
UST CLOSURE	Y	0.5	0	0	0	0	-	0
HHSS	Y	0.25	0	0	**3**	-	-	**3**
UST SWEEPS	Y	0.25	0	0	**4**	-	-	**4**
AST	Y	0.25	0	0	0	-	-	0
AST SWRCB	Y	0.25	0	0	0	-	-	0
TANK OIL GAS	Y	0.25	0	0	0	-	-	0
DELISTED TNK	Y	0.25	0	0	**2**	-	-	**2**
CERS TANK	Y	0.25	0	**1**	**1**	-	-	**2**
DELISTED CTNK	Y	0.25	0	0	0	-	-	0
HIST TANK	Y	0.25	0	0	**3**	-	-	**3**
LUR	Y	0.5	0	0	0	0	-	0
CALSITES	Y	0.5	0	0	0	0	-	0
HLUR	Y	0.5	0	0	0	0	-	0
DEED	Y	0.5	0	0	0	0	-	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
VCP	Y	0.5	0	0	0	0	-	0
CLEANUP SITES	Y	0.5	0	0	0	0	-	0
DELISTED COUNTY	Y	0.25	0	0	**2**	-	-	**2**
Tribal								
INDIAN LUST	Y	0.5	0	0	0	0	-	0
INDIAN UST	Y	0.25	0	0	0	-	-	0
DELISTED ILST	Y	0.5	0	0	0	0	-	0
DELISTED IUST	Y	0.25	0	0	0	-	-	0
County								
LOP RIVERSIDE	Y	0.5	0	0	**3**	**2**	-	**5**
UST RIVERSIDE	Y	0.25	0	0	**2**	-	-	**2**
Additional Environmental Records								
Federal								
PFAS NPL	Y	0.5	0	0	0	0	-	0
FINDS/FRS	Y	PO	0	-	-	-	-	0
TRIS	Y	PO	0	-	-	-	-	0
PFAS TRI	Y	0.5	0	0	0	0	-	0
PFAS WATER	Y	0.5	0	0	0	0	-	0
HMIRS	Y	0.125	0	0	-	-	-	0
NCDL	Y	0.125	0	0	-	-	-	0
TSCA	Y	0.125	0	0	-	-	-	0
HIST TSCA	Y	0.125	0	0	-	-	-	0
FTTS ADMIN	Y	PO	0	-	-	-	-	0
FTTS INSP	Y	PO	0	-	-	-	-	0
PRP	Y	PO	0	-	-	-	-	0
SCRD DRYCLEANER	Y	0.5	0	0	0	0	-	0
ICIS	Y	PO	0	-	-	-	-	0
FED DRYCLEANERS	Y	0.25	0	0	**2**	-	-	**2**
DELISTED FED DRY	Y	0.25	0	0	0	-	-	0
FUDS	Y	1	0	0	0	0	0	0
FORMER NIKE	Y	1	0	0	0	0	0	0
PIPELINE INCIDENT	Y	PO	0	-	-	-	-	0
MLTS	Y	PO	0	-	-	-	-	0
HIST MLTS	Y	PO	0	-	-	-	-	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
MINES	Y	0.25	0	0	0	-	-	0
SMCRA	Y	1	0	0	0	0	0	0
MRDS	Y	1	0	0	0	0	0	0
URANIUM	Y	1	0	0	0	0	0	0
ALT FUELS	Y	0.25	0	0	0	-	-	0
SSTS	Y	0.25	0	0	0	-	-	0
PCB	Y	0.5	0	0	0	0	-	0
State								
DRYCLEANERS	Y	0.25	0	**1**	**2**	-	-	**3**
DELISTED DRYCLEANERS	Y	0.25	0	0	0	-	-	0
DRYC GRANT	Y	0.25	0	0	0	-	-	0
PFAS	Y	0.5	0	0	0	0	-	0
PFAS GW	Y	0.5	0	0	0	0	-	0
HWSS CLEANUP	Y	0.5	0	0	0	0	-	0
DTSC HWF	Y	0.5	0	0	0	0	-	0
INSP COMP ENF	Y	1	0	0	0	0	0	0
SCH	Y	1	0	0	0	**4**	0	**4**
CHMIRS	Y	PO	0	-	-	-	-	0
HIST CHMIRS	Y	PO	0	-	-	-	-	0
HAZNET	Y	PO	0	-	-	-	-	0
HIST MANIFEST	Y	PO	0	-	-	-	-	0
HW TRANSPORT	Y	0.125	0	0	-	-	-	0
WASTE TIRE	Y	PO	0	-	-	-	-	0
MEDICAL WASTE	Y	0.25	0	0	0	-	-	0
HIST CORTESE	Y	0.5	0	0	0	0	-	0
CDO/CAO	Y	0.5	0	0	0	0	-	0
CERS HAZ	Y	0.125	0	**2**	-	-	-	**2**
DELISTED HAZ	Y	0.5	0	0	0	0	-	0
GEOTRACKER	Y	0.125	0	0	-	-	-	0
MINE	Y	1	0	0	0	0	0	0
LIEN	Y	PO	0	-	-	-	-	0
WASTE DISCHG	Y	0.25	0	0	0	-	-	0
EMISSIONS	Y	0.25	0	**2**	**8**	-	-	**10**
CDL	Y	0.125	0	0	-	-	-	0

Tribal ***No Tribal additional environmental record sources available for this State.***

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
County								
HWG RIVERSIDE	Y	0.125	0	**3**	-	-	-	**3**
HZH RIVERSIDE	Y	0.125	0	**3**	-	-	-	**3**
MED WST RIVERSIDE	Y	0.25	0	0	**2**	-	-	**2**
RMP RIVERSIDE	Y	PO	0	-	-	-	-	0
Total:			0	**21**	**48**	**13**	**4**	**86**

PO – Property Only
'Property and adjoining properties' database search radii are set at 0.25 miles.

Executive Summary: Site Report Summary - Project Property

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number

No records found in the selected databases for the project property.

Executive Summary: Site Report Summary - Surrounding Properties

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
1	RCRA NON GEN	MATEC INSTRUMENT COMPANIES INC	300 W LINCOLN BANNING CA 92220 ***EPA Handler ID:*** CAL000439798	SSE	0.03 / 161.96	-9	33
1	RCRA NON GEN	MATEC INSTRUMENT COMPANIES INC	300 W LINCOLN BANNING CA 92220 ***EPA Handler ID:*** CAC003100737	SSE	0.03 / 161.96	-9	34
2	CERS HAZ	Horizon Hobby LLC	201 W LINCOLN ST BANNING CA 92220	ESE	0.03 / 172.72	-9	35
2	HWG RIVERSIDE	Horizon Hobby LLC	201 W Lincoln St Banning CA 92220	ESE	0.03 / 172.72	-9	38
2	HZH RIVERSIDE	Horizon Hobby LLC	201 W Lincoln St Banning CA 92220	ESE	0.03 / 172.72	-9	38
2	RCRA NON GEN	DT MATTSON ENTERPRISES INC DBA PRO-LINE RACING	201 W LINCOLN ST BANNING CA 92220-4933 ***EPA Handler ID:*** CAL000064957	ESE	0.03 / 172.72	-9	38
2	RCRA NON GEN	HORIZON HOBBY LLC DBA PRO-LINE RACING	201 W LINCOLN ST BANNING CA 92220 ***EPA Handler ID:*** CAL000458991	ESE	0.03 / 172.72	-9	40
3	HZH RIVERSIDE	K S D, Inc.	161 W Lincoln St Banning CA 92220	ESE	0.07 / 352.39	-10	41
3	HWG RIVERSIDE	K S D, Inc.	161 W Lincoln St Banning CA 92220	ESE	0.07 / 352.39	-10	41
3	CERS HAZ	K S D, Inc.	161 W LINCOLN ST BANNING CA 92220	ESE	0.07 / 352.39	-10	41
3	RCRA NON GEN	KSD INC	161 W LINCOLN ST BANNING CA 92220-0000 ***EPA Handler ID:*** CAL000224634	ESE	0.07 / 352.39	-10	44
4	HZH RIVERSIDE	SCC Banning Bulk Plant	270 W Lincoln St Banning CA 92220	SSE	0.09 / 451.22	-17	45

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
4	HWG RIVERSIDE	SCC Banning Bulk Plant	270 W Lincoln St Banning CA 92220	SSE	0.09 / 451.22	-17	45
4	DRYCLEANERS	KENNY STRICKLAND INC	270 W LINCOLN ST BANNING CA 922204904	SSE	0.09 / 451.22	-17	46
4	CERS TANK	SCC Banning Bulk Plant	270 W LINCOLN ST BANNING CA 92220 ***Site ID:*** 127623	SSE	0.09 / 451.22	-17	46
4	RCRA NON GEN	SOCO GROUP	272 W LINCOLN ST BANNING CA 92220 ***EPA Handler ID:*** CAL000430735	SSE	0.09 / 451.22	-17	56
4	RCRA NON GEN	SC COMMERCIAL LLC DBA SCFUELS	270-274 W LINCOLN AVE BANNING CA 92220 ***EPA Handler ID:*** CAL000440891	SSE	0.09 / 451.22	-17	57
4	RCRA NON GEN	SC COMMERCIAL, LLC	272 LINCOLN STREET BANNING CA 92220 ***EPA Handler ID:*** CAC003106149	SSE	0.09 / 451.22	-17	58
5	EMISSIONS	APOLLO MASTERS CORPORATION	101 W LINCOLN ST BANNING CA 92220	ESE	0.11 / 555.11	-11	59
5	EMISSIONS	APOLLO MASTERS CORPORATION	101 WEST LINCOLN ST BANNING CA 92220	ESE	0.11 / 555.11	-11	60
5	RCRA SQG	APOLLO MASTERS CORPORATION	101 WEST LINCOLN STREET BANNING CA 92220 ***EPA Handler ID:*** CAD982411480	ESE	0.11 / 555.11	-11	62
6	DRYCLEANERS	TENAX DRY CLEANERS	57 S 2ND ST BANNING CA 922200000	NNE	0.13 / 679.38	24	63
6	EMISSIONS	TENAX CLEANERS, KUN HEE KIM DB	57 S 2ND ST BANNING CA 92220	NNE	0.13 / 679.38	24	64
6	EMISSIONS	TENAX CLEANERS, KUN HOE KIM DB	57 S 2ND ST BANNING CA 92220	NNE	0.13 / 679.38	24	64
6	EMISSIONS	TENAX CLEANERS	57 S 2ND ST BANNING CA 92220	NNE	0.13 / 679.38	24	65

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
6	FED DRYCLEANERS	TENAX DRY CLEANERS	57 S 2ND ST BANNING CA 92220 ***FRS Facility ID:*** 110009541157	NNE	0.13 / 679.38	24	65
6	DRYCLEANERS	TEXAS CLEANERS	57 S 2ND ST BANNING CA 92220	NNE	0.13 / 679.38	24	65
6	RCRA TSD	TEXAS CLEANERS	57 S 2ND ST BANNING CA 92220 ***EPA Handler ID:*** CAL000444726	NNE	0.13 / 679.38	24	66
6	RCRA NON GEN	TEXAS CLEANERS	57 S 2ND ST BANNING CA 92220 ***EPA Handler ID:*** CAL000444726	NNE	0.13 / 679.38	24	67
6	RCRA SQG	TENAX DRY CLEANERS	57 S 2ND ST BANNING CA 92220 ***EPA Handler ID:*** CAD981984511	NNE	0.13 / 679.38	24	68
6	FED DRYCLEANERS	TEXAS CLEANERS	57 S 2ND ST BANNING CA 92220 ***FRS Facility ID:*** 110070591459	NNE	0.13 / 679.38	24	69
7	EMISSIONS	BILLY MARK INC	260B S SAN GORGONIO BANNING CA 92220	E	0.14 / 738.93	-1	69
8	EMISSIONS	CUSTOMWORKS FURNITURE	326 S SAN GORGONIO AV BANNING CA 92262	E	0.14 / 739.16	-6	70
9	RCRA NON GEN	BANNING SMOG TEST CENTER	376 W RAMSEY ST BANNING CA 92220 ***EPA Handler ID:*** CAL000370680	NNW	0.16 / 843.03	33	71
9	UST SWEEPS	GLENS TIRE SERVICE	376 W RAMSEY ST BANNING CA ***C C | Status:*** A33-000-1910 | ACTIVE ***Tank ID:*** 000001	NNW	0.16 / 843.03	33	72
10	MED WST RIVERSIDE	OLIVERIO MEDICAL CORPORATION	330 W RAMSEY ST BANNING CA 92220-4823	N	0.16 / 843.65	32	73
11	HHSS	UNION OIL SERVICE STATION 411	437 W RAMSEY BANNING CA 92220	NNW	0.16 / 867.90	33	73
11	HHSS	STATION 4118	437 WEST RAMSEY BANNING CA 92220	NNW	0.16 / 867.90	33	73
11	HIST TANK	UNION OIL SERVICE STATION #411	437 W RAMSEY BANNING CA	NNW	0.16 / 867.90	33	73

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
11	HIST TANK	STATION #4118	437 WEST RAMSEY BANNING CA	NNW	0.16 / 867.90	33	73
12	LOP RIVERSIDE	Unocal #4118	437 W Ramsey St Banning CA ***Site ID*	*Status Desc:*** 93938 | CLOSED/ACTION COMPLETED	NNW	0.16 / 868.96	33	74
12	UST SWEEPS	UNOCAL #4118	437 W RAMSEY ST BANNING CA ***C C*	*Status:*** A33-000-17848 | ACTIVE ***Tank ID:*** 000002, 000003, 000001	NNW	0.16 / 868.96	33	74
13	LOP RIVERSIDE	City of Banning	161 W Ramsey St Banning CA ***Site ID*	*Status Desc:*** 94431 | CLOSED/ACTION COMPLETED	NNE	0.17 / 891.63	28	74
13	LUST	CITY OF BANNING	161 WEST RAMSEY STREET BANNING CA 92220 ***Global ID*	*Status*	*Status Date:*** T0606500725 | COMPLETED - CASE CLOSED | 1/26/1995	NNE	0.17 / 891.63	28	75
14	LUST	UNOCAL STATION 4118	437 WEST RAMSEY STREET BANNING CA 92220 ***Global ID*	*Status*	*Status Date:*** T0606500727 | COMPLETED - CASE CLOSED | 4/14/1994	NNW	0.18 / 945.83	36	77
15	MED WST RIVERSIDE	JOHN C. CHOE, DDS, INC.	617 W RAMSEY ST BANNING CA 92220-4919	NW	0.21 / 1,106.32	43	80
16	RCRA NON GEN	PACIFIC BELL	160 W HAYS BANNING CA 92220 ***EPA Handler ID:*** CAD980584718	NNE	0.22 / 1,168.73	35	80
16	DELISTED TNK	GTE CALIFORNIA BANNING	160 W HAYS ST Banning CA 92220	NNE	0.22 / 1,168.73	35	81
16	DELISTED COUNTY	Verizon Global/Service Group	160 W Hays St Banning CA 92220	NNE	0.22 / 1,168.73	35	82
16	DELISTED COUNTY	Verizon Global/Service Group	160 W Hays St Banning CA 92220	NNE	0.22 / 1,168.73	35	82
16	UST RIVERSIDE	Banning CO	160 W Hays St Banning CA 92220 ***No of Tanks:*** 1	NNE	0.22 / 1,168.73	35	82
16	UST	Frontier California, Inc.; Banning CO	160 W. Hays Street Banning CA 92220	NNE	0.22 / 1,168.73	35	82

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
			Facility ID: 82043				
16	EMISSIONS	GTE CALIFORNIA	160 W HAYS BANNING CA 92220	NNE	0.22 / 1,168.73	35	82
16	EMISSIONS	GTE CALIFORNIA	160 W HAYS ST BANNING CA 92220	NNE	0.22 / 1,168.73	35	83
16	EMISSIONS	GEN TEL OF CAL, BANNING CENTRA	160 W HAYS BANNING CA 92220	NNE	0.22 / 1,168.73	35	84
16	UST SWEEPS	GTE BANNING CENTRAL OFFICE	160 W HAYS ST BANNING CA	NNE	0.22 / 1,168.73	35	84
			C C | Status: A33-000-67018 | ACTIVE ***Tank ID:*** 000001				
17	RCRA SQG	SOUTHERN CALIFORNIA GAS CO	60 E RAMSEY ST UNIT A BANNING CA 92220	NE	0.23 / 1,204.68	22	84
			EPA Handler ID: CAR000221705				
18	DELISTED TNK	BANNING CITY OF	176 E LINCOLN ST Banning CA 92220	E	0.24 / 1,283.08	-17	86
18	UST RIVERSIDE	City of Banning Fleet Maintenance	176 E Lincoln St Banning CA 92220	E	0.24 / 1,283.08	-17	86
			No of Tanks: 2				
18	UST	City of Banning Fleet Maintenance	176 E Lincoln St Banning CA 92220	E	0.24 / 1,283.08	-17	86
18	CERS TANK	City of Banning Fleet Maintenance	176 E LINCOLN ST BANNING CA 92220	E	0.24 / 1,283.08	-17	86
			Site ID: 19416				
18	RCRA NON GEN	CITY OF BANNING	176 E LINCOLN ST BANNING CA 92220-4962	E	0.24 / 1,283.08	-17	107
			EPA Handler ID: CAD982326282				
18	UST SWEEPS	BANNING CITY OF/CORPORATE YARD	176 E LINCOLN ST BANNING CA	E	0.24 / 1,283.08	-17	108
			C C | Status: A33-000-28 | ACTIVE ***Tank ID:*** 000001, 000002, 000003				
19	LOP RIVERSIDE	Antique Classic Car	314 S Eighth St Banning CA	W	0.25 / 1,296.98	19	109
			Site ID | Status Desc: 90285 | CLOSED/ACTION COMPLETED				

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
19	LUST	ANTIQUE CLASSIC CAR	314 SOUTH EIGHTH STREET BANNING CA 92220	W	0.25 / 1,296.98	19	109
			***Global ID	Status	Status Date:*** T0606500719	COMPLETED - CASE CLOSED	7/25/1990				
20	RCRA NON GEN	BANNING RECYCLING	284 S 8TH ST BANNING CA 92220-4506	W	0.25 / 1,299.56	21	112
			EPA Handler ID: CAL000335600				
20	RECYCLING	BANNING RECYCLING	284 S 8TH ST BANNING CA 92220	W	0.25 / 1,299.56	21	113
21	HHSS	BANNING CENTRAL OFFICE	160 WEST HAYS STREET BANNING CA 92220	NE	0.25 / 1,305.85	33	113
21	HIST TANK	BANNING CENTRAL OFFICE	160 WEST HAYS STREET BANNING CA	NE	0.25 / 1,305.85	33	113
22	ENVIROSTOR	BANNING HIGH SCHOOL	100 WEST WESTWARD AVENUE BANNING CA 92220	SSE	0.26 / 1,392.60	-39	113
			***Estor/EPA ID	Cleanup Status:*** 60002529	NO ACTION REQUIRED AS OF 9/7/2017						
22	SCH	BANNING HIGH SCHOOL	100 WEST WESTWARD AVENUE BANNING CA 92220	SSE	0.26 / 1,392.60	-39	114
			***Estor/EPA ID	Cleanup Status:*** 60002529	NO ACTION REQUIRED AS OF 9/7/2017						
23	ENVIROSTOR	14-ACRE PROPERTY FOR FUTURE ELEMENTARY SCHOOL	W. OF BANNING HS & SOUTH OF WESTWARD AVE. BANNING CA 92220	SSE	0.26 / 1,398.07	-39	115
			***Estor/EPA ID	Cleanup Status:*** 60002115	NO ACTION REQUIRED AS OF 1/15/2015						
23	SCH	14-ACRE PROPERTY FOR FUTURE ELEMENTARY SCHOOL	W. OF BANNING HS & SOUTH OF WESTWARD AVE. BANNING CA 92220	SSE	0.26 / 1,398.07	-39	116
			***Estor/EPA ID	Cleanup Status:*** 60002115	NO ACTION REQUIRED AS OF 1/15/2015						
24	LOP RIVERSIDE	G & M Oil Co Inc #20	827 W Ramsey St Banning CA	WNW	0.31 / 1,642.99	55	117
			***Site ID	Status Desc:*** 9915034	CLOSED/ACTION COMPLETED						
24	LUST	G & M OIL CO INC #20	827 RAMSEY STREET W BANNING CA 92220	WNW	0.31 / 1,642.99	55	117
			***Global ID	Status	Status Date:*** T0606500733	COMPLETED - CASE CLOSED	6/15/2007				
25	SCH	BANNING HIGH SCHOOL EXPANSION	SOUTH OF WEST WESTWARD AVE/WEST OF CURRENT BANNING HIGH SCHOOL BANNING CA 92220	SW	0.35 / 1,831.01	-21	123
			***Estor/EPA ID	Cleanup Status:*** 60001998	NO FURTHER ACTION AS OF 12/24/2015						

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
25	ENVIROSTOR	BANNING HIGH SCHOOL EXPANSION	SOUTH OF WEST WESTWARD AVE/WEST OF CURRENT BANNING HIGH SCHOOL BANNING CA 92220	SW	0.35 / 1,831.01	-21	124
			***Estor/EPA ID	Cleanup Status:*** 60001998 | NO FURTHER ACTION AS OF 12/24/2015			
26	ENVIROSTOR	BANNING USD PROPOSED SCHOOL - PARCELS 3, 4, 18 AND 19	654 WEST WESTWARD AVENUE (PARCEL 18 ONLY) BANNING CA 92220	SSW	0.38 / 2,001.17	-38	126
			***Estor/EPA ID	Cleanup Status:*** 60002517 | NO FURTHER ACTION AS OF 10/22/2018			
26	SCH	BANNING USD PROPOSED SCHOOL - PARCELS 3, 4, 18 AND 19	654 WEST WESTWARD AVENUE (PARCEL 18 ONLY) BANNING CA 92220	SSW	0.38 / 2,001.17	-38	128
			***Estor/EPA ID	Cleanup Status:*** 60002517 | NO FURTHER ACTION AS OF 10/22/2018			
27	RECYCLING	J & C RECYCLING	435 E LINCOLN ST STE D BANNING CA 92220	E	0.41 / 2,161.78	-31	129
28	LOP RIVERSIDE	Bud's Lawnmower	355 E Ramsey St Banning CA	ENE	0.41 / 2,170.94	5	130
			***Site ID	Status Desc:*** 901061 | CLOSED/ACTION COMPLETED			
28	LUST	BUD'S LAWNMOWER	355 EAST RAMSEY STREET BANNING CA 92220	ENE	0.41 / 2,170.94	5	130
			***Global ID	Status	Status Date:*** T0606500722 | COMPLETED - CASE CLOSED | 7/22/1992		
29	ENVIROSTOR	INLAND BEHAVIORAL & HEALTH SVCS. - SAN B	665 & 671 NORTH D STREET SAN BERNARDINO CA 92401	E	0.83 / 4,365.52	-31	133
			***Estor/EPA ID	Cleanup Status:*** 33800003 | NO ACTION REQUIRED AS OF 6/4/2002			
30	ENVIROSTOR	INLAND BEHAVIORAL & HEALTH SVCS-BANNING	1070 E. RAMSEY STREET BANNING CA 92220	E	0.85 / 4,499.14	-37	133
			***Estor/EPA ID	Cleanup Status:*** 33800004 | NO ACTION REQUIRED AS OF 6/1/2002			
31	ENVIROSTOR	PERFECTION PLATING	1284 E. LINCOLN ST. BANNING CA 92220	E	0.94 / 4,988.32	-93	134
			***Estor/EPA ID	Cleanup Status:*** 60000748 | REFER: 1248 LOCAL AGENCY AS OF 6/25/2004			
32	ENVIROSTOR	PERFECTION PLATING, INC.	1284 E. LINCOLN STREET BANNING CA 92220	E	0.94 / 4,988.35	-93	135
			***Estor/EPA ID	Cleanup Status:*** 71003018 | NO FURTHER ACTION AS OF 9/9/2010			

Executive Summary: Summary by Data Source

Standard

Federal

RCRA TSD - RCRA non-CORRACTS TSD Facilities

A search of the RCRA TSD database, dated Aug 30, 2021 has found that there are 1 RCRA TSD site(s) within approximately 0.50 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
TEXAS CLEANERS	57 S 2ND ST BANNING CA 92220 ***EPA Handler ID**: CAL000444726*	NNE	0.13 / 679.38	6

RCRA SQG - RCRA Small Quantity Generators List

A search of the RCRA SQG database, dated Aug 30, 2021 has found that there are 3 RCRA SQG site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
TENAX DRY CLEANERS	57 S 2ND ST BANNING CA 92220 ***EPA Handler ID**: CAD981984511*	NNE	0.13 / 679.38	6
SOUTHERN CALIFORNIA GAS CO	60 E RAMSEY ST UNIT A BANNING CA 92220 ***EPA Handler ID**: CAR000221705*	NE	0.23 / 1,204.68	17

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
APOLLO MASTERS CORPORATION	101 WEST LINCOLN STREET BANNING CA 92220 ***EPA Handler ID**: CAD982411480*	ESE	0.11 / 555.11	5

RCRA NON GEN - RCRA Non-Generators

A search of the RCRA NON GEN database, dated Aug 30, 2021 has found that there are 13 RCRA NON GEN site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
TEXAS CLEANERS	57 S 2ND ST BANNING CA 92220 ***EPA Handler ID**: CAL000444726*	NNE	0.13 / 679.38	6
BANNING SMOG TEST CENTER	376 W RAMSEY ST BANNING CA 92220 ***EPA Handler ID**: CAL000370680*	NNW	0.16 / 843.03	9

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
PACIFIC BELL	160 W HAYS BANNING CA 92220 ***EPA Handler ID**: CAD980584718*	NNE	0.22 / 1,168.73	16
BANNING RECYCLING	284 S 8TH ST BANNING CA 92220-4506 ***EPA Handler ID**: CAL000335600*	W	0.25 / 1,299.56	20

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
MATEC INSTRUMENT COMPANIES INC	300 W LINCOLN BANNING CA 92220 ***EPA Handler ID**: CAC003100737*	SSE	0.03 / 161.96	1
MATEC INSTRUMENT COMPANIES INC	300 W LINCOLN BANNING CA 92220 ***EPA Handler ID**: CAL000439798*	SSE	0.03 / 161.96	1
DT MATTSON ENTERPRISES INC DBA PRO-LINE RACING	201 W LINCOLN ST BANNING CA 92220-4933 ***EPA Handler ID**: CAL000064957*	ESE	0.03 / 172.72	2
HORIZON HOBBY LLC DBA PRO-LINE RACING	201 W LINCOLN ST BANNING CA 92220 ***EPA Handler ID**: CAL000458991*	ESE	0.03 / 172.72	2
KSD INC	161 W LINCOLN ST BANNING CA 92220-0000 ***EPA Handler ID**: CAL000224634*	ESE	0.07 / 352.39	3
SC COMMERCIAL, LLC	272 LINCOLN STREET BANNING CA 92220 ***EPA Handler ID**: CAC003106149*	SSE	0.09 / 451.22	4
SC COMMERCIAL LLC DBA SCFUELS	270-274 W LINCOLN AVE BANNING CA 92220 ***EPA Handler ID**: CAL000440891*	SSE	0.09 / 451.22	4
SOCO GROUP	272 W LINCOLN ST BANNING CA 92220 ***EPA Handler ID**: CAL000430735*	SSE	0.09 / 451.22	4
CITY OF BANNING	176 E LINCOLN ST BANNING CA 92220-4962 ***EPA Handler ID**: CAD982326282*	E	0.24 / 1,283.08	18

State

ENVIROSTOR - EnviroStor Database

A search of the ENVIROSTOR database, dated Sep 15, 2021 has found that there are 8 ENVIROSTOR site(s) within approximately 1.00 miles of the project property.

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
BANNING HIGH SCHOOL	100 WEST WESTWARD AVENUE BANNING CA 92220	SSE	0.26 / 1,392.60	22
	***Estor/EPA ID | Cleanup Status**: 60002529 | NO ACTION REQUIRED AS OF 9/7/2017*			
14-ACRE PROPERTY FOR FUTURE ELEMENTARY SCHOOL	W. OF BANNING HS & SOUTH OF WESTWARD AVE. BANNING CA 92220	SSE	0.26 / 1,398.07	23
	***Estor/EPA ID | Cleanup Status**: 60002115 | NO ACTION REQUIRED AS OF 1/15/2015*			
BANNING HIGH SCHOOL EXPANSION	SOUTH OF WEST WESTWARD AVE/WEST OF CURRENT BANNING HIGH SCHOOL BANNING CA 92220	SW	0.35 / 1,831.01	25
	***Estor/EPA ID | Cleanup Status**: 60001998 | NO FURTHER ACTION AS OF 12/24/2015*			
BANNING USD PROPOSED SCHOOL - PARCELS 3, 4, 18 AND 19	654 WEST WESTWARD AVENUE (PARCEL 18 ONLY) BANNING CA 92220	SSW	0.38 / 2,001.17	26
	***Estor/EPA ID | Cleanup Status**: 60002517 | NO FURTHER ACTION AS OF 10/22/2018*			
INLAND BEHAVIORAL & HEALTH SVCS. - SAN B	665 & 671 NORTH D STREET SAN BERNARDINO CA 92401	E	0.83 / 4,365.52	29
	***Estor/EPA ID | Cleanup Status**: 33800003 | NO ACTION REQUIRED AS OF 6/4/2002*			
INLAND BEHAVIORAL & HEALTH SVCS-BANNING	1070 E. RAMSEY STREET BANNING CA 92220	E	0.85 / 4,499.14	30
	***Estor/EPA ID | Cleanup Status**: 33800004 | NO ACTION REQUIRED AS OF 6/1/2002*			
PERFECTION PLATING	1284 E. LINCOLN ST. BANNING CA 92220	E	0.94 / 4,988.32	31
	***Estor/EPA ID | Cleanup Status**: 60000748 | REFER: 1248 LOCAL AGENCY AS OF 6/25/2004*			
PERFECTION PLATING, INC.	1284 E. LINCOLN STREET BANNING CA 92220	E	0.94 / 4,988.35	32
	***Estor/EPA ID | Cleanup Status**: 71003018 | NO FURTHER ACTION AS OF 9/9/2010*			

RECYCLING - Recycling Centers

A search of the RECYCLING database, dated Nov 2, 2020 has found that there are 2 RECYCLING site(s) within approximately 0.50 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
BANNING RECYCLING	284 S 8TH ST BANNING CA 92220	W	0.25 / 1,299.56	20

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
J & C RECYCLING	435 E LINCOLN ST STE D BANNING CA 92220	E	0.41 / 2,161.78	27

LUST - Leaking Underground Fuel Tank Reports

A search of the LUST database, dated Jun 22, 2021 has found that there are 5 LUST site(s) within approximately 0.50 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
CITY OF BANNING	161 WEST RAMSEY STREET BANNING CA 92220	NNE	0.17 / 891.63	13
	Global ID* | *Status* | *Status Date: *T0606500725* | *COMPLETED - CASE CLOSED* | *1/26/1995*			
UNOCAL STATION 4118	437 WEST RAMSEY STREET BANNING CA 92220	NNW	0.18 / 945.83	14
	Global ID* | *Status* | *Status Date: *T0606500727* | *COMPLETED - CASE CLOSED* | *4/14/1994*			
ANTIQUE CLASSIC CAR	314 SOUTH EIGHTH STREET BANNING CA 92220	W	0.25 / 1,296.98	19
	Global ID* | *Status* | *Status Date: *T0606500719* | *COMPLETED - CASE CLOSED* | *7/25/1990*			
G & M OIL CO INC #20	827 RAMSEY STREET W BANNING CA 92220	WNW	0.31 / 1,642.99	24
	Global ID* | *Status* | *Status Date: *T0606500733* | *COMPLETED - CASE CLOSED* | *6/15/2007*			
BUD'S LAWNMOWER	355 EAST RAMSEY STREET BANNING CA 92220	ENE	0.41 / 2,170.94	28
	Global ID* | *Status* | *Status Date: *T0606500722* | *COMPLETED - CASE CLOSED* | *7/22/1992*			

UST - Permitted Underground Storage Tank (UST) in GeoTracker

A search of the UST database, dated Oct 17, 2021 has found that there are 2 UST site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
Frontier California, Inc.; Banning CO	160 W. Hays Street Banning CA 92220	NNE	0.22 / 1,168.73	16
	Facility ID: *82043*			

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
City of Banning Fleet Maintenance	176 E Lincoln St Banning CA 92220	E	0.24 / 1,283.08	18

HHSS - Historical Hazardous Substance Storage Information Database

A search of the HHSS database, dated Aug 27, 2015 has found that there are 3 HHSS site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
STATION 4118	437 WEST RAMSEY BANNING CA 92220	NNW	0.16 / 867.90	11
UNION OIL SERVICE STATION 411	437 W RAMSEY BANNING CA 92220	NNW	0.16 / 867.90	11

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
BANNING CENTRAL OFFICE	160 WEST HAYS STREET BANNING CA 92220	NE	0.25 / 1,305.85	21

UST SWEEPS - Statewide Environmental Evaluation and Planning System

A search of the UST SWEEPS database, dated Oct 1, 1994 has found that there are 4 UST SWEEPS site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
GLENS TIRE SERVICE	376 W RAMSEY ST BANNING CA ***C C | Status**: A33-000-1910 | ACTIVE* ***Tank ID**: 000001*	NNW	0.16 / 843.03	9
UNOCAL #4118	437 W RAMSEY ST BANNING CA ***C C | Status**: A33-000-17848 | ACTIVE* ***Tank ID**: 000002, 000003, 000001*	NNW	0.16 / 868.96	12
GTE BANNING CENTRAL OFFICE	160 W HAYS ST BANNING CA ***C C | Status**: A33-000-67018 | ACTIVE* ***Tank ID**: 000001*	NNE	0.22 / 1,168.73	16

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
BANNING CITY OF/CORPORATE YARD	176 E LINCOLN ST BANNING CA ***C C | Status**: A33-000-28 | ACTIVE* ***Tank ID**: 000001, 000002, 000003*	E	0.24 / 1,283.08	18

DELISTED TNK - Delisted Storage Tanks

A search of the DELISTED TNK database, dated Oct 26, 2021 has found that there are 2 DELISTED TNK site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
GTE CALIFORNIA BANNING	160 W HAYS ST Banning CA 92220	NNE	0.22 / 1,168.73	16

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
BANNING CITY OF	176 E LINCOLN ST Banning CA 92220	E	0.24 / 1,283.08	18

CERS TANK - California Environmental Reporting System (CERS) Tanks

A search of the CERS TANK database, dated Sep 24, 2021 has found that there are 2 CERS TANK site(s) within approximately 0.25 miles of the project property.

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
SCC Banning Bulk Plant	270 W LINCOLN ST BANNING CA 92220 ***Site ID**: 127623*	SSE	0.09 / 451.22	4
City of Banning Fleet Maintenance	176 E LINCOLN ST BANNING CA 92220 ***Site ID**: 19416*	E	0.24 / 1,283.08	18

HIST TANK - Historical Hazardous Substance Storage Container Information - Facility Summary

A search of the HIST TANK database, dated May 27, 1988 has found that there are 3 HIST TANK site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
STATION #4118	437 WEST RAMSEY BANNING CA	NNW	0.16 / 867.90	11
UNION OIL SERVICE STATION #411	437 W RAMSEY BANNING CA	NNW	0.16 / 867.90	11
BANNING CENTRAL OFFICE	160 WEST HAYS STREET BANNING CA	NE	0.25 / 1,305.85	21

DELISTED COUNTY - Delisted County Records

A search of the DELISTED COUNTY database, dated Oct 26, 2021 has found that there are 2 DELISTED COUNTY site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
Verizon Global/Service Group	160 W Hays St Banning CA 92220	NNE	0.22 / 1,168.73	16
Verizon Global/Service Group	160 W Hays St Banning CA 92220	NNE	0.22 / 1,168.73	16

County

LOP RIVERSIDE - Riverside County - Local Oversight Program List

A search of the LOP RIVERSIDE database, dated Jul 22, 2021 has found that there are 5 LOP RIVERSIDE site(s) within approximately 0.50 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
Unocal #4118	437 W Ramsey St Banning CA	NNW	0.16 / 868.96	12
	Site ID* | *Status Desc: *93938* | *CLOSED/ACTION COMPLETED*			
City of Banning	161 W Ramsey St Banning CA	NNE	0.17 / 891.63	13
	Site ID* | *Status Desc: *94431* | *CLOSED/ACTION COMPLETED*			
Antique Classic Car	314 S Eighth St Banning CA	W	0.25 / 1,296.98	19
	Site ID* | *Status Desc: *90285* | *CLOSED/ACTION COMPLETED*			
G & M Oil Co Inc #20	827 W Ramsey St Banning CA	WNW	0.31 / 1,642.99	24
	Site ID* | *Status Desc: *9915034* | *CLOSED/ACTION COMPLETED*			
Bud's Lawnmower	355 E Ramsey St Banning CA	ENE	0.41 / 2,170.94	28
	Site ID* | *Status Desc: *901061* | *CLOSED/ACTION COMPLETED*			

UST RIVERSIDE - Riverside County - Underground Storage Tanks List

A search of the UST RIVERSIDE database, dated Jul 22, 2021 has found that there are 2 UST RIVERSIDE site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
Banning CO	160 W Hays St Banning CA 92220	NNE	0.22 / 1,168.73	16
	No of Tanks: *1*			

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
City of Banning Fleet Maintenance	176 E Lincoln St Banning CA 92220	E	0.24 / 1,283.08	18
	No of Tanks: *2*			

Non Standard

Federal

FED DRYCLEANERS - Drycleaner Facilities

A search of the FED DRYCLEANERS database, dated May 5, 2021 has found that there are 2 FED DRYCLEANERS site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
TENAX DRY CLEANERS	57 S 2ND ST BANNING CA 92220	NNE	0.13 / 679.38	6
	FRS Facility ID: *110009541157*			

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
TEXAS CLEANERS	57 S 2ND ST BANNING CA 92220	NNE	0.13 / 679.38	6
	***FRS Facility ID**: 110070591459*			

State

DRYCLEANERS - Dry Cleaning Facilities

A search of the DRYCLEANERS database, dated Aug 27, 2021 has found that there are 3 DRYCLEANERS site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
TEXAS CLEANERS	57 S 2ND ST BANNING CA 92220	NNE	0.13 / 679.38	6
TENAX DRY CLEANERS	57 S 2ND ST BANNING CA 922200000	NNE	0.13 / 679.38	6

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
KENNY STRICKLAND INC	270 W LINCOLN ST BANNING CA 922204904	SSE	0.09 / 451.22	4

SCH - School Property Evaluation Program Sites

A search of the SCH database, dated Sep 15, 2021 has found that there are 4 SCH site(s) within approximately 1.00 miles of the project property.

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
BANNING HIGH SCHOOL	100 WEST WESTWARD AVENUE BANNING CA 92220	SSE	0.26 / 1,392.60	22
	***Estor/EPA ID	Cleanup Status**: 60002529	NO ACTION REQUIRED AS OF 9/7/2017*		
14-ACRE PROPERTY FOR FUTURE ELEMENTARY SCHOOL	W. OF BANNING HS & SOUTH OF WESTWARD AVE. BANNING CA 92220	SSE	0.26 / 1,398.07	23
	***Estor/EPA ID	Cleanup Status**: 60002115	NO ACTION REQUIRED AS OF 1/15/2015*		
BANNING HIGH SCHOOL EXPANSION	SOUTH OF WEST WESTWARD AVE/WEST OF CURRENT BANNING HIGH SCHOOL BANNING CA 92220	SW	0.35 / 1,831.01	25
	***Estor/EPA ID	Cleanup Status**: 60001998	NO FURTHER ACTION AS OF 12/24/2015*		
BANNING USD PROPOSED SCHOOL - PARCELS 3, 4, 18 AND 19	654 WEST WESTWARD AVENUE (PARCEL 18 ONLY) BANNING CA 92220	SSW	0.38 / 2,001.17	26
	***Estor/EPA ID	Cleanup Status**: 60002517	NO FURTHER ACTION AS OF 10/22/2018*		

CERS HAZ - California Environmental Reporting System (CERS) Hazardous Waste Sites

A search of the CERS HAZ database, dated Sep 24, 2021 has found that there are 2 CERS HAZ site(s) within approximately 0.12 miles

of the project property.

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
Horizon Hobby LLC	201 W LINCOLN ST BANNING CA 92220	ESE	0.03 / 172.72	2
K S D, Inc.	161 W LINCOLN ST BANNING CA 92220	ESE	0.07 / 352.39	3

EMISSIONS - Toxic Pollutant Emissions Facilities

A search of the EMISSIONS database, dated Dec 31, 2019 has found that there are 10 EMISSIONS site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
TENAX CLEANERS	57 S 2ND ST BANNING CA 92220	NNE	0.13 / 679.38	6
TENAX CLEANERS, KUN HOE KIM DB	57 S 2ND ST BANNING CA 92220	NNE	0.13 / 679.38	6
TENAX CLEANERS, KUN HEE KIM DB	57 S 2ND ST BANNING CA 92220	NNE	0.13 / 679.38	6
GEN TEL OF CAL, BANNING CENTRA	160 W HAYS BANNING CA 92220	NNE	0.22 / 1,168.73	16
GTE CALIFORNIA	160 W HAYS ST BANNING CA 92220	NNE	0.22 / 1,168.73	16
GTE CALIFORNIA	160 W HAYS BANNING CA 92220	NNE	0.22 / 1,168.73	16

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
APOLLO MASTERS CORPORATION	101 WEST LINCOLN ST BANNING CA 92220	ESE	0.11 / 555.11	5
APOLLO MASTERS CORPORATION	101 W LINCOLN ST BANNING CA 92220	ESE	0.11 / 555.11	5
BILLY MARK INC	260B S SAN GORGONIO BANNING CA 92220	E	0.14 / 738.93	7

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
CUSTOMWORKS FURNITURE	326 S SAN GORGONIO AV BANNING CA 92262	E	0.14 / 739.16	8

County

HWG RIVERSIDE - Riverside County - Hazardous Waste Generator Sites List

A search of the HWG RIVERSIDE database, dated Jul 22, 2021 has found that there are 3 HWG RIVERSIDE site(s) within approximately 0.12 miles of the project property.

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
Horizon Hobby LLC	201 W Lincoln St Banning CA 92220	ESE	0.03 / 172.72	2
K S D, Inc.	161 W Lincoln St Banning CA 92220	ESE	0.07 / 352.39	3
SCC Banning Bulk Plant	270 W Lincoln St Banning CA 92220	SSE	0.09 / 451.22	4

HZH RIVERSIDE - Riverside County - Disclosure Facility List

A search of the HZH RIVERSIDE database, dated Jul 22, 2021 has found that there are 3 HZH RIVERSIDE site(s) within approximately 0.12 miles of the project property.

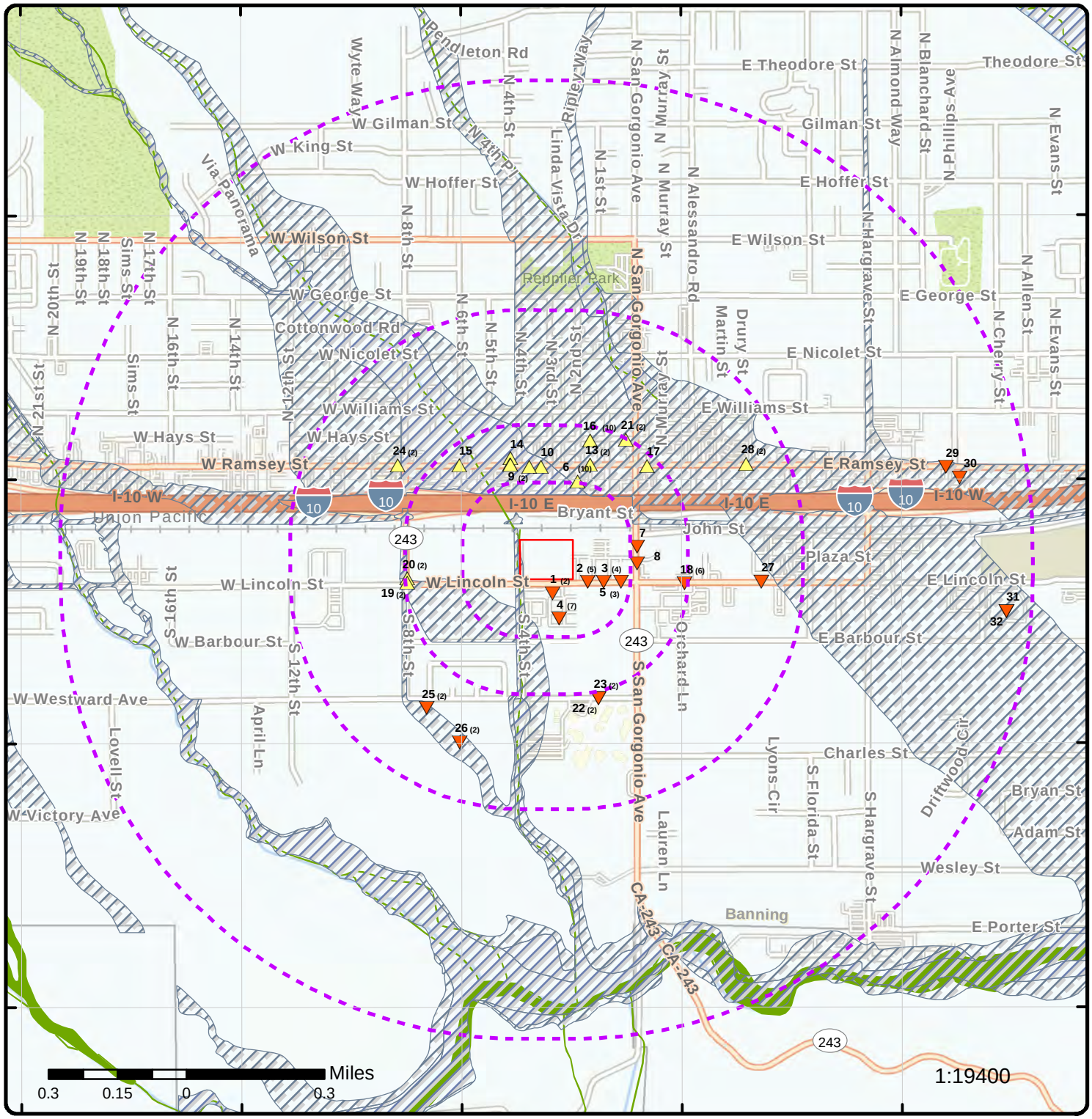
Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
Horizon Hobby LLC	201 W Lincoln St Banning CA 92220	ESE	0.03 / 172.72	2
K S D, Inc.	161 W Lincoln St Banning CA 92220	ESE	0.07 / 352.39	3
SCC Banning Bulk Plant	270 W Lincoln St Banning CA 92220	SSE	0.09 / 451.22	4

MED WST RIVERSIDE - Riverside County - Medical Waste Facilities

A search of the MED WST RIVERSIDE database, dated Sep 1, 2020 has found that there are 2 MED WST RIVERSIDE site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
OLIVERIO MEDICAL CORPORATION	330 W RAMSEY ST BANNING CA 92220-4823	N	0.16 / 843.65	10

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
JOHN C. CHOE, DDS, INC.	617 W RAMSEY ST BANNING CA 92220-4919	NW	0.21 / 1,106.32	15



Map: 1.0 Mile Radius

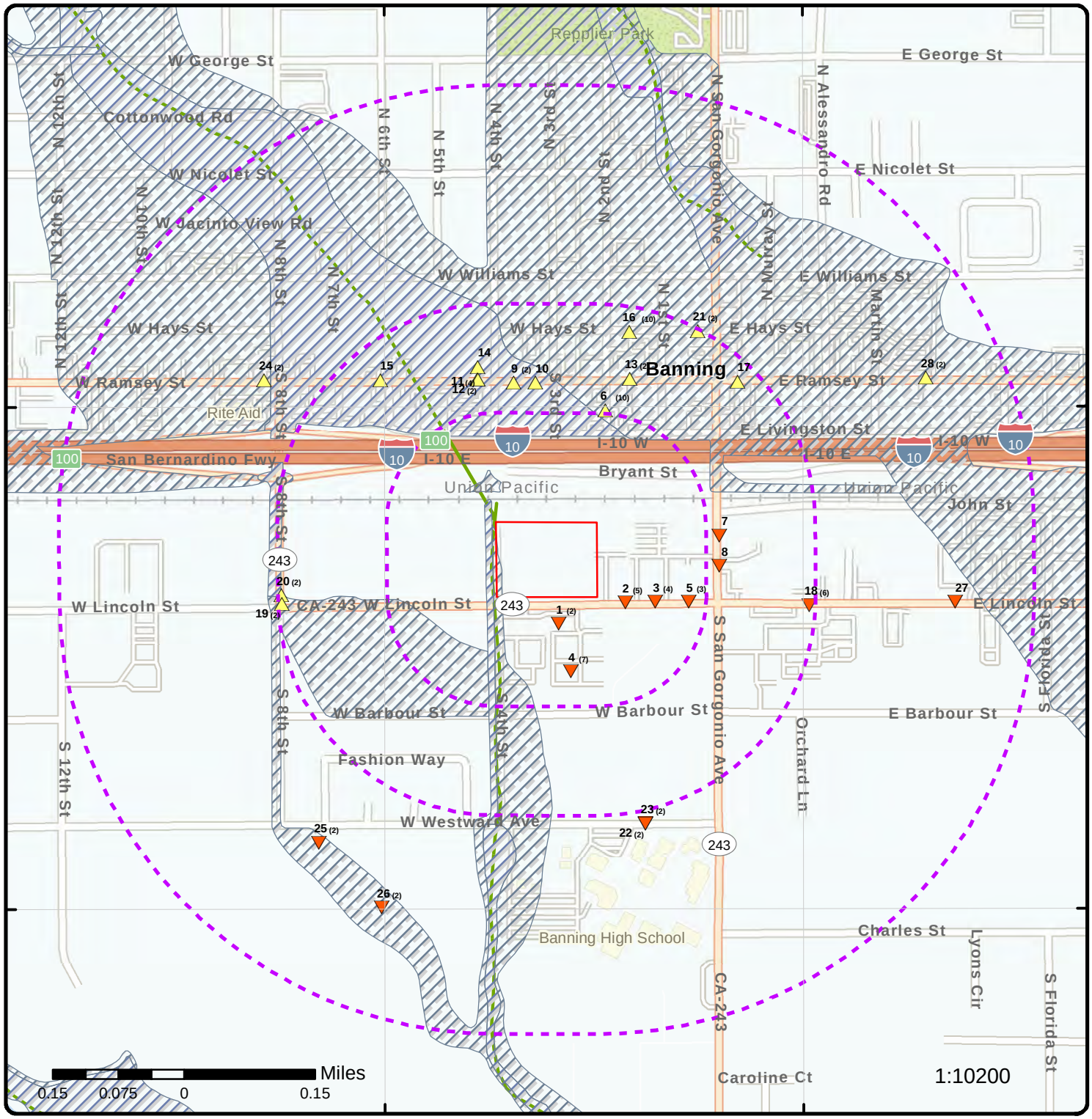
Order Number: 21110500005

Address: APNs 540-210-009 and 540-210-010, Banning, CA

- Project Property
- Buffer Outline
- Eris Sites with Higher Elevation
- Eris Sites with Same Elevation
- Eris Sites with Lower Elevation
- Eris Sites with Unknown Elevation
- Eris Areas with Higher Elevation
- Eris Areas with Same Elevation
- Eris Areas with Lower Elevation
- Eris Areas with Unknown Elevation
- Freeways; Highways
- Traffic Circle; Ramp
- Major & Minor Arterial
- Traffic Circle; Ramp
- Local Road
- Rail
- State
- Country
- National Priority List Sites
- National Wetland
- Indian Reserve Land
- Historic Fill
- 100 Year Flood Zone
- 500 Year Flood Zone
- FWS Special Designation Areas
- Plume

Source: © 2021 ESRI StreetMap Premium

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Map: 0.5 Mile Radius

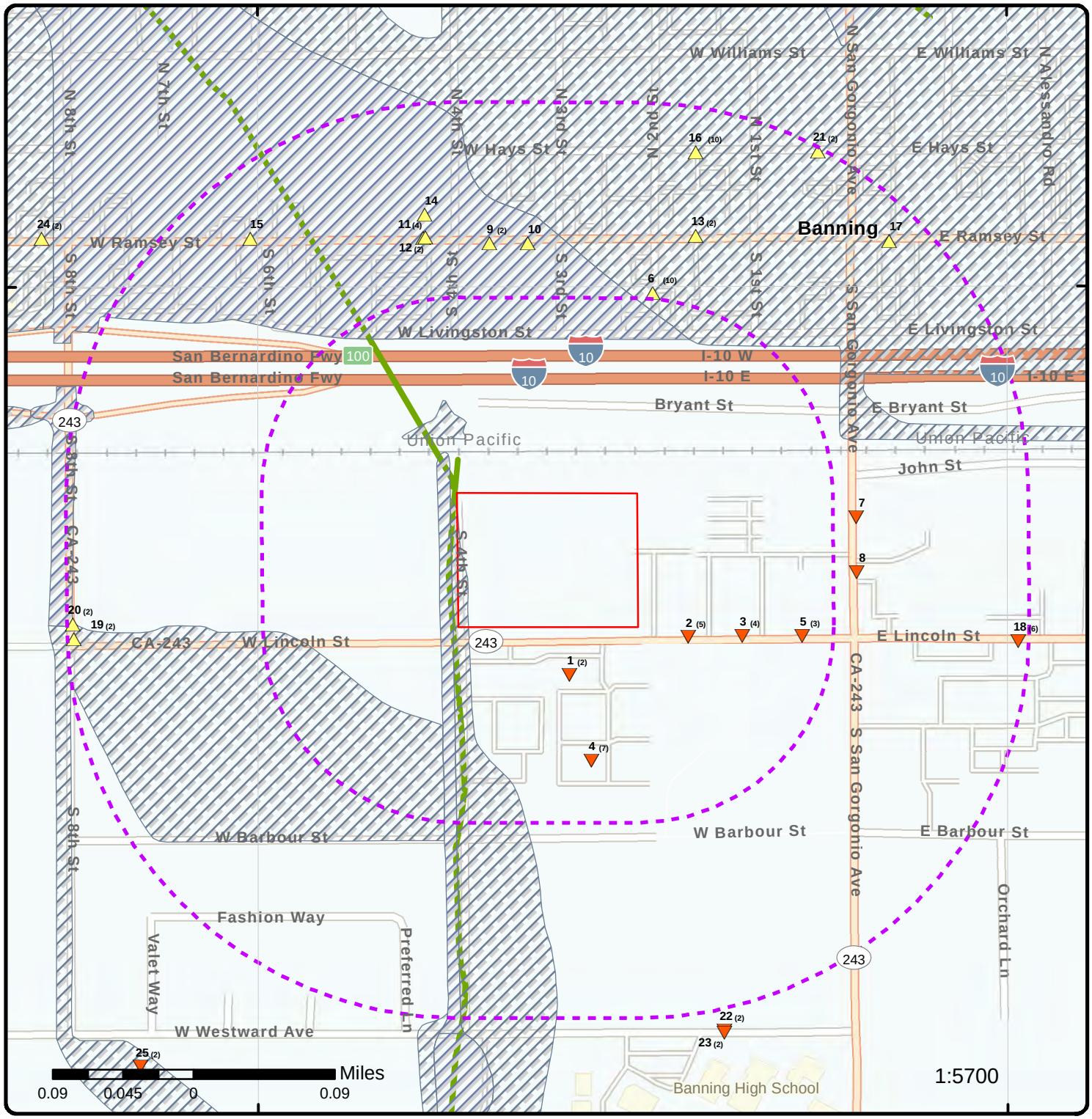
Order Number: 21110500005

Address: APNs 540-210-009 and 540-210-010, Banning, CA

- Project Property
- Buffer Outline
- Eris Sites with Higher Elevation
- Eris Sites with Same Elevation
- Eris Sites with Lower Elevation
- Eris Sites with Unknown Elevation
- Eris Areas with Higher Elevation
- Eris Areas with Same Elevation
- Eris Areas with Lower Elevation
- Eris Areas with Unknown Elevation
- Freeways; Highways
- Traffic Circle; Ramp
- Major & Minor Arterial
- Traffic Circle; Ramp
- Local Road
- Rail
- State
- Country
- National Priority List Sites
- National Wetland
- Indian Reserve Land
- Historic Fill
- 100 Year Flood Zone
- 500 Year Flood Zone
- FWS Special Designation Areas
- Plume

Source: © 2021 ESRI StreetMap Premium

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Map: 0.25 Mile Radius

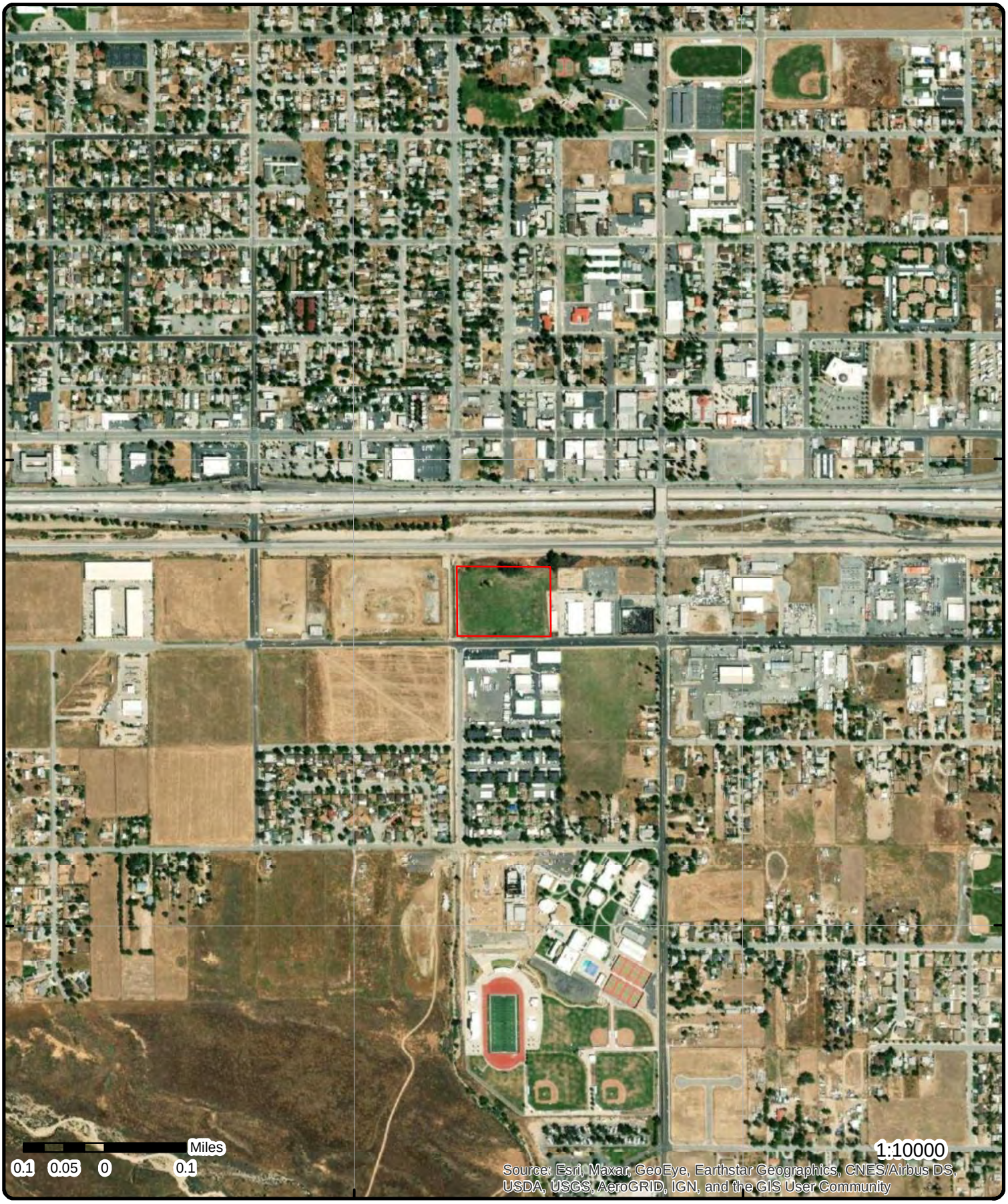
Order Number: 21110500005

Address: APNs 540-210-009 and 540-210-010, Banning, CA

- Project Property
- Buffer Outline
- Eris Sites with Higher Elevation
- Eris Sites with Same Elevation
- Eris Sites with Lower Elevation
- Eris Sites with Unknown Elevation
- Eris Areas with Higher Elevation
- Eris Areas with Same Elevation
- Eris Areas with Lower Elevation
- Eris Areas with Unknown Elevation
- Freeways; Highways
- Traffic Circle; Ramp
- Major & Minor Arterial
- Traffic Circle; Ramp
- Local Road
- Rail
- State
- Country
- National Priority List Sites
- National Wetland
- Indian Reserve Land
- Historic Fill
- 100 Year Flood Zone
- 500 Year Flood Zone
- FWS Special Designation Areas
- Plume

Source: © 2021 ESRI StreetMap Premium

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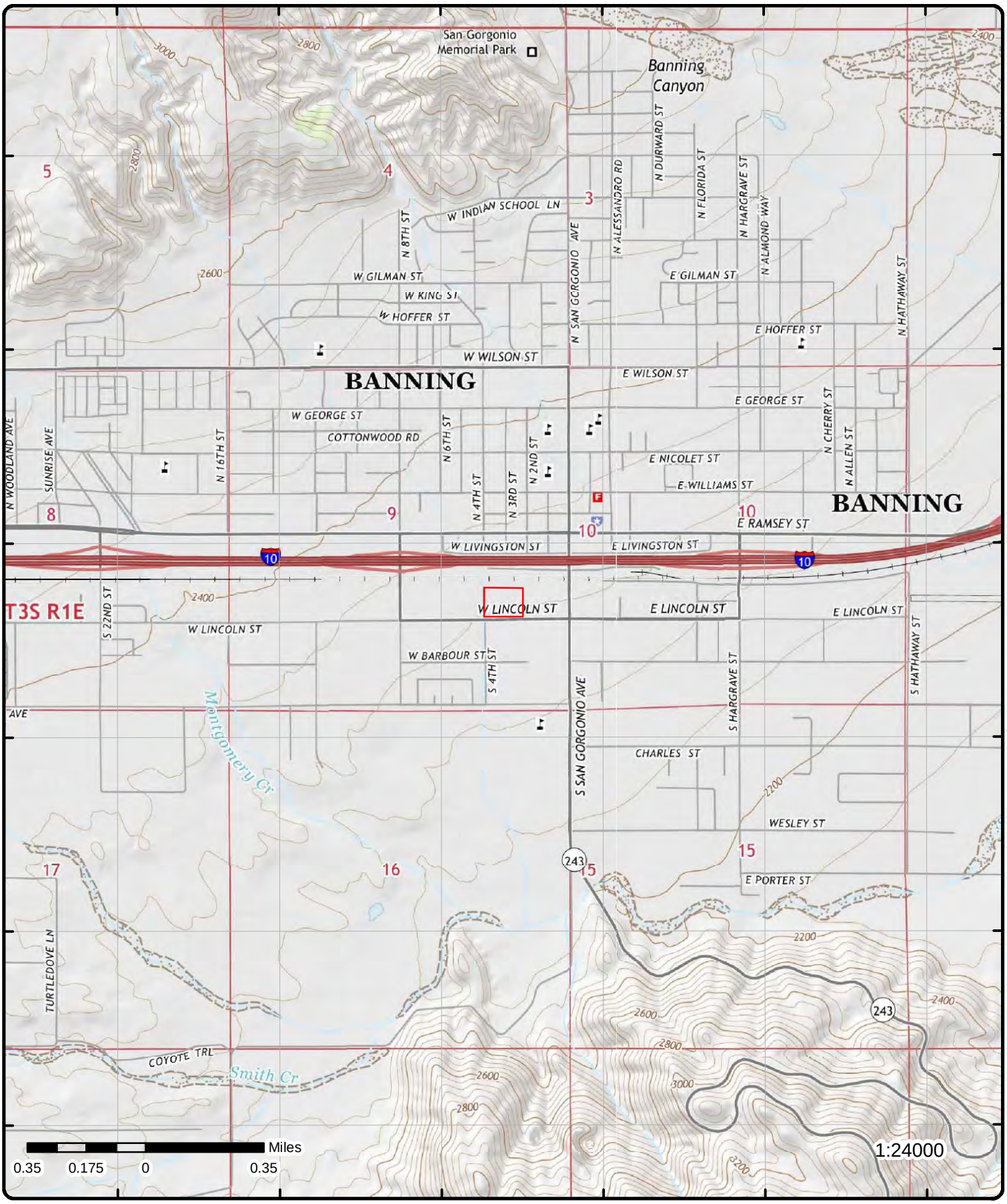
Aerial **Year: 2020**

Order Number: 21110500005

Address: APNs 540-210-009 and 540-210-010, Banning, CA

Source: ESRI World Imagery

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Topographic Map

Year: 2015

Order Number: 21110500005

Address: APNs 540-210-009 and 540-210-010, CA

Quadrangle(s): Cabazon, CA; Beaumont, CA

Source: USGS Topographic Map

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Detail Report

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
1	1 of 2	SSE	0.03 / 161.96	2,315.08 / -9	MATEC INSTRUMENT COMPANIES INC 300 W LINCOLN BANNING CA 92220	RCRA NON GEN

EPA Handler ID: CAL000439798
Gen Status Universe: No Report
Contact Name: CARMELO FRUCI
Contact Address: 300 W. LINCOLN STREET , , BANNINNG , CA, 92220 ,
Contact Phone No and Ext: 951-304-3062
Contact Email: CARMEN@MATEC.COM
Contact Country:
County Name: RIVERSIDE
EPA Region: 09
Land Type:
Receive Date: 20181015
Location Latitude: 33.921685
Location Longitude: -116.879699

Violation/Evaluation Summary

Note: NO RECORDS: As of Aug 2021, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 20181015
Handler Name: MATEC INSTRUMENT COMPANIES INC
Source Type: Implementer
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind: Current Operator
Type: Other
Street No:
Street 1: 300 W. LINCOLN STREET

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Name:	CARMELO FRUCI	**Street 2:**	
Date Became Current:		**City:**	BANNINNG
Date Ended Current:		**State:**	CA
Phone:	951-304-3062	**Country:**	
Source Type:	Implementer	**Zip Code:**	92220
Owner/Operator Ind:	Current Owner	**Street No:**	
Type:	Other	**Street 1:**	56 HUDSON ST
Name:	MATEC INSTRUMENT CO INC	**Street 2:**	
Date Became Current:		**City:**	NORTHBOROUGH
Date Ended Current:		**State:**	MA
Phone:	508-393-0155	**Country:**	
Source Type:	Implementer	**Zip Code:**	01532

1	2 of 2	SSE	0.03 / 161.96	2,315.08 / -9	MATEC INSTRUMENT COMPANIES INC 300 W LINCOLN BANNING CA 92220	RCRA NON GEN

EPA Handler ID:	CAC003100737
Gen Status Universe:	No Report
Contact Name:	CARMELO FRUCI
Contact Address:	300 W LINCOLN , , BANNING , CA, 92220 ,
Contact Phone No and Ext:	951-304-3062
Contact Email:	URBINAFAM@YAHOO.COM
Contact Country:	
County Name:	RIVERSIDE
EPA Region:	09
Land Type:	
Receive Date:	20210113
Location Latitude:	
Location Longitude:	

Violation/Evaluation Summary

Note:	NO RECORDS: As of Aug 2021, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Furnace Exemption:	No
Underground Injection Activity:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No
Used Oil Spec Marketer:	No

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	20210113
Handler Name:	MATEC INSTRUMENT COMPANIES INC
Source Type:	Implementer
Federal Waste Generator Code:	N
Generator Code Description:	Not a Generator, Verified

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Owner/Operator Details

Owner/Operator Ind:	Current Owner	***Street No:***	
Type:	Other	***Street 1:***	56 HUDSON ST
Name:	MATEC INSTRUMENT COMPANIES INC	***Street 2:***	
Date Became Current:		***City:***	NORTHBOROUGH
Date Ended Current:		***State:***	MA
Phone:	508-393-0155	***Country:***	
Source Type:	Implementer	***Zip Code:***	01532
Owner/Operator Ind:	Current Operator	***Street No:***	
Type:	Other	***Street 1:***	300 W LINCOLN
Name:	CARMELO FRUCI	***Street 2:***	
Date Became Current:		***City:***	BANNING
Date Ended Current:		***State:***	CA
Phone:	951-304-3062	***Country:***	
Source Type:	Implementer	***Zip Code:***	92220

2	*1 of 5*	*ESE*	*0.03 / 172.72*	*2,315.32 / -9*	***Horizon Hobby LLC 201 W LINCOLN ST BANNING CA 92220***	***CERS HAZ***

Site ID:	427776
Latitude:	33.922450
Longitude:	-116.878560
County:	

Regulated Programs

EI ID:	10747615	***EI Description:***	Hazardous Waste Generator
EI ID:	10747615	***EI Description:***	Chemical Storage Facilities

Violations

Violation Date:	05/31/2018	***Violation Source:***	CERS
Violation Program:	HW	***Violation Division:***	Riverside County Department of Env Health
Citation:	Un-Specified		
Violation Notes:			

Returned to compliance on 09/12/2018.

Violation Description:

Hazardous Waste Generator Program - Administration/Documentation - General Local Ordinance

Violations

Violation Date:	05/31/2018	***Violation Source:***	CERS
Violation Program:	HMRRP	***Violation Division:***	Riverside County Department of Env Health
Citation:	Un-Specified		
Violation Notes:			

Returned to compliance on 09/12/2018.

Violation Description:

Business Plan Program - Administration/Documentation - General Local Ordinance

Violations

Violation Date: 01/05/2021 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.95 25508(a)(3) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(3)
Violation Notes:

Returned to compliance on 07/13/2021. OBSERVATION: The chemical inventory description page submitted for acetone and motor oil contained incorrect information. Facility has reduced the amount of acetone contained on site from (1) 55-gallon drum to approximately (5) 1-gallon aluminum containers. Facility is storing (1) 55-gallon drum of motor oil in 201 West building and several 5-gallon buckets in 161 West building. CORRECTIVE ACTION: Owner/operator shall update the chemical inventory pages for acetone and motor oil and submit to the statewide information management system (e.g. CERS) at http://cers.calepa.ca.gov. Please refer to a current Safety Data Sheet (SDS) for guidance.

Violation Description:

Failure to complete and electronically submit hazardous material inventory information for all reportable hazardous materials on site at or above reportable quantities.

Violations

Violation Date: 01/05/2021 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.95 25505(a)(4) - California Health and Safety Code, Chapter 6.95, Section(s) 25505(a)(4)
Violation Notes:

Returned to compliance on 07/13/2021. OBSERVATION: No training records observed/provided during inspection. CORRECTIVE ACTION: Owner/operator shall provide training to all employees. Documentation shall be retained and be made available for inspection for a minimum period of 3 years from the date of the training. Copies of Hazardous Materials Training Sign-off sheets can be emailed to: rsgarcia@rivco.org, faxed to: 951-791-1778, or I can stop by to review in-person.

Violation Description:

Failure to provide initial and annual training to all employees in safety procedures in the event of a release or threatened release of a hazardous material or failure to document and maintain training records for a minimum of three years.

Evaluations

Eval Date: 01/05/2021
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS
Eval Notes:

Eval Date: 01/05/2021
Violations Found: No
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HW
Eval Source: CERS
Eval Notes:

** #8. Provided label for waste coolant drum. #33. Facility in process of acquiring new EPA ID for new owner. The following link is to an application to acquire a new one: https://rivcoeh.org/Portals/0/PDF/HazMat/GISS_FORM_1358.pdf?ver=2020-10-15-101304-363 **; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 05/31/2018
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS

Eval Notes:

New facility, waiting on docs; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 05/31/2018
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HW
Eval Source: CERS
Eval Notes:

New facility, waiting on docs; Note: data in [EVAL Notes] field for some records is truncated from the source.

Affiliations

Affil Type Desc: Parent Corporation
Entity Name: Pro-Line Racing
Entity Title:
Address:
City:
State:
Country:
Zip Code:
Phone:

Affil Type Desc: Identification Signer
Entity Name: Scott Simmons
Entity Title: Operations Manager
Address:
City:
State:
Country:
Zip Code:
Phone:

Affil Type Desc: Operator
Entity Name: Horizon Hobby LLC dba Pro-Line Racing
Entity Title:
Address:
City:
State:
Country:
Zip Code:
Phone: (951) 849-9781

Affil Type Desc: Document Preparer
Entity Name: Scott Simmons
Entity Title:
Address:
City:
State:
Country:
Zip Code:
Phone:

Affil Type Desc: Environmental Contact
Entity Name: Scott Simmons
Entity Title:
Address: 201 W Lincoln St
City: Banning
State: CA
Country:
Zip Code: 92220
Phone:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Affil Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title:
Address: 201 W Lincoln St
City: Banning
State: CA
Country:
Zip Code: 92220
Phone:

Affil Type Desc: CUPA District
Entity Name: Riverside Cnty Env Health
Entity Title:
Address: 4065 County Circle Drive, Room 104
City: Riverside
State: CA
Country:
Zip Code: 92503
Phone: (951) 358-5055

Affil Type Desc: Legal Owner
Entity Name: Horizon Hobby LLC dba Pro-Line Racing
Entity Title:
Address: 201 W Lincoln St
City: Banning
State: CA
Country: United States
Zip Code: 92220
Phone: (951) 849-9781

Coordinates

Env Int Type Code: HMBP
Program ID: 10747615
Latitude: 33.922450
Longitude: -116.878560
Coord Name:
Ref Point Type Desc: Center of a facility or station.

2	*2 of 5*	*ESE*	*0.03 / 172.72*	*2,315.32 / -9*	***Horizon Hobby LLC*** ***201 W Lincoln St*** ***Banning CA 92220***	***HWG*** ***RIVERSIDE***

2	*3 of 5*	*ESE*	*0.03 / 172.72*	*2,315.32 / -9*	***Horizon Hobby LLC*** ***201 W Lincoln St*** ***Banning CA 92220***	***HZH*** ***RIVERSIDE***

2	*4 of 5*	*ESE*	*0.03 / 172.72*	*2,315.32 / -9*	***DT MATTSON ENTERPRISES INC*** ***DBA PRO-LINE RACING*** ***201 W LINCOLN ST*** ***BANNING CA 92220-4933***	***RCRA*** ***NON GEN***

EPA Handler ID: CAL000064957
Gen Status Universe: No Report
Contact Name: SCOTT SIMMONS
Contact Address: 201 W LINCOLN ST , , BANNING , CA, 92220 , US
Contact Phone No and Ext: 951-849-9781 x123
Contact Email: SSIMMONS@PROLINERACING.COM
Contact Country: US
County Name: RIVERSIDE
EPA Region: 09
Land Type:
Receive Date: 20201215

Location Latitude: 33.921748
Location Longitude: -116.878541

Violation/Evaluation Summary

Note: NO RECORDS: As of Aug 2021, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 19920224
Handler Name: DT MATTSON ENTERPRISES INC DBA PRO-LINE
Source Type: Implementer
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 20201215
Handler Name: DT MATTSON ENTERPRISES INC DBA PRO-LINE RACING
Source Type: Deactivation
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind: Current Owner
Type: Other
Name: DT MATTSON ENTERPRISE INC
Date Became Current:
Date Ended Current:
Phone: 951-849-9781
Source Type: Implementer
Street No:
Street 1: 201 W LINCOLN ST
Street 2:
City: BANNING
State: CA
Country:
Zip Code: 92220-4933

Owner/Operator Ind: Current Operator
Type: Other
Name: CINDY CROSS, ACCOUNTING MGR
Date Became Current:
Date Ended Current:
Phone: 951-849-9781
Source Type: Implementer
Street No:
Street 1: 201 W LINCOLN ST
Street 2:
City: BANNING
State: CA
Country:
Zip Code: 92220

Owner/Operator Ind: Current Owner
Street No:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Type:	Other	**Street 1:**	201 W LINCOLN ST
Name:	DT MATTSON ENTERPRISE INC	**Street 2:**	
Date Became Current:		**City:**	BANNING
Date Ended Current:		**State:**	CA
Phone:	951-849-9781	**Country:**	US
Source Type:	Deactivation	**Zip Code:**	92220-4933
Owner/Operator Ind:	Current Operator	**Street No:**	
Type:	Other	**Street 1:**	201 W LINCOLN ST
Name:	DT MATTSON ENTERPRISE INC	**Street 2:**	
Date Became Current:		**City:**	BANNING
Date Ended Current:		**State:**	CA
Phone:	951-849-9781	**Country:**	US
Source Type:	Deactivation	**Zip Code:**	92220-4933

Historical Handler Details

Receive Dt:	19920224
Generator Code Description:	Not a Generator, Verified
Handler Name:	DT MATTSON ENTERPRISES INC DBA PRO-LINE

2	5 of 5	ESE	0.03 / 172.72	2,315.32 / -9	HORIZON HOBBY LLC DBA PRO-LINE RACING 201 W LINCOLN ST BANNING CA 92220	RCRA NON GEN

EPA Handler ID:	CAL000458991
Gen Status Universe:	No Report
Contact Name:	SCOTT SIMMONS
Contact Address:	201 W LINCOLN ST , , BANNING , CA, 92220 ,
Contact Phone No and Ext:	951-849-9781
Contact Email:	SSIMMONS@PROLINERACING.COM
Contact Country:	
County Name:	RIVERSIDE
EPA Region:	09
Land Type:	
Receive Date:	20211228
Location Latitude:	
Location Longitude:	

Violation/Evaluation Summary

Note:	NO RECORDS: As of Aug 2021, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Furnace Exemption:	No
Underground Injection Activity:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No
Used Oil Spec Marketer:	No

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 20211228
Handler Name: HORIZON HOBBY LLC DBA PRO-LINE RACING
Source Type: Implementer
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind: Current Operator
Type: Other
Name: SCOTT SIMMONS
Date Became Current:
Date Ended Current:
Phone: 951-849-9781
Source Type: Implementer
Street No:
Street 1: 201 W LINCOLN ST
Street 2:
City: BANNING
State: CA
Country:
Zip Code: 92220

Owner/Operator Ind: Current Owner
Type: Other
Name: HORIZON HOBBY LLC DBA PRO-LINE RACING
Date Became Current:
Date Ended Current:
Phone: 951-849-9781
Source Type: Implementer
Street No:
Street 1: 201 W LINCOLN ST
Street 2:
City: BANNING
State: CA
Country:
Zip Code: 92220

3	*1 of 4*	*ESE*	*0.07 / 352.39*	*2,314.50 / -10*	***K S D, Inc.*** ***161 W Lincoln St*** ***Banning CA 92220***	***HZH*** ***RIVERSIDE***

3	*2 of 4*	*ESE*	*0.07 / 352.39*	*2,314.50 / -10*	***K S D, Inc.*** ***161 W Lincoln St*** ***Banning CA 92220***	***HWG*** ***RIVERSIDE***

3	*3 of 4*	*ESE*	*0.07 / 352.39*	*2,314.50 / -10*	***K S D, Inc.*** ***161 W LINCOLN ST*** ***BANNING CA 92220***	***CERS HAZ***

Site ID: 40877
Latitude: 33.922474
Longitude: -116.877968
County:

Regulated Programs

EI ID: 10320565
EI Description: Hazardous Waste Generator

EI ID: 10320565
EI Description: Chemical Storage Facilities

Violations

Violation Date: 05/14/2015
Violation Source: CERS
Violation Program: HMRRP
Violation Division: Riverside County Department of Env Health
Citation: HSC 6.95 25508.2 - California Health and Safety Code, Chapter 6.95, Section(s) 25508.2
Violation Notes:

Returned to compliance on 12/16/2015.

Violation Description:

Failure to annually review and electronically certify that the business plan is complete, accurate, and up-to-date.

Violations

Violation Date: 05/14/2015 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Notes:

Returned to compliance on 12/16/2015.

Violation Description:

Failure to complete and electronically submit a site map with all required content.

Enforcements

Enf Action Date: 05/14/2015 ***Enf Action Program:*** HMRRP
Enf Action Type: Notice of Violation (Unified Program) ***Enf Action Source:*** CERS
Enf Action Division: Riverside County Department of Env Health
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:

Evaluations

Eval Date: 08/21/2018
Violations Found: No
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS
Eval Notes:

Eval Date: 05/14/2015
Violations Found: No
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HW
Eval Source: CERS
Eval Notes:

Eval Date: 08/21/2018
Violations Found: No
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HW
Eval Source: CERS
Eval Notes:

Eval Date: 08/11/2021
Violations Found: No
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HMRRP

Eval Source: CERS
Eval Notes:

Facility is a helicopter rotary components manufacturer with reportable quantities of oils, cleaning chemicals, and compressed gases on-site. ; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 08/11/2021
Violations Found: No
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HW
Eval Source: CERS
Eval Notes:

Facility is a helicopter rotary components manufacturer which generates used oily water on-site. The hazardous waste hauler this facility uses to perform hazardous waste removals is Western Environmental Services, Inc. #43. Facility is currently looking into acquiring TSDF copy for manifest #: 021644701 JJK; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 05/14/2015
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS
Eval Notes:

Affiliations

Affil Type Desc: Document Preparer
Entity Name: David L Schutte
Entity Title:
Address:
City:
State:
Country:
Zip Code:
Phone:

Affil Type Desc: CUPA District
Entity Name: Riverside Cnty Env Health
Entity Title:
Address: 4065 County Circle Drive, Room 104
City: Riverside
State: CA
Country:
Zip Code: 92503
Phone: (951) 358-5055

Affil Type Desc: Parent Corporation
Entity Name: K S D, Inc.
Entity Title:
Address:
City:
State:
Country:
Zip Code:
Phone:

Affil Type Desc: Legal Owner
Entity Name: Robert S Anderson
Entity Title:
Address: 161 W Lincoln St
City: Banning

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

State: CA
Country: United States
Zip Code: 92220
Phone: (951) 849-7669

Affil Type Desc: Identification Signer
Entity Name: David L Schutte
Entity Title: VP Operations
Address:
City:
State:
Country:
Zip Code:
Phone:

Affil Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title:
Address: 161 W Lincoln St
City: Banning
State: CA
Country:
Zip Code: 92220
Phone:

Affil Type Desc: Operator
Entity Name: David L Schutte
Entity Title:
Address:
City:
State:
Country:
Zip Code:
Phone: (951) 317-2642

Affil Type Desc: Environmental Contact
Entity Name: David L Schutte
Entity Title:
Address: 161 W Lincoln St
City: Banning
State: CA
Country:
Zip Code: 92220
Phone:

Coordinates

Env Int Type Code: HWG
Program ID: 10320565
Latitude: 33.922470
Longitude: -116.877970
Coord Name:
Ref Point Type Desc: Center of a facility or station.

3	4 of 4	ESE	0.07 / 352.39	2,314.50 / -10	KSD INC 161 W LINCOLN ST BANNING CA 92220-0000	RCRA NON GEN

EPA Handler ID: CAL000224634
Gen Status Universe: No Report
Contact Name: KEVIN BALL
Contact Address: 161 W LINCOLN ST , , BANNING , CA, 92220 ,
Contact Phone No and Ext: 951-849-7669
Contact Email: KBALL@KSDINC.NET
Contact Country:
County Name: RIVERSIDE
EPA Region: 09
Land Type:
Receive Date: 20001117
Location Latitude: 33.921752

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Location Longitude: -116.877931

Violation/Evaluation Summary

Note: NO RECORDS: As of Aug 2021, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 20001117
Handler Name: KSD INC
Source Type: Implementer
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind: Current Owner
Type: Other
Name: ROBERT ANDERSON
Date Became Current:
Date Ended Current:
Phone: 951-849-7669
Source Type: Implementer
Street No:
Street 1: 161 W LINCOLN ST
Street 2:
City: BANNING
State: CA
Country:
Zip Code: 92220-0000

Owner/Operator Ind: Current Operator
Type: Other
Name: KEVIN BALL
Date Became Current:
Date Ended Current:
Phone: 951-849-7669
Source Type: Implementer
Street No:
Street 1: 161 W LINCOLN ST
Street 2:
City: BANNING
State: CA
Country:
Zip Code: 92220

4	1 of 7	SSE	0.09 / 451.22	2,307.61 / -17	SCC Banning Bulk Plant 270 W Lincoln St Banning CA 92220	HZH RIVERSIDE
4	2 of 7	SSE	0.09 / 451.22	2,307.61 / -17	SCC Banning Bulk Plant 270 W Lincoln St Banning CA 92220	HWG RIVERSIDE

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
4	3 of 7	SSE	0.09 / 451.22	2,307.61 / -17	KENNY STRICKLAND INC 270 W LINCOLN ST BANNING CA 922204904	DRYCLEANERS

EPA ID: CAL000387448
Create Date: 7/16/2013 11:32:54 AM
Facility Act Ind: No
Inact Date: 6/30/2017
Reason: SIC/NAICS
Region Code: 4
DD Latitude: 33.921658
DD Longitude: -116.879612
Facility County Code: 33
Mail Name:
Owner Name: KENNY STRICKLAND INC
Owner Street 1: PO BOX 998
Owner Street 2:
Owner City: COACHELLA
Owner State: CA
Owner Zip: 922360000
Owner Phone: 7603982031
Owner Fax: 7603981921
Contact Name: JON DOAK
Contact Street 1: 600 S L ST
Contact Street 2:
Contact City: IMPERIAL
Contact State: CA
Contact Zip: 92251
Contact Phone: 9519228882
Contact Fax: 9519228896

NAICS Details

NAICS Code: 81232
NAICS Description: Drycleaning and Laundry Services (except Coin-Operated)
SIC Code: 7211
SIC Description: Power Laundries, Family and Commercial

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
4	4 of 7	SSE	0.09 / 451.22	2,307.61 / -17	SCC Banning Bulk Plant 270 W LINCOLN ST BANNING CA 92220	CERS TANK

Site ID: 127623
Latitude: 33.921669
Longitude: -116.879601

Regulated Programs

EI ID: 10329067
EI Description: Hazardous Waste Generator

EI ID: 10329067
EI Description: Chemical Storage Facilities

EI ID: 10329067
EI Description: Aboveground Petroleum Storage

Violations

Violation Date: 12/16/2014
Violation Source: CERS
Violation Program: APSA
Violation Division: Riverside County Department of Env Health
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Notes:

Returned to compliance on 04/17/2015.

Violation Description:

Failure to maintain SPCC plan onsite (applies if facility is manned at least four (4) hours per day).

Violations

Violation Date: 12/16/2014
Violation Source: CERS
Violation Program: HMRRP
Violation Division: Riverside County Department of Env Health
Citation: HSC 6.95 Multiple - California Health and Safety Code, Chapter 6.95, Section(s) Multiple

Violation Notes:

Returned to compliance on 03/11/2015. [LOCAL ORDINANCE VIOLATION 105A] Hazardous materials are stored in a manner to minimize the possibility of a fire, explosion, or release.

Violation Description:

Business Plan Program - Operations/Maintenance - General

Violations

Violation Date: 03/11/2015 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Notes:

Returned to compliance on 04/17/2015.

Violation Description:

Failure to discuss conformance with SPCC requirements within the SPCC plan.

Violations

Violation Date: 12/16/2014 ***Violation Source:*** CERS
Violation Program: HW ***Violation Division:*** Riverside County Department of Env Health
Citation: 22 CCR 12 66262.40(c) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.40(c)
Violation Notes:

Returned to compliance on 03/11/2015.

Violation Description:

Failure to determine if the waste generated is a hazardous waste and to maintain analysis results for three years.

Violations

Violation Date: 03/11/2015 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Notes:

Returned to compliance on 04/17/2015.

Violation Description:

Failure to maintain SPCC plan onsite (applies if facility is manned at least four (4) hours per day).

Violations

Violation Date: 12/16/2014 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.95 Multiple - California Health and Safety Code, Chapter 6.95, Section(s) Multiple
Violation Notes:

Returned to compliance on 03/11/2015. [LOCAL ORDINANCE VIOLATION 101C] Approved HMBP accessible on site and available for review.

Violation Description:

Business Plan Program - Administration/Documentation - General

Violations

Violation Date: 12/16/2014 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.67 25270.6(b) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.6(b)
Violation Notes:

Returned to compliance on 03/11/2015.

Violation Description:

Failure to pay the APSA Program fee.

Violations

Violation Date: 12/16/2014 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.95 25508(d) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(d)
Violation Notes:

Returned to compliance on 03/11/2015.

Violation Description:

Failure to complete and/or electronically submit a business plan when storing/handling a hazardous material at or above reportable quantities.

Violations

Violation Date: 03/11/2015 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Notes:

Returned to compliance on 04/17/2015.

Violation Description:

Failure to prepare and implement a Spill Prevention Control and Countermeasure (SPCC) Plan .

Violations

Violation Date: 12/16/2014 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Notes:

Returned to compliance on 04/17/2015.

Violation Description:

Failure to have a professional engineer certify and review the SPCC Plan.

Violations

Violation Date: 04/17/2015 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Notes:

Returned to compliance on 04/24/2015.

Violation Description:

Failure to adequately discuss procedures for reporting a discharge, or no information and procedures for reporting a discharge are included within the SPCC plan.

Violations

Violation Date: 12/16/2014 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.95 25505(a)(4) - California Health and Safety Code, Chapter 6.95, Section(s) 25505(a)(4)
Violation Notes:

Returned to compliance on 03/11/2015.

Violation Description:

Failure to provide initial and annual training to all employees in safety procedures in the event of a release or threatened release of a hazardous material or failure to document and maintain training records for a minimum of three years.

Violations

Violation Date: 12/16/2014 ***Violation Source:*** CERS
Violation Program: HW ***Violation Division:*** Riverside County Department of Env Health
Citation: 40 CFR 1 265.173 - U.S. Code of Federal Regulations, Title 40, Chapter 1, Section(s) 265.173
Violation Notes:

Returned to compliance on 03/11/2015.

Violation Description:

Failure to properly close hazardous waste containers when not in active use.

Violations

Violation Date: 06/04/2018 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Notes:

Returned to compliance on 08/07/2018.

Violation Description:

Failure to complete and electronically submit hazardous material inventory information for all reportable hazardous materials on site at or above reportable quantities.

Violations

Violation Date: 12/16/2014 ***Violation Source:*** CERS
Violation Program: HW ***Violation Division:*** Riverside County Department of Env Health
Citation: 22 CCR 12 66262.34(f) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.34(f)
Violation Notes:

Returned to compliance on 03/11/2015.

Violation Description:

Failure to properly label hazardous waste accumulation containers with the following requirements: "Hazardous Waste", name and address of the generator, physical and chemical characteristics of the Hazardous Waste, and starting accumulation date.

Violations

Violation Date: 06/04/2018 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Notes:

Returned to compliance on 08/07/2018.

Violation Description:

Failure to complete and electronically submit a site map with all required content.

Violations

Violation Date: 03/11/2015 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Notes:

Returned to compliance on 04/17/2015.

Violation Description:

Failure to have a professional engineer certify and review the SPCC Plan.

Violations

Violation Date: 12/16/2014 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Notes:

Returned to compliance on 04/17/2015.

Violation Description:

Failure to discuss conformance with SPCC requirements within the SPCC plan.

Violations

Violation Date: 12/16/2014 ***Violation Source:*** CERS
Violation Program: HW ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.11 25404.1 - California Health and Safety Code, Chapter 6.11, Section(s) 25404.1
Violation Notes:

Returned to compliance on 03/11/2015.

Violation Description:

Failure to obtain and/or maintain an active hazardous waste generator permit.

Violations

Violation Date: 06/04/2018 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.95 25508.1(a)-(f) - California Health and Safety Code, Chapter 6.95, Section(s) 25508.1(a)-(f)
Violation Notes:

Returned to compliance on 08/07/2018.

Violation Description:

Failure to electronically update business plan within 30 days of any one of the following events:
A 100 percent or more increase in the quantity of a previously disclosed material.
Any handling of a previously undisclosed hazardous materials at or above reportable quantities.
A change of business address, business ownership, or business name.
A substantial change in the handler's operations that requires modification to any portion of the business plan.

Violations

Violation Date: 06/04/2018 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Notes:

Returned to compliance on 08/07/2018.

Violation Description:

Failure to complete and electronically submit a business plan when storing/handling a hazardous material at or above reportable quantities.

Violations

Violation Date: 12/16/2014 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.95 Multiple - California Health and Safety Code, Chapter 6.95, Section(s) Multiple
Violation Notes:

Returned to compliance on 03/11/2015. [LOCAL ORDINANCE VIOLATION 104A] NFPA 704 sign(s) have been posted appropriately.

Violation Description:

Business Plan Program - Administration/Documentation - General

Violations

Violation Date: 12/16/2014 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Notes:

Returned to compliance on 04/17/2015.

Violation Description:

Failure to prepare and implement a Spill Prevention Control and Countermeasure (SPCC) Plan .

Violations

Violation Date: 12/16/2014 ***Violation Source:*** CERS
Violation Program: HW ***Violation Division:*** Riverside County Department of Env Health
Citation: 22 CCR 16 66266.130 - California Code of Regulations, Title 22, Chapter 16, Section(s) 66266.130
Violation Notes:

Returned to compliance on 03/11/2015.

Violation Description:

Failure to properly handle, manage, label, and recycle used oil and fuel filters.

Violations

Violation Date: 12/16/2014 ***Violation Source:*** CERS
Violation Program: HW ***Violation Division:*** Riverside County Department of Env Health
Citation: 40 CFR 1 262.34(d)(5)(iii) - U.S. Code of Federal Regulations, Title 40, Chapter 1, Section(s) 262.34(d)(5)(iii)
Violation Notes:

Returned to compliance on 03/11/2015.

Violation Description:

Failure to ensure employees are familiar with the handling and compliance of hazardous waste regulations and emergency response.

Violations

Violation Date: 04/17/2015 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Notes:

Returned to compliance on 04/24/2015.

Violation Description:

Failure to discuss the appropriate containment/diversionary structures/equipment within the plan.

Violations

Violation Date: 12/16/2014 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.11 25404.1 - California Health and Safety Code, Chapter 6.11, Section(s) 25404.1
Violation Notes:

Returned to compliance on 03/11/2015.

Violation Description:

Failure to maintain a valid permit.

Enforcements

Enf Action Date: 04/17/2015 ***Enf Action Program:*** APSA
Enf Action Type: Notice of Violation (Unified Program) ***Enf Action Source:*** CERS
Enf Action Division: Riverside County Department of Env Health
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:

Enf Action Date: 12/16/2014 ***Enf Action Program:*** APSA
Enf Action Type: Notice of Violation (Unified Program) ***Enf Action Source:*** CERS
Enf Action Division: Riverside County Department of Env Health
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:

Enf Action Date: 03/11/2015 ***Enf Action Program:*** APSA
Enf Action Type: Notice of Violation (Unified Program) ***Enf Action Source:*** CERS
Enf Action Division: Riverside County Department of Env Health
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:

Enf Action Date: 12/16/2014 ***Enf Action Program:*** HW
Enf Action Type: Notice of Violation (Unified Program) ***Enf Action Source:*** CERS
Enf Action Division: Riverside County Department of Env Health
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection

Enf Action Notes:

Enf Action Date: 12/16/2014
Enf Action Program: HMRRP
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Source: CERS
Enf Action Division: Riverside County Department of Env Health
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:

Evaluations

Eval Date: 06/04/2018
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS
Eval Notes:

Eval Date: 12/16/2014
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: APSA
Eval Source: CERS
Eval Notes:

APSA inspection with Justin Wood at Kenny Strickland, Banning. No PR# yet for new program.; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 03/15/2019
Violations Found: No
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: APSA
Eval Source: CERS
Eval Notes:

Eval Date: 03/11/2015
Violations Found: No
Eval General Type: Other/Unknown
Eval Type: Other, not routine, done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS
Eval Notes:

Eval Date: 03/15/2019
Violations Found: No
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS
Eval Notes:

Eval Date: 06/04/2018
Violations Found: No
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency

Eval Division: Riverside County Department of Env Health
Eval Program: APSA
Eval Source: CERS
Eval Notes:

Eval Date: 04/17/2015
Violations Found: Yes
Eval General Type: Other/Unknown
Eval Type: Other, not routine, done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: APSA
Eval Source: CERS
Eval Notes:

Eval Date: 03/11/2015
Violations Found: Yes
Eval General Type: Other/Unknown
Eval Type: Other, not routine, done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: APSA
Eval Source: CERS
Eval Notes:

Eval Date: 12/16/2014
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HW
Eval Source: CERS
Eval Notes:

Generator inspection with Justin wood at Kenny Strickland, Banning, No PR# yet for new program.; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 03/15/2019
Violations Found: No
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HW
Eval Source: CERS
Eval Notes:

Eval Date: 06/04/2018
Violations Found: No
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HW
Eval Source: CERS
Eval Notes:

Eval Date: 12/16/2014
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS
Eval Notes:

Eval Date: 03/11/2015

Violations Found: No
Eval General Type: Other/Unknown
Eval Type: Other, not routine, done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HW
Eval Source: CERS
Eval Notes:

Affiliations

Affil Type Desc: Operator
Entity Name: SC Commercial, LLC
Entity Title:
Address:
City:
State:
Country:
Zip Code:
Phone: (888) 723-8357

Affil Type Desc: CUPA District
Entity Name: Riverside Cnty Env Health
Entity Title:
Address: 4065 County Circle Drive, Room 104
City: Riverside
State: CA
Country:
Zip Code: 92503
Phone: (951) 358-5055

Affil Type Desc: Identification Signer
Entity Name: Brian Decker
Entity Title: Cardlock Facilities Manager
Address:
City:
State:
Country:
Zip Code:
Phone:

Affil Type Desc: Legal Owner
Entity Name: SC Commercial, LLC
Entity Title:
Address: 1800 West Katella Ave.
City: Orange
State: CA
Country: United States
Zip Code: 92867
Phone: (888) 723-8357

Affil Type Desc: Parent Corporation
Entity Name: SCC Banning
Entity Title:
Address:
City:
State:
Country:
Zip Code:
Phone:

Affil Type Desc: Environmental Contact
Entity Name: BRIAN DECKER
Entity Title:
Address: 1800 West Katella Ave.
City: Orange
State: CA
Country:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Zip Code: 92867
Phone:

Affil Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title:
Address: 1800 West Katella Ave.
City: Orange
State: CA
Country:
Zip Code: 92867
Phone:

Affil Type Desc: Property Owner
Entity Name: SC Commercial, LLC
Entity Title:
Address: 1800 West Katella Ave.
City: Orange
State: CA
Country: United States
Zip Code: 92867
Phone: (888) 723-8951

Affil Type Desc: Document Preparer
Entity Name: Brian Decker
Entity Title:
Address:
City:
State:
Country:
Zip Code:
Phone:

Coordinates

Env Int Type Code: HWG
Program ID: 10329067
Latitude: 33.921670
Longitude: -116.879600
Coord Name:
Ref Point Type Desc: Center of a facility or station.

4	5 of 7	SSE	0.09 / 451.22	2,307.61 / -17	SOCO GROUP 272 W LINCOLN ST BANNING CA 92220	RCRA NON GEN

EPA Handler ID: CAL000430735
Gen Status Universe: No Report
Contact Name: MICHELLE FERRARO
Contact Address: 5962 PREISTLY DR , , CARLSBAD , CA, 92008 ,
Contact Phone No and Ext: 760-795-5361
Contact Email: MFERRARO@THESOCOGROUP.COM
Contact Country:
County Name: RIVERSIDE
EPA Region: 09
Land Type:
Receive Date: 20170915
Location Latitude: 33.921645
Location Longitude: -116.879305

Violation/Evaluation Summary

Note: NO RECORDS: As of Aug 2021, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No

Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Furnace Exemption:	No
Underground Injection Activity:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No
Used Oil Spec Marketer:	No

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	20170915
Handler Name:	SOCO GROUP
Source Type:	Implementer
Federal Waste Generator Code:	N
Generator Code Description:	Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind:	Current Operator	***Street No:***	
Type:	Other	***Street 1:***	5962 PREISTLY DR
Name:	MICHELLE FERRARO	***Street 2:***	
Date Became Current:		***City:***	CARLSBAD
Date Ended Current:		***State:***	CA
Phone:	760-795-5361	***Country:***	
Source Type:	Implementer	***Zip Code:***	92008

Owner/Operator Ind:	Current Owner	***Street No:***	
Type:	Other	***Street 1:***	5962 PRIESTLY DR
Name:	THE SOCO GROUP INC	***Street 2:***	
Date Became Current:		***City:***	CARLSBAD
Date Ended Current:		***State:***	CA
Phone:	760-804-8460	***Country:***	
Source Type:	Implementer	***Zip Code:***	92008

4	***6 of 7***	***SSE***	***0.09 / 451.22***	***2,307.61 / -17***	***SC COMMERCIAL LLC DBA SCFUELS 270-274 W LINCOLN AVE BANNING CA 92220***	***RCRA NON GEN***

EPA Handler ID:	CAL000440891
Gen Status Universe:	No Report
Contact Name:	KAYLA TORRES
Contact Address:	270-274 W LINCOLN AVE , , BANNING , CA, 92220 ,
Contact Phone No and Ext:	714-637-1531
Contact Email:	KTORRES@THESOCOGROUP.COM
Contact Country:	
County Name:	RIVERSIDE
EPA Region:	09
Land Type:	
Receive Date:	20181119
Location Latitude:	33.921645
Location Longitude:	-116.879315

Violation/Evaluation Summary

Note:	NO RECORDS: As of Aug 2021, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Furnace Exemption:	No
Underground Injection Activity:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No
Used Oil Spec Marketer:	No

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	20181119
Handler Name:	SC COMMERCIAL LLC DBA SCFUELS
Source Type:	Implementer
Federal Waste Generator Code:	N
Generator Code Description:	Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind:	Current Owner	***Street No:***	
Type:	Other	***Street 1:***	1800 W KATELLA AVE STE 400
Name:	SOUTHERN COUNTIES OIL CO LP	***Street 2:***	
Date Became Current:		***City:***	ORANGE
Date Ended Current:		***State:***	CA
Phone:	714-516-7365	***Country:***	
Source Type:	Implementer	***Zip Code:***	92867
Owner/Operator Ind:	Current Operator	***Street No:***	
Type:	Other	***Street 1:***	270-274 W LINCOLN AVE
Name:	KAYLA TORRES	***Street 2:***	
Date Became Current:		***City:***	BANNING
Date Ended Current:		***State:***	CA
Phone:	714-637-1531	***Country:***	
Source Type:	Implementer	***Zip Code:***	92220

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
4	7 of 7	SSE	0.09 / 451.22	2,307.61 / -17	SC COMMERCIAL, LLC 272 LINCOLN STREET BANNING CA 92220	RCRA NON GEN

EPA Handler ID:	CAC003106149
Gen Status Universe:	No Report
Contact Name:	YASMEEN KANAN
Contact Address:	1800 WEST KATELLA AVE. , , ORANGE , CA, 92867 ,
Contact Phone No and Ext:	714-516-7365
Contact Email:	KANANY@SCFUELS.COM
Contact Country:	
County Name:	RIVERSIDE
EPA Region:	09
Land Type:	
Receive Date:	20210218
Location Latitude:	
Location Longitude:	

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Violation/Evaluation Summary

Note: NO RECORDS: As of Aug 2021, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Furnace Exemption:	No
Underground Injection Activity:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No
Used Oil Spec Marketer:	No

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	20210218
Handler Name:	SC COMMERCIAL, LLC
Source Type:	Implementer
Federal Waste Generator Code:	N
Generator Code Description:	Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind:	Current Operator	***Street No:***	
Type:	Other	***Street 1:***	1800 WEST KATELLA AVE.
Name:	YASMEEN KANAN	***Street 2:***	
Date Became Current:		***City:***	ORANGE
Date Ended Current:		***State:***	CA
Phone:	714-516-7365	***Country:***	
Source Type:	Implementer	***Zip Code:***	92867
Owner/Operator Ind:	Current Owner	***Street No:***	
Type:	Other	***Street 1:***	1800 W. KATELLA AVE STE 400
Name:	SCFUELS BROBERG	***Street 2:***	
Date Became Current:		***City:***	ORANGE
Date Ended Current:		***State:***	CA
Phone:	714-516-7365	***Country:***	
Source Type:	Implementer	***Zip Code:***	92867

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
5	1 of 3	ESE	0.11 / 555.11	2,313.97 / -11	APOLLO MASTERS CORPORATION 101 W LINCOLN ST BANNING CA 92220	EMISSIONS

2015 Criteria Data

Facility ID:	62326	***CERR Code:***	
Facility SIC Code:	3695	***TOGT:***	.17495856479289940828402366863905325443 79
CO:	33	***ROGT:***	.17065605

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Air Basin:	SC	**COT:**	.004375
District:	SC	**NOXT:**	.01625
COID:	RIV	**SOXT:**	.000075
DISN:	SOUTH COAST AQMD	**PMT:**	.0009375
CHAPIS:		**PM10T:**	.0009375

2015 Toxic Data

Facility ID:	62326	**COID:**	RIV
Facility SIC Code:	3695	**DISN:**	SOUTH COAST AQMD
CO:	33	**CHAPIS:**	
Air Basin:	SC	**CERR Code:**	
District:	SC		
TS:			
Health Risk Asmt:			
Non-Cancer Chronic Haz Ind:			
Non-Cancer Acute Haz Ind:			

2017 Criteria Data

Facility ID:	62326	**CERR Code:**	
Facility SIC Code:	3695	**TOGT:**	. 0254439129822485207100591715976331360947
CO:	33	**ROGT:**	.004300126
Air Basin:	SC	**COT:**	.02
District:	SC	**NOXT:**	.07
COID:	RIV	**SOXT:**	.000368
DISN:	SOUTH COAST AQMD	**PMT:**	.00461
CHAPIS:		**PM10T:**	.00461

2017 Toxic Data

Facility ID:	62326	**COID:**	RIV
Facility SIC Code:	3695	**DISN:**	SOUTH COAST AQMD
CO:	33	**CHAPIS:**	
Air Basin:	SC	**CERR Code:**	
District:	SC		
TS:			
Health Risk Asmt:			
Non-Cancer Chronic Haz Ind:			
Non-Cancer Acute Haz Ind:			

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
5	2 of 3	ESE	0.11 / 555.11	2,313.97 / -11	APOLLO MASTERS CORPORATION 101 WEST LINCOLN ST BANNING CA 92220	EMISSIONS

1990 Criteria Data

Facility ID:	62326	**CERR Code:**	
Facility SIC Code:	3360	**TOGT:**	3.8
CO:	33	**ROGT:**	3.14142
Air Basin:	MD	**COT:**	0
District:	SC	**NOXT:**	.1
COID:	RIV	**SOXT:**	0
DISN:	SOUTH COAST AQMD	**PMT:**	0
CHAPIS:		**PM10T:**	0

1990 Toxic Data

Facility ID:	62326	**COID:**	RIV
Facility SIC Code:	3360	**DISN:**	SOUTH COAST AQMD
CO:	33	**CHAPIS:**	
Air Basin:	MD	**CERR Code:**	
District:	SC		
TS:			
Health Risk Asmt:			
Non-Cancer Chronic Haz Ind:			
Non-Cancer Acute Haz Ind:			

1993 Criteria Data

Facility ID:	62326	**CERR Code:**	
Facility SIC Code:	3695	**TOGT:**	1.1
CO:	33	**ROGT:**	.94
Air Basin:	SC	**COT:**	0
District:	SC	**NOXT:**	.1
COID:	RIV	**SOXT:**	0
DISN:	SOUTH COAST AQMD	**PMT:**	0
CHAPIS:		**PM10T:**	0

1993 Toxic Data

Facility ID:	62326	**COID:**	RIV
Facility SIC Code:	3695	**DISN:**	SOUTH COAST AQMD
CO:	33	**CHAPIS:**	
Air Basin:	SC	**CERR Code:**	
District:	SC		
TS:			
Health Risk Asmt:			
Non-Cancer Chronic Haz Ind:			
Non-Cancer Acute Haz Ind:			

1995 Criteria Data

Facility ID:	62326	**CERR Code:**	
Facility SIC Code:	3695	**TOGT:**	1.1
CO:	33	**ROGT:**	.94
Air Basin:	SC	**COT:**	0
District:	SC	**NOXT:**	.1
COID:	RIV	**SOXT:**	0
DISN:	SOUTH COAST AQMD	**PMT:**	0
CHAPIS:		**PM10T:**	0

1995 Toxic Data

Facility ID:	62326	**COID:**	RIV
Facility SIC Code:	3695	**DISN:**	SOUTH COAST AQMD
CO:	33	**CHAPIS:**	
Air Basin:	SC	**CERR Code:**	
District:	SC		
TS:			
Health Risk Asmt:			
Non-Cancer Chronic Haz Ind:			
Non-Cancer Acute Haz Ind:			

2005 Criteria Data

Facility ID:	62326	**CERR Code:**	
Facility SIC Code:	3999	**TOGT:**	.0216470373861173524300875367211081391765
CO:	33	**ROGT:**	.006

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Air Basin:	SC	**COT:**	.023
District:	SC	**NOXT:**	.082
COID:	RIV	**SOXT:**	0
DISN:	SOUTH COAST AQMD	**PMT:**	.006
CHAPIS:		**PM10T:**	.0058

2005 Toxic Data

Facility ID:	62326	**COID:**	RIV
Facility SIC Code:	3999	**DISN:**	SOUTH COAST AQMD
CO:	33	**CHAPIS:**	
Air Basin:	SC	**CERR Code:**	
District:	SC		
TS:			
Health Risk Asmt:			
Non-Cancer Chronic Haz Ind:			
Non-Cancer Acute Haz Ind:			

2011 Criteria Data

Facility ID:	62326	**CERR Code:**	
Facility SIC Code:	3365	**TOGT:**	1.623991416036660758907676371619419073 04
CO:	33	**ROGT:**	1.59998
Air Basin:	SC	**COT:**	.00437
District:	SC	**NOXT:**	.01625
COID:	RIV	**SOXT:**	.00007
DISN:	SOUTH COAST AQMD	**PMT:**	.00093
CHAPIS:		**PM10T:**	.00093

2011 Toxic Data

Facility ID:	62326	**COID:**	RIV
Facility SIC Code:	3365	**DISN:**	SOUTH COAST AQMD
CO:	33	**CHAPIS:**	
Air Basin:	SC	**CERR Code:**	
District:	SC		
TS:			
Health Risk Asmt:			
Non-Cancer Chronic Haz Ind:			
Non-Cancer Acute Haz Ind:			

5	***3 of 3***	***ESE***	***0.11 / 555.11***	***2,313.97 / -11***	***APOLLO MASTERS CORPORATION 101 WEST LINCOLN STREET BANNING CA 92220***	***RCRA SQG***

EPA Handler ID:	CAD982411480
Gen Status Universe:	Small Quantity Generator
Contact Name:	ENVIRONMENTAL MANAGER
Contact Address:	101 WEST LINCOLN STREET , , BANNING , CA, 92220 , US
Contact Phone No and Ext:	714-849-8831
Contact Email:	
Contact Country:	US
County Name:	RIVERSIDE
EPA Region:	09
Land Type:	
Receive Date:	19880527
Location Latitude:	33.921595
Location Longitude:	-116.894173

Violation/Evaluation Summary

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Note: NO RECORDS: As of Aug 2021, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Furnace Exemption:	No
Underground Injection Activity:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No
Used Oil Spec Marketer:	No

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	19880527
Handler Name:	APOLLO MASTERS CORPORATION
Federal Waste Generator Code:	2
Generator Code Description:	Small Quantity Generator
Source Type:	Notification

Owner/Operator Details

Owner/Operator Ind:	Current Operator	**Street No:**	
Type:	Private	**Street 1:**	NOT REQUIRED
Name:	NOT REQUIRED	**Street 2:**	
Date Became Current:		**City:**	NOT REQUIRED
Date Ended Current:		**State:**	ME
Phone:	415-555-1212	**Country:**	
Source Type:	Notification	**Zip Code:**	99999
Owner/Operator Ind:	Current Owner	**Street No:**	
Type:	Private	**Street 1:**	NOT REQUIRED
Name:	GC INTERNATIONAL	**Street 2:**	
Date Became Current:		**City:**	NOT REQUIRED
Date Ended Current:		**State:**	ME
Phone:	415-555-1212	**Country:**	
Source Type:	Notification	**Zip Code:**	99999

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
6	1 of 10	NNE	0.13 / 679.38	2,348.39 / 24	TENAX DRY CLEANERS 57 S 2ND ST BANNING CA 922200000	DRYCLEANERS

EPA ID:	CAD981984511	**Owner City:**	BANNING
Create Date:	7/3/1987	**Owner State:**	CA
Facility Act Ind:	No	**Owner Zip:**	922200000
Inact Date:	6/30/2020	**Owner Phone:**	9518497418
Reason:	SIC/NAICS	**Owner Fax:**	9517803267
Region Code:	4	**Contact Name:**	RO SUP CHUN
DD Latitude:	33.92493	**Contact Street 1:**	57 S 2ND ST
DD Longitude:	-116.879003	**Contact Street 2:**	
Facility County Code:	33	**Contact City:**	BANNING
Mail Name:		**Contact State:**	CA
Owner Name:	TENAX DRY CLEANERS	**Contact Zip:**	92220
Owner Street 1:	57 S 2ND ST	**Contact Phone:**	9518497418
Owner Street 2:		**Contact Fax:**	9517803267

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

NAICS Details

NAICS Code: 81232
NAICS Description: Drycleaning and Laundry Services (except Coin-Operated)
SIC Code: 7211
SIC Description: Power Laundries, Family and Commercial

6	*2 of 10*	*NNE*	*0.13 / 679.38*	*2,348.39 / 24*	***TENAX CLEANERS, KUN HEE KIM*** ***DB*** ***57 S 2ND ST*** ***BANNING CA 92220***	***EMISSIONS***

1990 Criteria Data

Facility ID: 55831
Facility SIC Code: 7216
CO: 33
Air Basin: SC
District: SC
COID: RIV
DISN: SOUTH COAST AQMD
CHAPIS:
CERR Code:
TOGT: .8
ROGT: .55888
COT:
NOXT:
SOXT:
PMT:
PM10T:

1990 Toxic Data

Facility ID: 55831
Facility SIC Code: 7216
CO: 33
Air Basin: SC
District: SC
TS:
Health Risk Asmt:
Non-Cancer Chronic Haz Ind:
Non-Cancer Acute Haz Ind:
COID: RIV
DISN: SOUTH COAST AQMD
CHAPIS:
CERR Code:

6	*3 of 10*	*NNE*	*0.13 / 679.38*	*2,348.39 / 24*	***TENAX CLEANERS, KUN HOE KIM*** ***DB*** ***57 S 2ND ST*** ***BANNING CA 92220***	***EMISSIONS***

1987 Criteria Data

Facility ID: 55831
Facility SIC Code: 7216
CO: 33
Air Basin: SC
District: SC
COID: RIV
DISN: SOUTH COAST AQMD
CHAPIS:
CERR Code:
TOGT: 1.2
ROGT: 0
COT:
NOXT:
SOXT:
PMT:
PM10T:

1987 Toxic Data

Facility ID: 55831
Facility SIC Code: 7216
CO: 33
Air Basin: SC
District: SC
COID: RIV
DISN: SOUTH COAST AQMD
CHAPIS:
CERR Code:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

TS:
Health Risk Asmt:
Non-Cancer Chronic Haz Ind:
Non-Cancer Acute Haz Ind:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
6	4 of 10	NNE	0.13 / 679.38	2,348.39 / 24	TENAX CLEANERS 57 S 2ND ST BANNING CA 92220	EMISSIONS

2015 Toxic Data

Facility ID:	141767	**COID:**	RIV
Facility SIC Code:	7216	**DISN:**	SOUTH COAST AQMD
CO:	33	**CHAPIS:**	
Air Basin:	SC	**CERR Code:**	
District:	SC		

TS:
Health Risk Asmt:
Non-Cancer Chronic Haz Ind:
Non-Cancer Acute Haz Ind:

2016 Toxic Data

Facility ID:	141767	**TS:**	
Facility SIC Code:	7216	**HRA:**	
CERR CODE:		**CH Index:**	
COID:	RIV	**AH Index:**	
CO:	33	**Air Basin:**	SC
DISN:	SOUTH COAST AQMD	**District:**	SC
CHAPIS:			

2017 Toxic Data

Facility ID:	141767	**COID:**	RIV
Facility SIC Code:	7216	**DISN:**	SOUTH COAST AQMD
CO:	33	**CHAPIS:**	
Air Basin:	SC	**CERR Code:**	
District:	SC		

TS:
Health Risk Asmt:
Non-Cancer Chronic Haz Ind:
Non-Cancer Acute Haz Ind:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
6	5 of 10	NNE	0.13 / 679.38	2,348.39 / 24	TENAX DRY CLEANERS 57 S 2ND ST BANNING CA 92220	FED DRYCLEANERS

FRS Facility ID:	110009541157
NPDES IDs:	
NAICS Codes:	81232
SIC Codes:	
Latitude:	33.92491
Longitude:	-116.87891

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
6	6 of 10	NNE	0.13 / 679.38	2,348.39 / 24	TEXAS CLEANERS 57 S 2ND ST BANNING CA 92220	DRYCLEANERS

EPA ID:	CAL000444726	**Owner City:**	BANNING
Create Date:	3/25/2019 8:43:36 AM	**Owner State:**	CA
Facility Act Ind:	No	**Owner Zip:**	92220

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Inact Date:	6/30/2020	***Owner Phone:***	9519653501
Reason:	SIC/NAICS	***Owner Fax:***	
Region Code:	4	***Contact Name:***	LUCERO SILVA
DD Latitude:	0	***Contact Street 1:***	57 S 2ND ST
DD Longitude:	0	***Contact Street 2:***	
Facility County Code:	33	***Contact City:***	BANNING
Mail Name:		***Contact State:***	CA
Owner Name:	ERNEST & ALEX LLC	***Contact Zip:***	92220
Owner Street 1:	57 S 2ND ST	***Contact Phone:***	9518497418
Owner Street 2:		***Contact Fax:***	

NAICS Details

NAICS Code:	812320
NAICS Description:	Drycleaning and Laundry Services (except Coin-Operated)
SIC Code:	7211
SIC Description:	Power Laundries, Family and Commercial

6	***7 of 10***	***NNE***	***0.13 / 679.38***	***2,348.39 / 24***	***TEXAS CLEANERS 57 S 2ND ST BANNING CA 92220***	***RCRA TSD***

EPA Handler ID:	CAL000444726
Gen Status Universe:	No Report
Contact Name:	LUCERO SILVA
Contact Address:	57 S 2ND ST , , BANNING , CA, 92220 ,
Contact Phone No and Ext:	951-849-7418
Contact Email:	TEXASCLEANERS@HOTMAIL.COM
Contact Country:	
Land Type:	
County Name:	RIVERSIDE
EPA Region:	09
Receive Date:	20190325
Location Latitude:	33.924875
Location Longitude:	-116.878972

Violation/Evaluation Summary

Note:	NO RECORDS: As of Aug 2021, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Smelting, Melting and Refining:	No
Underground Injection Control:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No
Used Oil Spec Marketer:	No

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	20190325

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Handler Name: TEXAS CLEANERS
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified
Source Type: Implementer

Owner/Operator Details

Owner/Operator Ind:	Current Owner	**Street No:**	
Type:	Other	**Street 1:**	57 S 2ND ST
Name:	ERNEST & ALEX LLC	**Street 2:**	
Date Became Current:		**City:**	BANNING
Date Ended Current:		**State:**	CA
Phone:	951-965-3501	**Country:**	
Source Type:	Implementer	**Zip Code:**	92220

Owner/Operator Ind:	Current Operator	**Street No:**	
Type:	Other	**Street 1:**	57 S 2ND ST
Name:	LUCERO SILVA	**Street 2:**	
Date Became Current:		**City:**	BANNING
Date Ended Current:		**State:**	CA
Phone:	951-849-7418	**Country:**	
Source Type:	Implementer	**Zip Code:**	92220

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
6	8 of 10	NNE	0.13 / 679.38	2,348.39 / 24	TEXAS CLEANERS 57 S 2ND ST BANNING CA 92220	RCRA NON GEN

EPA Handler ID: CAL000444726
Gen Status Universe: No Report
Contact Name: LUCERO SILVA
Contact Address: 57 S 2ND ST , , BANNING , CA, 92220 ,
Contact Phone No and Ext: 951-849-7418
Contact Email: TEXASCLEANERS@HOTMAIL.COM
Contact Country:
County Name: RIVERSIDE
EPA Region: 09
Land Type:
Receive Date: 20190325
Location Latitude: 33.924875
Location Longitude: -116.878972

Violation/Evaluation Summary

Note: NO RECORDS: As of Aug 2021, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	20190325
Handler Name:	TEXAS CLEANERS
Source Type:	Implementer
Federal Waste Generator Code:	N
Generator Code Description:	Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind:	Current Owner	***Street No:***	
Type:	Other	***Street 1:***	57 S 2ND ST
Name:	ERNEST & ALEX LLC	***Street 2:***	
Date Became Current:		***City:***	BANNING
Date Ended Current:		***State:***	CA
Phone:	951-965-3501	***Country:***	
Source Type:	Implementer	***Zip Code:***	92220

Owner/Operator Ind:	Current Operator	***Street No:***	
Type:	Other	***Street 1:***	57 S 2ND ST
Name:	LUCERO SILVA	***Street 2:***	
Date Became Current:		***City:***	BANNING
Date Ended Current:		***State:***	CA
Phone:	951-849-7418	***Country:***	
Source Type:	Implementer	***Zip Code:***	92220

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
6	*9 of 10*	*NNE*	*0.13 / 679.38*	*2,348.39 / 24*	***TENAX DRY CLEANERS*** ***57 S 2ND ST*** ***BANNING CA 92220***	***RCRA SQG***

EPA Handler ID:	CAD981984511
Gen Status Universe:	Small Quantity Generator
Contact Name:	ENVIRONMENTAL MANAGER
Contact Address:	57 S 2ND ST , , BANNING , CA, 92220 , US
Contact Phone No and Ext:	714-849-7418
Contact Email:	
Contact Country:	US
County Name:	RIVERSIDE
EPA Region:	09
Land Type:	Other
Receive Date:	19870330
Location Latitude:	33.924875
Location Longitude:	-116.878972

Violation/Evaluation Summary

Note:	NO RECORDS: As of Aug 2021, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Furnace Exemption:	No
Underground Injection Activity:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 19870330
Handler Name: TENAX DRY CLEANERS
Federal Waste Generator Code: 2
Generator Code Description: Small Quantity Generator
Source Type: Notification

Owner/Operator Details

Owner/Operator Ind: Current Operator
Type: Private
Name: NOT REQUIRED
Date Became Current:
Date Ended Current:
Phone: 415-555-1212
Source Type: Notification
Street No:
Street 1: NOT REQUIRED
Street 2:
City: NOT REQUIRED
State: ME
Country:
Zip Code: 99999

Owner/Operator Ind: Current Owner
Type: Private
Name: KIM KUN HOE
Date Became Current:
Date Ended Current:
Phone: 415-555-1212
Source Type: Notification
Street No:
Street 1: NOT REQUIRED
Street 2:
City: NOT REQUIRED
State: ME
Country:
Zip Code: 99999

6	10 of 10	NNE	0.13 / 679.38	2,348.39 / 24	TEXAS CLEANERS 57 S 2ND ST BANNING CA 92220	FED DRYCLEANERS

FRS Facility ID: 110070591459
NPDES IDs:
NAICS Codes: 812320
SIC Codes:
Latitude: 33.929017
Longitude: -116.901932

7	1 of 1	E	0.14 / 738.93	2,323.09 / -1	BILLY MARK INC 260B S SAN GORGONIO BANNING CA 92220	EMISSIONS

1987 Criteria Data

Facility ID: 45860
Facility SIC Code: 5199
CO: 33
Air Basin: SC
District: SC
COID: RIV
DISN: SOUTH COAST AQMD
CHAPIS:
CERR Code:
TOGT: .6
ROGT: .5808
COT:
NOXT:
SOXT:
PMT: 0
PM10T: 0

1987 Toxic Data

Facility ID: 45860
Facility SIC Code: 5199
COID: RIV
DISN: SOUTH COAST AQMD

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

CO: 33
Air Basin: SC
District: SC
TS:
Health Risk Asmt:
Non-Cancer Chronic Haz Ind:
Non-Cancer Acute Haz Ind:
CHAPIS:
CERR Code:

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8 | ***1 of 1*** | ***E*** | ***0.14 / 739.16*** | ***2,318.51 / -6*** | ***CUSTOMWORKS FURNITURE***
326 S SAN GORGONIO AV
BANNING CA 92262 | ***EMISSIONS***

1987 Criteria Data

Facility ID: 42393
Facility SIC Code: 2434
CO: 33
Air Basin: SC
District: SC
COID: RIV
DISN: SOUTH COAST AQMD
CHAPIS:
CERR Code:
TOGT: 1.9
ROGT: 1.71836
COT:
NOXT:
SOXT:
PMT: .2
PM10T: .192

1987 Toxic Data

Facility ID: 42393
Facility SIC Code: 2434
CO: 33
Air Basin: SC
District: SC
TS:
Health Risk Asmt:
Non-Cancer Chronic Haz Ind:
Non-Cancer Acute Haz Ind:
COID: RIV
DISN: SOUTH COAST AQMD
CHAPIS:
CERR Code:

1990 Criteria Data

Facility ID: 42393
Facility SIC Code: 2499
CO: 33
Air Basin: SC
District: SC
COID: RIV
DISN: SOUTH COAST AQMD
CHAPIS:
CERR Code:
TOGT: 1.8
ROGT: 1.62792
COT:
NOXT:
SOXT:
PMT: 0
PM10T: 0

1990 Toxic Data

Facility ID: 42393
Facility SIC Code: 2499
CO: 33
Air Basin: SC
District: SC
TS:
Health Risk Asmt:
Non-Cancer Chronic Haz Ind:
Non-Cancer Acute Haz Ind:
COID: RIV
DISN: SOUTH COAST AQMD
CHAPIS:
CERR Code:

1993 Criteria Data

Facility ID: 42393
CERR Code:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Facility SIC Code:	2499	**TOGT:**	.6
CO:	33	**ROGT:**	.16
Air Basin:	SC	**COT:**	
District:	SC	**NOXT:**	
COID:	RIV	**SOXT:**	
DISN:	SOUTH COAST AQMD	**PMT:**	
CHAPIS:		**PM10T:**	

1993 Toxic Data

Facility ID:	42393	**COID:**	RIV
Facility SIC Code:	2499	**DISN:**	SOUTH COAST AQMD
CO:	33	**CHAPIS:**	
Air Basin:	SC	**CERR Code:**	
District:	SC		
TS:			
Health Risk Asmt:			
Non-Cancer Chronic Haz Ind:			
Non-Cancer Acute Haz Ind:			

1995 Criteria Data

Facility ID:	42393	**CERR Code:**	
Facility SIC Code:	2499	**TOGT:**	.6
CO:	33	**ROGT:**	.16
Air Basin:	SC	**COT:**	
District:	SC	**NOXT:**	
COID:	RIV	**SOXT:**	
DISN:	SOUTH COAST AQMD	**PMT:**	
CHAPIS:		**PM10T:**	

1995 Toxic Data

Facility ID:	42393	**COID:**	RIV
Facility SIC Code:	2499	**DISN:**	SOUTH COAST AQMD
CO:	33	**CHAPIS:**	
Air Basin:	SC	**CERR Code:**	
District:	SC		
TS:			
Health Risk Asmt:			
Non-Cancer Chronic Haz Ind:			
Non-Cancer Acute Haz Ind:			

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
9	1 of 2	NNW	0.16 / 843.03	2,357.42 / 33	BANNING SMOG TEST CENTER 376 W RAMSEY ST BANNING CA 92220	RCRA NON GEN

EPA Handler ID:	CAL000370680
Gen Status Universe:	No Report
Contact Name:	AVIKASH NAND
Contact Address:	376 W RAMSEY ST , , BANNING , CA, 92220 ,
Contact Phone No and Ext:	951-849-1825
Contact Email:	AMBKSTALLION@AOL.COM
Contact Country:	
County Name:	RIVERSIDE
EPA Region:	09
Land Type:	
Receive Date:	20120110
Location Latitude:	33.925402
Location Longitude:	-116.880759

Violation/Evaluation Summary

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Note: NO RECORDS: As of Aug 2021, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Furnace Exemption:	No
Underground Injection Activity:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No
Used Oil Spec Marketer:	No

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	20120110
Handler Name:	BANNING SMOG TEST CENTER
Source Type:	Implementer
Federal Waste Generator Code:	N
Generator Code Description:	Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind:	Current Owner	**Street No:**	
Type:	Other	**Street 1:**	376 W RAMSEY ST
Name:	AVIKASH PURAN NAND	**Street 2:**	
Date Became Current:		**City:**	BANNING
Date Ended Current:		**State:**	CA
Phone:	951-849-1825	**Country:**	
Source Type:	Implementer	**Zip Code:**	92220-0000
Owner/Operator Ind:	Current Operator	**Street No:**	
Type:	Other	**Street 1:**	376 W RAMSEY ST
Name:	AVIKASH NAND	**Street 2:**	
Date Became Current:		**City:**	BANNING
Date Ended Current:		**State:**	CA
Phone:	951-849-1825	**Country:**	
Source Type:	Implementer	**Zip Code:**	92220

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
9	2 of 2	NNW	0.16 / 843.03	2,357.42 / 33	GLENS TIRE SERVICE 376 W RAMSEY ST BANNING CA	UST SWEEPS

C C:	A33-000-1910	**D Filename:**	SITE16A
BOE:		**Page No:**	5
Comp:	1910	**County:**	RIVERSIDE
Status:	ACTIVE	**State :**	CA
No of Tanks:	1	**Zip:**	92220
Jurisdict:	RIVERSIDE COUNTY	**Latitude:**	33.925565
Agency:	ENVIRONMENTAL HEALTH - U.S.T.	**Longitude:**	-116.889124
Phone:		**Georesult:**	S5HPNTSCZA

Tank Details

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Tank ID:	000001	**S Contain:**	
O Tank ID:	1910	**Stg:**	W
SWRCB No:	33-000-001910-000001	**Storage :**	
Removed:		**Storag Type:**	WASTE
Installed:		**P Contain:**	
A Date:	07-14-92	**Content:**	WASTE OIL
Capac:	500	**ONA:**	
Tank Use:	OIL	**D File Name:**	TANK16A

---

10 | ***1 of 1*** | ***N*** | ***0.16 / 843.65*** | ***2,356.33 / 32*** | ***OLIVERIO MEDICAL CORPORATION***
330 W RAMSEY ST
BANNING CA 92220-4823 | ***MED***
WST RIVERSIDE

Fac ID:	FA0000668	**State:**	CA
Rec ID:	PR0000930	**City:**	BANNING
County:		**Zip:**	92220-4823
Address:	330 W RAMSEY ST		

Details

Current Status:		**Phone No:**	9098491892
Last Bill:	01/01/11	**Count:**	647
Fixed Fee:	43	**Mailing Zip:**	922204823
PE:	4332		
Facility Description:	MED SMALL QUANTITY GENERATOR		

---

11 | ***1 of 4*** | ***NNW*** | ***0.16 / 867.90*** | ***2,357.71 / 33*** | ***UNION OIL SERVICE STATION 411***
437 W RAMSEY
BANNING CA 92220 | ***HHSS***

County:	Riverside
Tank Details Microfiche:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0001fa63.pdf

---

11 | ***2 of 4*** | ***NNW*** | ***0.16 / 867.90*** | ***2,357.71 / 33*** | ***STATION 4118***
437 WEST RAMSEY
BANNING CA 92220 | ***HHSS***

County:	Riverside
Tank Details Microfiche:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0001fa72.pdf

---

11 | ***3 of 4*** | ***NNW*** | ***0.16 / 867.90*** | ***2,357.71 / 33*** | ***UNION OIL SERVICE STATION #411***
437 W RAMSEY
BANNING CA | ***HIST TANK***

Owner Name:	UNION OIL COMPANY OF CALIFORNI	**No of Containers:**	3
Owner Street:	123 CAMINO DELA REINA	**County:**	RIVERSIDE
Owner City:	SAN DIEGO	**Facility State:**	CA
Owner State:	CA	**Facility Zip:**	92220
Owner Zip:	92108		

---

11 | ***4 of 4*** | ***NNW*** | ***0.16 / 867.90*** | ***2,357.71 / 33*** | ***STATION #4118***
437 WEST RAMSEY
BANNING CA | ***HIST TANK***

Owner Name:	UNION OIL COMPANY OF CALIFORNI	**No of Containers:**	1
Owner Street:	1450 FRAZEE ROAD	**County:**	RIVERSIDE
Owner City:	SAN DIEGO	**Facility State:**	CA
Owner State:	CA	**Facility Zip:**	92220

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Owner Zip: 92108

---

12 *1 of 2* **NNW** **0.16 / 868.96** **2,357.35 / 33** **Unocal #4118**
437 W Ramsey St
Banning CA

LOP
RIVERSIDE

Site ID: 93938
Status Code: 9
Status Desc: CLOSED/ACTION COMPLETED
Case Type Code: S
Case Type Desc: SOIL ONLY IS IMPACTED
Closed Code: Y
Closed Desc: CLOSED SITE
Employee: Brown

---

12 *2 of 2* **NNW** **0.16 / 868.96** **2,357.35 / 33** **UNOCAL #4118**
437 W RAMSEY ST
BANNING CA

UST SWEEPS

C C: A33-000-17848
BOE: 44-001057
Comp: 17848
Status: ACTIVE
No of Tanks: 3
Jurisdict: RIVERSIDE COUNTY
Agency: ENVIRONMENTAL HEALTH - U.S.T.
Phone:
D Filename: SITE16A
Page No: 5
County: RIVERSIDE
State : CA
Zip: 92220
Latitude: 33.925455
Longitude: -116.889702
Georesult: S5HPNTSCZA

Tank Details

Tank ID: 000002
O Tank ID: 4118-22
SWRCB No: 33-000-017848-000002
Removed:
Installed:
A Date: 11-19-92
Capac: 10000
Tank Use: M.V. FUEL
S Contain:
Stg: P
Storage :
Storag Type: PRODUCT
P Contain:
Content: REG UNLEADED
ONA:
D File Name: TANK16A

Tank Details

Tank ID: 000003
O Tank ID: 4118-11
SWRCB No: 33-000-017848-000003
Removed:
Installed:
A Date: 11-19-92
Capac: 10000
Tank Use: M.V. FUEL
S Contain:
Stg: P
Storage :
Storag Type: PRODUCT
P Contain:
Content: REG UNLEADED
ONA:
D File Name: TANK16A

Tank Details

Tank ID: 000001
O Tank ID: 4118-34
SWRCB No: 33-000-017848-000001
Removed:
Installed:
A Date: 11-19-92
Capac: 550
Tank Use: OIL
S Contain:
Stg: W
Storage :
Storag Type: WASTE
P Contain:
Content: WASTE OIL
ONA:
D File Name: TANK16A

---

13 *1 of 2* **NNE** **0.17 / 891.63** **2,352.40 / 28** **City of Banning**
161 W Ramsey St
Banning CA

LOP
RIVERSIDE

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Site ID: 94431
Status Code: 9
Status Desc: CLOSED/ACTION COMPLETED
Case Type Code: S
Case Type Desc: SOIL ONLY IS IMPACTED
Closed Code: Y
Closed Desc: CLOSED SITE
Employee: Brown

---

13 **2 of 2** **NNE** **0.17 / 891.63** **2,352.40 / 28**

CITY OF BANNING
161 WEST RAMSEY STREET
BANNING CA 92220

LUST

Global ID: T0606500725
Status: COMPLETED - CASE CLOSED
Status Date: 1/26/1995
Case Type: LUST CLEANUP SITE
Date Source: LUST Cleanup Sites & Military UST Site from GeoTracker Project Search Results Export; LUST Cleanup Sites & Military UST Site from GeoTracker Cleanup Sites Data Download
County: RIVERSIDE
Latitude: 33.9255002394161
Longitude: -116.878025591333

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail

RB Case No: 7T2220011
Local Case No: 94431
Begin Date: 3/1/1991
Lead Agency: RIVERSIDE COUNTY LOP
Local Agency: RIVERSIDE COUNTY LOP
CUF Case: NO
Potential Media of Concern: Soil
How Discovered Description:
Calwater Watershed Name: Whitewater - San Gorgonio - Banning (719.31)
DWR GW Subbasin Name: Coachella Valley - San Gorgonio Pass (7-021.04)
Disadvantaged Community:
Calenviroscreen Score: 71-75%
Site History:
Potential COC: Gasoline
How Discovered: Other Means
Stop Method: Close and Remove Tank
Stop Description:
Case Worker: RIV
File Location: Local Agency Warehouse

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Activity

Action Type: ENFORCEMENT
Date : 1/15/2009
Action: Closure/No Further Action Letter - #Site Closure

Action Type: ENFORCEMENT
Date : 1/14/2009
Action: File review - #RCDEH Upload Site File 3/13/2015

Action Type: Other
Date : 5/25/1994
Action: Leak Discovery

Action Type: Other
Date : 5/25/1994
Action: Leak Reported

Action Type: Other
Date : 3/1/1991
Action: Leak Stopped

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Contacts

Contact Type: Regional Board Caseworker
Contact Name: Phan Le
City: PALM DESERT
Organization Name: COLORADO RIVER BASIN RWQCB (REGION 7)
Address: 73720 FRED WARING DRIVE SUITE #100
Email: phan.le@waterboards.ca.gov
Phone No: 7607768974

Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP
City: RIVERSIDE
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
Email:
Phone No: 9519558980

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History

Status: Completed - Case Closed
Status Date: 1/26/1995

Status: Open - Site Assessment
Status Date: 4/1/1991

Status: Open - Site Assessment
Status Date: 3/1/1991

Status: Open - Case Begin Date
Status Date: 3/1/1991

LUST Sites from GeoTracker Search - Regulatory Profile

Site Facility Name: CITY OF BANNING
Site Facility Type: LUST CLEANUP SITE
Cleanup Status: COMPLETED - CASE CLOSED
Project Status:
WDR Place Type:
WDR File:
WDR Order:
CUF Priority Assig:
CUF Amount Paid:
Potential COC: GASOLINE
Facility Type:
Composting Method:
Address: 161 WEST RAMSEY STREET
City: BANNING
Zip: 92220
County: RIVERSIDE
CUF Claim:
File Location: LOCAL AGENCY WAREHOUSE
Designated Beneficial Use: MUN, AGR, IND
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T0606500725
Cleanup Status Detail: COMPLETED - CASE CLOSED AS OF 1/26/1995
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=T0606500725&tabname=regulatoryhistory
Potential Media of Concern: SOIL
User Defined Beneficial Use:
DWR GW Sub Basin: Coachella Valley - San Gorgonio Pass (7-021.04)
Calwater Watershed Name: Whitewater - San Gorgonio - Banning (719.31)
Post Closure Site Management: NOTIFY PRIOR TO CHANGE IN LAND USE
Future Land Use:
Cleanup Oversight Agencies: RIVERSIDE COUNTY LOP (LEAD) - CASE #: 94431
CASEWORKER: Riverside County LOP
COLORADO RIVER BASIN RWQCB (REGION 7) - CASE #: 7T2220011
CASEWORKER: Phan Le
Gndwater Monitoring Freque:
Designated Beneficial Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply
Site History:

No site history available

LUST Sites from GeoTracker Search - Cleanup Status History

Status: Completed - Case Closed
Date : 1/26/1995

Status: Open - Site Assessment
Date : 4/1/1991

Status: Open - Site Assessment
Date : 3/1/1991

Status: Open - Case Begin Date

Date : 3/1/1991

LUST Sites from GeoTracker Search - Regulatory Activities (as of May 29, 2021)

Action Type: Other Regulatory Actions
Action Date: 1/15/2009
Received Issue Date: 1/15/2009
Action: Closure/No Further Action Letter - #Site Closure
Doc Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0606500725&enforcement_id=5999640&temptable=ENFORCEMENT
Title Description Comments:

RivCo Site Closure

Action Type: Other Regulatory Actions
Action Date: 1/14/2009
Received Issue Date: 1/14/2009
Action: File review - #RCDEH Upload Site File 3/13/2015
Doc Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0606500725&enforcement_id=6050044&temptable=ENFORCEMENT
Title Description Comments:

RCDEH Upload Site File 3/13/2015

Action Type: Leak Action
Action Date: 5/25/1994
Received Issue Date:
Action: Leak Discovery
Doc Link:
Title Description Comments:

Action Type: Leak Action
Action Date: 5/25/1994
Received Issue Date:
Action: Leak Reported
Doc Link:
Title Description Comments:

Action Type: Leak Action
Action Date: 3/1/1991
Received Issue Date:
Action: Leak Stopped
Doc Link:
Title Description Comments:

LUST Sites from GeoTracker Search - Documents (as of May 29, 2021)

Document Type: Site Documents
Document Date: 1/15/2009
Type: CLOSURE/NO FURTHER ACTION LETTER
Title: RIVCO SITE CLOSURE
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0606500725&enforcement_id=5999640
Size :
Submitted By: RIVERSIDE COUNTY LOP (REGULATOR)
Submitted:

Document Type: Site Documents
Document Date: 1/14/2009
Type: FILE REVIEW
Title: RCDEH UPLOAD SITE FILE 3/13/2015
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0606500725&enforcement_id=6050044
Size :
Submitted By: LINDA SHURLOW (REGULATOR)
Submitted:

14	*1 of 1*	*NNW*	*0.18 / 945.83*	*2,360.50 / 36*	***UNOCAL STATION 4118*** ***437 WEST RAMSEY STREET*** ***BANNING CA 92220***	***LUST***

Global ID: T0606500727
Status: COMPLETED - CASE CLOSED
Status Date: 4/14/1994
Case Type: LUST CLEANUP SITE
Date Source: LUST Cleanup Sites & Military UST Site from GeoTracker Project Search Results Export; LUST Cleanup Sites & Military UST Site from GeoTracker Cleanup Sites Data Download
County: RIVERSIDE
Latitude: 33.9255825142536
Longitude: -116.881496837504

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail

RB Case No: 7T2220013
Local Case No: 93938
Begin Date: 10/4/1993
Lead Agency: RIVERSIDE COUNTY LOP
Local Agency: RIVERSIDE COUNTY LOP
CUF Case: YES
Potential Media of Concern: Under Investigation
How Discovered Description:
Calwater Watershed Name: Whitewater - San Gorgonio - Banning (719.31)
DWR GW Subbasin Name: Coachella Valley - San Gorgonio Pass (7-021.04)
Disadvantaged Community:
Calenviroscreen Score: 71-75%
Site History:
Potential COC: Gasoline
How Discovered: Other Means
Stop Method: Close and Remove Tank
Stop Description:
Case Worker: RIV
File Location: Local Agency Warehouse

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Activity

Action Type: ENFORCEMENT
Date : 4/14/1994
Action: Closure/No Further Action Letter - #Riv Co Closure

Action Type: ENFORCEMENT
Date : 4/13/1994
Action: File review - #RCDEH Upload Site File 10/30/2015

Action Type: Other
Date : 10/5/1993
Action: Leak Stopped

Action Type: Other
Date : 10/5/1993
Action: Leak Reported

Action Type: Other
Date : 10/4/1993
Action: Leak Discovery

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Contacts

Contact Type: Regional Board Caseworker
Contact Name: Phan Le
City: PALM DESERT
Organization Name: COLORADO RIVER BASIN RWQCB (REGION 7)
Address: 73720 FRED WARING DRIVE SUITE #100
Email: phan.le@waterboards.ca.gov
Phone No: 7607768974

Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP
City: RIVERSIDE
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
Email:
Phone No: 9519558980

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History

Status: Completed - Case Closed
Status Date: 4/14/1994

Status: Open - Case Begin Date

Status Date: 10/4/1993

LUST Sites from GeoTracker Search - Regulatory Profile

Site Facility Name:	UNOCAL STATION 4118	***Potential COC:***	GASOLINE
Site Facility Type:	LUST CLEANUP SITE	***Facility Type:***	
Cleanup Status:	COMPLETED - CASE CLOSED	***Composting Method:***	
Project Status:		***Address:***	437 WEST RAMSEY STREET
WDR Place Type:		***City:***	BANNING
WDR File:		***Zip:***	92220
WDR Order:		***County:***	RIVERSIDE
CUF Priority Assig:	D	***CUF Claim:***	9747
CUF Amount Paid:			

File Location: LOCAL AGENCY WAREHOUSE
Designated Beneficial Use: MUN, AGR, IND
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T0606500727
Cleanup Status Detail: COMPLETED - CASE CLOSED AS OF 4/14/1994
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=T0606500727&tabname=regulatoryhistory
Potential Media of Concern: UNDER INVESTIGATION
User Defined Beneficial Use:
DWR GW Sub Basin: Coachella Valley - San Gorgonio Pass (7-021.04)
Calwater Watershed Name: Whitewater - San Gorgonio - Banning (719.31)
Post Closure Site Management: NOTIFY PRIOR TO CHANGE IN LAND USE
Future Land Use: UNKNOWN
Cleanup Oversight Agencies: RIVERSIDE COUNTY LOP (LEAD) - CASE #: 93938
CASEWORKER: Riverside County LOP
COLORADO RIVER BASIN RWQCB (REGION 7) - CASE #: 7T2220013
CASEWORKER: Phan Le
Gndwater Monitoring Freque:
Designated Beneficial Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply
Site History:

No site history available

LUST Sites from GeoTracker Search - Cleanup Status History

Status: Completed - Case Closed
Date : 4/14/1994

Status: Open - Case Begin Date
Date : 10/4/1993

LUST Sites from GeoTracker Search - Regulatory Activities (as of May 29, 2021)

Action Type: Other Regulatory Actions
Action Date: 4/14/1994
Received Issue Date: 4/14/1994
Action: Closure/No Further Action Letter - #Riv Co Closure
Doc Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0606500727&enforcement_id=6000247&temptable=ENFORCEMENT
Title Description Comments:

Riv Co Site Closure

Action Type: Other Regulatory Actions
Action Date: 4/13/1994
Received Issue Date: 4/13/1994
Action: File review - #RCDEH Upload Site File 10/30/2015
Doc Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0606500727&enforcement_id=6072379&temptable=ENFORCEMENT
Title Description Comments:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

RCDEH Upload Site File 10/30/2015

Action Type: Leak Action
Action Date: 10/5/1993
Received Issue Date:
Action: Leak Stopped
Doc Link:
Title Description Comments:

Action Type: Leak Action
Action Date: 10/5/1993
Received Issue Date:
Action: Leak Reported
Doc Link:
Title Description Comments:

Action Type: Leak Action
Action Date: 10/4/1993
Received Issue Date:
Action: Leak Discovery
Doc Link:
Title Description Comments:

LUST Sites from GeoTracker Search - Documents (as of May 29, 2021)

Document Type: Site Documents
Document Date: 4/14/1994
Type: CLOSURE/NO FURTHER ACTION LETTER
Title: RIV CO SITE CLOSURE
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0606500727&enforcement_id=6000247
Size :
Submitted By: RIVERSIDE COUNTY LOP (REGULATOR)
Submitted:

Document Type: Site Documents
Document Date: 4/13/1994
Type: FILE REVIEW
Title: RCDEH UPLOAD SITE FILE 10/30/2015
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0606500727&enforcement_id=6072379
Size :
Submitted By: LINDA SHURLOW (REGULATOR)
Submitted:

15	1 of 1	NW	0.21 / 1,106.32	2,367.72 / 43	JOHN C. CHOE, DDS, INC. 617 W RAMSEY ST BANNING CA 92220-4919	MED WST RIVERSIDE

Fac ID: FA0000853
Rec ID: PR0001171
County:
Address: 617 W RAMSEY ST
State: CA
City: BANNING
Zip: 92220-4919

Details

Current Status:
Last Bill: 01/01/11
Fixed Fee: 43
PE: 4332
Facility Description: MED SMALL QUANTITY GENERATOR
Phone No: 9098494649
Count: 781
Mailing Zip: 922204919

16	1 of 10	NNE	0.22 / 1,168.73	2,359.40 / 35	PACIFIC BELL 160 W HAYS BANNING CA 92220	RCRA NON GEN

EPA Handler ID: CAD980584718
Gen Status Universe: No Report
Contact Name: ENVIRONMENTAL MANAGER
Contact Address: 160 W HAYS , , BANNING , CA, 92220 , US

Contact Phone No and Ext:	714-974-6651
Contact Email:	
Contact Country:	US
County Name:	RIVERSIDE
EPA Region:	09
Land Type:	Other
Receive Date:	19820303
Location Latitude:	
Location Longitude:	

Violation/Evaluation Summary

Note:	NO RECORDS: As of Aug 2021, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Furnace Exemption:	No
Underground Injection Activity:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No
Used Oil Spec Marketer:	No

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	19820303
Handler Name:	PACIFIC BELL
Source Type:	Notification
Federal Waste Generator Code:	N
Generator Code Description:	Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind:	Current Operator	**Street No:**	
Type:	Private	**Street 1:**	NOT REQUIRED
Name:	NOT REQUIRED	**Street 2:**	
Date Became Current:		**City:**	NOT REQUIRED
Date Ended Current:		**State:**	ME
Phone:	415-555-1212	**Country:**	
Source Type:	Notification	**Zip Code:**	99999

Owner/Operator Ind:	Current Owner	**Street No:**	
Type:	Private	**Street 1:**	NOT REQUIRED
Name:	NOT REQUIRED	**Street 2:**	
Date Became Current:		**City:**	NOT REQUIRED
Date Ended Current:		**State:**	ME
Phone:	415-555-1212	**Country:**	
Source Type:	Notification	**Zip Code:**	99999

16	***2 of 10***	***NNE***	***0.22 / 1,168.73***	***2,359.40 / 35***	***GTE CALIFORNIA BANNING 160 W HAYS ST Banning CA 92220***	***DELISTED TNK***

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Delisted Storage Tanks

Facility ID: 333
Permitting Agency: RIVERSIDE COUNTY
County: Riverside
Latitude: 33.92627
Longitude: -116.87848
Original Source: UST
Record Date: 30-JAN-2017

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
16	3 of 10	NNE	0.22 / 1,168.73	2,359.40 / 35	Verizon Global/Service Group 160 W Hays St Banning CA 92220	DELISTED COUNTY

Original Source Facility ID:
Original Source Name: Riverside County Disclosure Facility List
Record Date: 17-FEB-2016

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
16	4 of 10	NNE	0.22 / 1,168.73	2,359.40 / 35	Verizon Global/Service Group 160 W Hays St Banning CA 92220	DELISTED COUNTY

Original Source Facility ID:
Original Source Name: Riverside County Underground Storage Tanks List
Record Date: 17-FEB-2016

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
16	5 of 10	NNE	0.22 / 1,168.73	2,359.40 / 35	Banning CO 160 W Hays St Banning CA 92220	UST RIVERSIDE

No of Tanks: 1

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
16	6 of 10	NNE	0.22 / 1,168.73	2,359.40 / 35	Frontier California, Inc.; Banning CO 160 W. Hays Street Banning CA 92220	UST

Facility ID: 82043
CERS ID: 10141015
County: Riverside
Latitude:
Longitude:
Permitting Agency: Riverside County Department of Environmental Health
Note: Information related to facilities can be searched on Geo Tracker Website: https://geotracker.waterboards.ca.gov/search
Site Facility Type: PERMITTED UNDERGROUND STORAGE TANK (UST)

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
16	7 of 10	NNE	0.22 / 1,168.73	2,359.40 / 35	GTE CALIFORNIA 160 W HAYS BANNING CA 92220	EMISSIONS

1990 Criteria Data

Facility ID: 52217
Facility SIC Code: 4813
CO: 33
Air Basin: SC
CERR Code:
TOGT: 0
ROGT: 0
COT: 0

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

District:	SC	**NOXT:**	.1
COID:	RIV	**SOXT:**	
DISN:	SOUTH COAST AQMD	**PMT:**	0
CHAPIS:		**PM10T:**	0

1990 Toxic Data

Facility ID:	52217	**COID:**	RIV
Facility SIC Code:	4813	**DISN:**	SOUTH COAST AQMD
CO:	33	**CHAPIS:**	
Air Basin:	SC	**CERR Code:**	
District:	SC		
TS:			
Health Risk Asmt:			
Non-Cancer Chronic Haz Ind:			
Non-Cancer Acute Haz Ind:			

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
16	8 of 10	NNE	0.22 / 1,168.73	2,359.40 / 35	GTE CALIFORNIA 160 W HAYS ST BANNING CA 92220	EMISSIONS

1993 Criteria Data

Facility ID:	52217	**CERR Code:**	
Facility SIC Code:	4813	**TOGT:**	0
CO:	33	**ROGT:**	0
Air Basin:	SC	**COT:**	0
District:	SC	**NOXT:**	0
COID:	RIV	**SOXT:**	
DISN:	SOUTH COAST AQMD	**PMT:**	0
CHAPIS:		**PM10T:**	0

1993 Toxic Data

Facility ID:	52217	**COID:**	RIV
Facility SIC Code:	4813	**DISN:**	SOUTH COAST AQMD
CO:	33	**CHAPIS:**	
Air Basin:	SC	**CERR Code:**	
District:	SC		
TS:			
Health Risk Asmt:			
Non-Cancer Chronic Haz Ind:			
Non-Cancer Acute Haz Ind:			

1995 Criteria Data

Facility ID:	52217	**CERR Code:**	
Facility SIC Code:	4813	**TOGT:**	0
CO:	33	**ROGT:**	0
Air Basin:	SC	**COT:**	0
District:	SC	**NOXT:**	0
COID:	RIV	**SOXT:**	
DISN:	SOUTH COAST AQMD	**PMT:**	0
CHAPIS:		**PM10T:**	0

1995 Toxic Data

Facility ID:	52217	**COID:**	RIV
Facility SIC Code:	4813	**DISN:**	SOUTH COAST AQMD
CO:	33	**CHAPIS:**	
Air Basin:	SC	**CERR Code:**	

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

District: SC
TS:
Health Risk Asmt:
Non-Cancer Chronic Haz Ind:
Non-Cancer Acute Haz Ind:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
16	9 of 10	NNE	0.22 / 1,168.73	2,359.40 / 35	GEN TEL OF CAL, BANNING CENTRA 160 W HAYS BANNING CA 92220	EMISSIONS

1987 Criteria Data

Facility ID:	52217	**CERR Code:**	
Facility SIC Code:	4922	**TOGT:**	0
CO:	33	**ROGT:**	0
Air Basin:	SC	**COT:**	.1
District:	SC	**NOXT:**	.1
COID:	RIV	**SOXT:**	
DISN:	SOUTH COAST AQMD	**PMT:**	0
CHAPIS:		**PM10T:**	0

1987 Toxic Data

Facility ID:	52217	**COID:**	RIV
Facility SIC Code:	4922	**DISN:**	SOUTH COAST AQMD
CO:	33	**CHAPIS:**	
Air Basin:	SC	**CERR Code:**	
District:	SC		
TS:			
Health Risk Asmt:			
Non-Cancer Chronic Haz Ind:			
Non-Cancer Acute Haz Ind:			

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
16	10 of 10	NNE	0.22 / 1,168.73	2,359.40 / 35	GTE BANNING CENTRAL OFFICE 160 W HAYS ST BANNING CA	UST SWEEPS

C C:	A33-000-67018	**D Filename:**	SITE16A
BOE:	44-018496	**Page No:**	4
Comp:	67018	**County:**	RIVERSIDE
Status:	ACTIVE	**State :**	CA
No of Tanks:	1	**Zip:**	92220
Jurisdict:	RIVERSIDE COUNTY	**Latitude:**	33.926385
Agency:	ENVIRONMENTAL HEALTH - U.S.T.	**Longitude:**	-116.878537
Phone:		**Georesult:**	S5HPNTSCZA

Tank Details

Tank ID:	000001	**S Contain:**	
O Tank ID:	000526	**Stg:**	P
SWRCB No:	33-000-067018-000001	**Storage :**	
Removed:		**Storag Type:**	PRODUCT
Installed:		**P Contain:**	
A Date:	10-29-92	**Content:**	DIESEL
Capac:	4000	**ONA:**	
Tank Use:	M.V. FUEL	**D File Name:**	TANK16A

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
17	1 of 1	NE	0.23 / 1,204.68	2,346.46 / 22	SOUTHERN CALIFORNIA GAS CO 60 E RAMSEY ST UNIT A BANNING CA 92220	RCRA SQG

EPA Handler ID:	CAR000221705
Gen Status Universe:	Small Quantity Generator
Contact Name:	ERICA YEE
Contact Address:	8101 ROSEMEAD BLVD , SC720F , PICO RIVERA , CA, 90660 , US
Contact Phone No and Ext:	562-806-4419
Contact Email:	EYEE@SEMPRAUTILITIES.COM
Contact Country:	US
County Name:	RIVERSIDE
EPA Region:	09
Land Type:	Private
Receive Date:	20110914
Location Latitude:	33.925368
Location Longitude:	-116.876176

Violation/Evaluation Summary

Note:	NO RECORDS: As of Aug 2021, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Furnace Exemption:	No
Underground Injection Activity:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No
Used Oil Spec Marketer:	No

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	20110914
Handler Name:	SOUTHERN CALIFORNIA GAS CO
Federal Waste Generator Code:	2
Generator Code Description:	Small Quantity Generator
Source Type:	Notification

Waste Code Details

Hazardous Waste Code:	151
Waste Code Description:	Asbestos-containing waste
Hazardous Waste Code:	181
Waste Code Description:	Other inorganic solid waste
Hazardous Waste Code:	352
Waste Code Description:	Other organic solids
Hazardous Waste Code:	D006
Waste Code Description:	CADMIUM
Hazardous Waste Code:	D007
Waste Code Description:	CHROMIUM
Hazardous Waste Code:	D008

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Waste Code Description: LEAD

Hazardous Waste Code: D009
Waste Code Description: MERCURY

Owner/Operator Details

Owner/Operator Ind: Current Operator
Type: Private
Name: SOUTHERN CALIFORNIA GAS CO
Date Became Current: 19940101
Date Ended Current:
Phone:
Source Type: Notification
Street No:
Street 1:
Street 2:
City:
State:
Country: US
Zip Code:

Owner/Operator Ind: Current Owner
Type: Other
Name: CITY OF BANNING
Date Became Current: 19680101
Date Ended Current:
Phone: 951-849-4695
Source Type: Notification
Street No:
Street 1: 60 E RAMSEY ST
Street 2:
City: BANNING
State: CA
Country: US
Zip Code: 92220

18	1 of 6	E	0.24 / 1,283.08	2,307.34 / -17	BANNING CITY OF 176 E LINCOLN ST Banning CA 92220	DELISTED TNK

Delisted Storage Tanks

Facility ID: 106
Permitting Agency: RIVERSIDE COUNTY
County: Riverside
Latitude: 33.92174
Longitude: -116.87464
Original Source: UST
Record Date: 30-JAN-2017

18	2 of 6	E	0.24 / 1,283.08	2,307.34 / -17	City of Banning Fleet Maintenance 176 E Lincoln St Banning CA 92220	UST RIVERSIDE

No of Tanks: 2

18	3 of 6	E	0.24 / 1,283.08	2,307.34 / -17	City of Banning Fleet Maintenance 176 E Lincoln St Banning CA 92220	UST

Facility ID:
CERS ID: 10316794
County: Riverside
Latitude: 33.92169
Longitude: -116.87522
Permitting Agency: Riverside County Department of Environmental Health
Note: Information related to facilities can be searched on Geo Tracker Website: https://geotracker.waterboards.ca.gov/search
Site Facility Type: PERMITTED UNDERGROUND STORAGE TANK (UST)

18	4 of 6	E	0.24 / 1,283.08	2,307.34 / -17	City of Banning Fleet Maintenance 176 E LINCOLN ST BANNING CA 92220	CERS TANK

Site ID: 19416
Latitude: 33.921689

Longitude: -116.875223

Regulated Programs

EI ID: 10316794
EI Description: Hazardous Waste Generator

EI ID: 10316794
EI Description: Underground Storage Tank

EI ID: 10316794
EI Description: Chemical Storage Facilities

EI ID: 10316794
EI Description: Aboveground Petroleum Storage

Violations

Violation Date: 12/22/2020 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Notes:

Returned to compliance on 03/16/2021.

Violation Description:

Failure to provide the following training to all oil-handling personnel:

1. Operation and maintenance of equipment to prevent discharges.

2. Discharge procedure protocols.

3. Applicable pollution control laws, rules, and regulations.

4. General facility operations.

5. Contents of the SPCC Plan.

Violations

Violation Date: 08/09/2017 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Notes:

Returned to compliance on 01/13/2018.

Violation Description:

Failure to annually review and electronically certify that the business plan is complete and accurate on or before the annual due date.

Violations

Violation Date: 12/23/2019 ***Violation Source:*** CERS
Violation Program: UST ***Violation Division:*** Riverside County Department of Env Health
Citation: 23 CCR 16 2716(e) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2716(e)
Violation Notes:

Returned to compliance on 03/10/2020. OBSERVATION: Observed that Designated Operator inspections are being improperly performed. Numerous DO inspection reports are not signed and dated by the owner/operator. CORRECTIVE ACTION: Owner/operator shall ensure that the Designated Operator is properly conducting inspections, noting observations, reviewing paperwork and alarm history reports, attaching required documentation and any other DO required functions.

Violation Description:

For designated operator (DO) monthly inspections conducted before October 1, 2018, failure to comply with one or more of the following requirements:
Be performed by an ICC certified DO.
Inspect monthly alarm history report, check that alarms are documented and responded to appropriately, and attach a copy.
Inspect for the presence of liquid/debris in spill containers.
Inspect for the presence of liquid/debris in under dispenser containment (UDC) and ensure that the monitoring equipment is positioned correctly.
Inspect for liquid or debris in containment sumps where an alarm occurred with no service visit.
Check that all testing and maintenance has been completed and documented.
Verify that all facility employees have been trained in accordance with 23 CCR 2715(c).
For designated operator (DO) 30 day inspections conducted on and after October 1, 2018, failure to conduct the designated UST operator visual inspection at least once every 30 days.

Violations

Violation Date: 12/19/2017 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.67 25270.4.5 (a) - California Health and Safety Code, Chapter 6.67 , Section(s) 25270.4.5 (a)
Violation Notes:

Returned to compliance on 02/16/2018.

Violation Description:

Failure to have management or a professional engineer certify the SPCC Plan and comply with certification requirements at a qualified facility.

Violations

Violation Date: 12/22/2020 ***Violation Source:*** CERS
Violation Program: UST ***Violation Division:*** Riverside County Department of Env Health
Citation: 23 CCR 16 2641(h) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2641(h)
Violation Notes:

Returned to compliance on 02/04/2021. OBSERVATION: Observed UST Response Plan to be inaccurate and/or missing information. UST Response Plan is not approved as submitted. CORRECTIVE ACTION: Owner/operator shall make the following corrections to the UST Response Plan and submit in CERS. Update to reflect current management in place.

Violation Description:

Failure to have an approved UST Response Plan.

Violations

Violation Date: 12/10/2014 ***Violation Source:*** CERS
Violation Program: HW ***Violation Division:*** Riverside County Department of Env Health
Citation: 22 CCR 12 66262.34(d) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.34(d)
Violation Notes:

Returned to compliance on 03/04/2015.

Violation Description:

Failure to dispose of hazardous waste within 180 days (or 270 if waste is transported over 200 miles) for the generator who generates less than 1000 kilogram per month, but more than 100 kilograms per month.

Violations

Violation Date: 12/22/2020 ***Violation Source:*** CERS
Violation Program: HW ***Violation Division:*** Riverside County Department of Env Health
Citation: 40 CFR 1 265.31 - U.S. Code of Federal Regulations, Title 40, Chapter 1, Section(s) 265.31
Violation Notes:

Returned to compliance on 01/21/2021. OBSERVATION: Observed liquid/used oil in secondary containment pallet in storage connex. CORRECTIVE ACTION: Owner/operator shall remove all liquids from secondary containment, and manage according to Title 22 hazardous waste regulations. Pictures can be emailed to: rsgarcia@rivco.org, faxed to: 951-791-1778, or I can stop by to review in-person.

Violation Description:

Failure to maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

Violations

Violation Date: 12/12/2018 ***Violation Source:*** CERS
Violation Program: UST ***Violation Division:*** Riverside County Department of Env Health
Citation: 23 CCR 16 2712 - California Code of Regulations, Title 23, Chapter 16, Section(s) 2712
Violation Notes:

Returned to compliance on 07/15/2019. OBSERVATION: Owner/operator failed to comply with all the required operating permit conditions. The owner/operator failed to have an accurate UST Response Plan in CERS. Owner/operator failed to have an accurate UST Facility Operating Permit Application in CERS as the BOE Number entered is not valid. Refer to violation #2010010 and/or 2010014 for details. CORRECTIVE ACTION: Owner/operator shall maintain on site a complete and accurate monitoring plan that has been accepted in CERS as required as part of the the operating permit condition.

Violation Description:

Failure to comply with any of the applicable requirements of the permit issued for the operation of the UST system.

Violations

Violation Date: 12/10/2014 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Notes:

Returned to compliance on 03/04/2015.

Violation Description:

Failure to maintain SPCC plan onsite (applies if facility is manned at least four (4) hours per day).

Violations

Violation Date: 12/22/2020 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.95 25505(a)(4) - California Health and Safety Code, Chapter 6.95, Section(s) 25505(a)(4)
Violation Notes:

Returned to compliance on 01/21/2021. OBSERVATION: No training records observed/provided during inspection. CORRECTIVE ACTION: Owner/operator shall provide training to all employees. Documentation shall be retained and be made available for inspection for a minimum period of 3 years from the date of the training. Copies of Hazardous Materials Training records/Sign-off sheets can be emailed to: rsgarcia@rivco.org, faxed to: 951-791-1778, or I can stop by to review in-person.

Violation Description:

Failure to provide initial and annual training to all employees in safety procedures in the event of a release or threatened release of a hazardous material or failure to document and maintain training records for a minimum of three years.

Violations

Violation Date: 12/22/2020 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.67 25270.4.5 (a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5 (a)
Violation Notes:

Returned to compliance on 03/16/2021.

Violation Description:

Failure to complete a review and evaluation of the SPCC Plan at least once every five years, document the completion of the review, and sign a statement as to whether the SPCC Plan will be amended.

Violations

Violation Date: 12/23/2019 ***Violation Source:*** CERS
Violation Program: UST ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.75 25299.30-25299.34 - California Health and Safety Code, Chapter 6.75, Section(s) 25299.30-25299.34
Violation Notes:

Returned to compliance on 02/21/2020. OBSERVATION: Submitted Certification of Financial Responsibility (CFR) was observed to contain misinformation. The signature on the CFR form and CFO letter is Bonnie Johnson. Bonnie no longer works for the city. CORRECTIVE ACTION: Owner/operator shall submit a current and complete Certification of Financial Responsibility and CFO letter in CERS, and maintain a copy on site.

Violation Description:

Failure to submit and maintain complete and current Certification of Financial Responsibility or other mechanism of financial assurance.

Violations

Violation Date: 12/12/2018 ***Violation Source:*** CERS
Violation Program: UST ***Violation Division:*** Riverside County Department of Env Health
Citation: 23 CCR 16 2712(b)(1)(G) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2712(b)(1)(G)
Violation Notes:

Returned to compliance on 07/15/2019. OBSERVATION: An overfill equipment inspection was not completed by the October 13, 2018 deadline. CORRECTIVE ACTION: Owner/operator shall immediately schedule and complete an overfill equipment inspection providing the required 48 hour notification prior to conducting the inspection. Inspection results and all supporting documentation (inspection procedures used, tank charts, printouts, etc.) must be submitted to this Department within 30 days upon completion of the inspection.

Violation Description:

Failure to comply with one or more of the following overfill prevention equipment requirements:
Alert the transfer operator when the tank is 90 percent full by restricting the flow into the tank or triggering an audible and visual alarm; or
Restrict delivery of flow to the tank at least 30 minutes before the tank overfills, provided the restriction occurs when the tank is filled to no more than 95 percent of capacity; and activate an audible alarm at least five minutes before the tank overfills; or
Provide positive shut-off of flow to the tank when the tank is filled to no more than 95 percent of capacity; or
Provide positive shut-off of flow to the tank so that none of the fittings located on the top of the tank are exposed to product due to overfilling.

Install/retrofit overfill prevention equipment that does not use flow restrictors on vent piping to meet overfill prevention equipment requirements when the overfill prevention equipment is installed, repaired, or replaced on and after October 1, 2018.

For USTs installed before October 1, 2018, perform an inspection by October 13, 2018 and every 36 months thereafter.

For USTs installed on and after October 1, 2018, perform an inspection at installation and every 36 months thereafter.

Inspected within 30 days after a repair to the overfill prevention equipment.

Inspected using an applicable manufacturer guidelines, industry codes, engineering standards, or a method approved by a professional engineer.

Inspected by a certified UST service technician.

Maintain records of overfill prevention equipment inspection for 36 months.

Violations

Violation Date: 12/10/2014 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.67 25270.6(b) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.6(b)

Violation Notes:

Returned to compliance on 03/04/2015.

Violation Description:

Failure to pay the APSA Program fee.

Violations

Violation Date: 12/22/2020 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.95 25508(a)(3) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(3)
Violation Notes:

Returned to compliance on 02/04/2021. OBSERVATION: Observed an inaccurate emergency response plan and procedures submitted to CERS. Specifically, plan must include Emergency Coordinator Contact information. CORRECTIVE ACTION: Owner/operator shall update the emergency response plans and procedures. The following must be included: immediate notification contacts to the appropriate local emergency response personnel and to the unified program agency, procedures for the mitigation of a release or threatened release to minimize any potential harm or damage to persons, property, or the environment, and evacuation plans and procedures that includes immediate notice for the business site.

Violation Description:

Failure to establish and electronically submit an adequate emergency response plan and procedures for a release or threatened release of a hazardous material.

Violations

Violation Date: 12/22/2020 ***Violation Source:*** CERS
Violation Program: UST ***Violation Division:*** Riverside County Department of Env Health
Citation: 23 CCR 16 2715(a)(2) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2715(a)(2)
Violation Notes:

Returned to compliance on 01/21/2021. OBSERVATION: Observed that an "Underground Storage Tank Statement of Understanding and Compliance Form" was not submitted electronically in CERS. CORRECTIVE ACTION: Owner/operator shall electronically submit into CERS a complete, accurate and signed "Underground Storage Tank Statement of Understanding and Compliance Form".

Violation Description:

Failure to submit the "Underground Storage Tank Statement of Understanding and Compliance Form."

Violations

Violation Date: 01/21/2021 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.95 25508(a)(3) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(3)
Violation Notes:

Returned to compliance on 02/04/2021. OBSERVATION: Observed an inaccurate emergency response plan and procedures submitted to CERS. Specifically, plan must include Emergency Coordinator Contact information reflecting current staff. CORRECTIVE ACTION: Owner/operator shall update the emergency response plans and procedures. The following must be included: immediate notification contacts to the appropriate local emergency response personnel and to the unified program agency, procedures for the mitigation of a release or threatened release to minimize any potential harm or damage to persons, property, or the environment, and evacuation plans and procedures that includes immediate notice for the business site.

Violation Description:

Failure to establish and electronically submit an adequate emergency response plan and procedures for a release or threatened release of a hazardous material.

Violations

Violation Date: 12/23/2019 ***Violation Source:*** CERS

Violation Program: UST ***Violation Division:*** Riverside County Department of Env Health
Citation: 23 CCR 16 2637(f) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2637(f)
Violation Notes:

Returned to compliance on 12/23/2019. OBSERVATION: Secondary containment testing was conducted on 12/13/18. Observed that owner/operator failed to submit test results to the CUPA within 30 days of testing. Results received on 6/6/19. CORRECTIVE ACTION: Owner/operator shall submit test results for secondary containment testing to the CUPA within 30 days. Documents must be provided on state-approved forms. Violation corrected on site.

Violation Description:

Failure to submit a copy of the secondary containment test results on the "Secondary Containment Testing report Form" to the UPA within 30 days after the test.

Violations

Violation Date: 12/10/2014 ***Violation Source:*** CERS
Violation Program: HW ***Violation Division:*** Riverside County Department of Env Health
Citation: 40 CFR 1 265.33 - U.S. Code of Federal Regulations, Title 40, Chapter 1, Section(s) 265.33
Violation Notes:

Returned to compliance on 03/04/2015.

Violation Description:

Failure of the facility to test and maintain all communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment.

Violations

Violation Date: 12/22/2020 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** Riverside County Department of Env Health
Citation: Un-Specified
Violation Notes:

Returned to compliance on 01/21/2021.

Violation Description:

Business Plan Program - Operations/Maintenance - General Local Ordinance

Violations

Violation Date: 12/12/2018 ***Violation Source:*** CERS
Violation Program: UST ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.7 25284, 25286 - California Health and Safety Code, Chapter 6.7, Section(s) 25284, 25286
Violation Notes:

Returned to compliance on 01/29/2019. OBSERVATION: Observed UST Facility Operating Permit Application submitted in CERS to be inaccurate information. BOE Number provided: 44326788 is Not Valid. CORRECTIVE ACTION: Owner/operator shall make the corrections noted above to the UST Facility Operating Permit Application and re-submit updated forms in CERS.

Violation Description:

Failure to submit a complete and accurate application for a permit to operate a UST, or for renewal of the permit.

Violations

Violation Date: 12/10/2014 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.95 Multiple - California Health and Safety Code, Chapter 6.95, Section(s) Multiple
Violation Notes:

Returned to compliance on 03/04/2015. [LOCAL ORDINANCE VIOLATION 104D] Emergency equipment has been posted appropriately.

Violation Description:

Business Plan Program - Operations/Maintenance - General

Violations

Violation Date: 12/10/2014 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Notes:

Returned to compliance on 03/04/2015.

Violation Description:

Failure to discuss conformance with SPCC requirements within the SPCC plan.

Violations

Violation Date: 03/04/2015 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.95 Multiple - California Health and Safety Code, Chapter 6.95, Section(s) Multiple
Violation Notes:

Returned to compliance on 04/30/2015.

Violation Description:

Business Plan Program - Operations/Maintenance - General

Violations

Violation Date: 12/10/2014 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.95 Multiple - California Health and Safety Code, Chapter 6.95, Section(s) Multiple
Violation Notes:

Returned to compliance on 03/04/2015. [LOCAL ORDINANCE VIOLATION 104A] NFPA 704 sign(s) have been posted appropriately.

Violation Description:

Business Plan Program - Administration/Documentation - General

Violations

Violation Date: 12/23/2019 ***Violation Source:*** CERS
Violation Program: UST ***Violation Division:*** Riverside County Department of Env Health
Citation: 23 CCR 16 2712 - California Code of Regulations, Title 23, Chapter 16, Section(s) 2712
Violation Notes:

Returned to compliance on 12/23/2019. OBSERVATION: Owner/operator failed to comply with all the required operating permit conditions. The owner/operator failed to have an accurate UST system monitoring plans submitted in CERS and available on site as the operating permit requires. Refer to violation #2010013 and/or 2030041 for details. CORRECTIVE ACTION: Owner/operator shall maintain on site a complete and accurate monitoring plan that has been accepted in CERS as required as part of the the operating permit condition.

Violation Description:

Failure to comply with any of the applicable requirements of the permit issued for the operation of the UST system.

Violations

Violation Date: 12/23/2019 ***Violation Source:*** CERS
Violation Program: UST ***Violation Division:*** Riverside County Department of Env Health
Citation: 23 CCR 16 2641(h) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2641(h)
Violation Notes:

Returned to compliance on 12/23/2019. OBSERVATION: Observed UST Monitoring Plan(s) for both tanks to be inaccurate and/or missing information. UDC section of monitoring plans indicate a "Yes" for alarms causing positive shutdown. Facility has float and chain UDCs. UST Monitoring Plan is not approved as submitted. CORRECTIVE ACTION: Owner/operator shall make the following corrections to the UST Monitoring Plan(s) and submit in CERS. Update UDC section of both monitoring plans to indicate "No" for positive shutdown.

Violation Description:

Failure to have an approved UST Monitoring Plan.

Violations

Violation Date: 12/10/2014 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.95 25505(a)(4) - California Health and Safety Code, Chapter 6.95, Section(s) 25505(a)(4)
Violation Notes:

Returned to compliance on 03/04/2015.

Violation Description:

Failure to provide initial and annual training to all employees in safety procedures in the event of a release or threatened release of a hazardous material or failure to document and maintain training records for a minimum of three years.

Violations

Violation Date: 12/22/2020 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.95 25508(a)(3) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(3)
Violation Notes:

Returned to compliance on 01/21/2021. OBSERVATION: The owner/operator page submitted with the most recent hazardous materials business plan was incorrect. Specifically, information entered for *Primary Emergency Contact*, please update to reflect current staff. CORRECTIVE ACTION: Owner/operator shall complete and submit an updated owner/operator page in the statewide information management system (e.g. CERS) at http://cers.calepa.ca.gov.

Violation Description:

Failure to complete and electronically submit the Business Activities Page and/or Business Owner Operator Identification Page.

Violations

Violation Date: 12/12/2018 ***Violation Source:*** CERS
Violation Program: UST ***Violation Division:*** Riverside County Department of Env Health
Citation: 23 CCR 16 2641(h) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2641(h)
Violation Notes:

Returned to compliance on 01/29/2019. OBSERVATION: A Response Plan has not been submitted in CERS for this facility. An Emergency Response/Contingency Plan was uploaded in CERS in section designated for the UST Response Plan. UST Response Plan was found on site for this facility. CORRECTIVE ACTION: Owner/operator shall submit a complete UST Response Plans in CERS.

Violation Description:

Failure to have an approved UST Response Plan.

Violations

Violation Date: 12/19/2017 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Notes:

Returned to compliance on 02/16/2018.

Violation Description:

Failure to maintain a complete copy of the SPCC Plan at the facility if the facility is normally attended at least four hours per day, or at the nearest field office if the facility is not so attended.

Violations

Violation Date: 12/22/2020 ***Violation Source:*** CERS
Violation Program: HW ***Violation Division:*** Riverside County Department of Env Health
Citation: 40 CFR 1 265.33 - U.S. Code of Federal Regulations, Title 40, Chapter 1, Section(s) 265.33
Violation Notes:

Returned to compliance on 01/21/2021. OBSERVATION: Observed fire extinguishers not properly maintained. Last serviced 02/20/2019, fire extinguishers are required to be certified on annual basis. CORRECTIVE ACTION: Owner/operator shall properly test and maintain all emergency equipment including fire extinguishers.

Violation Description:

Failure to test and maintain as necessary all facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment to assure its proper operation in time of emergency.

Violations

Violation Date: 12/19/2017 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.67 25270.6(a)(1), 25270.6(a)(2) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.6(a)(1), 25270.6(a)(2)
Violation Notes:

Returned to compliance on 02/07/2018.

Violation Description:

Failure to submit a tank facility statement on or before January 1 annually unless a current Business Plan has been submitted.

Violations

Violation Date: 12/17/2014 ***Violation Source:*** CERS
Violation Program: UST ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.75 25299.30-25299.34 - California Health and Safety Code, Chapter 6.75, Section(s) 25299.30-25299.34
Violation Notes:

Returned to compliance on 12/17/2014.

Violation Description:

Failure to submit and maintain complete and current Certification of Financial Responsibility or other mechanism of financial assurance.

Violations

Violation Date: 12/19/2017 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)

Violation Notes:

Returned to compliance on 02/07/2018.

Violation Description:

Failure to complete and electronically submit a business plan when storing/handling a hazardous material at or above reportable quantities.

Violations

Violation Date: 12/10/2014 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Notes:

Returned to compliance on 03/04/2015.

Violation Description:

Failure to prepare and implement a Spill Prevention Control and Countermeasure (SPCC) Plan .

Violations

Violation Date: 01/21/2021 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.95 25508(a)(3) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(3)
Violation Notes:

Returned to compliance on 02/04/2021. OBSERVATION: Site map submitted in CERS was missing location of five gallon paint buckets observed in Streets Department Warehouse. CORRECTIVE ACTION: Owner/operator shall add location of five gallon paint buckets to annotated site map. Submit site map into the statewide information management system (e.g. CERS) at http://cers.calepa.ca.gov.

Violation Description:

Failure to complete and electronically submit a site map with all required content.

Violations

Violation Date: 01/21/2021 ***Violation Source:*** CERS
Violation Program: UST ***Violation Division:*** Riverside County Department of Env Health
Citation: 23 CCR 16 2641(h) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2641(h)
Violation Notes:

Returned to compliance on 02/04/2021. OBSERVATION: Observed UST Response Plan to be inaccurate and/or missing information. UST Response Plan is not approved as submitted. CORRECTIVE ACTION: Owner/operator shall make the following corrections to the UST Response Plan and submit in CERS. Update to reflect current management in place.

Violation Description:

Failure to have an approved UST Response Plan.

Violations

Violation Date: 12/12/2018 ***Violation Source:*** CERS
Violation Program: UST ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.7 25284.2 - California Health and Safety Code, Chapter 6.7, Section(s) 25284.2
Violation Notes:

Returned to compliance on 06/05/2019. OBSERVATION: Spill buckets were not tested at time of inspection. Technician stated he will be doing SB989 and overfill equipment testing tomorrow, 12/13/18, and will conduct spill bucket testing at that time. CORRECTIVE ACTION: Owner/operator shall submit testing results to this department within 30 days of completion.

Violation Description:

"Failure to meet one or more of the following requirements:

Install or maintain a liquid-tight spill container.

Have a minimum capacity of five gallons.

Have a functional drain valve or other method for the removal of liquid from the spill container.

Be resistant to galvanic corrosion.

Perform a tightness test at installation, every 12 months thereafter, or within 30 days after a repair to the spill container.

Tested using applicable manufacturer guidelines, industry codes, engineering standards, or a method approved by a professional engineer.

Tested by a certified UST service technician.

Maintain records of spill containment testing for 36 months.

"

Violations

Violation Date: 12/10/2014 ***Violation Source:*** CERS
Violation Program: HW ***Violation Division:*** Riverside County Department of Env Health
Citation: 22 CCR 12 66262.34(f) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.34(f)
Violation Notes:

Returned to compliance on 03/04/2015.

Violation Description:

Failure to properly label hazardous waste accumulation containers with the following requirements: "Hazardous Waste", name and address of the generator, physical and chemical characteristics of the Hazardous Waste, and starting accumulation date.

Violations

Violation Date: 12/19/2017 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.95 25505(c) - California Health and Safety Code, Chapter 6.95, Section(s) 25505(c)
Violation Notes:

Returned to compliance on 12/19/2017.

Violation Description:

Failure to have a business plan readily available to personnel of the business or the unified program facility with responsibilities for emergency response or training.

Violations

Violation Date: 12/10/2014 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.11 25404.1 - California Health and Safety Code, Chapter 6.11, Section(s) 25404.1
Violation Notes:

Returned to compliance on 03/04/2015.

Violation Description:

Failure to maintain a valid permit.

Violations

Violation Date: 12/22/2020 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Notes:

Returned to compliance on 03/16/2021.

Violation Description:

Failure to comply with one or more of the following requirements:

1. Have record of inspections and tests, including integrity tests, signed by the appropriate supervisor or inspector.

2. Keep written procedures and records of inspections and tests, including integrity tests, for at least three years.

3. Keep comparison records.

Violations

Violation Date: 12/19/2017 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Notes:

Returned to compliance on 02/07/2018.

Violation Description:

Failure to complete and electronically submit a site map with all required content.

Violations

Violation Date: 12/23/2019 ***Violation Source:*** CERS
Violation Program: UST ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.7 25284, 25286 - California Health and Safety Code, Chapter 6.7, Section(s) 25284, 25286
Violation Notes:

Returned to compliance on 12/23/2019. OBSERVATION: Observed UST tank information pages submitted in CERS to be inaccurate and/or missing information. Piping construction section for each tank is inaccurate. See CERS notes for details. CORRECTIVE ACTION: Owner/operator shall make the corrections noted above to the UST tank information pages and re-submit updated forms in CERS.

Violation Description:

Failure to submit a complete and accurate application for a permit to operate a UST, or for renewal of the permit.

Violations

Violation Date: 12/10/2014 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.95 Multiple - California Health and Safety Code, Chapter 6.95, Section(s) Multiple
Violation Notes:

Returned to compliance on 03/04/2015. [LOCAL ORDINANCE VIOLATION 105A] Hazardous materials are stored in a manner to minimize the possibility of a fire, explosion, or release.

Violation Description:

Business Plan Program - Operations/Maintenance - General

Violations

Violation Date: 12/15/2015 ***Violation Source:*** CERS
Violation Program: UST ***Violation Division:*** Riverside County Department of Env Health
Citation: 23 CCR 16 2637 - California Code of Regulations, Title 23, Chapter 16, Section(s) 2637
Violation Notes:

Returned to compliance on 02/03/2016.

Violation Description:

Failure to comply with one or more of the following: conduct secondary containment testing, within six months of installation and every 36 months thereafter, conducted in accordance with proper practices, protocols, or test methods.

Violations

Violation Date: 01/21/2021 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Notes:

Violation Description:

Failure to provide the following training to all oil-handling personnel:

1. Operation and maintenance of equipment to prevent discharges.

2. Discharge procedure protocols.

3. Applicable pollution control laws, rules, and regulations.

4. General facility operations.

5. Contents of the SPCC Plan.

Violations

Violation Date: 12/23/2019 ***Violation Source:*** CERS
Violation Program: UST ***Violation Division:*** Riverside County Department of Env Health
Citation: 23 CCR 16 2715(c)(4) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2715(c)(4)
Violation Notes:

Returned to compliance on 03/10/2020. OBSERVATION: Owner/operator unable to produce a current list of employees trained by the designated operator. Last documented DO training observed was 11/29/18. CORRECTIVE ACTION: Owner/operator shall provide list of employees trained by the designated operator and maintain on site readily available for review. Employees are required to be trained within 30 days of hire. Employees hired on/after 10/13/2018 are required to be trained before assuming their duties.

Violation Description:

Failure to maintain a list of employees trained by the designated operator on-site or off-site at a readily available location, if approved by the UPA. For training that occurs on or after October 1, 2018, failure to maintain a copy of the "Facility Employee Training Certificate" on-site or off-site at a readily available location, if approved by the UPA.

Violations

Violation Date: 12/14/2016 ***Violation Source:*** CERS
Violation Program: UST ***Violation Division:*** Riverside County Department of Env Health
Citation: 23 CCR 6.7 25284, 25286 - California Code of Regulations, Title 23, Chapter 6.7, Section(s) 25284, 25286
Violation Notes:

Returned to compliance on 03/07/2017.

Violation Description:

Failure to submit a complete and accurate application for a permit to operate a UST, or for renewal of the permit.

Violations

Violation Date: 12/22/2020 ***Violation Source:*** CERS
Violation Program: HW ***Violation Division:*** Riverside County Department of Env Health
Citation: HSC 6.5 25123.3(h)(1) - California Health and Safety Code, Chapter 6.5, Section(s) 25123.3(h)(1)
Violation Notes:

Returned to compliance on 01/21/2021. OBSERVATION: Observed two used antifreeze drums on site without an accumulation start date. CORRECTIVE ACTION: Owner/operator shall ensure all hazardous wastes are transported off site within 180 days of the accumulation start date. Owner/operator shall have used antifreeze drums properly hauled off site by a registered hazardous waste transporter.

Violation Description:

Failure to send hazardous waste offsite for treatment, storage, or disposal within 180 days (or 270 days if waste is transported over 200 miles) for a generator who generates less than 1000 kilogram per month if all of the following conditions are met:
(1) The quantity of hazardous waste accumulated onsite never exceeds 6,000 kilograms.

(2) The generator complies with the requirements of 40 Code of Federal Regulations section 262.34(d), (e) and (f).

(3) The generator does not hold acutely hazardous waste or extremely hazardous waste in an amount greater than one kilogram for more than 90 days.

Violations

Violation Date: 03/04/2015 ***Violation Source:*** CERS
Violation Program: HW ***Violation Division:*** Riverside County Department of Env Health
Citation: 40 CFR 1 265.33 - U.S. Code of Federal Regulations, Title 40, Chapter 1, Section(s) 265.33
Violation Notes:

Returned to compliance on 04/30/2015.

Violation Description:

Failure of the facility to test and maintain all communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment.

Enforcements

Enf Action Date: 03/04/2015 ***Enf Action Program:*** HMRRP
Enf Action Type: Notice of Violation (Unified Program) ***Enf Action Source:*** CERS
Enf Action Division: Riverside County Department of Env Health
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:

Enf Action Date: 12/15/2015 ***Enf Action Program:*** UST
Enf Action Type: Notice of Violation (Unified Program) ***Enf Action Source:*** CERS
Enf Action Division: Riverside County Department of Env Health
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:

Enf Action Date: 12/10/2014 ***Enf Action Program:*** HMRRP
Enf Action Type: Notice of Violation (Unified Program) ***Enf Action Source:*** CERS
Enf Action Division: Riverside County Department of Env Health
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:

Enf Action Date: 12/17/2014 ***Enf Action Program:*** UST
Enf Action Type: Notice of Violation (Unified Program) ***Enf Action Source:*** CERS
Enf Action Division: Riverside County Department of Env Health
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:

Enf Action Date: 12/10/2014 ***Enf Action Program:*** APSA
Enf Action Type: Notice of Violation (Unified Program) ***Enf Action Source:*** CERS
Enf Action Division: Riverside County Department of Env Health
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:

Enf Action Date: 12/10/2014 ***Enf Action Program:*** HW
Enf Action Type: Notice of Violation (Unified Program) ***Enf Action Source:*** CERS
Enf Action Division: Riverside County Department of Env Health
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:

Enf Action Date: 03/04/2015 ***Enf Action Program:*** HW
Enf Action Type: Notice of Violation (Unified Program) ***Enf Action Source:*** CERS
Enf Action Division: Riverside County Department of Env Health
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:

Evaluations

Eval Date: 12/15/2015
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: UST
Eval Source: CERS
Eval Notes:

Eval Date: 01/21/2021
Violations Found: Yes
Eval General Type: Other/Unknown
Eval Type: Other, not routine, done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS
Eval Notes:

Eval Date: 01/21/2021
Violations Found: No
Eval General Type: Other/Unknown
Eval Type: Other, not routine, done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HW
Eval Source: CERS
Eval Notes:

Eval Date: 06/25/2019
Violations Found: No
Eval General Type: Other/Unknown
Eval Type: Other, not routine, done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: UST
Eval Source: CERS
Eval Notes:

Eval Date: 03/10/2020
Violations Found: No
Eval General Type: Other/Unknown
Eval Type: Other, not routine, done by local agency
Eval Division: Riverside County Department of Env Health

Eval Program: UST
Eval Source: CERS
Eval Notes:

Eval Date: 03/04/2015
Violations Found: No
Eval General Type: Other/Unknown
Eval Type: Other, not routine, done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: APSA
Eval Source: CERS
Eval Notes:

Eval Date: 01/21/2021
Violations Found: Yes
Eval General Type: Other/Unknown
Eval Type: Other, not routine, done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: UST
Eval Source: CERS
Eval Notes:

Eval Date: 12/12/2018
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: UST
Eval Source: CERS
Eval Notes:

Note: Financial Responsibility is current; however, is set to expire 12/15/18. Ensure a current copy is maintained on CERS and on site. Note: SB989 testing was conducted 12/22/15. Technician on site stated SB989 is scheduled for tomorrow, 12/13/18. Note: Test boots were observed to be tightened and shrader valves were opened. Technician rotated test boots to ensure shrader valves were located at the bottom half of the test boot.; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 12/17/2014
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: UST
Eval Source: CERS
Eval Notes:

Eval Date: 12/22/2020
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: UST
Eval Source: CERS
Eval Notes:

** #29. Monthly DO reports properly performed - DO reports for 04/08/2020-07/07/2020 had no signatures due to vacancy in management personnel. All other months signed within 48 hour requirement. ; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 04/30/2015
Violations Found: No
Eval General Type: Other/Unknown
Eval Type: Other, not routine, done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HW
Eval Source: CERS

Eval Notes:

Eval Date: 12/15/2017
Violations Found: No
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: UST
Eval Source: CERS
Eval Notes:

Eval Date: 12/22/2020
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: APSA
Eval Source: CERS
Eval Notes:

Eval Date: 12/22/2020
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS
Eval Notes:

** #7. Facility is in process of determining possible cessation of bulk tanks in daily operations, please update inventory if necessary. **; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 12/10/2014
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS
Eval Notes:

Eval Date: 12/19/2017
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS
Eval Notes:

Eval Date: 12/10/2014
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: APSA
Eval Source: CERS
Eval Notes:

Eval Date: 12/19/2017
Violations Found: No
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency

Eval Division: Riverside County Department of Env Health
Eval Program: HW
Eval Source: CERS
Eval Notes:

Eval Date: 03/04/2015
Violations Found: Yes
Eval General Type: Other/Unknown
Eval Type: Other, not routine, done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS
Eval Notes:

Eval Date: 12/10/2013
Violations Found: No
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: UST
Eval Source: CERS
Eval Notes:

Eval Date: 12/22/2020
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HW
Eval Source: CERS
Eval Notes:

** #8. Labels faded. Facility shall update labels for waste paint containers. #28. Labels faded, labels provided. Facility shall update faded waste filter labels. **; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 12/19/2017
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: APSA
Eval Source: CERS
Eval Notes:

Eval Date: 08/09/2017
Violations Found: Yes
Eval General Type: Other/Unknown
Eval Type: Other, not routine, done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS
Eval Notes:

Eval Date: 12/23/2019
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: UST
Eval Source: CERS
Eval Notes:

Eval Date: 03/04/2015

Violations Found: Yes
Eval General Type: Other/Unknown
Eval Type: Other, not routine, done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HW
Eval Source: CERS
Eval Notes:

Eval Date: 01/21/2021
Violations Found: Yes
Eval General Type: Other/Unknown
Eval Type: Other, not routine, done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: APSA
Eval Source: CERS
Eval Notes:

Eval Date: 12/10/2014
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: HW
Eval Source: CERS
Eval Notes:

Eval Date: 12/14/2016
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Riverside County Department of Env Health
Eval Program: UST
Eval Source: CERS
Eval Notes:

Affiliations

Affil Type Desc: Environmental Contact
Entity Name: Sergio Rubio
Entity Title:
Address: 176 E Lincoln St
City: Banning
State: CA
Country:
Zip Code: 922220
Phone:

Affil Type Desc: UST Property Owner Name
Entity Name: City of Banning
Entity Title:
Address: P.O. Box 998
City: Banning
State: CA
Country: United States
Zip Code: 92220
Phone: (951) 922-3291

Affil Type Desc: Legal Owner
Entity Name: City of Banning
Entity Title:
Address: 176 E Lincoln St
City: Banning
State: CA
Country: United States

Zip Code: 92220
Phone: (951) 922-3291

Affil Type Desc: Identification Signer
Entity Name: Sergio Rubio
Entity Title: Manager
Address:
City:
State:
Country:
Zip Code:
Phone:

Affil Type Desc: UST Permit Applicant
Entity Name: John Packham
Entity Title: Agent
Address:
City:
State:
Country:
Zip Code:
Phone: (951) 312-0102

Affil Type Desc: UST Tank Operator
Entity Name: City of Banning
Entity Title:
Address: P.O. Box 998
City: Banning
State: Ca
Country: United States
Zip Code: 92220
Phone: (951) 922-3291

Affil Type Desc: Parent Corporation
Entity Name: City of Banning Fleet Maintenance
Entity Title:
Address:
City:
State:
Country:
Zip Code:
Phone:

Affil Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title:
Address: 176 E Lincoln St
City: Banning
State: CA
Country:
Zip Code: 92220
Phone:

Affil Type Desc: Operator
Entity Name: City of Banning
Entity Title:
Address:
City:
State:
Country:
Zip Code:
Phone: (951) 922-3286

Affil Type Desc: Document Preparer
Entity Name: John Packham
Entity Title:
Address:
City:
State:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Country:
Zip Code:
Phone:

Affil Type Desc: CUPA District
Entity Name: Riverside Cnty Env Health
Entity Title:
Address: 4065 County Circle Drive, Room 104
City: Riverside
State: CA
Country:
Zip Code: 92503
Phone: (951) 358-5055

Affil Type Desc: UST Tank Owner
Entity Name: City of Banning
Entity Title:
Address: P.O. Box 998
City: Banning
State: Ca
Country: United States
Zip Code: 92220
Phone: (951) 922-3291

Coordinates

Env Int Type Code: HWG
Program ID: 10316794
Latitude: 33.921690
Longitude: -116.875220
Coord Name:
Ref Point Type Desc: Center of a facility or station.

18	5 of 6	E	0.24 / 1,283.08	2,307.34 / -17	CITY OF BANNING 176 E LINCOLN ST BANNING CA 92220-4962	RCRA NON GEN

EPA Handler ID: CAD982326282
Gen Status Universe: No Report
Contact Name: LEON SCHRADER
Contact Address: 176 E LINCOLN ST , , BANNING , CA, 92220 ,
Contact Phone No and Ext: 951-922-3291
Contact Email: LSCHRADER@CI.BANNING.CA.US
Contact Country:
County Name: RIVERSIDE
EPA Region: 09
Land Type:
Receive Date: 19880617
Location Latitude: 33.92166
Location Longitude: -116.874935

Violation/Evaluation Summary

Note: NO RECORDS: As of Aug 2021, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No

Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No
Used Oil Spec Marketer:	No

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	19880617
Handler Name:	CITY OF BANNING
Source Type:	Implementer
Federal Waste Generator Code:	N
Generator Code Description:	Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind:	Current Owner	***Street No:***	
Type:	Other	***Street 1:***	PO BOX 998
Name:	CITY OF BANNING	***Street 2:***	
Date Became Current:		***City:***	BANNING
Date Ended Current:		***State:***	CA
Phone:	951-922-3291	***Country:***	
Source Type:	Implementer	***Zip Code:***	92220-0007

Owner/Operator Ind:	Current Operator	***Street No:***	
Type:	Other	***Street 1:***	176 E LINCOLN ST
Name:	LEON SCHRADER	***Street 2:***	
Date Became Current:		***City:***	BANNING
Date Ended Current:		***State:***	CA
Phone:	951-922-3291	***Country:***	
Source Type:	Implementer	***Zip Code:***	92220

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
18	6 of 6	E	0.24 / 1,283.08	2,307.34 / -17	***BANNING CITY OF/CORPORATE YARD*** ***176 E LINCOLN ST*** ***BANNING CA***	***UST SWEEPS***

C C:	A33-000-28	***D Filename:***	SITE16A
BOE:	44-017802	***Page No:***	3
Comp:	28	***County:***	RIVERSIDE
Status:	ACTIVE	***State :***	CA
No of Tanks:	3	***Zip:***	92220
Jurisdict:	RIVERSIDE COUNTY	***Latitude:***	33.921874
Agency:	ENVIRONMENTAL HEALTH - U.S.T.	***Longitude:***	-116.874973
Phone:		***Georesult:***	S5HPNTSCZA

Tank Details

Tank ID:	000001	***S Contain:***	
O Tank ID:	1554	***Stg:***	P
SWRCB No:	33-000-000028-000001	***Storage :***	
Removed:		***Storag Type:***	PRODUCT
Installed:		***P Contain:***	
A Date:	10-21-92	***Content:***	DIESEL
Capac:	10000	***ONA:***	
Tank Use:	M.V. FUEL	***D File Name:***	TANK16A

Tank Details

Tank ID:	000002	***S Contain:***	
O Tank ID:	1554	***Stg:***	P
SWRCB No:	33-000-000028-000002	***Storage :***	

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Removed:		**Storag Type:**	PRODUCT
Installed:		**P Contain:**	
A Date:	10-21-92	**Content:**	DIESEL
Capac:	10000	**ONA:**	
Tank Use:	M.V. FUEL	**D File Name:**	TANK16A

Tank Details

Tank ID:	000003	**S Contain:**	
O Tank ID:	1554	**Stg:**	W
SWRCB No:	33-000-000028-000003	**Storage :**	
Removed:		**Storag Type:**	WASTE
Installed:		**P Contain:**	
A Date:	10-21-92	**Content:**	WASTE OIL
Capac:	550	**ONA:**	
Tank Use:	OIL	**D File Name:**	TANK16A

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
19	1 of 2	W	0.25 / 1,296.98	2,343.66 / 19	Antique Classic Car 314 S Eighth St Banning CA	LOP RIVERSIDE

Site ID:	90285	**Closed Code:**	Y
Status Code:	9	**Closed Desc:**	CLOSED SITE
Status Desc:	CLOSED/ACTION COMPLETED	**Employee:**	Rogers
Case Type Code:	S		
Case Type Desc:	SOIL ONLY IS IMPACTED		

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
19	2 of 2	W	0.25 / 1,296.98	2,343.66 / 19	ANTIQUE CLASSIC CAR 314 SOUTH EIGHTH STREET BANNING CA 92220	LUST

Global ID:	T0606500719	**County:**	RIVERSIDE
Status:	COMPLETED - CASE CLOSED	**Latitude:**	33.9224633763925
Status Date:	7/25/1990	**Longitude:**	-116.884991544111
Case Type:	LUST CLEANUP SITE		
Date Source:	LUST Cleanup Sites & Military UST Site from GeoTracker Project Search Results Export; LUST Cleanup Sites & Military UST Site from GeoTracker Cleanup Sites Data Download		

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail

RB Case No:	7T2220005	**Potential COC:**	Diesel
Local Case No:	90285	**How Discovered:**	Other Means
Begin Date:	3/21/1990	**Stop Method:**	Close and Remove Tank, Remove Contents
Lead Agency:	RIVERSIDE COUNTY LOP	**Stop Description:**	
Local Agency:	RIVERSIDE COUNTY LOP	**Case Worker:**	RIV
CUF Case:	NO	**File Location:**	Local Agency Warehouse
Potential Media of Concern:	Soil		
How Discovered Description:	Tank Removal		
Calwater Watershed Name:	Whitewater - San Gorgonio - Banning (719.31)		
DWR GW Subbasin Name:	Coachella Valley - San Gorgonio Pass (7-021.04)		
Disadvantaged Community:			
Calenviroscreen Score:	66-70%		
Site History:			

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Activity

Action Type:	ENFORCEMENT
Date :	1/7/2009
Action:	Closure/No Further Action Letter - #Site Closure
Action Type:	ENFORCEMENT
Date :	1/6/2009

Action: File review - #RCDEH Upload Site File 3/27/2015

Action Type: Other
Date : 4/3/1990
Action: Leak Reported

Action Type: Other
Date : 3/21/1990
Action: Leak Discovery

Action Type: Other
Date : 3/21/1990
Action: Leak Stopped

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Contacts

Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP
City: RIVERSIDE
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
Email:
Phone No: 9519558980

Contact Type: Regional Board Caseworker
Contact Name: Phan Le
City: PALM DESERT
Organization Name: COLORADO RIVER BASIN RWQCB (REGION 7)
Address: 73720 FRED WARING DRIVE SUITE #100
Email: phan.le@waterboards.ca.gov
Phone No: 7607768974

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History

Status: Completed - Case Closed
Status Date: 7/25/1990

Status: Open - Case Begin Date
Status Date: 3/21/1990

LUST Sites from GeoTracker Search - Regulatory Profile

Site Facility Name: ANTIQUE CLASSIC CAR
Site Facility Type: LUST CLEANUP SITE
Cleanup Status: COMPLETED - CASE CLOSED
Project Status:
WDR Place Type:
WDR File:
WDR Order:
CUF Priority Assig:
CUF Amount Paid:
Potential COC: DIESEL
Facility Type:
Composting Method:
Address: 314 SOUTH EIGHTH STREET
City: BANNING
Zip: 92220
County: RIVERSIDE
CUF Claim:
File Location: LOCAL AGENCY WAREHOUSE
Designated Beneficial Use: MUN, AGR, IND
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T0606500719
Cleanup Status Detail: COMPLETED - CASE CLOSED AS OF 7/25/1990
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=T0606500719&tabname=regulatoryhistory
Potential Media of Concern: SOIL
User Defined Beneficial Use:
DWR GW Sub Basin: Coachella Valley - San Gorgonio Pass (7-021.04)
Calwater Watershed Name: Whitewater - San Gorgonio - Banning (719.31)
Post Closure Site Management: NOTIFY PRIOR TO CHANGE IN LAND USE
Future Land Use:
Cleanup Oversight Agencies: RIVERSIDE COUNTY LOP (LEAD) - CASE #: 90285
CASEWORKER: Riverside County LOP
COLORADO RIVER BASIN RWQCB (REGION 7) - CASE #: 7T2220005
CASEWORKER: Phan Le
Gndwater Monitoring Freque:
Designated Beneficial Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply
Site History:

No site history available

LUST Sites from GeoTracker Search - Cleanup Status History

Status: Completed - Case Closed
Date : 7/25/1990

Status: Open - Case Begin Date
Date : 3/21/1990

LUST Sites from GeoTracker Search - Regulatory Activities (as of May 29, 2021)

Action Type: Other Regulatory Actions
Action Date: 1/7/2009
Received Issue Date: 1/7/2009
Action: Closure/No Further Action Letter - #Site Closure
Doc Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0606500719&enforcement_id=5998676&temptable=ENFORCEMENT
Title Description Comments:

RivCo Site Closure

Action Type: Other Regulatory Actions
Action Date: 1/6/2009
Received Issue Date: 1/6/2009
Action: File review - #RCDEH Upload Site File 3/27/2015
Doc Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0606500719&enforcement_id=6045547&temptable=ENFORCEMENT
Title Description Comments:

RCDEH Upload Site File 3/27/2015

Action Type: Leak Action
Action Date: 4/3/1990
Received Issue Date:
Action: Leak Reported
Doc Link:
Title Description Comments:

Action Type: Leak Action
Action Date: 3/21/1990
Received Issue Date:
Action: Leak Discovery
Doc Link:
Title Description Comments:

Action Type: Leak Action
Action Date: 3/21/1990
Received Issue Date:
Action: Leak Stopped
Doc Link:
Title Description Comments:

LUST Sites from GeoTracker Search - Documents (as of May 29, 2021)

Document Type: Site Documents
Document Date: 1/7/2009
Type: CLOSURE/NO FURTHER ACTION LETTER
Title: RIVCO SITE CLOSURE
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0606500719&enforcement_id=5998676
Size :
Submitted By: RIVERSIDE COUNTY LOP (REGULATOR)
Submitted:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Document Type:	Site Documents	**Size :**	
Document Date:	1/6/2009	**Submitted By:**	LINDA SHURLOW (REGULATOR)
Type:	FILE REVIEW	**Submitted:**	
Title:	RCDEH UPLOAD SITE FILE 3/27/2015		
Title Link:	https://geotracker.waterboards.ca.gov/view_documents?global_id=T0606500719&enforcement_id=6045547		

20	1 of 2	W	0.25 / 1,299.56	2,345.26 / 21	BANNING RECYCLING 284 S 8TH ST BANNING CA 92220-4506	RCRA NON GEN

EPA Handler ID:	CAL000335600
Gen Status Universe:	No Report
Contact Name:	RAJ GANDHI
Contact Address:	2993 6TH ST , , RIVERSIDE , CA, 92507 ,
Contact Phone No and Ext:	951-686-2129
Contact Email:	RAJMG1029@MSN.COM
Contact Country:	
County Name:	RIVERSIDE
EPA Region:	09
Land Type:	
Receive Date:	20080819
Location Latitude:	33.922471
Location Longitude:	-116.885369

Violation/Evaluation Summary

Note:	NO RECORDS: As of Aug 2021, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Furnace Exemption:	No
Underground Injection Activity:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No
Used Oil Spec Marketer:	No

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	20080819
Handler Name:	BANNING RECYCLING
Source Type:	Implementer
Federal Waste Generator Code:	N
Generator Code Description:	Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind:	Current Operator	**Street No:**	
Type:	Other	**Street 1:**	2993 6TH ST
Name:	RAJ GANDHI	**Street 2:**	
Date Became Current:		**City:**	RIVERSIDE
Date Ended Current:		**State:**	CA

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Phone: 951-686-2129
Source Type: Implementer

Owner/Operator Ind: Current Owner
Type: Other
Name: RIVERSIDE SCRAP IRON & METAL
Date Became Current:
Date Ended Current:
Phone: 951-686-2129
Source Type: Implementer

Country:
Zip Code: 92507

Street No:
Street 1: 2993 6TH ST
Street 2:
City: RIVERSIDE
State: CA
Country:
Zip Code: 92507-0000

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
20	2 of 2	W	0.25 / 1,299.56	2,345.26 / 21	BANNING RECYCLING 284 S 8TH ST BANNING CA 92220	RECYCLING

Cert ID: RC5687
Operation: 5/2/1994
Rural: N
Organization: RIVERSIDE SCRAP IRON & METAL CORP
Aluminium: Yes
Glass: Yes
Plastic: Yes
Bimetal: Yes
Agency: N/A
Grand Fath: N
Cert Status:
Operatione:
Monday Hou: CLOSED
Tuesday Ho: 8:00 am - 4:00 pm; Closed 12:00 pm - 12:30 pm

Wednesday: 8:00 am - 4:00 pm; Closed 12:00 pm - 12:30 pm
Thursday H: 8:00 am - 4:00 pm; Closed 12:00 pm - 12:30 pm
Friday Hou: 8:00 am - 4:00 pm; Closed 12:00 pm - 12:30 pm
Saturday H: 8:00 am - 4:00 pm; Closed 12:00 pm - 12:30 pm
Sunday Hou: CLOSED
Mailing Ad: P O BOX 5288
Mailing Ci: RIVERSIDE
Mailing St: CA
Mailing Zi: 92517
Phone No: (951) 686-2129x205
Website:
Email: rivrecycling@aim.com
Hours of Ope: MON CLOSED; TUE - SAT 8:00 AM - 4:00 PM, CLOSED 12:00 PM - 12:30 PM; SUN CLOSED
County: RIVERSIDE

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
21	1 of 2	NE	0.25 / 1,305.85	2,357.26 / 33	BANNING CENTRAL OFFICE 160 WEST HAYS STREET BANNING CA 92220	HHSS

County: Riverside
Tank Details Microfiche: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0001f6bc.pdf

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Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
21	2 of 2	NE	0.25 / 1,305.85	2,357.26 / 33	BANNING CENTRAL OFFICE 160 WEST HAYS STREET BANNING CA	HIST TANK

Owner Name: GENERAL TELEPHONE COMPANY OF C
Owner Street: 4959 PALO VERDE DRIVE
Owner City: MONTCLAIR
Owner State: CA
Owner Zip: 91763

No of Containers: 1
County: RIVERSIDE
Facility State: CA
Facility Zip: 92220

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
22	1 of 2	SSE	0.26 / 1,392.60	2,285.30 / -39	BANNING HIGH SCHOOL 100 WEST WESTWARD AVENUE BANNING CA 92220	ENVIROSTOR

Estor/EPA ID: 60002529
Site Code: 404943
Nat Priority List: NO
APN: NONE SPECIFIED
Census Tract: 6065043813
Site Type: SCHOOL

Assembly District: , 42
Senate District: , 23
Permit Renewal Lead:
Public Partici Spclst:
Project Manager: JOHNSON ABRAHAM
County: RIVERSIDE

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Address Description: 100 WEST WESTWARD AVENUE
Office: SOUTHERN CALIFORNIA SCHOOLS & BROWNFIELDS OUTREACH
Special Program:
Funding: SCHOOL DISTRICT
Cleanup Status: NO ACTION REQUIRED AS OF 9/7/2017
Cleanup Oversight Agencies: DTSC - SITE CLEANUP PROGRAM - LEAD AGENCY
School District: BANNING UNIFIED SCHOOL DISTRICT
Past Use that Caused Contam: NONE
Potential Media Affected: NO MEDIA AFFECTED
Potential Contamin of Concern:

Latitude: 33.918095
Longitude: -116.878153
Acres: 50.69 ACRES
Supervisor: SHAHIR HADDAD

NO CONTAMINANTS FOUND

Site History:

The Site consists of eleven parcels identified as Assessor•fs Parcel Numbers [APNs] 543•]030•]008, 010, •]011, •]013, •]014, •]015, and •]016; and APNs 543•]040•]009, •]012, •]013, and •]014, total approximately 50.69 acres. The Site was a farmland prior to construction of the school, apparently dryland farming or pastureland. The Site vicinity consists of residential and agricultural land, a campground, and undeveloped properties. The Site is currently occupied by existing Banning High School. The Phase I concludes that there is no recognized environmental conditions at the Site.

Based on the information provided and a Site visit conducted by DTSC on August 31, 2017, neither a release of hazardous material nor the presence of a naturally occurring hazardous material, which would pose a threat to public health or the environment under unrestricted land use, was indicated at the Site. DTSC concurred with the conclusion that further environmental investigation of the Site was not required and approved the Phase I.

Status: NO ACTION REQUIRED
Program Type: SCHOOL INVESTIGATION
CalEnviroScreen Score: 71-75%
Summary Link: https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=60002529

Completed Activities

Title: Site Visit Report
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60002529&doc_id=60434829
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Fieldwork
Date Completed: 9/7/2017
Comments:

Title: Phase I ESA
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60002529&doc_id=60431459
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Phase 1
Date Completed: 9/7/2017
Comments: DTSC approved the Site with a recommendation "No Action Required at the Site."

22	2 of 2	SSE	0.26 / 1,392.60	2,285.30 / -39	BANNING HIGH SCHOOL 100 WEST WESTWARD AVENUE BANNING CA 92220	SCH

Estor/EPA ID: 60002529
Site Code: 404943
Nat Priority List: NO
Acres: 50.69 ACRES
Special Program:
Funding: SCHOOL DISTRICT
Assembly District: , 42
Senate District: , 23
School District: BANNING UNIFIED SCHOOL DISTRICT
APN: NONE SPECIFIED
Cleanup Status: NO ACTION REQUIRED AS OF 9/7/2017

Permit Renewal Lead:
Project Manager: JOHNSON ABRAHAM
Supervisor: SHAHIR HADDAD
Public Partici Spclst:
Census Tract: 6065043813
County: RIVERSIDE
Latitude: 33.918095
Longitude: -116.878153

Cleanup Oversight Agencies: DTSC - SITE CLEANUP PROGRAM - LEAD AGENCY
Site Type: SCHOOL
Office: SOUTHERN CALIFORNIA SCHOOLS & BROWNFIELDS OUTREACH
Past Use that Caused Contam: NONE
Potential Media Affected: NO MEDIA AFFECTED
Potential Contamin of Concern:

NO CONTAMINANTS FOUND

SITE HISTORY:

The Site consists of eleven parcels identified as Assessor•fs Parcel Numbers [APNs] 543•]030•]008, 010, •]011, •]013, •]014, •]015, and •]016; and APNs 543•]040•]009, •]012, •]013, and •]014, total approximately 50.69 acres. The Site was a farmland prior to construction of the school, apparently dryland farming or pastureland. The Site vicinity consists of residential and agricultural land, a campground, and undeveloped properties. The Site is currently occupied by existing Banning High School. The Phase I concludes that there is no recognized environmental conditions at the Site.

Based on the information provided and a Site visit conducted by DTSC on August 31, 2017, neither a release of hazardous material nor the presence of a naturally occurring hazardous material, which would pose a threat to public health or the environment under unrestricted land use, was indicated at the Site. DTSC concurred with the conclusion that further environmental investigation of the Site was not required and approved the Phase I.

Status: NO ACTION REQUIRED
Program Type: SCHOOL INVESTIGATION
CalEnviroScreen Score: 71-75%
Summary Link: https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=60002529

Completed Activities

Title: Phase I ESA
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60002529&doc_id=60431459
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Phase 1
Date Completed: 9/7/2017
Comments: DTSC approved the Site with a recommendation "No Action Required at the Site."

Title: Site Visit Report
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60002529&doc_id=60434829
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Fieldwork
Date Completed: 9/7/2017
Comments:

23	1 of 2	SSE	0.26 / 1,398.07	2,285.30 / -39	14-ACRE PROPERTY FOR FUTURE ELEMENTARY SCHOOL W. OF BANNING HS & SOUTH OF WESTWARD AVE. BANNING CA 92220	ENVIROSTOR

Estor/EPA ID: 60002115
Site Code: 404906
Nat Priority List: NO
APN: 543-040-001, 543-040-002
Census Tract: 6065043813
Site Type: SCHOOL
Address Description: W. OF BANNING HS & SOUTH OF WESTWARD AVE.
Office: SOUTHERN CALIFORNIA SCHOOLS & BROWNFIELDS OUTREACH
Special Program:
Funding: SCHOOL DISTRICT
Assembly District: 42
Senate District: 23
Permit Renewal Lead:
Public Partici Spclst:
Project Manager: JOHNSON ABRAHAM
County: RIVERSIDE
Latitude: 33.9180795
Longitude: -116.8781537
Acres: 14 ACRES
Supervisor: SHAHIR HADDAD
Cleanup Status: NO ACTION REQUIRED AS OF 1/15/2015
Cleanup Oversight Agencies: DTSC - SITE CLEANUP PROGRAM - LEAD AGENCY

School District: BANNING UNIFIED SCHOOL DISTRICT
Past Use that Caused Contam: NONE
Potential Media Affected: NO MEDIA AFFECTED
Potential Contamin of Concern:

UNDER INVESTIGATION

Site History:

The District submitted a Phase 1 Report for assessment and would like to purchase the property for an elementary school.

the Site consists of approximately 14.0 acres of land located immediately west of the existing Banning High School football stadium and immediately south of the properties along Westward Avenue. The Site is part of the Rancho San Gorgonio master-planned community. The northern boundary is demarcated by a fence along the parcel boundaries. The other boundaries were not demarcated and were estimated from local landmarks. The Site is currently undeveloped pasture. A dirt road crosses the eastern portion of the Site. Historically, the Site was an undeveloped land used for grazing horses and cattle. The Phase I concludes that there is no recognized environmental conditions at the Site.

Based on the information provided in the Phase I, neither a release of hazardous material nor the presence of a naturally occurring hazardous material, which would pose a threat to public health or the environment under unrestricted land use, was indicated at the Site. DTSC concurred with the conclusion that further environmental investigation of the Site is not required and approves the Phase I.

Status: NO ACTION REQUIRED
Program Type: SCHOOL INVESTIGATION
CalEnviroScreen Score: 71-75%
Summary Link: https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=60002115

Completed Activities

Title: Phase I ESA
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60002115&doc_id=60384053
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Phase 1
Date Completed: 1/15/2015
Comments:

Title: Phase I Application
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60002115&doc_id=60384066
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Other Report
Date Completed: 10/14/2014
Comments: Phase I Application received via email on 10/13/2014; hard copy received on 10/20/2014.

23	2 of 2	SSE	0.26 / 1,398.07	2,285.30 / -39	14-ACRE PROPERTY FOR FUTURE ELEMENTARY SCHOOL W. OF BANNING HS & SOUTH OF WESTWARD AVE. BANNING CA 92220	SCH

Estor/EPA ID: 60002115
Site Code: 404906
Nat Priority List: NO
Acres: 14 ACRES
Special Program:
Funding: SCHOOL DISTRICT
Assembly District: 42
Senate District: 23
Permit Renewal Lead:
Project Manager: JOHNSON ABRAHAM
Supervisor: SHAHIR HADDAD
Public Partici Spclst:
Census Tract: 6065043813
County: RIVERSIDE
Latitude: 33.9180795
Longitude: -116.8781537
School District: BANNING UNIFIED SCHOOL DISTRICT
APN: 543-040-001, 543-040-002
Cleanup Status: NO ACTION REQUIRED AS OF 1/15/2015
Cleanup Oversight Agencies: DTSC - SITE CLEANUP PROGRAM - LEAD AGENCY
Site Type: SCHOOL

Office: SOUTHERN CALIFORNIA SCHOOLS & BROWNFIELDS OUTREACH
Past Use that Caused Contam: NONE
Potential Media Affected: NO MEDIA AFFECTED
SITE HISTORY:

The District submitted a Phase 1 Report for assessment and would like to purchase the property for an elementary school.

the Site consists of approximately 14.0 acres of land located immediately west of the existing Banning High School football stadium and immediately south of the properties along Westward Avenue. The Site is part of the Rancho San Gorgonio master-planned community. The northern boundary is demarcated by a fence along the parcel boundaries. The other boundaries were not demarcated and were estimated from local landmarks. The Site is currently undeveloped pasture. A dirt road crosses the eastern portion of the Site. Historically, the Site was an undeveloped land used for grazing horses and cattle. The Phase I concludes that there is no recognized environmental conditions at the Site.

Based on the information provided in the Phase I, neither a release of hazardous material nor the presence of a naturally occurring hazardous material, which would pose a threat to public health or the environment under unrestricted land use, was indicated at the Site. DTSC concurred with the conclusion that further environmental investigation of the Site is not required and approves the Phase I.

Potential Contamin of Concern:

UNDER INVESTIGATION

Status: NO ACTION REQUIRED
Program Type: SCHOOL INVESTIGATION
CalEnviroScreen Score: 71-75%
Summary Link: https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=60002115

Completed Activities

Title: Phase I ESA
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60002115&doc_id=60384053
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Phase 1
Date Completed: 1/15/2015
Comments:

Title: Phase I Application
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60002115&doc_id=60384066
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Other Report
Date Completed: 10/14/2014
Comments: Phase I Application received via email on 10/13/2014; hard copy received on 10/20/2014.

24	1 of 2	WNW	0.31 / 1,642.99	2,379.34 / 55	G & M Oil Co Inc #20 827 W Ramsey St Banning CA	LOP RIVERSIDE

Site ID: 9915034
Status Code: 9
Status Desc: CLOSED/ACTION COMPLETED
Case Type Code: S
Case Type Desc: SOIL ONLY IS IMPACTED
Closed Code: Y
Closed Desc: CLOSED SITE
Employee: Shurlow-LOP

24	2 of 2	WNW	0.31 / 1,642.99	2,379.34 / 55	G & M OIL CO INC #20 827 RAMSEY STREET W BANNING CA 92220	LUST

Global ID: T0606500733
Status: COMPLETED - CASE CLOSED
Status Date: 6/15/2007
County: RIVERSIDE
Latitude: 33.925670306
Longitude: -116.8856836

Case Type: LUST CLEANUP SITE
Date Source: LUST Cleanup Sites & Military UST Site from GeoTracker Project Search Results Export; LUST Cleanup Sites & Military UST Site from GeoTracker Cleanup Sites Data Download

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail

RB Case No: 7T2220020
Local Case No: 9915034
Begin Date: 12/3/1998
Lead Agency: RIVERSIDE COUNTY LOP
Local Agency:
CUF Case: YES
Potential Media of Concern: Soil
How Discovered Description:
Calwater Watershed Name: Whitewater - San Gorgonio - Banning (719.31)
DWR GW Subbasin Name: Coachella Valley - San Gorgonio Pass (7-021.04)
Disadvantaged Community:
Calenviroscreen Score: 71-75%
Site History:

Potential COC: Gasoline
How Discovered: Tank Closure
Stop Method: Close and Replace Tank
Stop Description:
Case Worker:
File Location: Local Agency

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Activity

Action Type: ENFORCEMENT
Date : 6/15/2007
Action: Closure/No Further Action Letter

Action Type: ENFORCEMENT
Date : 6/14/2007
Action: File review - #RCDEH Upload Site File 2/8/2011

Action Type: RESPONSE
Date : 11/25/2006
Action: Unknown

Action Type: ENFORCEMENT
Date : 9/25/2006
Action: Staff Letter - #092506

Action Type: ENFORCEMENT
Date : 4/27/2006
Action: File review

Action Type: ENFORCEMENT
Date : 3/1/2006
Action: File review

Action Type: ENFORCEMENT
Date : 2/28/2006
Action: File review

Action Type: ENFORCEMENT
Date : 2/23/2006
Action: File review

Action Type: ENFORCEMENT
Date : 2/9/2006
Action: Technical Correspondence / Assistance / Other

Action Type: ENFORCEMENT
Date : 1/24/2006
Action: Technical Correspondence / Assistance / Other

Action Type: REMEDIATION
Date : 7/8/2004
Action: Soil Vapor Extraction (SVE)

Action Type: Other
Date : 3/22/1999
Action: Leak Discovery

Action Type: Other
Date : 3/22/1999
Action: Leak Reported

Action Type: Other
Date : 12/3/1998
Action: Leak Stopped

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Contacts

Contact Type: Regional Board Caseworker
Contact Name: Phan Le
City: PALM DESERT
Organization Name: COLORADO RIVER BASIN RWQCB (REGION 7)
Address: 73720 FRED WARING DRIVE SUITE #100
Email: phan.le@waterboards.ca.gov
Phone No: 7607768974

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History

Status: Completed - Case Closed
Status Date: 6/15/2007

Status: Open - Verification Monitoring
Status Date: 12/20/2005

Status: Open - Remediation
Status Date: 7/8/2004

Status: Open - Site Assessment
Status Date: 4/23/1999

Status: Open - Site Assessment
Status Date: 3/22/1999

Status: Open - Case Begin Date
Status Date: 12/3/1998

LUST Sites from GeoTracker Search - Regulatory Profile

Site Facility Name: G & M OIL CO INC #20
Site Facility Type: LUST CLEANUP SITE
Cleanup Status: COMPLETED - CASE CLOSED
Project Status:
WDR Place Type:
WDR File:
WDR Order:
CUF Priority Assig: C
CUF Amount Paid: $252,484
Potential COC: GASOLINE
Facility Type:
Composting Method:
Address: 827 RAMSEY STREET W
City: BANNING
Zip: 92220
County: RIVERSIDE
CUF Claim: 14218
File Location: LOCAL AGENCY
Designated Beneficial Use: MUN, AGR, IND
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T0606500733
Cleanup Status Detail: COMPLETED - CASE CLOSED AS OF 6/15/2007
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=T0606500733&tabname=regulatoryhistory
Potential Media of Concern: SOIL
User Defined Beneficial Use:
DWR GW Sub Basin: Coachella Valley - San Gorgonio Pass (7-021.04)
Calwater Watershed Name: Whitewater - San Gorgonio - Banning (719.31)
Post Closure Site Management:
Future Land Use:
Cleanup Oversight Agencies: RIVERSIDE COUNTY LOP (LEAD) - CASE #: 9915034
COLORADO RIVER BASIN RWQCB (REGION 7) - CASE #: 7T2220020
CASEWORKER: Phan Le
Gndwater Monitoring Freque:

Designated Beneficial Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply
Site History:

No site history available

LUST Sites from GeoTracker Search - Cleanup Status History

Status: Completed - Case Closed
Date : 6/15/2007

Status: Open - Verification Monitoring
Date : 12/20/2005

Status: Open - Remediation
Date : 7/8/2004

Status: Open - Site Assessment
Date : 4/23/1999

Status: Open - Site Assessment
Date : 3/22/1999

Status: Open - Case Begin Date
Date : 12/3/1998

LUST Sites from GeoTracker Search - Cleanup Action Report (as of May 29, 2021)

Action Type: SOIL VAPOR EXTRACTION (SVE) ***Begin Date:*** 7/8/2004
Phase: Soil ***End Date:*** 12/20/2005
Contaminant Mass Removed:
Description:

LUST Sites from GeoTracker Search - Regulatory Activities (as of May 29, 2021)

Action Type: Other Regulatory Actions
Action Date: 6/15/2007
Received Issue Date: 6/15/2007
Action: Closure/No Further Action Letter
Doc Link:
Title Description Comments:

RCDEH issued Closure/NFA letter dated 6/15/07

Action Type: Other Regulatory Actions
Action Date: 6/14/2007
Received Issue Date: 6/14/2007
Action: File review - #RCDEH Upload Site File 2/8/2011
Doc Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0606500733&enforcement_id=6077211&temptable=ENFORCEMENT
Title Description Comments:

RCDEH Upload Site File 2/8/2011

Action Type: Response Requested - Other
Action Date: 11/25/2006
Received Issue Date: 5/29/2007
Action: Unknown
Doc Link:
Title Description Comments:

Well Destruction Report

Action Type: Other Regulatory Actions
Action Date: 9/25/2006
Received Issue Date: 9/25/2006
Action: Staff Letter - #092506
Doc Link:
Title Description Comments:

RCDEH sent letter requiring wells be destroyed within 60 days

Action Type: Other Regulatory Actions
Action Date: 4/27/2006
Received Issue Date: 4/27/2006
Action: File review
Doc Link:
Title Description Comments:

RB staff review of database to determine if closure status was updated by local agency.

Action Type: Other Regulatory Actions
Action Date: 3/1/2006
Received Issue Date: 3/1/2006
Action: File review
Doc Link:
Title Description Comments:

RB staff concurrence with closure

Action Type: Other Regulatory Actions
Action Date: 2/28/2006
Received Issue Date: 2/28/2006
Action: File review
Doc Link:
Title Description Comments:

RB staff closure review and discussion with local agency

Action Type: Other Regulatory Actions
Action Date: 2/23/2006
Received Issue Date: 2/23/2006
Action: File review
Doc Link:
Title Description Comments:

RB staff discussion of case with local agency

Action Type: Other Regulatory Actions
Action Date: 2/9/2006
Received Issue Date: 2/9/2006
Action: Technical Correspondence / Assistance / Other
Doc Link:
Title Description Comments:

RP 01/16/06 Verification Boring Results and Request for Site Closure Report RP 01/16/06 Quarterly Status Report - 4Q 2005

Action Type: Other Regulatory Actions
Action Date: 1/24/2006
Received Issue Date: 1/24/2006
Action: Technical Correspondence / Assistance / Other
Doc Link:
Title Description Comments:

LOP 11/16/05 WP Acceptance

Action Type: Cleanup Action
Action Date: 7/8/2004
Received Issue Date:
Action: Soil Vapor Extraction (SVE)
Doc Link:
Title Description Comments:

Action Type: Leak Action
Action Date: 3/22/1999
Received Issue Date:
Action: Leak Discovery
Doc Link:
Title Description Comments:

Action Type: Leak Action
Action Date: 3/22/1999
Received Issue Date:
Action: Leak Reported
Doc Link:
Title Description Comments:

Action Type: Leak Action
Action Date: 12/3/1998
Received Issue Date:
Action: Leak Stopped
Doc Link:
Title Description Comments:

LUST Sites from GeoTracker Search - Site Maps (as of May 29, 2021)

Title: GEO_MAP
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_map/4915572941/T0606500733.jpg
Size : 23 KB
Submitted By: KARL KERNER (CONTRACTOR)
Submitted: 7/10/2002

LUST Sites from GeoTracker Search - Documents (as of May 29, 2021)

Document Type: Site Documents
Document Date: 6/15/2007
Type: OTHER
Size : 185 KB
Submitted By: SHARON BOLTINGHOUSE (REGULATOR)
Submitted:
Title: RCDEH CLOSURE SUMMARY
Title Link: https://geotracker.waterboards.ca.gov/site_documents/6188908219/G%20%26%20M%20Oil%20%2320%20%209915034%20Clos%20Summary%2Epdf

Document Type: Site Documents
Document Date: 6/15/2007
Type: LETTER
Size : 61 KB
Submitted By: SHARON BOLTINGHOUSE (REGULATOR)
Submitted:
Title: RCDEH 061507 NFA/CLOSURE LETTER
Title Link: https://geotracker.waterboards.ca.gov/site_documents/5276905655/G%20%26%20M%20Oil%20%2320%20%209915034%20Clos%20Letter%2Epdf

Document Type: Site Documents
Document Date: 6/14/2007
Type: FILE REVIEW
Size :
Submitted By: STEVEN COOK (REGULATOR)
Submitted:
Title: RCDEH UPLOAD SITE FILE 2/8/2011
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0606500733&enforcement_id=6077211

Document Type: Site Documents
Document Date: 5/25/2007
Type: REPORTS - OTHER
Size : 1,791 KB
Submitted By: KARL KERNER (CONTRACTOR)
Submitted:
Title: REMEDIATION SYSTEM DECOMMISSIONING AND WELL DESTRUCTION REPORT

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Title Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6616943180/T0606500733.PDF

Document Type: Site Documents
Size : 1,007 KB
Document Date: 5/1/2007
Submitted By: LINDA SHURLOW (REGULATOR)
Type: LETTER
Submitted:
Title: RIV CO 092506
Title Link: https://geotracker.waterboards.ca.gov/site_documents/9104679703/G%20and%20M%20092506%2Epdf

Document Type: Site Documents
Size : 1,973 KB
Document Date: 5/1/2007
Submitted By: LINDA SHURLOW (REGULATOR)
Type: REPORT
Submitted:
Title: UNAUTHORIZED RELEASE REPORT
Title Link: https://geotracker.waterboards.ca.gov/site_documents/8473515152/G%20and%20M%20UAR%2Epdf

Document Type: Site Documents
Size : 7,784 KB
Document Date: 10/27/2005
Submitted By: KARL KERNER (CONTRACTOR)
Type: REPORTS - QUARTERLY STATUS REPORT
Submitted:
Title: QUARTERLY STATUS REPORT 3RD QUARTER 2005
Title Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3955426871/T0606500733.PDF

Document Type: Monitoring Reports
Size : 6,374 KB
Document Date: 8/2/2005
Submitted By: KARL KERNER (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: QUARTERLY STATUS REPORT--2ND QUARTER 2005
Title Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8574725091/T0606500733.PDF

25	1 of 2	SW	0.35 / 1,831.01	2,303.19 / -21	BANNING HIGH SCHOOL EXPANSION SOUTH OF WEST WESTWARD AVE/WEST OF CURRENT BANNING HIGH SCHOOL BANNING CA 92220	SCH

Estor/EPA ID: 60001998
Permit Renewal Lead:
Site Code: 404898
Project Manager: ASLAM SHAREEF
Nat Priority List: NO
Supervisor: SHAHIR HADDAD
Acres: 9.06 ACRES
Public Partici Spclst:
Special Program: VOLUNTARY CLEANUP PROGRAM
Census Tract: 6065043813
Funding: SCHOOL DISTRICT
County: RIVERSIDE
Assembly District: 42
Latitude: 33.9177657421342
Senate District: 23
Longitude: -116.88465090744
School District: BANNING UNIFIED SCHOOL DISTRICT
APN: 543-030-001, 543030001
Cleanup Status: NO FURTHER ACTION AS OF 12/24/2015
Cleanup Oversight Agencies: DTSC - HAZARDOUS WASTE MANAGEMENT PROGRAM - LEAD AGENCY
Site Type: SCHOOL
Office: SOUTHERN CALIFORNIA SCHOOLS & BROWNFIELDS OUTREACH
Past Use that Caused Contam: AGRICULTURAL - ORCHARD, RESIDENTIAL AREA
Potential Media Affected: SOIL, SOIL VAPOR
Potential Contamin of Concern:

UNDER INVESTIGATION

SITE HISTORY:

The 9.06 acre Site consists of a residence and former agricultural land currently used for animal grazing.

Status: NO FURTHER ACTION
Program Type: SCHOOL INVESTIGATION
CalEnviroScreen Score: 71-75%
Summary Link: https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=60001998

Completed Activities

Title: PEA Workplan
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60001998&doc_id=60358526

Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Preliminary Endangerment Assessment Tech Memo
Date Completed: 8/26/2014
Comments: DTSC approved the TM provided DTSC comments are addressed during the field/in future reports

Title: EOA application
Title Link: https://www.envirostor.dtsc.ca.gov/public/
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Environmental Oversight Agreement Application
Date Completed: 5/27/2014
Comments: Application accepted and EOA executed

Title: Preliminary Environmental Assessment Report
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60001998&doc_id=60370056
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Preliminary Endangerment Assessment Report
Date Completed: 12/24/2015
Comments: DTSC approved the PEA with a No Further Action determination

Title: EOA agreement
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60001998&enforcement_id=60362146
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Environmental Oversight Agreement
Date Completed: 6/9/2014
Comments: Final signed and fully executed copy mailed out on 6/9/2014

Title: Annual Cost Estimate FY 15/16
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60001998&enforcement_id=60400397
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Annual Oversight Cost Estimate
Date Completed: 9/21/2015
Comments: Annual Cost Estimate emailed and mailed to BP.

Title: Phase 1 report for background information only
Title Link: https://www.envirostor.dtsc.ca.gov/public/
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Other Report
Date Completed: 4/15/2014
Comments:

25	*2 of 2*	*SW*	*0.35 / 1,831.01*	*2,303.19 / -21*	***BANNING HIGH SCHOOL EXPANSION*** ***SOUTH OF WEST WESTWARD AVE/WEST OF CURRENT BANNING HIGH SCHOOL*** ***BANNING CA 92220***	***ENVIROSTOR***

Estor/EPA ID: 60001998
Site Code: 404898
Nat Priority List: NO
Assembly District: 42
Senate District: 23
Permit Renewal Lead:

APN:	543-030-001, 543030001	**Public Partici Spclst:**	
Census Tract:	6065043813	**Project Manager:**	ASLAM SHAREEF
Site Type:	SCHOOL	**County:**	RIVERSIDE
Address Description:	SOUTH OF WEST WESTWARD AVE/WEST OF CURRENT BANNING HIGH SCHOOL	**Latitude:**	33.9177657421342
Office:	SOUTHERN CALIFORNIA SCHOOLS & BROWNFIELDS OUTREACH	**Longitude:**	-116.88465090744
Special Program:	VOLUNTARY CLEANUP PROGRAM	**Acres:**	9.06 ACRES
Funding:	SCHOOL DISTRICT	**Supervisor:**	SHAHIR HADDAD

Cleanup Status: NO FURTHER ACTION AS OF 12/24/2015
Cleanup Oversight Agencies: DTSC - HAZARDOUS WASTE MANAGEMENT PROGRAM - LEAD AGENCY
School District: BANNING UNIFIED SCHOOL DISTRICT
Past Use that Caused Contam: AGRICULTURAL - ORCHARD, RESIDENTIAL AREA
Potential Media Affected: SOIL, SOIL VAPOR
Potential Contamin of Concern:

UNDER INVESTIGATION

Site History:

The 9.06 acre Site consists of a residence and former agricultural land currently used for animal grazing.

Status: NO FURTHER ACTION
Program Type: SCHOOL INVESTIGATION
CalEnviroScreen Score: 71-75%
Summary Link: https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=60001998

Completed Activities

Title: Preliminary Environmental Assessment Report
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60001998&doc_id=60370056
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Preliminary Endangerment Assessment Report
Date Completed: 12/24/2015
Comments: DTSC approved the PEA with a No Further Action determination

Title: Annual Cost Estimate FY 15/16
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60001998&enforcement_id=60400397
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Annual Oversight Cost Estimate
Date Completed: 9/21/2015
Comments: Annual Cost Estimate emailed and mailed to BP.

Title: PEA Workplan
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60001998&doc_id=60358526
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Preliminary Endangerment Assessment Tech Memo
Date Completed: 8/26/2014
Comments: DTSC approved the TM provided DTSC comments are addressed during the field/in future reports

Title: EOA agreement
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60001998&enforcement_id=60362146
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Environmental Oversight Agreement
Date Completed: 6/9/2014

Comments:	Final signed and fully executed copy mailed out on 6/9/2014
Title:	Phase 1 report for background information only
Title Link:	https://www.envirostor.dtsc.ca.gov/public/
Area Name:	
Area Link:	
Sub Area:	
Sub Area Link:	
Document Type:	Other Report
Date Completed:	4/15/2014
Comments:	
Title:	EOA application
Title Link:	https://www.envirostor.dtsc.ca.gov/public/
Area Name:	
Area Link:	
Sub Area:	
Sub Area Link:	
Document Type:	Environmental Oversight Agreement Application
Date Completed:	5/27/2014
Comments:	Application accepted and EOA executed

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
26	1 of 2	SSW	0.38 / 2,001.17	2,286.86 / -38	BANNING USD PROPOSED SCHOOL - PARCELS 3, 4, 18 AND 19 654 WEST WESTWARD AVENUE (PARCEL 18 ONLY) BANNING CA 92220	ENVIROSTOR

Estor/EPA ID:	60002517	**Assembly District:**	, 42
Site Code:	404942	**Senate District:**	, 23
Nat Priority List:	NO	**Permit Renewal Lead:**	
APN:	NONE SPECIFIED	**Public Partici Spclst:**	
Census Tract:	6065043813	**Project Manager:**	JOHNSON ABRAHAM
Site Type:	SCHOOL	**County:**	RIVERSIDE
Address Description:	654 WEST WESTWARD AVENUE (PARCEL 18 ONLY)	**Latitude:**	33.916685
Office:	SOUTHERN CALIFORNIA SCHOOLS & BROWNFIELDS OUTREACH	**Longitude:**	-116.883405
Special Program:		**Acres:**	18.3 ACRES
Funding:	SCHOOL DISTRICT	**Supervisor:**	SHAHIR HADDAD
Cleanup Status:	NO FURTHER ACTION AS OF 10/22/2018		
Cleanup Oversight Agencies:	DTSC - SITE CLEANUP PROGRAM - LEAD AGENCY		
School District:	BANNING UNIFIED SCHOOL DISTRICT		
Past Use that Caused Contam:	AGRICULTURAL - ORCHARD, FUEL - VEHICLE STORAGE/ REFUELING, PESTICIDE/INSECTIDE/RODENTICIDE STORAGE, UNDERGROUND STORAGE TANKS, UTILITY - ELECTRIC		
Potential Media Affected:	NO MEDIA AFFECTED		
Potential Contamin of Concern:			

NO CONTAMINANTS FOUND

Site History:

The District submitted an EOP Application for DTSC oversight of a PEA for a proposed school site.

On October 22, 2018, DTSC approved the PEA. Based on the PEA, the Site consists of approximately 18.30 acres of land proposed to be developed as an extension of the existing Banning High School, which borders the east side of the Site. Recognized environmental conditions (RECs) were identified on the Site include former residence, historical agriculture use, a layer of fill material of 8000 cubic yards in the north half of parcels 18 & 19, a disposal area on parcel 18, and underground storage tanks (USTs) associated with historic farming activities. To evaluate potential impact from these RECs, the Site was investigated for organochlorine pesticides (OCPs), polychlorinated biphenyls (PCBs), petroleum hydrocarbons, volatile organic compounds (VOCs), and heavy metals. The PEA concluded that further environmental investigation of the Site was not necessary.

Based on review of the PEA, neither a release of hazardous material nor the presence of a naturally occurring hazardous material which would pose a threat to public health or the environment under unrestricted land use, was indicated at the Site. Therefore, DTSC concurred with the conclusion of the PEA that further environmental investigation of the Site was not required and approved the PEA.

Status:	NO FURTHER ACTION
Program Type:	SCHOOL INVESTIGATION

CalEnviroScreen Score: 71-75%
Summary Link: https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=60002517

Completed Activities

Title: PEA Workplan
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60002517&doc_id=60428497
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Preliminary Endangerment Assessment Workplan
Date Completed: 9/7/2017
Comments: DTSC conditionally approved the Tech Memo.

Title: Background Reports - Phase I ESA
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60002517&doc_id=60428491
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Other Report
Date Completed: 6/23/2017
Comments: Phase I ESA Reports: 2 reports--one for Parcels 3, 4 & 19 and one for Parcel 19.

Title: EOA Application
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60002517&doc_id=60428486
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Environmental Oversight Agreement Application
Date Completed: 6/22/2017
Comments: District submitted EOP Application via email on 6/22/17; hard copy on the way.

Title: Annual Oversight Cost Estimate - FY 2018-19
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60002517&enforcement_id=60448476
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Annual Oversight Cost Estimate
Date Completed: 9/18/2018
Comments: FY 1819 Estimate: $2,439

Title: Preliminay Environmental Assessment Report
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60002517&doc_id=60428499
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Preliminary Endangerment Assessment Report
Date Completed: 11/5/2018
Comments:

Title: Site Visit
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60002517&doc_id=60437090
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Fieldwork
Date Completed: 10/20/2017
Comments:

Title: EOA
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60002517&enforcement_id=60428678
Area Name:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Area Link:
Sub Area:
Sub Area Link:
Document Type: Environmental Oversight Agreement
Date Completed: 7/24/2017
Comments: Shahir signed for Peter; fully executed EOA sent to District 07/24/17 via regular mail.

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
26	2 of 2	SSW	0.38 / 2,001.17	2,286.86 / -38	BANNING USD PROPOSED SCHOOL - PARCELS 3, 4, 18 AND 19 654 WEST WESTWARD AVENUE (PARCEL 18 ONLY) BANNING CA 92220	SCH

Estor/EPA ID: 60002517
Site Code: 404942
Nat Priority List: NO
Acres: 18.3 ACRES
Special Program:
Funding: SCHOOL DISTRICT
Assembly District: , 42
Senate District: , 23
Permit Renewal Lead:
Project Manager: JOHNSON ABRAHAM
Supervisor: SHAHIR HADDAD
Public Partici Spclst:
Census Tract: 6065043813
County: RIVERSIDE
Latitude: 33.916685
Longitude: -116.883405
School District: BANNING UNIFIED SCHOOL DISTRICT
APN: NONE SPECIFIED
Cleanup Status: NO FURTHER ACTION AS OF 10/22/2018
Cleanup Oversight Agencies: DTSC - SITE CLEANUP PROGRAM - LEAD AGENCY
Site Type: SCHOOL
Office: SOUTHERN CALIFORNIA SCHOOLS & BROWNFIELDS OUTREACH
Past Use that Caused Contam: AGRICULTURAL - ORCHARD, FUEL - VEHICLE STORAGE/ REFUELING, PESTICIDE/INSECTIDE/RODENTICIDE STORAGE, UNDERGROUND STORAGE TANKS, UTILITY - ELECTRIC
Potential Media Affected: NO MEDIA AFFECTED
SITE HISTORY:

The District submitted an EOP Application for DTSC oversight of a PEA for a proposed school site.

On October 22, 2018, DTSC approved the PEA. Based on the PEA, the Site consists of approximately 18.30 acres of land proposed to be developed as an extension of the existing Banning High School, which borders the east side of the Site. Recognized environmental conditions (RECs) were identified on the Site include former residence, historical agriculture use, a layer of fill material of 8000 cubic yards in the north half of parcels 18 & 19, a disposal area on parcel 18, and underground storage tanks (USTs) associated with historic farming activities. To evaluate potential impact from these RECs, the Site was investigated for organochlorine pesticides (OCPs), polychlorinated biphenyls (PCBs), petroleum hydrocarbons, volatile organic compounds (VOCs), and heavy metals. The PEA concluded that further environmental investigation of the Site was not necessary.

Based on review of the PEA, neither a release of hazardous material nor the presence of a naturally occurring hazardous material which would pose a threat to public health or the environment under unrestricted land use, was indicated at the Site. Therefore, DTSC concurred with the conclusion of the PEA that further environmental investigation of the Site was not required and approved the PEA.

Potential Contamin of Concern:

NO CONTAMINANTS FOUND

Status: NO FURTHER ACTION
Program Type: SCHOOL INVESTIGATION
CalEnviroScreen Score: 71-75%
Summary Link: https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=60002517

Completed Activities

Title: EOA Application
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60002517&doc_id=60428486
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Environmental Oversight Agreement Application
Date Completed: 6/22/2017
Comments: District submitted EOP Application via email on 6/22/17; hard copy on the way.

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Title: PEA Workplan
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60002517&doc_id=60428497
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Preliminary Endangerment Assessment Workplan
Date Completed: 9/7/2017
Comments: DTSC conditionally approved the Tech Memo.

Title: Background Reports - Phase I ESA
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60002517&doc_id=60428491
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Other Report
Date Completed: 6/23/2017
Comments: Phase I ESA Reports: 2 reports--one for Parcels 3, 4 & 19 and one for Parcel 19.

Title: EOA
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60002517&enforcement_id=60428678
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Environmental Oversight Agreement
Date Completed: 7/24/2017
Comments: Shahir signed for Peter; fully executed EOA sent to District 07/24/17 via regular mail.

Title: Site Visit
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60002517&doc_id=60437090
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Fieldwork
Date Completed: 10/20/2017
Comments:

Title: Annual Oversight Cost Estimate - FY 2018-19
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60002517&enforcement_id=60448476
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Annual Oversight Cost Estimate
Date Completed: 9/18/2018
Comments: FY 1819 Estimate: $2,439

Title: Preliminay Environmental Assessment Report
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60002517&doc_id=60428499
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Preliminary Endangerment Assessment Report
Date Completed: 11/5/2018
Comments:

27	1 of 1	E	0.41 / 2,161.78	2,293.30 / -31	J & C RECYCLING 435 E LINCOLN ST STE D BANNING CA 92220	RECYCLING

Cert ID: RC230996.001
Operation: 11/24/2015
Rural: N
Organization: J & C RECYCLING

Wednesday: 8:00 am - 5:00 pm; Closed 12:00 -12:30
Thursday H: 8:00 am - 5:00 pm; Closed 12:00 -12:30
Friday Hou: 8:00 am - 5:00 pm; Closed 12:00 -12:30
Saturday H: 8:00 am - 5:00 pm; Closed 12:00 -12:30

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Aluminium:	Yes	**Sunday Hou:**	CLOSED
Glass:	Yes	**Mailing Ad:**	1769 W BALL RD #1
Plastic:	Yes	**Mailing Ci:**	ANAHEIM
Bimetal:	Yes	**Mailing St:**	CA
Agency:	N/A	**Mailing Zi:**	92804
Grand Fath:	N	**Phone No:**	(714) 561-0704
Cert Status:		**Website:**	
Operatione:		**Email:**	victor@bnetdesign.com
Monday Hou:	8:00 am - 5:00 pm; Closed 12:00 -12:30	**Hours of Ope:**	MON - SAT 8:00 AM - 5:00 PM, CLOSED 12:00 -12:30 PM; SUN CLOSED
Tuesday Ho:	8:00 am - 5:00 pm; Closed 12:00 -12:30	**County:**	RIVERSIDE

28	1 of 2	ENE	0.41 / 2,170.94	2,329.64 / 5	**Bud's Lawnmower** **355 E Ramsey St** **Banning CA**	**LOP** **RIVERSIDE**

Site ID:	901061	**Closed Code:**	Y
Status Code:	9	**Closed Desc:**	CLOSED SITE
Status Desc:	CLOSED/ACTION COMPLETED	**Employee:**	Rogers
Case Type Code:	S		
Case Type Desc:	SOIL ONLY IS IMPACTED		

28	2 of 2	ENE	0.41 / 2,170.94	2,329.64 / 5	**BUD'S LAWNMOWER** **355 EAST RAMSEY STREET** **BANNING CA 92220**	**LUST**

Global ID:	T0606500722	**County:**	RIVERSIDE
Status:	COMPLETED - CASE CLOSED	**Latitude:**	33.9257155664519
Status Date:	7/22/1992	**Longitude:**	-116.873190719049
Case Type:	LUST CLEANUP SITE		
Date Source:	LUST Cleanup Sites & Military UST Site from GeoTracker Project Search Results Export; LUST Cleanup Sites & Military UST Site from GeoTracker Cleanup Sites Data Download		

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail

RB Case No:	7T2220008	**Potential COC:**	Gasoline
Local Case No:	901061	**How Discovered:**	Other Means
Begin Date:	10/22/1990	**Stop Method:**	Close and Remove Tank, Remove Contents
Lead Agency:	RIVERSIDE COUNTY LOP	**Stop Description:**	
Local Agency:	RIVERSIDE COUNTY LOP	**Case Worker:**	RIV
CUF Case:	NO	**File Location:**	Local Agency Warehouse
Potential Media of Concern:	Soil		
How Discovered Description:			
Calwater Watershed Name:	Whitewater - San Gorgonio - Cabazon (719.32)		
DWR GW Subbasin Name:	Coachella Valley - San Gorgonio Pass (7-021.04)		
Disadvantaged Community:			
Calenviroscreen Score:	71-75%		
Site History:			

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Activity

Action Type:	ENFORCEMENT
Date :	1/15/2009
Action:	Closure/No Further Action Letter - #Site Closure
Action Type:	ENFORCEMENT
Date :	1/14/2009
Action:	File review - #RCDEH Upload Site File 3/13/2015
Action Type:	Other
Date :	12/5/1990
Action:	Leak Reported

Action Type: Other
Date : 10/22/1990
Action: Leak Stopped

Action Type: Other
Date : 10/22/1990
Action: Leak Discovery

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Contacts

Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP
City: RIVERSIDE
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
Email:
Phone No: 9519558980

Contact Type: Regional Board Caseworker
Contact Name: Phan Le
City: PALM DESERT
Organization Name: COLORADO RIVER BASIN RWQCB (REGION 7)
Address: 73720 FRED WARING DRIVE SUITE #100
Email: phan.le@waterboards.ca.gov
Phone No: 7607768974

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History

Status: Completed - Case Closed
Status Date: 7/22/1992

Status: Open - Case Begin Date
Status Date: 10/22/1990

LUST Sites from GeoTracker Search - Regulatory Profile

Site Facility Name: BUD'S LAWNMOWER
Site Facility Type: LUST CLEANUP SITE
Cleanup Status: COMPLETED - CASE CLOSED
Project Status:
WDR Place Type:
WDR File:
WDR Order:
CUF Priority Assig:
CUF Amount Paid:
Potential COC: GASOLINE
Facility Type:
Composting Method:
Address: 355 EAST RAMSEY STREET
City: BANNING
Zip: 92220
County: RIVERSIDE
CUF Claim:
File Location: LOCAL AGENCY WAREHOUSE
Designated Beneficial Use: MUN, AGR, IND
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T0606500722
Cleanup Status Detail: COMPLETED - CASE CLOSED AS OF 7/22/1992
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=T0606500722&tabname=regulatoryhistory
Potential Media of Concern: SOIL
User Defined Beneficial Use:
DWR GW Sub Basin: Coachella Valley - San Gorgonio Pass (7-021.04)
Calwater Watershed Name: Whitewater - San Gorgonio - Cabazon (719.32)
Post Closure Site Management: NOTIFY PRIOR TO CHANGE IN LAND USE
Future Land Use:
Cleanup Oversight Agencies: RIVERSIDE COUNTY LOP (LEAD) - CASE #: 901061
CASEWORKER: Riverside County LOP
COLORADO RIVER BASIN RWQCB (REGION 7) - CASE #: 7T2220008
CASEWORKER: Phan Le
Gndwater Monitoring Freque:
Designated Beneficial Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply
Site History:

No site history available

LUST Sites from GeoTracker Search - Cleanup Status History

Status: Completed - Case Closed
Date : 7/22/1992

Status: Open - Case Begin Date
Date : 10/22/1990

LUST Sites from GeoTracker Search - Regulatory Activities (as of May 29, 2021)

Action Type: Other Regulatory Actions
Action Date: 1/15/2009
Received Issue Date: 1/15/2009
Action: Closure/No Further Action Letter - #Site Closure
Doc Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0606500722&enforcement_id=5999637&temptable=ENFORCEMENT
Title Description Comments:

RivCo Site Closure

Action Type: Other Regulatory Actions
Action Date: 1/14/2009
Received Issue Date: 1/14/2009
Action: File review - #RCDEH Upload Site File 3/13/2015
Doc Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0606500722&enforcement_id=6047972&temptable=ENFORCEMENT
Title Description Comments:

RCDEH Upload Site File 3/13/2015

Action Type: Leak Action
Action Date: 12/5/1990
Received Issue Date:
Action: Leak Reported
Doc Link:
Title Description Comments:

Action Type: Leak Action
Action Date: 10/22/1990
Received Issue Date:
Action: Leak Discovery
Doc Link:
Title Description Comments:

Action Type: Leak Action
Action Date: 10/22/1990
Received Issue Date:
Action: Leak Stopped
Doc Link:
Title Description Comments:

LUST Sites from GeoTracker Search - Documents (as of May 29, 2021)

Document Type: Site Documents
Document Date: 1/15/2009
Type: CLOSURE/NO FURTHER ACTION LETTER
Title: RIVCO SITE CLOSURE
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0606500722&enforcement_id=5999637
Size :
Submitted By: RIVERSIDE COUNTY LOP (REGULATOR)
Submitted:

Document Type: Site Documents
Document Date: 1/14/2009
Type: FILE REVIEW
Title: RCDEH UPLOAD SITE FILE 3/13/2015
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0606500722&enforcement_id=6047972
Size :
Submitted By: LINDA SHURLOW (REGULATOR)
Submitted:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
29	1 of 1	E	0.83 / 4,365.52	2,293.14 / -31	INLAND BEHAVIORAL & HEALTH SVCS. - SAN B 665 & 671 NORTH D STREET SAN BERNARDINO CA 92401	ENVIROSTOR

Estor/EPA ID: 33800003
Site Code: 401041
Nat Priority List: NO
APN: NONE SPECIFIED
Census Tract: 6065044200
Site Type: CALMORTGAGE
Address Description: 665 & 671 NORTH D STREET
Office: CLEANUP SACRAMENTO
Special Program:
Funding: CALMORTGAGE
Assembly District: 42
Senate District: 23
Permit Renewal Lead:
Public Partici Spclst:
Project Manager:
County: RIVERSIDE
Latitude: 33.925372
Longitude: -116.864987
Acres: 0.25 ACRES
Supervisor: WILLIAM BECKMAN
Cleanup Status: NO ACTION REQUIRED AS OF 6/4/2002
Cleanup Oversight Agencies: DTSC - LEAD AGENCY
School District:
Past Use that Caused Contam: NONE
Potential Media Affected: NO MEDIA AFFECTED
Potential Contamin of Concern:

NO CONTAMINANTS FOUND

Site History:

DTSC performed an environmental assessment for the Office of Statewide Planning and Development, Cal-Mortgage Loan Insurance Division a sister agency as a part of the real estate due diligence process under a Memorandum of Understanding (MOU) for the guaranteed loan insurance program for the construction, improvement, and expansion of various health care facilities.

Status: NO ACTION REQUIRED
Program Type: CALMORTGAGE
CalEnviroScreen Score: 66-70%
Summary Link: https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=33800003

Completed Activities

Title: Phase 1
Title Link: https://www.envirostor.dtsc.ca.gov/public/
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Phase 1
Date Completed: 6/4/2002
Comments: Pursuant to the MOU, DTSC has reviewed a Phase I Environmental Site Assessment Report and other documents for Inland Behavioral and Health Services, Inc. (IBHS). The subject property is currently vacant. IBHS is proposing to construct a new health center on the subject property. A Supplemental Phase I Environmental Assessment Report was prepared by DTSC and concluded that no action was needed for this property; there is no contamination on the property.

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
30	1 of 1	E	0.85 / 4,499.14	2,287.81 / -37	INLAND BEHAVIORAL & HEALTH SVCS-BANNING 1070 E. RAMSEY STREET BANNING CA 92220	ENVIROSTOR

Estor/EPA ID: 33800004
Site Code: 401042
Nat Priority List: NO
APN: NONE SPECIFIED
Census Tract: 6065044200
Site Type: CALMORTGAGE
Address Description: 1070 E. RAMSEY STREET
Office: CLEANUP SACRAMENTO
Special Program:
Assembly District: 42
Senate District: 23
Permit Renewal Lead:
Public Partici Spclst:
Project Manager:
County: RIVERSIDE
Latitude: 33.9250398
Longitude: -116.8644688
Acres: 0.25 ACRES

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Funding: CALMORTGAGE ***Supervisor:*** WILLIAM BECKMAN
Cleanup Status: NO ACTION REQUIRED AS OF 6/1/2002
Cleanup Oversight Agencies: DTSC - LEAD AGENCY
School District:
Past Use that Caused Contam: NONE
Potential Media Affected: NO MEDIA AFFECTED
Potential Contamin of Concern:

NO CONTAMINANTS FOUND

Site History:

DTSC performed an environmental assessment for the Office of Statewide Planning and Development, Cal-Mortgage Loan Insurance Division a sister agency as a part of the real estate due diligence process under a Memorandum of Understanding (MOU) for the guaranteed loan insurance program for the construction, improvement, and expansion of various health care facilities.

Status: NO ACTION REQUIRED
Program Type: CALMORTGAGE
CalEnviroScreen Score: 66-70%
Summary Link: https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=33800004

Completed Activities

Title: Phase 1
Title Link: https://www.envirostor.dtsc.ca.gov/public/
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Phase 1
Date Completed: 6/4/2002
Comments: Pursuant to the MOU, DTSC has reviewed a Phase I Environmental Site Assessment Report and other documents for Inland Behavioral and Health Services, Inc. (IBHS). The subject property is currently vacant. IBHS is proposing to construct a new health center on the subject property. A Supplemental Phase I Environmental Assessment Report was prepared by DTSC and concluded that no action was needed for this property; there is no contamination on the property.

31	1 of 1	E	0.94 / 4,988.32	2,231.49 / -93	PERFECTION PLATING 1284 E. LINCOLN ST. BANNING CA 92220	ENVIROSTOR

Estor/EPA ID: 60000748 ***Assembly District:*** 42
Site Code: ***Senate District:*** 23
Nat Priority List: NO ***Permit Renewal Lead:***
APN: NONE SPECIFIED ***Public Partici Spclst:***
Census Tract: 6065044300 ***Project Manager:***
Site Type: EVALUATION ***County:*** RIVERSIDE
Address Description: 1284 E. LINCOLN ST. ***Latitude:*** 33.9208218129527
Office: CLEANUP CYPRESS ***Longitude:*** -116.862705126007
Special Program: ***Acres:*** NONE SPECIFIED
Funding: NOT APPLICABLE ***Supervisor:***
Cleanup Status: REFER: 1248 LOCAL AGENCY AS OF 6/25/2004
Cleanup Oversight Agencies: DTSC - SITE CLEANUP PROGRAM - LEAD AGENCY
School District:
Past Use that Caused Contam: NONE SPECIFIED
Potential Media Affected: NONE SPECIFIED
Potential Contamin of Concern:

NONE SPECIFIED

Site History:

Status: REFER: 1248 LOCAL AGENCY
Program Type: EVALUATION
CalEnviroScreen Score: 51-55%
Summary Link: https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=60000748

Completed Activities

Title: SB 1248 Notification
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000748&doc_id=6017481
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: SB 1248 Notification
Date Completed: 6/25/2004
Comments: DTSC is not involved with this project

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32 | ***1 of 1*** | ***E*** | ***0.94 / 4,988.35*** | ***2,231.49 / -93*** | ***PERFECTION PLATING, INC. 1284 E. LINCOLN STREET BANNING CA 92220*** | ***ENVIROSTOR***

Estor/EPA ID: 71003018
Site Code: 550003
Nat Priority List: NO
APN: NONE SPECIFIED
Census Tract: 6065044300
Site Type: TIERED PERMIT
Address Description: 1284 E. LINCOLN STREET
Office: CLEANUP CYPRESS
Special Program:
Funding:
Assembly District: 42
Senate District: 23
Permit Renewal Lead:
Public Partici Spclst:
Project Manager:
County: RIVERSIDE
Latitude: 33.920822
Longitude: -116.862705
Acres: 5 ACRES
Supervisor: * JOHN GEROCH
Cleanup Status: NO FURTHER ACTION AS OF 9/9/2010
Cleanup Oversight Agencies: DTSC - SITE CLEANUP PROGRAM - LEAD AGENCY
School District:
Past Use that Caused Contam: METAL PLATING - CHROME
Potential Media Affected: SOIL
Potential Contamin of Concern:

CHROMIUM VI
TETRACHLOROETHYLENE (PCE)
TRICHLOROETHYLENE (TCE)

Site History:

Site History: The property is currently owned by the Arthur Hale Trust, which has owned the property since April 3, 1996. The site was undeveloped land until approximately 1980, when an aerial photograph shows the presence of a building on the property. A 1984 city directory indicates that Pantsmaker West Limited had begun operating at the site. Little information is available concerning the company, however it is known that Pantsmaker West was a clothing manufacturer. The layout of the facility during their operations and the types of chemicals used or stored at the site by Pantsmaker is unknown. By 1990, Pantsmaker West was no longer operating at the site. The 1995 city directory indicates that Airway Scale Manufacturing was operating at the site. The precise nature of Airway Scale's operations and chemical use or storage at the site is also unknown.

Perfection Plating was in operation from February 1997 and January 2003. Prior to 1980, the site was undeveloped land. The primary source of business was the plating of after market aluminum automobile wheels. They had copper, nickel and chrome plating lines.

Currently the site is the location of A Perfect Storage. A Perfect Storage stores recreational vehicles, recreational trailers, and boats in the parking lot and inside the main building. Storage began in June 2004.

Plating operations
The main building housed the two plating lines, storage tanks, the waste water treatment system, chemical storage and use areas. Aboveground tanks contained housed spent plating solutions. Also several above ground tanks for acid storage and a chemical treatment system were located in a covered patio at the exterior southeast end of the main building. In the western exterior portion, tanks associated with chemical evaporation process system were located.

PBR units were the waste water treatment system and the evaporator system.

WWTS
WWTS is the bulk storage area in the tank house, the piping trenches, and the primary waste water treatment area in the main building. Tanks 16-24 (9 tanks) in the tank house each were 4000 to 8000 gallons.

The piping trenches linked the production pits, tank house and the pwwta.

The pwwta consisted of a de-ionizing water system, 5 cone bottomed process tanks (T1-T5), two free standing batch holding tanks (T6-T7), one oopen

top rectangular tank for equipment decontamination (T13), and two operational sludge presses

Evaporator System
Located in the western exterior of the main building. Consists of a water evaporation unit and three free standing aboveground liquid storage tanks (T8-T10).
The waste water treatment system consisted of a bulk storage area in the tank house, the piping trenches, and the primary waste water treatment area

There were several releases at the facility which resulted in releases of metal containing solutions, fugitive bugging wastes, and acidic exhaust fumes into the environment

Spill and Discharge History
1999 – Tank House release. The release was contained within the tank house, but neither the volume or type of fluid released was known.

2002 – Nitric acid release. Release was from the acid tanks located at the eastern exterior of the main building.

? Nov 2003 and Feb 2004 – Possible process water release, however there is no documentation indicating what chemicals were contained within the process water. Not clear if release was continuous, intermittent, or from multiple sources within the building.

December 17, 2000 – Plating line release. City of Banning police patrol. Observed employees digging dirt into drums. When asked, he was informed that a filter within the plant had broken and released nickel solution onto the ground behind the main building. About 50 gallons impacted surface soils. CRDEH did not grant closure to the remedial activities.

January 21, 2001 – Plating line release. Tank in the plating line release an unknown quantity of solution.

Groundwater Contamination: No groundwater data has been obtained

Project Description: Corrective Action Oversight Under a Consent Agreement

Status: NO FURTHER ACTION
Program Type: TIERED PERMIT
CalEnviroScreen Score: 51-55%
Summary Link: https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=71003018

Completed Activities

Title: Corrective Action Completed
Title Link: https://www.envirostor.dtsc.ca.gov/public/
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Corrective Action Completion Determination
Date Completed: 9/30/2006
Comments:

Title: FI Workplan Approved
Title Link: https://www.envirostor.dtsc.ca.gov/public/
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Supplemental Site Investigation Workplan
Date Completed: 3/23/2006
Comments:

Title: Consent Agreement Executed
Title Link: https://www.envirostor.dtsc.ca.gov/public/
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Consent Agreement
Date Completed: 1/31/2005
Comments:

Title: Corrective Action Consent Agreement
Title Link: https://www.envirostor.dtsc.ca.gov/public/

Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Consent Agreement
Date Completed: 1/31/2005
Comments:

Title: Phase I verification inspection completed
Title Link: https://www.envirostor.dtsc.ca.gov/public/
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Phase 1
Date Completed: 8/26/2004
Comments:

Title: Compliance
Title Link: https://www.envirostor.dtsc.ca.gov/public/
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Site Inspections/Visit (Non LUR)
Date Completed: 4/1/1999
Comments:

Title: Further Investigation Completed
Title Link: https://www.envirostor.dtsc.ca.gov/public/
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Supplemental Site Investigation Report
Date Completed: 9/30/2006
Comments:

Title: PEA Workplan Oversight Completed
Title Link: https://www.envirostor.dtsc.ca.gov/public/
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Site Inspections/Visit (Non LUR)
Date Completed: 6/30/2006
Comments:

Title: Inspection - Phase I Verification
Title Link: https://www.envirostor.dtsc.ca.gov/public/
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Phase I Verification
Date Completed: 8/26/2004
Comments:

Unplottable Summary

Total: 3 Unplottable sites

DB	Company Name/Site Name	Address	City	Zip	ERIS ID
CHMIRS	ERTS	Westbound I-10 @ exit 100	Banning CA		825418424
CHMIRS	CHP Indio	On Westbound Interstate 10, MPM 100	Unincorporated county area CA		821870757
HZH RIVERSIDE	SCE - Banning Substation	Lincoln St E	Banning CA	92220	820086705

Unplottable Report

Site: **ERTS**
Westbound I-10 @ exit 100 Banning CA

CHMIRS

Control No:	15-0928	**Notified Date:**	
County:	Riverside County	**Notified Date Time:**	
Year:	2015		

URL: https://w3.calema.ca.gov/operational/malhaz.nsf/f1841a103c102734882563e200760c4a/d663545e9b8e3ba188257def000ccbc6?OpenDocument

California Hazardous Material Incident Report System (as of 2006 to 2015)

Contained:	Yes	**3 Ves >= 300 Tons:**	No
1 Substance:	Truck Petroleum Products	**Incident Date:**	2/16/2015
1 Measure:	Gal(s)	**Incident Time:**	1630
1 Other:		**Spill Site:**	Road
1 Quantity:	Unk	**Injuries?:**	No
1 Type:	PETROLEUM	**No of Injuries:**	
1 Pipeline:	No	**Fatals?:**	No
1 Vessel >= 300 Tons:	No	**No of Fatals:**	
2 Substance:		**Evacs?:**	No
2 Quantity:		**No of Evacs:**	
2 Measure:		**Cleanup:**	Contractor
2 Type:		**Site:**	
2 Other:		**Cause:**	Unknown
2 Pipeline:	No	**Cause Other:**	
2 Vessel >= 300 Tons:	No	**Dog No:**	
3 Substance:		**Water:**	No
3 Quantity:		**Water Way:**	
3 Measure:		**City:**	Banning
3 Type:		**County:**	Riverside County
3 Other:		**ZIP:**	
3 Pipeline:	No		

Admin Agency: Banning Fire Department
Notification Area: AA/CUPA,DFG-OSPR,DTSC,RWQCB,US EPA,USFWS
Location: Westbound I-10 @ exit 100
Description: RP received a report of a big rig truck that is fully engulfed in fire, with an unknown amount of the vehicle's petroleum products involved. The load is believed to be non hazardous. No further information at this time.

Spill Report View

Amount 1:		**Creation Date:**	02/16/2015 06:19 PM
Amount 2:		**Received By:**	
Amount 3:		**Admin Agency:**	
Type:	PETROLEUM	**Admin Agency 2:**	
Water:		**Additional County:**	
On Scene:		**Phone No:**	
Other on Scene:		**Ext:**	
Other Notified:		**Pag Cell:**	
Document Title:	SPILL Report		
Spill Site:	Road		
Cause Desc for Other:			
Person Notifying Cal OES:			

Hazardous Materials Spill Report

Contained:	Yes	**Control Cal OES:**	15-0928
Date :	02/16/2015	**Control NRC:**	
Time:	1819	**Received By:**	
Incident Date:	02/16/2015	**Cleanup By:**	Contractor

Incident Time:	1630	***2 Substance:***	
Water Involved:	No	***2 Qty:***	=
Waterway:		***2 Amount:***	
Drink Wtr Impact:		***2 Measure:***	
Detail for Other:		***2 Type:***	
UPRR Rim No:		***2 Other:***	
DOG Unit:		***2 Pipeline:***	No
RWQCB Unit:	7	***2 Ves >= 300 Tns:***	No
1 Substance:	Truck Petroleum Products	***3 Substance:***	
1 Qty:	=	***3 Qty:***	=
1 Amount :	Unk	***3 Amount:***	
1 Measure:	Gal(s)	***3 Measure:***	
1 Type:	PETROLEUM	***3 Type:***	
1 Other:		***3 Other:***	
1 Pipeline:	No	***3 Pipeline:***	No
1 Ves >= 300 Tons:	No	***3 Ves >= 300 Tons:***	No

Incident Location:	Westbound I-10 @ exit 100
Additional County:	
Injuries:	No
Fatality:	No
Evacuation:	No
Known Impact:	
Name:	
Agency:	ERTS
Phone:	
Ext:	
Pag Cell:	
PRS Name:	
PRS Agency:	
PRS Phone:	
PRS Ext:	
PRS Pag Cell:	
Sec Agency:	Riverside County Environmental Health
Admin Agency:	Banning Fire Department
Admin Agency 2:	
Notification Info:	
Notification List:	
On Scene:	Fire Dept., Police Dept., Other
Other on Scene:	US Dept. of Forestry
Other Notified:	Caltrans Dist. 8
Header Unknown:	SOUTH COAST AQMD
Incident Desc:	
Site:	Road
Reported Cause:	Unknown
R R Crssing < 50 Ft:	
Description:	RP received a report of a big rig truck that is fully engulfed in fire, with an unknown amount of the vehicle's petroleum products involved. The load is believed to be non hazardous. No further information at this time.

Site: ***CHP Indio***
On Westbound Interstate 10, MPM 100 Unincorporated county area CA

CHMIRS

Control No:	09-6705	***Notified Date:***	
County:	Riverside County	***Notified Date Time:***	
Year:	2009		
URL:	https://w3.calema.ca.gov/operational/malhaz.nsf/f1841a103c102734882563e200760c4a/b1ab51cfc2b588e4882576450078dc8e?OpenDocument		

California Hazardous Material Incident Report System (as of 2006 to 2015)

Contained:	Yes	***3 Ves >= 300 Tons:***	
1 Substance:	Diesel Fuel	***Incident Date:***	10/4/2009
1 Measure:	Gal(s)	***Incident Time:***	1344
1 Other:		***Spill Site:***	Road
1 Quantity:	80	***Injuries?:***	
1 Type:	PETROLEUM	***No of Injuries:***	1
1 Pipeline:		***Fatals?:***	
1 Vessel >= 300 Tons:		***No of Fatals:***	0
2 Substance:		***Evacs?:***	
2 Quantity:		***No of Evacs:***	0

2 Measure:		***Cleanup:***	CDF/ Caltrans
2 Type:		***Site:***	
2 Other:		***Cause:***	Other
2 Pipeline:		***Cause Other:***	Accident
2 Vessel >= 300 Tons:		***Dog No:***	
3 Substance:		***Water:***	No
3 Quantity:		***Water Way:***	
3 Measure:		***City:***	Unincorporated county area
3 Type:		***County:***	Riverside County
3 Other:		***ZIP:***	
3 Pipeline:			

Admin Agency: Riverside County Environmental Health
Notification Area: AA/CUPA,DFG-OSPR,DTSC,RWQCB,US EPA,USFWS
Location: On Westbound Interstate 10, MPM 100
Description: Caller states a big rig hit three separate vehicles resulting in the release of substance from the big rig's saddle tanks. Minor injuries to the driver of one of the vehicles involved.

Spill Report View

Amount 1:		***Creation Date:***	10/04/2009 03:00 PM
Amount 2:		***Received By:***	
Amount 3:		***Admin Agency:***	
Type:	PETROLEUM	***Admin Agency 2:***	
Water:		***Additional County:***	
On Scene:		***Phone No:***	
Other on Scene:		***Ext:***	
Other Notified:		***Pag Cell:***	
Document Title:	SPILL Report		
Spill Site:	Road		
Cause Desc for Other:			
Person Notifying Cal OES:			

Hazardous Materials Spill Report

Contained:	Yes	***Control Cal OES:***	09-6705
Date :	10/04/2009	***Control NRC:***	
Time:	1500	***Received By:***	
Incident Date:	10/04/2009	***Cleanup By:***	CDF/ Caltrans
Incident Time:	1344	***2 Substance:***	
Water Involved:	No	***2 Qty:***	=
Waterway:		***2 Amount:***	
Drink Wtr Impact:		***2 Measure:***	
Detail for Other:		***2 Type:***	
UPRR Rim No:		***2 Other:***	
DOG Unit:		***2 Pipeline:***	No
RWQCB Unit:	7	***2 Ves >= 300 Tns:***	No
1 Substance:	Diesel Fuel	***3 Substance:***	
1 Qty:	=	***3 Qty:***	=
1 Amount :	80	***3 Amount:***	
1 Measure:	Gal(s)	***3 Measure:***	
1 Type:	PETROLEUM	***3 Type:***	
1 Other:		***3 Other:***	
1 Pipeline:	No	***3 Pipeline:***	No
1 Ves >= 300 Tons:	No	***3 Ves >= 300 Tons:***	No

Incident Location: On Westbound Interstate 10, MPM 100
Additional County:
Injuries: No
Fatality: No
Evacuation: No
Known Impact: None
Name:
Agency: CHP Indio
Phone:
Ext:
Pag Cell:
PRS Name:
PRS Agency:
PRS Phone:
PRS Ext:

PRS Pag Cell:	
Sec Agency:	
Admin Agency:	Riverside County Environmental Health
Admin Agency 2:	
Notification Info:	
Notification List:	
On Scene:	CDF, CHP
Other on Scene:	
Other Notified:	Caltrans
Header Unknown:	MOJAVE DESERT AQMD
Incident Desc:	
Site:	Road
Reported Cause:	Other Description for Other : Accident
R R Crssing < 50 Ft:	
Description:	Caller states a big rig hit three separate vehicles resulting in the release of substance from the big rig's saddle tanks. Minor injuries to the driver of one of the vehicles involved.

Site: ***SCE - Banning Substation***
Lincoln St E Banning CA 92220

HZH RIVERSIDE

Appendix: Database Descriptions

Environmental Risk Information Services (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. ERIS updates databases as set out in ASTM Standard E1527-13, Section 8.1.8 Sources of Standard Source Information:

"Government information from nongovernmental sources may be considered current if the source updates the information at least every 90 days, or, for information that is updated less frequently than quarterly by the government agency, within 90 days of the date the government agency makes the information available to the public."

Standard Environmental Record Sources

Federal

Formerly Utilized Sites Remedial Action Program: DOE FUSRAP

The U.S. Department of Energy (DOE) established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from the Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations. The DOE Office of Legacy Management (LM) established long-term surveillance and maintenance (LTS&M) requirements for remediated FUSRAP sites. DOE evaluates the final site conditions of a remediated site on the basis of risk for different future uses. DOE then confirms that LTS&M requirements will maintain protectiveness.

Government Publication Date: Mar 4, 2017

National Priority List: NPL

National Priorities List (Superfund)-NPL: EPA's (United States Environmental Protection Agency) list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Superfund program. The NPL, which EPA is required to update at least once a year, is based primarily on the score a site receives from EPA's Hazard Ranking System. A site must be on the NPL to receive money from the Superfund Trust Fund for remedial action.

Government Publication Date: Aug 25, 2021

National Priority List - Proposed: PROPOSED NPL

Includes sites proposed (by the EPA, the state, or concerned citizens) for addition to the NPL due to contamination by hazardous waste and identified by the Environmental Protection Agency (EPA) as a candidate for cleanup because it poses a risk to human health and/or the environment.

Government Publication Date: Aug 25, 2021

Deleted NPL: DELETED NPL

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.

Government Publication Date: Aug 25, 2021

SEMS List 8R Active Site Inventory: SEMS

The Superfund Program has deployed the Superfund Enterprise Management System (SEMS), which integrates multiple legacy systems into a comprehensive tracking and reporting tool. This inventory contains active sites evaluated by the Superfund program that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The Active Site Inventory Report displays site and location information at active SEMS sites. An active site is one at which site assessment, removal, remedial, enforcement, cost recovery, or oversight activities are being planned or conducted.

Government Publication Date: Oct 20, 2021

Inventory of Open Dumps, June 1985: ODI

The Resource Conservation and Recovery Act (RCRA) provides for publication of an inventory of open dumps. The Act defines "open dumps" as facilities which do not comply with EPA's "Criteria for Classification of Solid Waste Disposal Facilities and Practices" (40 CFR 257).

Government Publication Date: Jun 1985

SEMS List 8R Archive Sites: SEMS ARCHIVE

The Superfund Enterprise Management System (SEMS) Archived Site Inventory displays site and location information at sites archived from SEMS. An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time.

Government Publication Date: Oct 20, 2021

Comprehensive Environmental Response, Compensation and Liability Information System - CERCLIS: CERCLIS

Superfund is a program administered by the United States Environmental Protection Agency (EPA) to locate, investigate, and clean up the worst hazardous waste sites throughout the United States. CERCLIS is a database of potential and confirmed hazardous waste sites at which the EPA Superfund program has some involvement. It contains sites that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The EPA administers the Superfund program in cooperation with individual states and tribal governments; this database is made available by the EPA.

Government Publication Date: Oct 25, 2013

EPA Report on the Status of Open Dumps on Indian Lands: IODI

Public Law 103-399, The Indian Lands Open Dump Cleanup Act of 1994, enacted October 22, 1994, identified congressional concerns that solid waste open dump sites located on American Indian or Alaska Native (AI/AN) lands threaten the health and safety of residents of those lands and contiguous areas. The purpose of the Act is to identify the location of open dumps on Indian lands, assess the relative health and environment hazards posed by those sites, and provide financial and technical assistance to Indian tribal governments to close such dumps in compliance with Federal standards and regulations or standards promulgated by Indian Tribal governments or Alaska Native entities.

Government Publication Date: Dec 31, 1998

CERCLIS - No Further Remedial Action Planned: CERCLIS NFRAP

An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time. The Archive designation means 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). 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.

Government Publication Date: Oct 25, 2013

CERCLIS Liens: CERCLIS LIENS

A Federal Superfund lien exists at any property where EPA has incurred Superfund costs to address contamination ("Superfund site") and has provided notice of liability to the property owner. A Federal CERCLA ("Superfund") lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. This database is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Jan 30, 2014

RCRA CORRACTS-Corrective Action: RCRA CORRACTS

RCRA Info 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. At these sites, the Corrective Action Program ensures that cleanups occur. EPA and state regulators work with facilities and communities to design remedies based on the contamination, geology, and anticipated use unique to each site.

Government Publication Date: Aug 30, 2021

RCRA non-CORRACTS TSD Facilities: RCRA TSD

RCRA Info 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. This database includes Non-Corrective Action sites listed as treatment, storage and/or disposal facilities of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).

Government Publication Date: Aug 30, 2021

RCRA Generator List: RCRA LQG

RCRA Info 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. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Large Quantity Generators (LQGs) generate 1,000 kilograms per month or more of hazardous waste or more than one kilogram per month of acutely hazardous waste.

Government Publication Date: Aug 30, 2021

RCRA Small Quantity Generators List: RCRA SQG

RCRA Info is the 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. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Small Quantity Generators (SQGs) generate more than 100 kilograms, but less than 1,000 kilograms, of hazardous waste per month.

Government Publication Date: Aug 30, 2021

RCRA Very Small Quantity Generators List: RCRA VSQG

RCRA Info is the 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. A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Very Small Quantity Generators (VSQG) generate 100 kilograms or less per month of hazardous waste, or one kilogram or less per month of acutely hazardous waste. Additionally, VSQG may not accumulate more than 1,000 kilograms of hazardous waste at any time.

Government Publication Date: Aug 30, 2021

RCRA Non-Generators: RCRA NON GEN

RCRA Info 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. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Non-Generators do not presently generate hazardous waste.

Government Publication Date: Aug 30, 2021

Federal Engineering Controls-ECs: FED ENG

Engineering controls (ECs) encompass a variety of engineered and constructed physical barriers (e.g., soil capping, sub-surface venting systems, mitigation barriers, fences) to contain and/or prevent exposure to contamination on a property. This database is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Feb 23, 2021

Federal Institutional Controls- ICs: FED INST

Institutional controls are non-engineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy. Although it is EPA's (United States Environmental Protection Agency) expectation that treatment or engineering controls will be used to address principal threat wastes and that groundwater will be returned to its beneficial use whenever practicable, ICs play an important role in site remedies because they reduce exposure to contamination by limiting land or resource use and guide human behavior at a site.

Government Publication Date: Feb 23, 2021

Land Use Control Information System: LUCIS

The LUCIS database is maintained by the U.S. Department of the Navy and contains information for former Base Realignment and Closure (BRAC) properties across the United States.

Government Publication Date: Sep 1, 2006

Emergency Response Notification System: ERNS 1982 TO 1986

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

Government Publication Date: 1982-1986

Emergency Response Notification System: ERNS 1987 TO 1989

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

Government Publication Date: 1987-1989

Emergency Response Notification System: ERNS

Database of oil and hazardous substances spill reports made available by the United States Coast Guard National Response Center (NRC). The NRC fields initial reports for pollution and railroad incidents and forwards that information to appropriate federal/state agencies for response. These data contain initial incident data that has not been validated or investigated by a federal/state response agency.

Government Publication Date: Jul 26, 2021

The Assessment, Cleanup and Redevelopment Exchange System (ACRES) Brownfield Database: FED BROWNFIELDS

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 protects the environment, reduces blight, and takes development pressures off greenspaces and working lands. This database is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Aug 20, 2021

FEMA Underground Storage Tank Listing: FEMA UST

The Federal Emergency Management Agency (FEMA) of the Department of Homeland Security maintains a list of FEMA owned underground storage tanks.

Government Publication Date: Dec 31, 2017

Facility Response Plan: FRP

List of facilities that have submitted Facility Response Plans (FRP) to EPA. Facilities that could reasonably be expected to cause "substantial harm" to the environment by discharging oil into or on navigable waters are required to prepare and submit Facility Response Plans (FRPs). Harm is determined based on total oil storage capacity, secondary containment and age of tanks, oil transfer activities, history of discharges, proximity to a public drinking water intake or sensitive environments.

Government Publication Date: Dec 2, 2020

Historical Gas Stations: HIST GAS STATIONS

This historic directory of service stations is provided by the Cities Service Company. The directory includes Cities Service filling stations that were located throughout the United States in 1930.

Government Publication Date: Jul 1, 1930

Petroleum Refineries: REFN

List of petroleum refineries from the U.S. Energy Information Administration (EIA) Refinery Capacity Report. Includes operating and idle petroleum refineries (including new refineries under construction) and refineries shut down during the previous year located in the 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, Guam, and other U.S. possessions. Survey locations adjusted using public data.

Government Publication Date: Jul 10, 2020

Petroleum Product and Crude Oil Rail Terminals: BULK TERMINAL

List of petroleum product and crude oil rail terminals made available by the U.S. Energy Information Administration (EIA). Includes operable bulk petroleum product terminals located in the 50 States and the District of Columbia with a total bulk shell storage capacity of 50,000 barrels or more, and/or the ability to receive volumes from tanker, barge, or pipeline; also rail terminals handling the loading and unloading of crude oil that were active between 2017 and 2018. Petroleum product terminals comes from the EIA-815 Bulk Terminal and Blender Report, which includes working, shell in operation, and shell idle for several major product groupings. Survey locations adjusted using public data.

Government Publication Date: Apr 28, 2020

LIEN on Property: SEMS LIEN

The EPA Superfund Enterprise Management System (SEMS) provides LIEN information on properties under the EPA Superfund Program.

Government Publication Date: Oct 20, 2021

Superfund Decision Documents: SUPERFUND ROD

This database contains a listing of decision documents for Superfund sites. Decision documents serve to provide the reasoning for the choice of (or) changes to a Superfund Site cleanup plan. The decision documents include Records of Decision (ROD), ROD Amendments, Explanations of Significant Differences (ESD), along with other associated memos and files. This information is maintained and made available by the US EPA (Environmental Protection Agency).

Government Publication Date: Jun 28, 2021

State

State Response Sites: RESPONSE

A list of identified confirmed release sites where the Department of Toxic Substances Control (DTSC) is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk. This database is state equivalent NPL.

Government Publication Date: Sep 15, 2021

EnviroStor Database: ENVIROSTOR

The EnviroStor Data Management System is made available by the Department of Toxic Substances Control (DTSC). Includes Corrective Action sites, Tiered Permit sites, Historical Sites and Evaluation/Investigation sites. This database is state equivalent CERCLIS.

Government Publication Date: Sep 15, 2021

Delisted State Response Sites: DELISTED ENVS

Sites removed from the list of State Response Sites made available by the EnviroStor Data Management System, Department of Toxic Substances Control (DTSC).

Government Publication Date: Sep 15, 2021

Solid Waste Information System (SWIS): SWF/LF

The Solid Waste Information System (SWIS) database made available by the Department of Resources Recycling and Recovery (CalRecycle) contains information on solid waste facilities, operations, and disposal sites throughout the State of California. The types of facilities found in this database include landfills, transfer stations, material recovery facilities, composting sites, transformation facilities, waste tire sites, and closed disposal sites.

Government Publication Date: Jul 20, 2021

Solid Waste Disposal Sites with Waste Constituents Above Hazardous Waste Levels: SWRCB SWF

This is a list of solid waste disposal sites identified by California State Water Resources Control Board with waste constituents above hazardous waste levels outside the waste management unit.

Government Publication Date: Sep 20, 2006

EnviroStor Hazardous Waste Facilities: HWP

A list of hazardous waste facilities including permitted, post-closure and historical facilities found in the Department of Toxic Substances Control (DTSC) EnviroStor database.

Government Publication Date: Sep 15, 2021

Sites Listed in the Solid Waste Assessment Test (SWAT) Program Report: SWAT

In a 1993 Memorandum of Understanding, the State Water Resources Control Board (SWRCB) agreed to submit a comprehensive report on the Solid Waste Assessment Test (SWAT) Program to the California Integrated Waste Management Board (CIWMB). This report summarizes the work completed to date on the SWAT Program, and addresses both the impacts that leakage from solid waste disposal sites (SWDS) may have upon waters of the State and the actions taken to address such leakage.

Government Publication Date: Dec 31, 1995

Construction and Demolition Debris Recyclers: C&D DEBRIS RECY

This listing of Construction and Demolition Debris Recyclers is maintained by the California Intergrated Waste Management Board-common C&D materials include lumber, drywall, metals, masonry (brick, concrete, etc.), carpet, plastic, pipe, rocks, dirt, paper, cardboard, or green waste related to land development.

Government Publication Date: Jun 20, 2018

Recycling Centers: RECYCLING

This list of Certified Recycling Centers that are operating under the state of California's Beverage Container Recycling Program is maintained by the California Department of Resources Recycling and Recovery.

Government Publication Date: Nov 2, 2020

Listing of Certified Processors: PROCESSORS

This list of Certified Processors that are operating under the state of California's Beverage Container Recycling Program is maintained by the California Department of Resources Recycling and Recovery.

Government Publication Date: Oct 27, 2020

Listing of Certified Dropoff, Collection, and Community Service Programs: CONTAINER RECY

This list of Certified Dropoff, Collection, and Community Service Programs (non-buyback) operating under the state of California's Beverage Container Recycling Program is maintained by the California Department of Resources Recycling and Recovery.

Government Publication Date: Dec 16, 2020

Land Disposal Sites: LDS

Land Disposal Sites in GeoTracker, the State Water Resources Control Board (SWRCB)'s data management system. The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units. Waste management units include waste piles, surface impoundments, and landfills.

Government Publication Date: Jun 22, 2021

Leaking Underground Fuel Tank Reports: LUST

List of Leaking Underground Storage Tanks within the Cleanup Sites data in GeoTracker database. GeoTracker is the State Water Resources Control Board's (SWRCB) data management system for managing sites that impact groundwater, especially those that require groundwater cleanup (Underground Storage Tanks, Department of Defense and Site Cleanup Program) as well as permitted facilities such as operating Underground Storage Tanks. The Leak Prevention Program that overlooks LUST sites is the SWRCB in California's Environmental Protection Agency.

Government Publication Date: Jun 22, 2021

Delisted Leaking Storage Tanks: DELISTED LST

List of Leaking Underground Storage Tanks (LUST) cleanup sites removed from GeoTracker, the State Water Resources Control Board (SWRCB)'s database system, as well as sites removed from the SWRCB's list of UST Case closures.

Government Publication Date: Jun 22, 2021

Permitted Underground Storage Tank (UST) in GeoTracker: UST

List of Permitted Underground Storage Tank (UST) sites made available by the State Water Resources Control Board (SWRCB) in California's Environmental Protection Agency (EPA).

Government Publication Date: Oct 17, 2021

Proposed Closure of Underground Storage Tank Cases: UST CLOSURE

List of UST cases that are being considered for closure by either the California Environmental Protection Agency, State Water Resources Control Board or the Executive Director that have been posted for a 60-day public comment period.

Government Publication Date: May 5, 2021

Historical Hazardous Substance Storage Information Database: HHSS

The Historical Hazardous Substance Storage database contains information collected in the 1980s from facilities that stored hazardous substances. The information was originally collected on paper forms, was later transferred to microfiche, and recently indexed as a searchable database. When using this database, please be aware that it is based upon self-reported information submitted by facilities which has not been independently verified. It is unlikely that every facility responded to the survey and the database should not be expected to be a complete inventory of all facilities that were operating at that time. This database is maintained by the California State Water Resources Control Board's (SWRCB) Geotracker.

Government Publication Date: Aug 27, 2015

Statewide Environmental Evaluation and Planning System: UST SWEEPS

The Statewide Environmental Evaluation and Planning System (SWEEPS) is a historical listing of active and inactive underground storage tanks made available by the California State Water Resources Control Board (SWRCB).

Government Publication Date: Oct 1, 1994

Aboveground Storage Tanks: AST

A statewide list from 2009 of aboveground storage tanks (ASTs) made available by the Cal FIRE Office of the State Fire Marshal (OSFM). This list is no longer maintained or updated by the Cal FIRE OSFM.

Government Publication Date: Aug 31, 2009

SWRCB Historical Aboveground Storage Tanks: AST SWRCB

A list of aboveground storage tanks made available by the California State Water Resources Control Board (SWRCB). Effective January 1, 2008, the Certified Unified Program Agencies (CUPAs) are vested with the responsibility and authority to implement the Aboveground Petroleum Storage Act (APSA).

Government Publication Date: Dec 1, 2007

Oil and Gas Facility Tanks: TANK OIL GAS

Locations of oil and gas tanks that fall under the jurisdiction of the Geologic Energy Management Division of the California Department of Conservation (CalGEM) (CCR 1760). CalGEM was formerly the Division of Oil, Gas, and Geothermal Resources (DOGGR).

Government Publication Date: Sep 13, 2021

Delisted Storage Tanks: DELISTED TNK

This database contains a list of storage tank sites that were removed by the State Water Resources Control Board (SWRCB) in California's Environmental Protection Agency (EPA) and the Cal FIRE Office of State Fire Marshal (OSFM).

Government Publication Date: Oct 26, 2021

California Environmental Reporting System (CERS) Tanks: CERS TANK

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs. The CalEPA oversees the statewide implementation of the Unified Program which applies regulatory standards to protect Californians from hazardous waste and materials.

Government Publication Date: Sep 24, 2021

Delisted California Environmental Reporting System (CERS) Tanks: DELISTED CTNK

This database contains a list of Aboveground Petroleum Storage and Underground Storage Tank sites that were removed from in the California Environmental Protection Agency (CalEPA) Regulated Site Portal.

Government Publication Date: Sep 24, 2021

Historical Hazardous Substance Storage Container Information - Facility Summary: HIST TANK

The State Water Resources Control Board maintained the Hazardous Substance Storage Containers listing and inventory in th 1980s. This facility summary lists historic tank sites where the following container types were present: farm motor vehicle fuel tanks; waste tanks; sumps; pits, ponds, lagoons, and others; and all other product tanks. This set, published in May 1988, lists facility and owner information, as well as the number of containers. This data is historic and will not be updated.

Government Publication Date: May 27, 1988

Site Mitigation and Brownfields Reuse Program Facility Sites with Land Use Restrictions: LUR

The Department of Toxic Substances Control (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 land use restrictions that are active. Some sites have multiple land use restrictions.

Government Publication Date: Sep 15, 2021

CALSITES Database: CALSITES

This historical database was maintained by the Department of Toxic Substance Control (DTSC) for more than a decade. CALSITES contains information on Brownfield properties with confirmed or potential hazardous contamination. In 2006, DTSC introduced EnviroStor as the latest Brownfields site database.

Government Publication Date: May 1, 2004

Hazardous Waste Management Program Facility Sites with Deed / Land Use Restrictions: HLUR

The Department of Toxic Substances Control (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.

Government Publication Date: Feb 18, 2021

Deed Restrictions and Land Use Restrictions: DEED

List of Deed Restrictions, Land Use Restrictions and Covenants in GeoTracker made available by the State Water Resources Control Board (SWRCB) in California's Environmental Protection Agency. A deed restriction (land use covenant) may be required to facilitate the remediation of past environmental contamination and to protect human health and the environment by reducing the risk of exposure to residual hazardous materials.

Government Publication Date: Jun 22, 2021

Voluntary Cleanup Program: VCP

List of sites in the Voluntary Cleanup Program made available by the Department of Toxic Substances and Control (DTSC). The Voluntary Cleanup Program was designed to respond to lower priority sites. Under the Voluntary Cleanup Program, DTSC enters site-specific agreements with project proponents for DTSC oversight of site assessment, investigation, and/or removal or remediation activities, and the project proponents agree to pay DTSC's reasonable costs for those services.

Government Publication Date: Sep 15, 2021

GeoTracker Cleanup Program Sites: CLEANUP SITES

A list of Cleanup Program sites in the state of California made available by The State Water Resources Control Board (SWRCB) of the California Environmental Protection Agency (EPA). SWRCB tracks leaking underground storage tank cleanups as well as other water board cleanups.

Government Publication Date: Jun 22, 2021

Delisted County Records: DELISTED COUNTY

Records removed from county or CUPA databases. Records may be removed from the county lists made available by the respective county departments because they are inactive, or because they have been deemed to be below reportable thresholds.

Government Publication Date: Oct 26, 2021

Tribal

Leaking Underground Storage Tanks (LUSTs) on Indian Lands: INDIAN LUST
LUSTs on Tribal/Indian Lands in Region 9, which includes California.
Government Publication Date: Apr 8, 2020

Underground Storage Tanks (USTs) on Indian Lands: INDIAN UST
USTs on Tribal/Indian Lands in Region 9, which includes California.
Government Publication Date: Apr 8, 2020

Delisted Tribal Leaking Storage Tanks: DELISTED ILST
Leaking Underground Storage Tank facilities which have been removed from the Regional Tribal LUST lists made available by the EPA.
Government Publication Date: Apr 14, 2020

Delisted Tribal Underground Storage Tanks: DELISTED IUST
Underground Storage Tank facilities which have been removed from the Regional Tribal UST lists made available by the EPA.
Government Publication Date: Apr 14, 2020

County

Riverside County - Local Oversight Program List: LOP RIVERSIDE
A list of Leaking Underground Storage Tank (LUST) facilities in Riverside County. This list is made available by Riverside County Department of Environmental Health. Environmental Cleanup Program provides oversight of assessments and cleanups at properties that have been, or may have been, contaminated with hazardous substances from LUSTs or releases associated with other commercial/industrial use.
Government Publication Date: Jul 22, 2021

Riverside County - Underground Storage Tanks List: UST RIVERSIDE
A list of registered Underground Storage Tank (UST) sites in Riverside County. This list is made available by Riverside County Department of Environmental Health. The Hazardous Materials Management Branch (HMMB) regulates and oversees the inspections of constructions, repairs, upgrades, system operation and removal of UST systems.
Government Publication Date: Jul 22, 2021

Additional Environmental Record Sources

Federal

PFOA/PFOS Contaminated Sites: PFAS NPL
List of sites where PFOA or PFOS contaminants have been found in drinking water or soil. Made available by the Federal Environmental Protection Agency (EPA).
Government Publication Date: Sep 17, 2021

Facility Registry Service/Facility Index: FINDS/FRS
The Facility Registry Service (FRS) is a centrally managed database that identifies facilities, sites, or places subject to environmental regulations or of environmental interest. FRS creates high-quality, accurate, and authoritative facility identification records through rigorous verification and management procedures that incorporate information from program national systems, state master facility records, and data collected from EPA's Central Data Exchange registrations and data management personnel. This list is made available by the Environmental Protection Agency (US EPA).
Government Publication Date: Nov 2, 2020

Toxics Release Inventory (TRI) Program: TRIS

The EPA's Toxics Release Inventory (TRI) is a database containing data on disposal or other releases of over 650 toxic chemicals from thousands of U. S. facilities and information about how facilities manage those chemicals through recycling, energy recovery, and treatment. One of TRI's primary purposes is to inform communities about toxic chemical releases to the environment.

Government Publication Date: Aug 24, 2021

Perfluorinated Alkyl Substances (PFAS) Releases: PFAS TRI

List of Toxics Release Inventory (TRI) facilities at which the reported chemical is a Per- or polyfluorinated alkyl substance (PFAS) included in the Environmental Protection Agency (EPA)'s consolidated PFAS Master List of PFAS Substances. The EPA's Toxics Release Inventory (TRI) is a database containing data on disposal or other releases of over 650 toxic chemicals from thousands of U.S. facilities and information about how facilities manage those chemicals through recycling, energy recovery, and treatment.

Government Publication Date: Aug 24, 2021

Perfluorinated Alkyl Substances (PFAS) Water Quality: PFAS WATER

The Water Quality Portal (WQP) is a cooperative service sponsored by the United States Geological Survey (USGS), the Environmental Protection Agency (EPA), and the National Water Quality Monitoring Council (NWQMC). This listing includes records from the Water Quality Portal where the characteristic (environmental measurement) is in the Environmental Protection Agency (EPA)'s consolidated PFAS Master List of PFAS Substances.

Government Publication Date: Jul 20, 2020

Hazardous Materials Information Reporting System: HMIRS

US DOT - Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) Incidents Reports Database taken from Hazmat Intelligence Portal, U.S. Department of Transportation.

Government Publication Date: Sep 1, 2020

National Clandestine Drug Labs: NCDL

The U.S. Department of Justice ("the Department") provides this data 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.

Government Publication Date: Oct 5, 2020

Toxic Substances Control Act: TSCA

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.
The CDR enables EPA to collect and publish information on the manufacturing, processing, and use of commercial chemical substances and mixtures (referred to hereafter as chemical substances) on the TSCA Chemical Substance Inventory (TSCA Inventory). This includes current information on chemical substance production volumes, manufacturing sites, and how the chemical substances are used. This information helps the Agency determine whether people or the environment are potentially exposed to reported chemical substances. EPA publishes submitted CDR data that is not Confidential Business Information (CBI).

Government Publication Date: Apr 11, 2019

Hist TSCA: HIST TSCA

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.
The 2006 IUR data summary report includes information about chemicals manufactured or imported in quantities of 25,000 pounds or more at a single site during calendar year 2005. In addition to the basic manufacturing information collected in previous reporting cycles, the 2006 cycle is the first time EPA collected information to characterize exposure during manufacturing, processing and use of organic chemicals. The 2006 cycle also is the first time manufacturers of inorganic chemicals were required to report basic manufacturing information.

Government Publication Date: Dec 31, 2006

FTTS Administrative Case Listing: FTTS ADMIN

An administrative case listing from the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.

Government Publication Date: Jan 19, 2007

FTTS Inspection Case Listing: FTTS INSP

An inspection case listing from the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.

Government Publication Date: Jan 19, 2007

Potentially Responsible Parties List: PRP

Early in the cleanup process, the Environmental Protection Agency (EPA) conducts a search to find the potentially responsible parties (PRPs). EPA looks for evidence to determine liability by matching wastes found at the site with parties that may have contributed wastes to the site.

Government Publication Date: Oct 20, 2021

State Coalition for Remediation of Drycleaners Listing: SCRD DRYCLEANER

The State Coalition for Remediation of Drycleaners (SCRD) was established in 1998, with support from the U.S. Environmental Protection Agency (EPA) Office of Superfund Remediation and Technology Innovation. Coalition members are states with mandated programs and funding for drycleaner site remediation. Current members are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Government Publication Date: Nov 08, 2017

Integrated Compliance Information System (ICIS): ICIS

The Integrated Compliance Information System (ICIS) is a system that provides information for the Federal Enforcement and Compliance (FE&C) and the National Pollutant Discharge Elimination System (NPDES) programs. The FE&C component supports the Environmental Protection Agency's (EPA) Civil Enforcement and Compliance program activities. These activities include Compliance Assistance, Compliance Monitoring and Enforcement. The NPDES program supports tracking of NPDES permits, limits, discharge monitoring data and other program reports.

Government Publication Date: Jun 14, 2021

Drycleaner Facilities: FED DRYCLEANERS

A list of drycleaner facilities from Enforcement and Compliance History Online (ECHO) online search. The Environmental Protection Agency (EPA) tracks facilities that possess NAIC and SIC codes that classify businesses as drycleaner establishments.

Government Publication Date: May 5, 2021

Delisted Drycleaner Facilities: DELISTED FED DRY

List of sites removed from the list of Drycleaner Facilities (sites in the EPA's Integrated Compliance Information System (ICIS) with NAIC or SIC codes identifying the business as a drycleaner establishment).

Government Publication Date: May 5, 2021

Formerly Used Defense Sites: FUDS

Formerly Used Defense Sites (FUDS) are properties that were formerly owned by, leased to, or otherwise possessed by and under the jurisdiction of the Secretary of Defense prior to October 1986, where the Department of Defense (DoD) is responsible for an environmental restoration. This list is published by the U.S. Army Corps of Engineers.

Government Publication Date: May 26, 2021

Former Military Nike Missile Sites: FORMER NIKE

This information was taken from report DRXTH-AS-IA-83A016 (Historical Overview of the Nike Missile System, 12/1984) which was performed by Environmental Science and Engineering, Inc. for the U.S. Army Toxic and Hazardous Materials Agency Assessment Division. The Nike system was deployed between 1954 and the mid-1970's. Among the substances used or stored on Nike sites were liquid missile fuel (JP-4); starter fluids (UDKH, aniline, and furfuryl alcohol); oxidizer (IRFNA); hydrocarbons (motor oil, hydraulic fluid, diesel fuel, gasoline, heating oil); solvents (carbon tetrachloride, trichloroethylene, trichloroethane, stoddard solvent); and battery electrolyte. The quantities of material a disposed of and procedures for disposal are not documented in published reports. Virtually all information concerning the potential for contamination at Nike sites is confined to personnel who were assigned to Nike sites. During deactivation most hardware was shipped to depot-level supply points. There were reportedly instances where excess materials were disposed of on or near the site itself at closure. There was reportedly no routine site decontamination.

Government Publication Date: Dec 2, 1984

PHMSA Pipeline Safety Flagged Incidents: PIPELINE INCIDENT

A list of flagged pipeline incidents made available by the U.S. Department of Transportation (US DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA). PHMSA regulations require incident and accident reports for five different pipeline system types.

Government Publication Date: Jul 7, 2020

Material Licensing Tracking System (MLTS): MLTS

A list of sites that store radioactive material subject to the Nuclear Regulatory Commission (NRC) licensing requirements. This list is maintained by the NRC. As of September 2016, the NRC no longer releases location information for sites. Site locations were last received in July 2016.

Government Publication Date: May 11, 2021

Historic Material Licensing Tracking System (MLTS) sites: HIST MLTS

A historic list of sites that have inactive licenses and/or removed from the Material Licensing Tracking System (MLTS). In some cases, a site is removed from the MLTS when the state becomes an "Agreement State". An Agreement State is a State that has signed an agreement with the Nuclear Regulatory Commission (NRC) authorizing the State to regulate certain uses of radioactive materials within the State.

Government Publication Date: Jan 31, 2010

Mines Master Index File: MINES

The Master Index File (MIF) contains mine identification numbers issued by the Department of Labor Mine Safety and Health Administration (MSHA) for mines active or opened since 1971. Note that addresses may or may not correspond with the physical location of the mine itself.

Government Publication Date: Nov 3, 2020

Surface Mining Control and Reclamation Act Sites: SMCRA

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by the Office of Surface Mining Reclamation and Enforcement (OSMRE) to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of Abandoned Mine Land (AML) impacts, as well as information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Government Publication Date: Dec 18, 2020

Mineral Resource Data System: MRDS

The Mineral Resource Data System (MRDS) is a collection of reports describing metallic and nonmetallic mineral resources throughout the world. Included are deposit name, location, commodity, deposit description, geologic characteristics, production, reserves, resources, and references. This database contains the records previously provided in the Mineral Resource Data System (MRDS) of USGS and the Mineral Availability System/Mineral Industry Locator System (MAS/MILS) originated in the U.S. Bureau of Mines, which is now part of USGS. The USGS has ceased systematic updates of the MRDS database with their focus more recently on deposits of critical minerals while providing a well-documented baseline of historical mine locations from USGS topographic maps.

Government Publication Date: Mar 15, 2006

Uranium Mill Tailings Radiation Control Act Sites: URANIUM

The Legacy Management Office of the Department of Energy (DOE) manages radioactive and chemical waste, environmental contamination, and hazardous material at over 100 sites across the U.S. The L.M. Office manages this database of sites registered under the Uranium Mill Tailings Control Act (UMTRCA).

Government Publication Date: Mar 4, 2017

Alternative Fueling Stations: ALT FUELS

List of alternative fueling stations made available by the US Department of Energy's Office of Energy Efficiency & Renewable Energy. Includes Biodiesel stations, Ethanol (E85) stations, Liquefied Petroleum Gas (Propane) stations, Ethanol (E85) stations, Natural Gas stations, Hydrogen stations, and Electric Vehicle Supply Equipment (EVSE). The National Renewable Energy Laboratory (NREL) obtains information about new stations from trade media, Clean Cities coordinators, a Submit New Station form on the Station Locator website, and through collaborating with infrastructure equipment and fuel providers, original equipment manufacturers (OEMs), and industry groups.

Government Publication Date: Oct 25, 2021

Registered Pesticide Establishments: SSTS

List of active EPA-registered foreign and domestic pesticide-producing and device-producing establishments based on data from the Section Seven Tracking System (SSTS). The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Section 7 requires that facilities producing pesticides, active ingredients, or devices be registered. The list of establishments is made available by the EPA.

Government Publication Date: Apr 13, 2021

Polychlorinated Biphenyl (PCB) Notifiers: PCB

Facilities included in the national list of facilities that have notified the United States Environmental Protection Agency (EPA) of Polychlorinated Biphenyl (PCB) activities. Any company or person storing, transporting or disposing of PCBs or conducting PCB research and development must notify the EPA and receive an identification number.

Government Publication Date: Nov 19, 2020

State

Dry Cleaning Facilities: DRYCLEANERS

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial, linen supply, commercial laundry, dry cleaning and pressing machines - Coin Operated Laundry and Dry Cleaning. This is provided by the Department of Toxic Substance Control.

Government Publication Date: Aug 27, 2021

Delisted Drycleaners: DELISTED DRYCLEANERS

Sites removed from the list of drycleaner related facilities that have EPA ID numbers, made available by the California Department of Toxic Substance Control.

Government Publication Date: Aug 27, 2021

Non-Toxic Dry Cleaning Incentive Program: DRYC GRANT

A list of grant recipients of the Non-Toxic Dry Cleaning Incentive Program made available by the California Air Resources Board (CARB). The program provides grants to eligible dry cleaning businesses to assist them in transitioning away from PERC machines to alternative non-toxic and non-smog forming technologies.

Government Publication Date: Feb 28, 2018

Per- and Polyfluoroalkyl Substances (PFAS): PFAS

List of sites from the State Water Resources Control Board (SWRCB)'s GeoTracker at which one or more of the potential contaminants of concern are in the PFAS Master List of PFAS Substances made available by the Environmental Protection Agency (US EPA).

Government Publication Date: Jun 22, 2021

PFOA/PFOS Groundwater: PFAS GW

A list of water wells from the Groundwater Ambient Monitoring and Assessment Program (GAMA) Groundwater Information System with the groundwater chemical perfluorooctanoic acid (PFOA) (NL = 0.014 UG/L) or perfluorooctanoic sulfonate (PFOS) (NL = 0.013 UG/L). The GAMA Groundwater Information System search is made available by California Water Boards.

Government Publication Date: Oct 22, 2020

Hazardous Waste and Substances Site List - Site Cleanup: HWSS CLEANUP

The Hazardous Waste and Substances Sites (Cortese) List is a planning document used by the State, local agencies and developers to comply with the California Environmental Quality Act requirements in providing information about the location of hazardous materials release sites. This list is published by California Department of Toxic Substance Control.

Government Publication Date: May 20, 2021

List of Hazardous Waste Facilities Subject to Corrective Action: DTSC HWF

This is a list of hazardous waste facilities identified in Health and Safety Code (HSC) § 25187.5. These facilities are those where Department of Toxic Substances Control (DTSC) has taken or contracted for corrective action because a facility owner/operator has failed to comply with a date for taking corrective action in an order issued under HSC § 25187, or because DTSC determined that immediate corrective action was necessary to abate an imminent or substantial endangerment.

Government Publication Date: Jul 18, 2016

EnviroStor Inspection, Compliance, and Enforcement: INSP COMP ENF

A list of permitted facilities with inspections and enforcements tracked in the Department of Toxic Substance Control (DTSC) EnviroStor.

Government Publication Date: Apr 29, 2021

School Property Evaluation Program Sites: SCH

A list of sites registered with The Department of Toxic Substances Control (DTSC) School Property Evaluation and Cleanup (SPEC) Division. SPEC is responsible for assessing, investigating and cleaning up proposed school sites. The Division ensures that selected properties are free of contamination or, if the properties were previously contaminated, that they have been cleaned up to a level that protects the students and staff who will occupy the new school.

Government Publication Date: Sep 15, 2021

California Hazardous Material Incident Report System (CHMIRS): CHMIRS

A list of reported hazardous material incidents, spills, and releases from the California Hazardous Material Incident Report System (CHMIRS). This list has been made available by the California Office of Emergency Services (OES).

Government Publication Date: Aug 1, 2021

Historical California Hazardous Material Incident Report System (CHMIRS): HIST CHMIRS

A list of reported hazardous material incidents, spills, and releases from the California Hazardous Material Incident Report System (CHMIRS) prior to 1993. This list has been made available by the California Office of Emergency Services (OES).

Government Publication Date: Jan 1, 1993

Hazardous Waste Manifest Data: HAZNET

A list of hazardous waste manifests received each year by Department of Toxic Substances Control (DTSC). The volume of manifests is typically 900,000 - 1,000,000 annually, representing approximately 450,000 - 500,000 shipments.

Government Publication Date: Oct 24, 2016

Historical Hazardous Waste Manifest Data: HIST MANIFEST

A list of historic hazardous waste manifests received by the Department of Toxic Substances Control (DTSC) from year the 1980 to 1992. The volume of manifests is typically 900,000 - 1,000,000 annually, representing approximately 450,000 - 500,000 shipments.

Government Publication Date: Dec 31, 1992

DTSC Registered Hazardous Waste Transporters: HW TRANSPORT

The California Department of Toxic Substances Control (DTSC) maintains this list of Registered Hazardous Waste Transporters.

Government Publication Date: Oct 19, 2020

Registered Waste Tire Haulers: WASTE TIRE

This list of registered waste tire haulers is maintained by the California Department of Resources Recycling and Recovery.

Government Publication Date: Dec 16, 2020

California Medical Waste Management Program Facility List: MEDICAL WASTE

This list of Medical Waste Management Program Facilities is maintained by the California Department of Public Health. The Medical Waste Management Program (MWMP) regulates the generation, handling, storage, treatment, and disposal of medical waste by providing oversight for the implementation of the Medical Waste Management Act (MWMA). The MWMP permits and inspects all medical waste off-site treatment facilities, medical waste transporters, and medical waste transfer stations. This list contains transporters, treatment, and transfer facilities.

Government Publication Date: Dec 31, 2020

Historical Cortese List: HIST CORTESE

List of sites which were once included on the Cortese list. The Hazardous Waste and Substances Sites (Cortese) List is a planning document used by the State, local agencies and developers to comply with the California Environmental Quality Act requirements for providing information about the location of hazardous sites.

Government Publication Date: Nov 13, 2008

Cease and Desist Orders and Cleanup and Abatement Orders: CDO/CAO

The California Environment Protection Agency "Cortese List" of active Cease and Desist Orders (CDO) and Cleanup and Abatement Orders (CAO). This list contains many CDOs and CAOs that do NOT concern the discharge of wastes that are hazardous materials. Many of the listed orders concern, as examples, discharges of domestic sewage, food processing wastes, or sediment that do not contain hazardous materials, but the Water Boards' database does not distinguish between these types of orders.

Government Publication Date: Jul 19, 2020

California Environmental Reporting System (CERS) Hazardous Waste Sites: CERS HAZ

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the following regulatory programs: Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, RCRA LQ HW Generator. The CalEPA oversees the statewide implementation of the Unified Program which applies regulatory standards to protect Californians from hazardous waste and materials.

Government Publication Date: Sep 24, 2021

Delisted Environmental Reporting System (CERS) Hazardous Waste Sites: DELISTED HAZ

This database contains a list of sites that were removed from the California Environmental Protection Agency (CalEPA) in the following regulatory programs: Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, RCRA LQ HW Generator.

Government Publication Date: Nov 29, 2018

Sites in GeoTracker: GEOTRACKER

GeoTracker is the State Water Resource Control Boards' data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater. This is a list of sites in GeoTracker that aren't otherwise categorized as LUST, Land Disposal Sites (LDS), Cleanup Sites, or sites having Waste Discharge Requirements (WDR). This listing includes program types such as Underground Injection Control (UIC), Confined Animal Facilities (CAF), Irrigated Lands Regulatory Program, plans, and non-case information.
Government Publication Date: Jun 22, 2021

Mines Listing: MINE

This list includes mine site locations extracted from the Mines Online database, maintained by the California Department of Conservation. Mines Online (MOL) is an interactive web map designed with GIS features that provide information such as the mine name, mine status, commodity sold, location, and other mine specific data. Please note: Mine location information is provided to assist experts in determining the location of mine operators in accordance with California Civil Code section 1103.4 and reflects information reported by mine operators in annual reports provided under Public Resources Code section 2207. While the Division of Mine Reclamation (DMR) attempts to populate MOL with accurate location information, the DMR cannot guarantee the accuracy of operator reported location information.
Government Publication Date: Jan 12, 2021

Recorded Environmental Cleanup Liens: LIEN

The California Department of Toxic Substance Control (DTSC) maintains this list of liens placed upon real properties. A lien is utilized by the DTSC to obtain reimbursement from responsible parties for costs associated with the remediation of contaminated properties.
Government Publication Date: Nov 16, 2020

Waste Discharge Requirements: WASTE DISCHG

List of sites in California State Water Resources Control Board (SWRCB) Waste Discharge Requirements (WDRs) Program in California, made available by the SWRCB via GeoTracker. The WDR program regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.
Government Publication Date: Jun 22, 2021

Toxic Pollutant Emissions Facilities: EMISSIONS

A list of criteria and toxic pollutant emissions data for facilities in California made available by the California Environmental Protection Agency - Air Resources Board (ARB). Risk data may be based on previous inventory submittals. The toxics data are submitted to the ARB by the local air districts as requirement of the Air Toxics "Hot Spots" Program. This program requires emission inventory updates every four years.
Government Publication Date: Dec 31, 2019

Clandestine Drug Lab Sites: CDL

The Department of Toxic Substances Control (DTSC) maintains a listing of drug lab sites. DTSC is responsible for removal and disposal of hazardous substances discovered by law enforcement officials while investigating illegal/clandestine drug laboratories.
Government Publication Date: Jan 19, 2021

Tribal

No Tribal additional environmental record sources available for this State.

County

Riverside County - Hazardous Waste Generator Sites List: HWG RIVERSIDE

A list of Hazardous Waste Generator Sites in the County of Riverside. This list is made available by Riverside County Department of Environmental Health which has been designated as the CUPA for the County.
Government Publication Date: Jul 22, 2021

Riverside County - Disclosure Facility List: HZH RIVERSIDE

A list of facilities disclosed to Riverside County Department of Environmental Health (DEH). This list is made available by Riverside County DEH which has been designated as the CUPA for the County. A business is required to establish and submit a Business Plan if the facility handles hazardous material equal to or greater than 55 gallons, 500 pounds or 200 cubic feet at any time during the year.
Government Publication Date: Jul 22, 2021

Riverside County - Medical Waste Facilities: MED WST RIVERSIDE

This list of active and inactive medical waste facilities is maintained by the County of Riverside Department of Environmental Health.
Government Publication Date: Sep 1, 2020

Riverside County - California Accidental Release Prevention Program Sites: RMP RIVERSIDE

This list of Riverside County California Accidental Release Prevention Program sites is maintained by the County of Riverside Department of Environmental Health. AB 3777 was enacted in 1986 to minimize potential emergencies involving acutely hazardous materials by requiring facilities which handle these materials to submit Risk Management Prevention Plans. The Riverside County Department of Environmental Health Hazardous Materials Branch began implementation of this Program County-wide in January 1991. All cities within Riverside County are included in this list.

Government Publication Date: Jul 29, 2020

Definitions

Database Descriptions: This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

Detail Report: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

Distance: The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries. All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

Elevation: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

Unplottables: These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and are included as reference.

APPENDIX D
REGULATORY AGENCY RECORDS

County of Riverside

DEPARTMENT OF ENVIRONMENTAL HEALTH

KEITH JONES, DIRECTOR

November 30, 2021

Riverside County Hazardous Materials has reopened to limited in-person services. We will be implementing the best practices to serve our customers in person while preventing the transmission and spread of COVID-19.

Due to the ongoing COVID-19 national state of emergency, and Orders by the Riverside County Health Officer, the Riverside County Department of Environmental Health has continued to request that our employees work remotely to support you.

Records Request services will continue to be available but please be patient with us and understand that staff is limited.

Responses will be provided **temporarily via email** and will resume to respond via US Mail once the pandemic has rectified.

During this time records will be provided in five different ways after fees are paid.

1) In office appointments for viewing of larger files only
2) Email – Only small files **no larger than ¼ inch qualify**
3) US Mail – files that are appropriately sized for mailing will qualify – **Additional Copy and Reproduction Fees will apply**
4) USPS / FedEx – larger files that are unable to be mailed via US Mail will be shipped at the requestor's expense – **Additional Copy and Reproduction Fees will apply**
5) Pick Up – By appointment only – **Additional Copy and Reproduction Fees will apply**

For questions please call (951) 358-5055 or visit our website for information www.rivcoeh.org

Environmental Protection & Oversight Division
Hazardous Materials Management Branch
Attn: Records Management
P.O. Box 7909
Riverside, CA 92513-7909
Ph: (951) 358-5055
Fax (951) 358-5342

*additional fees may include costs for appt. cancellation/no show, time per service, scan/fax/mail of documents, cd/dvd

County of Riverside

DEPARTMENT OF ENVIRONMENTAL HEALTH

KEITH JONES, DIRECTOR

RELEASE OF RECORDS RESPONSE

November 30, 2021

Service Request No: 52891

Weis Environmental, LLC
1938 Kellogg Ave.
Suite 116
Carlsbad, CA 92008
Attn: Samantha Weis

Your request concerning **Hazardous Materials Management Records** has been received and a file search has been conducted. The appropriate action has been taken.

Site Address	City	Records Found
W. Lincoln St. & 4th St.	**Banning**	☐ **YES** ☒ **NO**
THIS IS NOT AN INVOICE	**Estimated Cost**	**$0.00**

If no records are found, no further action will be taken.

If records are found, please contact our office at (951) 358-5055 to schedule a file review appointment. Records will be available for 30 days from the date of this letter, after which a new Records Request will need to be submitted.

** There is a clerical records research fee of **$.50 for the first page, plus $.10 per additional page **Records will not be made available until this fee is paid****

Other fees may apply

Note: Additional time for processing may be required

Appointments are scheduled in one (1) hour increments, not to exceed two (2) hours.

Environmental Protection & Oversight Division
Hazardous Materials Management Branch
Attn: Records Management
P.O. Box 7909
Riverside, CA 92513-7909
Ph: (951) 358-5055
Fax (951) 358-5342

*additional fees may include costs for appt. cancellation/no show, time per service, scan/fax/mail of documents, cd/dvd

4065 County Circle Drive, Room 104, Riverside CA 92503
(951) 358-5055
Fax (951) 358-5342
Mailing Address: P.O. Box 7909, Riverside, CA 92513-7909
www.rivcoeh.org

Gmail Samantha Weis <sw@weisenviro.com>

Public Records Request- APNs 540-210-009 and 540-210-020, Banning, CA 92220

2 messages

Samantha Weis <sw@weisenviro.com> Tue, Nov 2, 2021 at 7:23 PM
To: Landuse Desert <landusedesert@rivco.org>, Landuse <landuse@rivco.org>

Hello Public Records Team,

Our firm is performing a Phase I ESA on the subject property identified by APNs 540-210-009 and 540-210-020 in Banning, CA 92220.

We are requesting any files associated with this subject property.

Best regards,

Samantha Weis
President
Weis Environmental LLC
1938 Kellogg Avenue, Suite 116
Carlsbad, CA 92008
sw@weisenviro.com
760.585.7070 (Office)
760.672.6339 (Mobile)

County of Riverside Request-for-Records - APNs 540-210-009 and 540-210-020.pdf
147K

Landuse Desert <landusedesert@rivco.org> Wed, Nov 3, 2021 at 7:33 AM
To: Samantha Weis <sw@weisenviro.com>

Hello Samantha,

Riverside County Department of Environmental Health does not have any permits or records for these properties.

John Riddell

Environmental Health Specialist

Riverside County Department of Environmental Health

47-950 Arabia Street, Suite A

Indio, CA 92201

(760) 863-7570

JRiddell@rivco.org

From: Samantha Weis <sw@weisenviro.com>
Sent: Tuesday, November 2, 2021 7:23 PM

To: Landuse Desert <landusedesert@rivco.org>; Landuse <Landuse@RivCo.org>
Subject: Public Records Request- APNs 540-210-009 and 540-210-020, Banning, CA 92220

CAUTION: This email originated externally from the **Riverside County** email system. **DO NOT** click links or open attachments unless you recognize the sender and know the content is safe.

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County of Riverside California

Department of Toxic Substances Control

Jared Blumenfeld
Secretary for
Environmental Protection

Meredith Williams, Ph.D.
Director
5796 Corporate Avenue
Cypress, California 90630

Gavin Newsom
Governor

November 4, 2021

Samantha Weis
WEIS ENVIRONMENTAL LLC
sw@weisenviro.com

PR4-110321-02
APNs 540-210-009, 020 BANNING, CA

Dear Requestor:

We have received your Public Records Act Request from the Department of Toxic Substances Control (DTSC). After a thorough review of our files, no site records were found pertaining to the sites/facilities referenced above.

A large number of our records are available on EnviroStor, an online database that provides non-confidential, public access to DTSCs Data Management System. It tracks our cleanup, permitting, enforcement and investigation efforts at hazardous waste facilities and sites with known or suspected contamination issues. EnviroStor is available 24/7, 365 days a year. The data reflects the latest updates as they are entered in the system. Access it from your computer or smartphone, the local library – anywhere Internet access is available. Just go to www.envirostor.dtsc.ca.gov. You'll find a step-by-step tour of EnviroStor under the "How to Use EnviroStor" menu on the website.

If you have any questions or would like further information regarding your request, please contact me at 714-4845337 or via email at CypressFileRoom@dtsc.ca.gov.

Sincerely,

Julie Johnson
Julie Johnson
Regional Records Coordinator

Public Records Request/Waterboard/APNs 540-210-009 and 540-210-020, Banning, CA 92220

Samantha Weis <sw@weisenviro.com> Tue, Nov 2, 2021 at 7:19 PM
Draft To: WB-RB7-PRA <RB7-PRA@waterboards.ca.gov>

Waterboard do not search by APNs.

Gmail Samantha Weis <sw@weisenviro.com>

Building and Safety Records Request

2 messages

sw@weisenviro.com <sw@weisenviro.com> Tue, Nov 2, 2021 at 7:44 PM
To: Records@rivco.org
Cc: sw@weisenviro.com

Requestor's Name:	Samantha Weis
Company:	Weis Environmental LLC
Requestor's Phone No (format example 951-000-0000):	7606726339
Current Mailing Address:	1938 Kellogg Avenue, Suite 116
City:	Carlsbad
State:	California
Zip:	92011
E-Mail:	sw@weisenviro.com
ADDRESS TO BE RESEARCHED:	
ASSESSOR'S PARCEL NUMBER (APN) (format example 123-456-789):	APN 540-210-009 and 540-210-020
Year Built:	
REQUESTING ALL PERMITS:	Yes
If not please specify type of permit(s) below:	
Additional Comments:	

Records <records@rivco.org> Wed, Nov 3, 2021 at 7:34 AM
To: "sw@weisenviro.com" <sw@weisenviro.com>

Hello Samantha,

After a thorough search of our records, we are unable to locate any building records for these APNs.

Our records date back to 1963. All building permit records prior to 1963 have been destroyed.

Also, these parcels are now located in the City of Banning's jurisdiction. You may want to contact their Building Department at (951) 922-3120 to check for any permits they may have issued.

If you have any questions contact us at (951) 955-2017 or with a reply email.

Thank you,

Dan

County of Riverside

Transportation and Land Management Agency

Records And Information Management

(951) 955-2017

records@rivco.org

How are we doing? **Click the Link and tell us**

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County of Riverside California

RESOLUTION 2021-03

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF BANNING, CALIFORNIA, APPROVING CONDITIONAL USE PERMIT NO. 20-8012 TO ALLOW A TRACTOR-TRAILER/SEMI-TRUCK ("TRUCK") TRANSFER AND STORAGE YARD FOR THE ACCOMMODATION OF TRUCK USED FOR THE DISTRIBUTION, TRANSFER, AND MOVEMENT OF GOODS AND COMMODITIES

WHEREAS, an application for a Conditional Use Permit to permit a tractor trailer/semi-truck ("truck") transfer and storage yard for the accommodation of trucks used for the distribution, transfer, and movement of goods and commodities has been duly filed by:

Project Location:	Northeast Corner 4th St. and Lincoln St.
APN Information:	540-210-009
Project Applicant/Owner:	Stepping Stone Properties, LLC Attn: John Sappington 14561 Merrill Ave, Suite A, Fontana, CA 92335

WHEREAS, the Planning Commission has the authority per Chapter 17.52 of the Banning Municipal Code to take action on proposed Conditional Use Permit No. 20-8012 to permit tractor-trailer/semi-truck ("truck") transfer and storage yard for the accommodation of trucks used for the distribution, transfer, and movement of goods and commodities on real property located at APN: 540-210-009 in the Industrial zoning district.

WHEREAS, on March 26, 2021, the City gave public notice by advertising in the Record Gazette, a newspaper of general circulation within the City of Banning, and by mailing public hearing notices to property owners within 300 feet of the project site, of the holding of a public hearing at which proposed Conditional Use Permit No. 20-8012 would be considered.

WHEREAS, on April 7, 2021, the Planning Commission held a duly noticed public hearing at which interested persons had an opportunity to testify in support of, or opposition to proposed Conditional Use Permit No. 20-8012; and

WHEREAS, in accordance with the requirements of the California Environmental Quality Act (CEQA), staff analyzed proposed Conditional Use Permit No. 20-8011 and determined that, pursuant to CEQA Section 15332 (Class 32 – In fill exemption), the project is categorically exempt from the requirements of the CEQA Guidelines.

NOW THEREFORE, the Planning Commission of the City of Banning does hereby resolve, determine, find, and order as follows:

SECTION 1. ENVIRONMENTAL DETERMINATION:

California Environmental Quality Act (CEQA)

The Planning Division staff has determined that the project is categorically exempt from the requirements of the California Environmental Quality Act (CEQA and the State CEQA Guidelines. The project qualifies under CEQA Guidelines Section 15332 (In fill exemption) Class 32 categorical exemption because the project is consistent with the City's General Plan land use designation and policies as well as the applicable zoning district of Industrial. At the time of the lead agency's determination, the project is located within the City of Banning jurisdictional limits and is less than 5-acres in size. The Planning Commission has analyzed proposed Conditional Use Permit No. 20-8012 and reviewed the Planning Division's determination of exemption, and based on its own independent judgement, concurs in staff's determination of exemption under CEQA pursuant to CEQA Guidelines Section 15332.

Multiple Species Habitat Conservation Plan (MSHCP).

The Planning Commission has determined that the project is not subject to MSHCP as the project is an in-fill property and no impacts to covered species is anticipated

SECTION 2: REQUIRED FINDINGS FOR CONDITIONAL USE PERMIT NO. 20-8011:

Section 17.52.050 of the Banning Municipal Code provides that the Planning Commission may approve Conditional Use Permit No. 20-8012 application in whole or in part, with or without conditions, only if the following findings are made:

A. Finding: The proposed use is consistent with the General Plan;

Finding of Fact: The proposed transfer facility is consistent with the following General Plan Land Use Element Policy which states: "The land–use map shall provide for sufficient lands to provide a large range of products and services to the City and the region while carefully considering compatibility with adjacent residential lands." The land-use designation of Industrial, allows semi-truck and transfer facilities are permitted with approval of a Conditional Use Permit by the Planning Commission The proposed facility is consistent with the following General Plan Economic Development Policy which states: "The City shall take a proactive role in the retention of existing businesses and the recruitment of new businesses, particularly those that generate and broaden employment opportunities, increase discretionary incomes, and contribute to City General Fund revenues." Approval of Conditional Use Permit No. 20-8012 would allow the City to retain the existing business as it expands and allow the applicant to promote business diversity while providing an economic benefit to the City.

B. Finding: The proposed use is conditionally permitted within the subject land use district and complies with all the applicable provisions of the Zoning Ordinance;

Finding of Fact: Table 17.12.020 (Permitted, Conditional and Prohibited Commercial and Industrial Uses) of Chapter 17.12 of Title 17 of the Municipal Code, classifies semi-

truck transfer and storage facility, as a conditionally permitted use. The proposed truck transfer as conditioned, complies with the applicable development standards set forth in Section 17.12.030 of the Banning Municipal Code.

C. **Finding: The proposed use would not impair the integrity and character of the land use district in which it is to be located;**

Finding of Fact: The proposed semi-truck transfer facility will provide economic development and permanent employment within the Industrial land use district. The proposed project will provide a facility to accommodate regional commerce.

D. **Finding: The subject site is physically suitable for the type and intensity of land use being proposed;**

Finding of Fact: The subject site currently is developed with a vacant property that has enjoyed a complimentary existence with adjacent businesses and residents. The applicant is not proposing any significant land use improvements. Furthermore, the use is compatible with the existing land use and activities typically associated with an industrial district.

E. **Finding: The subject project will have a limited lifespan;**

Findings of Fact: The project is conditionally consistent with the surrounding zones, land uses, and general uses within the surrounding project area. As such, the proposed project shall expire, and become null and void, after five (5) from the date of approval referenced herein. Unless extended by a revised conditional use permit, that is duly file with the Community Development Department, is approved by the City Planning Commission on or before the conclusion of the five (5) year lifespan.

F. **Finding: There are adequate provisions for water, sanitation, and public utilities and services to ensure that the proposed use would not be detrimental to public health and safety;**

Finding of Fact: The subject site is served by the public and private utilities, including the City's water and electrical utilities. The subject site is accessed and served from Fourth and Lincoln Streets, which is an existing developed roadway with existing utilities.

G. **Finding: There will not be significant harmful effects upon environmental quality; natural resources; or neighborhood characteristics;**

Finding of Fact: Per the findings set forth in Section 1 of this Resolution, the property improvements are categorically exempt from review under CEQA pursuant to CEQA Guidelines Section 15332 (Existing Facilities).

H. **Finding: The proposed location, size, design, and operating characteristics of the proposed use will not be detrimental to the public interests, health, safety, convenience, or welfare of the City.**

Finding of Fact: The semi-truck transfer facility is located at an appropriate location that is zoned industrial and provides for an industrial land use of Industrial. The size, design and operating characteristics of the proposed truck transfer and storage facility will not have a negative impact to the public interest, health, safety, convenience or welfare of the City due to the use being an extension of existing industrial operations and services within the immediate surroundings.

SECTION 3. PLANNING COMMISSION ACTION:

Based on the findings specified above, and all other evidence in the record, the Planning Commission hereby approves Conditional Use Permit 20-8012 to permit a semi-truck transfer facility on vacant land on real property located at the northeasterly corner of Fourth and Lincoln Streets (APN: 540-210-009) in the Industrial Zoning District, subject to Conditions of Approval attached hereto as Exhibit A.

PASSED, APPROVED, AND ADOPTED this 7th day of April, 2021.

Eric Shaw, Chairman
Banning Planning Commission

APPROVED AS TO FORM
AND LEGAL CONTENT:

Maricela E. Marroquin, Shareholder
Richards, Watson & Gershon

ATTEST:

Sandra Calderon, Recording Secretary
City of Banning, California

CERTIFICATION:

I, Sandra Calderon, Recording Secretary of the Planning Commission of the City of Banning, California, do hereby certify that the foregoing Resolution 2021-03, was duly adopted by the Planning Commission of the City of Banning, California, at a regular meeting thereof held on the 7th day of April, 2021, by the following vote, to wit:

AYES: Brosious, Krick, Lopez, Santana, Shaw

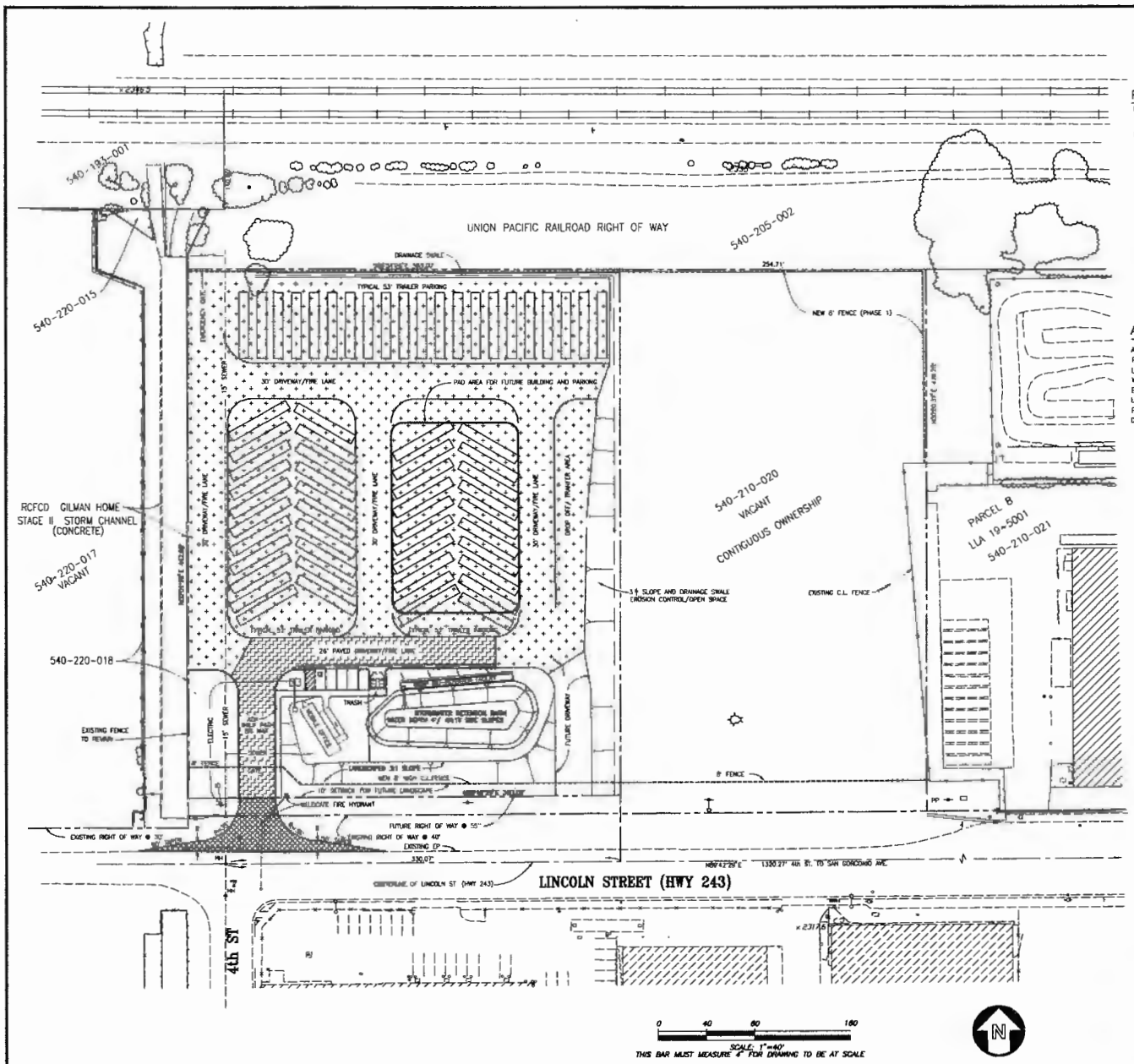
NOES: None

ABSENT: None

ABSTAIN: None

Sandra Calderon

Sandra Calderon, Recording Secretary
City of Banning, California



PROJECT DESCRIPTION

EXISTING USE
VACANT

PROPOSED USE
TRUCK AND TRAILER TRANSFER YARD
TRAILERS TO BE DROPPED OFF AND ANOTHER PICKED UP &
EXCESS TRAILER INVENTORY TO BE STORED.
NO TERMINAL BUILDING, FUEL STATION, OR SERVICE SHOP.

PROPOSED IMPROVEMENTS
MASS GRADE SITE FOR TRAILERS & FUTURE BUIDING PAD WITH
AGGREGATE BASE FOR SEMI TRAILER PARKING.
INSTALL A 6' HIGH CHAIN LINK PERIMETR SECURITY FENCE.
PAVED DRIVEWAY, 4 PARKING SPACES & TRASH ENCLOSURE.
SETUP MOBILE OFFICE WITH ADA RESTROOM AND BREAK ROOMS.
CONSTRUCT UTILIMATE SIZED WQMP AND RETENTION BASIN
INSTALL SECURITY LIGHTING FOR DRIVEWAYS & PARKING AREAS.
CONNECT TO EXISTING SEWER
RELOCATE EXISTING FIRE HYDRANT.
INSTALL NEW WATER METER
CONSTRUCT DRIVEWAY APPROACH PER CAL TRANS REQ'MTS
DEFER FULL STREET IMPROVEMENTS UNTIL FUTURE DEVELOPMENT

AREA CALCULATIONS

AGG./GRAVEL SEMI TRAILER PARKING AREA	105,435 S.F.	66.16%
PAVED DRIVEWAYS, SIDEWALKS & PARKING	11,338 S.F.	7.11%
LANDSCAPED SLOPES & PLANTERS	6,012 S.F.	3.77%
WQMP & STORMWATER RETENTION AREA	11,105 S.F.	6.97%
BUILDING PAD AREA FOR MOBILE OFFICE	3,338 S.F.	2.09%
LANDSCAPING FROM FENCE TO FUTURE ROW	3,303 S.F.	2.07%
FUTURE DRIVEWAY AREA	3,379 S.F.	2.12%
DRAINAGE AND OPEN SPACE AREA	15,447 S.F.	9.69%

TOTAL NET AREA 159,357 S.F.

PAVED DRIVEWAY AND PARKING AREA

GRADED AND GRAVEL TRAILER PARKING AREA

PAVED DRIVEWAY APPROACH PER CAL TRANS REQUIRMENTS

APPLICANT/OWNER

STEPPING STONE PROPERTIES, L.L.C.
14581 MERRILL AVE. SUITE A
FONTANA, CA 92335

AGENT

MR. JOHN SAPPINGTON
STEPPING STONE PROPERTIES, L.L.C.
14581 MERRILL AVE. SUITE A
FONTANA, CA 92335
(909) 355-8545x3304 TCI OFFICE
(714) 321-7151 CELL
SAPPINGTON@TCI-LEASING.COM

ASSESSOR'S PARCEL NO.

APN 540-210-009

LEGAL DESCRIPTION

BLOCK 232 OF AMENDED MAP OF BANNING
LAND CO RECORDED IN MB 9/44 SB CO
TOGETHER WITH PORTIONS OF VACATED
3rd & 4th STREETS, EXCEPT THE SLY 10'.

ACREAGE & LOT SIZE

SEE SITE PLAN FOR OVERALL DIMENSIONS

GROSS AREA 179,091 S.F./ 4.11 ACRES
TO CENTERLINE HWY 243 (LINCOLN ST)

EXISTING LOT AREA 164,758 S.F / 3.78 ACRES
BASED ON 40' LINCOLN STREET EXISTING ROW

ULTIMATE NET AREA 159,357 S.F./ 3.66 ACRES
BASED ON 55' LINCOLN STREET ULTIMATE R.O.W

TOWNSHIP/RANGE

SECTION 9, T3S, R1E, S.B.M.

ZONING

INDUSTRIAL

LAND USE

EXISTING
VACANT
PROPOSED
INDUSTRIAL (SEE PROJECT DESCRIPTION)

WQMP

PRIORITY PROJECT-- DEVELOPMENT AREA OVER 100,000 S.F.
WATER QUALITY MANAGEMENT PLAN REQUIRED

SWPPP AREA OF DISTURBANCE

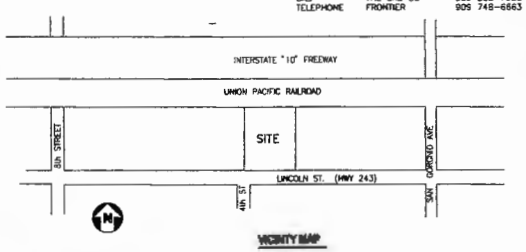
TOTAL PROJECT AREA
3.66 ACRES NET
AREA OF DISTURBANCE MORE THAN 1 ACRE
A SWPPP & NOI IS REQUIRED

FLOOD/FEMA

SITE IS NOT WITHIN A FEMA MAPPED 100 YR FLOODPLAIN

UTILITIES

WATER	CITY OF BANNING	951 922-3142
SEWER	CITY OF BANNING	951 922-3142
GAS	THE GAS CO	909 335-7928
TELEPHONE	FRONTIER	909 748-6663



VICINITY MAP

SUBJECT TO REVIEW AND APPROVAL CONDITIONS
REFERENCE CASE FILE PAC 20-23

MARCELL & ASSOCIATES
Development Consultants
P. O. BOX 371
BANNING, CA. 92220
(951) 662-7460

NOV. 18, 2020

TRANSPORTATION COMMODITIES, INC (TCI)
NORTHEAST CORNER OF 4th ST & LINCOLN ST.
BANNING, CA

CONDITIONAL USE PERMIT
SITE PLAN EXHIBIT

FOR T.C.I. W.O. 1656

SHEET NO. 1 OF 2 SHTS.
FILE NO

City of Banning

Community Development Department

Conditions of Approval

PROJECT: Conditional Use Permit 20-8012
SUBJECT: Conditions of Approval (City Council Resolution 2021-03)
APPLICANT: Stepping Stone Properties, LLC
LOCATION: Northeast Corner 4th St. and Lincoln St./APN 540-210-009

EXHIBIT B
To Planning Commission Resolution 2021-03

(All fair share agreements, covenant agreements and agreements subject to recordation will be subject to review and approval by the City Attorney and will include appropriate enforcement provisions by the City and be properly securitized.)

Community Development Department

1. The project shall always comply with all federal, state, County and City laws, codes, regulations, and standards, including those that relate to hazardous materials.

2. The applicant shall indemnify, protect, defend, and hold harmless, the City, and/or any of its officials, officers, employees, agents, departments, agencies, and instrumentalities thereof, from any and all claims, demands, lawsuits, writs of mandamus, and other actions and proceedings (whether legal, equitable, declaratory, administrative or adjudicatory in nature), and alternative dispute resolutions procedures (including, but not limited to, arbitrations, mediations, and other such procedures) (collectively "Actions"), brought against the City, and/or any of its officials, officers, employees, agents, departments, agencies, and instrumentalities thereof, that challenge, attack, or seek to modify, set aside, void, or annul, the action of, or any permit or approval issued by, the City and/or any of its officials, officers, employees, agents, departments, agencies, and instrumentalities thereof (including actions approved by the voters of the City), for or concerning the project, whether such actions are brought under the California Environmental Quality Act (CEQA), State Planning and Zoning Law, the Subdivisions Map Act, Code of Civil Procedure Section 1085 or 1094.5, or any other state, federal, or local statute, law, ordinance, rule, regulation, or any decision of a competent jurisdiction. It is expressly agreed that the City shall have the right to approve, which approval will not be unreasonably withheld, the legal counsel providing the City's defense, and that applicant shall reimburse City for any costs and expenses directly and necessarily incurred by the City in the course of the defense. City shall promptly notify the applicant of any Action brought and City shall cooperate with applicant in the defense of the Action.

City of Banning

Community Development Department

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3. Approval of this entitlement shall not waive compliance with any sections of the Banning Municipal Code (BMC), other applicable City ordinances, in effect at the time of building permit issuance.

4. A proposed tractor-trailer/semi-truck ("truck") transfer and storage yard for the accommodation of trucks used for the distribution, transfer, and movement of goods and commodities is permitted under this Conditional Use Permit (CUP) 20-8012. The permit shall commence substantial construction within two (2) years from the date of this approval, or the Conditional Use Permit shall become null and void. Substantial construction is defined as the following, but not limited to, the first-foundation inspection, trenching, connection, and energization of utilities (i.e., sewer, water, electrical, and/or storm drains). Additionally, if after commencement of operations, the truck transfer operation is discontinued for a period of 180 (ONE-HUNDRED AND EIGHTY) days, the Conditional Use Permit shall become also null and void. The Community Development Director may, upon a written application being filed 30 days prior to expiration and for good cause, grant a onetime extension not to exceed 12 months. Upon granting of an extension, the Community Development Director shall ensure that the Conditional Use Permit complies with all current provisions of Title 17 of the Banning Municipal Code.

5. A copy of the signed Resolution of approval, and all Conditions of Approval imposed on the Conditional Use Permit, shall be reproduced in legible form on the tenant improvement plans submitted for review and approval as required by the reviewing department.

6. The subject property shall be developed and maintained in accordance with the site plans stamped approved by the City and on file in the Planning Division, the conditions contained herein, and the applicable regulations within the Banning Municipal Code (BMC).

7. The permittee shall hire or contract for 24-hour security personnel to provide security services for the premises. All security personnel hired or contracted for the business operations shall comply with the BMC.

8. The permittee shall provide video surveillance of all sensitive outside and inside areas of the facility with a system camera resolution of 1280 x 720 pixels; shall be transmission control protocol capable of being accessed through the internet; shall provide sound; shall record 24 hours per day at 15 frames per second; and shall have a storage capacity of 90 days.

9. The permittee shall provide a security plan, lighting plan, and alarm system.

10. The project is conditionally consistent with the surrounding zones, land uses, and general uses within the surrounding project area. As such, the proposed project shall expire, and become null and void, after five (5) from the date of approval referenced herein. Unless extended by a revised conditional use permit, that is duly file with the Community Development Department, is approved by the City Planning Commission on or before the conclusion of the five (5) year lifespan.

11. On or before April 7, 2026 the Project Applicant/Proponent/Successor-in-interest shall duly file for a Revised Conditional Use Permit (CUP) to extend the project life beyond the initial five (5) year term. Otherwise, the entitlement shall become null and void.

Building Department

12. The applicant shall provide building data information: total occupant load, square footage, fire and the sprinkler type and sizing on the cover page of the drawing plans.

13. The applicant shall justify the existing area per California Building Code (CBC) Table 506.2 "Allowable Area," for the proposed project area. Please note that fire sprinklers maybe required within the allowable building area.

14. The applicant shall provide occupant load calculations on plans based on CBC Table 1004.5.

15. The applicant shall provide a breakdown of occupant load per each space used. Two exits or exit access doorways from any space shall be provided where the occupant load exceeds 49. (CBC Section 1006.2.4).

16. The applicant shall comply with the maximum common path of egress travel per CBC Table 1006.2.1.

17. The applicant shall provide mechanical, electrical, and plumbing (MEP) plans identifying the ventilation system throughout.

18. The applicant shall justify the number of plumbing fixtures with California Plumbing Code (CPC) Table 422.1.

19. When alterations, structural repairs, improvements, or additions are made to existing building or facility, the provisions of Division 2 shall comply. As set forth within Division 2 of the CBC, if the 20% of the construction valuation meets or exceeds

20% of the total, then ADA/Disabled upgrades shall be applied to building and/or building site for disabled access improvements CBC Section 11B-202.4 addressed in the following order of importance (see exceptions below):

i. Accessible route from the public sidewalk to the accessible building entrance. (When public sidewalks exist).
ii. Accessible parking.
iii. Accessible route from the accessible parking space(s) to the accessible building entrance.
iv. Accessible route from the accessible building entrance to the area(s) of improvement.
v. Accessible restrooms (one each) for each sex when required.
vi. Accessible drinking fountain.

20. The applicant shall identify the door strike edge distance for the existing restroom located on the upper floor per CBC Section 11B-404.2.4.1.

21. The applicant shall provide an accessible path of travel to the street on the Approved Site Plan if public sidewalks are provided. Accessible routes shall connect those buildings, facilities, elements, and spaces on a site, which are required to be accessible. Accessible routes shall be provided from public transportation stops, accessible parking, public streets, and sidewalks to the accessible building entrance(s) they serve. All routes shall be accessible. Detail the accessible route(s) on the site plan. (CBC 11B-206)

22. The applicant shall identify all slopes and curb conditions along the accessible path of travel. Walks shall be a minimum of 48 inches in width with a maximum cross slope of 2% and a maximum slope in the direction of travel of 5%. Walks exceeding 5% shall conform to the requirements of a ramp. The applicant shall detail curb ramps and truncated domes on the drawing plans. (CBC Section 11B-403.5.1)

Electric Department

23. It will be required that the new service be underground, see the list below for the requirements:

a. The new service voltage will be 120/208-volt 3-phase.
b. An area for a pad mounted transformer per SD 600-62 will be needed.
c. There must be adequate space for safe working clearance around the transformer per SD600-05.

d. This area of the transformer must also be accessible for the installation and maintenance of the transformer.
e. Protective barriers may be required to be installed per SD600-06 to protect the transformer from vehicle damage.
f. Future building plans will need to include electric service panel schedule and proposed location.
g. Contact the Electric Utility for Service Requirements and the New Service Questionnaire/Agreement.

Public Works Department

WATER

24. The applicant shall submit a water improvement plan showing proposed water service connection sizes and locations, including separate laterals for irrigation and for fire protection (if required by Fire Department).

25. Both the domestic and irrigation water services will require the installation of an RP backflow protection device.

26. The fire service, if required, will need an RPDA backflow protection device.

27. Any existing water meters, which if not used, will need to be properly abandoned at the applicant's expense.

28. The applicant shall submit water demand calculations to justify meter sizing and to determine annual water demands.

29. Submit sewer plans showing the proposed sewer lateral and cleanout. The single lateral connection shall be a minimum of 6" in diameter. Plans shall be submitted directly to the Public Works Departments and all plan check fees paid.

30. Submit for review existing utility easement documents for the vacated portion of Fourth Street. If deemed necessary by the City Engineer, the easement may need to be adjusted to provide 20-foot easement centered over the 15-inch sewer main.

31. Each water service shall be protected by a reduced pressure principal backflow preventor, and the backflow preventor shall be tested by a State-certified backflow tester.

32. Proposed meter sizes shall be determined based on anticipated maximum flows or fixture counts and the calculations submitted along with the water plans.

33. Abandon the existing water main along the vacated portion of Fourth Street by cutting and capping the main at the Tee at the intersection with Lincoln St.

FEES

34. Water Connection Fees shall be paid per EDU (EDU is based on meter sizes); Sewer Connection Fees shall be paid per EDU. EDUs for industrial customers are determined by the City Engineer based on both quantity and quality of the anticipated discharge. Final fee amounts for water and sewer will be determined during the plan-check process. Fees shall be paid at the time of issuance of building permits in accordance with the fee schedule in effect at the time the fees are paid.

Fire Department

35. Questions should be directed to the Riverside County Fire Department, Office of the Fire Marshal at 99 E. Ramsey St. Banning, CA 92220 (951) 922-3167.

36. With respect to the conditions of approval for the referenced project, the Fire Department requires the following fire protection measures be provided in accordance with Riverside County Ordinances and/or recognized fire protection standards:

37. Fire Hydrants and Fire Flow: Prior to the issuance of building permits, the applicant shall submit plans for the water system to the fire department for review and approval. The water system shall be capable of delivering the required fire flow. Fire hydrant(s) location and spacing shall comply with the fire code. The applicant shall make an approved water supply for fire protection during construction available prior to the arrival of combustible materials on site. (Ref. 2019 California Fire Code (CFC) 507.5.1, 3312, Appendices B and C.)

38. Fire Department Access: Prior to building permit issuance, the applicant shall provide a site plan showing the fire lanes. Access roads shall be provided to within 150 feet to all portions of the exterior building walls and shall have an unobstructed width of not less than 24 feet. The construction of the access roads shall be all weather and capable of sustaining 40,000 lbs. over two axles for areas of residential development and 60,000 lbs. over two axels for commercial developments. Approved vehicle

access, either permanent or temporary, shall be provided during construction. (Ref. CFC 503.1.1, 3310.1 and 503.2.1)

39. Construction Permits Fire Department Review: The applicant shall submit construction plans to the Office of the Fire Marshal for development, construction, installation, and operational use permitting. Final fire and life safety conditions will be addressed when the Office of the Fire Marshal reviews these plans. These conditions will be based on occupancy, use, CBC, CFC, and related codes, which are in effect at the time of building plan submittal.

40. Phased Construction Access: If construction is phased, each phase shall provide approved access for fire protection prior to any construction. (Ref. CFC 503.1)

41. Fire Alarm and Detection System: A water flow monitoring system and/or fire alarm system may be required and determined at time of building plan review. (Ref. CFC 903.4, CFC 907.2 and NFPA 72)

42. Knox Box and Gate Access: The applicant shall provide buildings with a Knox Box. The Knox Box shall be installed in an accessible location approved by the Office of the Fire Marshal. The applicant shall provide all electronically operated gates with Knox key switches and automatic sensors for access. (Ref. CFC 506.1)

43. Addressing: All commercial buildings shall display street numbers in a prominent location on the address side and additional locations as required. (Ref. CFC 505.1 and County of Riverside Office of the Fire Marshal Standard #07-01)

Engineering Department

A. General Requirements

44. A Public Works Permit shall be required prior to commencement of any work within the public right-of-way. The contractor working within the public right-of-way shall submit proof of a Class "A" State Contractor's License, City of Banning Business License, and Liability Insurance. Any existing public improvements, or public improvements not accepted by the City that are damaged during construction shall be removed and replaced as determined by the City Engineer or his/her representative.

City of Banning

Community Development Department

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45. Prior to the issuance of any grading, construction, or public works permit by the City, the applicant shall obtain any necessary clearances and/or permits from the following agencies:

    h. Fire Marshal (access)
    i. Public Works Department (grading permits, street improvement permits)
    j. Riverside County Flood Control & Water Conservation District (storm drain)
    k. California Regional Water Quality Control Board Colorado River Basin (RWQCB)
    l. South Coast Air Quality Management District (SCAQMD)

46. The applicant is responsible for meeting all requirements of permits and/or clearances from the above listed agencies. When the requirements include approval of improvement plans, the applicant shall furnish proof of such approvals when submitting improvements plans to the City.

47. The following improvement plans shall be prepared by a Civil Engineer licensed by the State of California and submitted to the Engineering Division for review and approval. A separate set of plans shall be prepared for each line item listed below. Unless otherwise authorized in writing by the City Engineer, the plans shall utilize the minimum scale specified and shall be drawn on 24" x 36" Mylar film. Plans may be prepared at a larger scale if additional detail or plan clarity is desired (Note: the applicant may be required to prepare other improvement plans not listed here pursuant to improvements required by other agencies and utility purveyors):

48. Rough Grading Plans — 1" = 40' horizontal

49. (All Conditions of Approval shall be reproduced on last sheet of set)

    c. Haul Route Plans — 1" = 40' horizontal
        i. Clearing Plans (Include construction fencing plan) 1" = 50' horizontal
    b. Erosion Control & SWPPP, WQMP — 1" = 40' Horizontal
    c. (Note: a, b, c & d shall be reviewed and approved concurrently)
    d. Street Improvement Plans — 1" = 40' Horizontal, 1" = 4' Vertical
    d. Precise Grading Plans — 1" = 40' Horizontal
    e. Landscaping Plans — 1" = 20 Horizontal

50. Other engineered improvement plans prepared for City approval that are not listed herein shall be prepared in formats approved by the City Engineer prior to commencing plan preparation.

51. A small index map shall be included on the title sheet of each set of plans, showing the overall view of the entire work area.

52. Upon completion of construction, the Developer shall furnish the City with reproducible record drawings on Mylar film of all improvement plans that were approved by the City Engineer. Each sheet shall be clearly marked "As-Built" or "As-Constructed" and shall be stamped and signed by the engineer or surveyor certifying the accuracy and completeness of the drawings. The applicant shall have all AutoCAD files submitted to the City, revised to reflect the "As-Built" conditions.

B. Right-of-Way/Street Improvements

53. Applicant shall offer to dedicate to the City of Banning the additional right-of-way for Lincoln Street (50 feet one-half width) fronting the south side of the site as a Major Highway for public street and utilities purposes. Legal descriptions and plats of street dedication shall be provided to the Engineering Division for review and approval before acceptance by City Council and recorded by the County of Riverside.

54. Construct Lincoln Street (55 -eet from the centerline) fronting the property including street lighting, curb and gutter, driveway approaches, sidewalk, parkway, asphalt concrete paving, traffic signs and striping, and any transitions. Applicant's geotechnical engineer shall provide the design of the pavement section based upon the Caltrans method.

55. Other street improvements may be required as identified in the traffic impact analysis (TIA).

56. The City and Developer are to enter into a Public Improvement Agreement to guarantee the construction of the public improvements as listed in the Conditions of Approval and as shown on the approved plans. The applicant shall work with the City Attorney's Office to execute the Agreement and pay all related legal processing fees.

57. All street improvement designs shall provide pavement and lane transitions per City of Banning and Caltrans standards for transition to existing street sections.

58. Any public improvements damaged during the course of construction shall be replaced to the satisfaction of the City Engineer, or his/her designee.

59. The applicant shall plant and perpetually maintain trees, shrubs, and ground cover placed in the parkway, slopes adjacent to public right-of-ways constructed in connection with the project. This includes providing irrigation and the clearing of debris and weed removal. The applicant shall be required to enter into a Landscape Maintenance Agreement for the perpetual maintenance of landscaping within the public right-of-way fronting the project site.

60. All required public improvements for the project shall be completed, tested, and approved by the Engineering Division prior to issuance of any Certificate of Occupancy.

C. Grading and Drainage

61. Submit a Drainage Study with hydrologic and hydraulic analysis for developed and undeveloped (existing) conditions to the Engineering Division for review and approval. The study and analysis shall be prepared by a civil engineer licensed by the State of California. Drainage design shall be in accordance with Banning Master Drainage Plan adopted by Riverside County Flood Control and Water Conservation District (RCFCD), RCFCD Hydrology Manual, and standard plans and specifications. The 10-year storm flow shall be contained within the street curbs, and the 100-year storm shall be contained within the street right-of-way; when this criteria is exceeded, additional drainage facilities shall be designed and constructed.

62. At a minimum, all development will make provisions to store runoff from rainfall events up to and including the one-hundred three-hour during event. Post-development peak urban runoff discharge rates shall not exceed pre-development peak urban runoff discharge rates.

63. If the site is located in a Flood Area as identified in Flood Insurance Rate Map dated August 28, 2008 the applicant is responsible for providing a certification by a registered professional engineer or architect demonstrating that encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.

64. The project grading shall be designed in a manner that perpetuates the existing natural drainage patterns with respect to tributary drainage areas, outlet points and outlet conditions. Otherwise, a drainage easement shall be obtained for the release of concentrated or diverted storm flows. The project shall accept and convey storm flows from the adjacent property to the north and west.

65. The applicant shall comply with Chapter 13.24 "Stormwater Management Systems" of the Banning Municipal Code (BMC) and Title 18 "Grading, Erosion and Sediment Control" of the California Building Code related to excavation and grading; and the State Water Resources Control Board's orders, rules and regulations.

66. For construction activities including clearing, grading or excavation of land that disturbs one (1) acre or more of land, or that disturbs less than one (1) acre of land, but which is a part of a construction project that encompasses more than one (1) acre of land, the applicant shall be required to submit a Storm Water Pollution Protection Plan (SWPPP) and file a Notice of Intent (NOI) with the Regional Water Quality Control Board (RWQCB).

67. The applicant shall provide proof that the SWPPP has been approved by the RWQCB prior to issuance of any permits.

68. The applicant shall ensure that the required SWPPP is available for inspection at the project site at all times through and including acceptance of all improvements by the City.

69. The applicant's SWPPP shall include provisions for all of the following Best Management.

70. Practices ("BMPs"):

    m. Temporary Soil Stabilization (erosion control).
    n. Temporary Sediment Control.
    o. Wind Erosion Control.
    p. Tracking Control.
    q. Non-Storm Water Management.
    r. Waste Management and Materials Pollution Control.

71. All erosion and sediment control BMPs proposed by the applicant shall be designed using the CASQA BMP handbook and approved by the City Engineer prior to any onsite or offsite grading, pursuant to this project.

72. The approved SWPPP and BMPs shall remain in effect for the entire duration of project construction until all improvements are completed and accepted by the City.

73. Prior to issuance of any grading or building permit, a Project-Specific Water Quality Management Plan (WQMP) shall be reviewed and approved by the City Engineer in accordance with the California Regional Water Quality Control Board Colorado River Basin Region Order No. R7-2013-0011.
74. Prior to the issuance of any building permit(s), a precise grading plan shall be submitted to the City Engineer for review and approval. A grading permit shall be obtained prior to commencement of any grading activity.

75. The following notation shall be placed on the grading plan: "No more than three days prior to removing trees, shrubs or tall herbaceous vegetation during the breeding season for migratory birds (February 15 to August 31) a qualified biologist shall conduct a nesting bird survey."

D. Traffic/Airport Safety Zone

76. Prior to the issuance of a grading permit or building permit, the applicant shall submit and obtain approval in writing from the Fire Marshall for the plans for all public or private access drives or streets. The plans shall include plan and sectional views and indicate the grade and width of the access road measured flow-line to flow-line. When a dead-end access exceeds 150 feet or when otherwise required, a clearly marked fire apparatus access turnaround must be provided and approved by the Fire Marshall. Applicable covenant, conditions or restrictions or other approved documents shall contain provisions which prohibit obstructions such as speed bumps/humps, control gates or other modifications within said easement or access road unless prior approval of the Fire Marshall is granted.

77. Driveway grades shall not exceed eight percent unless approved by the City Engineer.

78. Access drives to the public right-of-way shall be restricted to those approved by the City Engineer as shown on the approved plans.

79. Prior to the issuance of any certificate of occupancy, all fire hydrants shall have a blue reflective pavement marker indicating the hydrant location on the street/access driveway as approved by the Fire Marshall and must be maintained in good condition by the property owner until the street is accepted for maintenance.

80. The applicant shall apply the current version of the "Riverside County Transportation Department Traffic Impact Analysis Preparation Guide", all exemptions identified in the TIA Preparation Guide shall apply. If it is determined, according to the TIA Preparation Guide, that a TIA is determined, then a Scoping Agreement shall be required.

81. The site is located within an airport safety zone as designated in the Riverside County Airport Land Use Compatibility Plan. Prior to approval of any building permit, the project shall be submitted to the Riverside Airport Land Use Commission for a consistency determination and the Applicant shall provide written evidence that the project meets all conditions set forth by said Commission.

E. Trash/Recycling

82. Construction debris shall be disposed of at a certified recycling site. It is the responsibility of the developer to contact the City's franchised solid waste hauler, Waste Management of the Inland Valley, at 1-800-423-9986 for disposal of construction debris.

83. The developer shall participate in the City's recycling and diversion programs by providing a solid waste enclosure to accommodate necessary solid waste containers.

84. All new development projects including, but not limited to, industrial and business buildings and facilities, as well as multi-family complexes shall provide a solid waste enclosure to accommodate trash, recycle and organics waste bins and/or containers. Solid waste enclosures for multiple tenant properties, such as a shopping center, must design the enclosure to accommodate all waste containers of the property.

85. Solid waste enclosures shall be located on the site to be serviced.

86. The enclosure shall be designed for the exclusive use of housing solid waste containers including trash, recyclable and organics materials.

87. Enclosures Design Criteria:
    a. The size and dimensions of the trash enclosure shall be based on the required number and size of containers at a minimum accommodating one (1) container each for trash, recyclables, and organics materials.

b. Enclosure shall be architecturally compatible with the primary building on site to provide a coordinated design.
c. Exterior materials and colors of the enclosure shall match the building walls.
d. NO NEW Chain link fencing with or without/plastic slats is prohibited
e. Enclosure shall have solid metal or wood gates with latches that can be secured in an open or closed position.
f. Enclosures shall be lockable and/or contain locking bins. Locking mechanisms on enclosures and/or bins shall be approved by the City of Banning Solid Waste Franchise Hauler. Enclosures shall be constructed in a permanent manner.
g. Exterior must be fully enclosed with solid roofing to prevent rainfall from entering the enclosure and to prevent wind dispersal, as well as offsite transport of trash and recycling. Provide the minimum clearance for collector and user accessibility.
h. City Engineer approval shall be obtained in writing prior to the construction of any solid waste enclosure.

F. Fees

88. Plan check fees for professional report review (geotechnical, drainage, WQMP, etc.), and all improvement plans review, shall be paid at the time of submittal of said documents for review and approval in accordance with the fee schedule in effect at the time of submittal.

89. Public Works Inspection fees shall be paid prior to issuance of any permits in accordance with the fee schedule in effect at time of time of scheduling.

90. A plan storage fee shall be paid for any engineering plans that may be required prior to issuance of certificate of occupancy in accordance with the fee schedule in effect at the time the fee is paid.

END

APPENDIX E
HISTORICAL RESOURCES

ERIS

HISTORICAL AERIALS

Project Property: APNs 540-210-009 and 540-210-010
APNs 540-210-009 and 540-210-010
Banning CA

Project No:

Requested By: Weis Environmental, LLC

Order No: 21110500005

Date Completed: November 08,2021

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Environmental Risk Information Services
A division of Glacier Media Inc.
1.866.517.5204 | info@erisinfo.com | erisinfo.com

Date	Source	Scale	Comments
2020	United States Departments of Agriculture	1" = 500'	
2018	United States Departments of Agriculture	1" = 500'	
2014	United States Departments of Agriculture	1" = 500'	
2012	United States Departments of Agriculture	1" = 500'	
2010	United States Departments of Agriculture	1" = 500'	
2009	United States Departments of Agriculture	1" = 500'	
2006	United States Departments of Agriculture	1" = 500'	
2005	United States Departments of Agriculture	1" = 500'	
2004	United States Departments of Agriculture	1" = 500'	
2002	United States Geologial Survey	1" = 500'	
1996	United States Geologial Survey	1" = 500'	
1994	United States Geologial Survey	1" = 500'	
1990	United States Geologial Survey	1" = 500'	
1985	United States Geologial Survey	1" = 500'	
1980	United States Geologial Survey	1" = 500'	
1979	United States Geologial Survey	1" = 500'	
1972	United States Geologial Survey	1" = 500'	
1967	Agricultural Stabilization & Conserv. Service	1" = 500'	
1962	FAIRCHILD	1" = 500'	
1953	Agricultural Stabilization & Conserv. Service	1" = 500'	
1939	FAIRCHILD	1" = 500'	



Year: 2020
Source: USDA
Scale: 1" = 500'
Comment:

Address: APNs 540-210-009 and 540-210-010, Banning, CA
Approx Center: -116.88011532,33.9224622

Order No: 21110500005

ERIS



Year: 2018
Source: USDA
Scale: 1" = 500'
Comment:

Address: APNs 540-210-009 and 540-210-010, Banning, CA
Approx Center: -116.88011532,33.9224622

Order No: 21110500005

ERIS



Year: 2014
Source: USDA
Scale: 1" = 500'
Comment:

Address: APNs 540-210-009 and 540-210-010, Banning, CA
Approx Center: -116.88011532,33.9224622

Order No: 21110500005

ERIS



Year: 2012
Source: USDA
Scale: 1" = 500'
Comment:

Address: APNs 540-210-009 and 540-210-010, Banning, CA
Approx Center: -116.88011532,33.9224622

Order No: 21110500005

ERIS



Year: 2010
Source: USDA
Scale: 1" = 500'
Comment:

Address: APNs 540-210-009 and 540-210-010, Banning, CA
Approx Center: -116.88011532,33.9224622

Order No: 21110500005

ERIS



Year: 2009
Source: USDA
Scale: 1" = 500'
Comment:

Address: APNs 540-210-009 and 540-210-010, Banning, CA
Approx Center: -116.88011532,33.9224622

Order No: 21110500005

ERIS



Year: 2006
Source: USDA
Scale: 1" = 500'
Comment:

Address: APNs 540-210-009 and 540-210-010, Banning, CA
Approx Center: -116.88011532,33.9224622

Order No: 21110500005

ERIS



Year: 2005
Source: USDA
Scale: 1" = 500'
Comment:

Address: APNs 540-210-009 and 540-210-010, Banning, CA
Approx Center: -116.88011532,33.9224622

Order No: 21110500005

ERIS



Year: 2004
Source: USDA
Scale: 1" = 500'
Comment:

Address: APNs 540-210-009 and 540-210-010, Banning, CA
Approx Center: -116.88011532,33.9224622

Order No: 21110500005

ERIS



Year: 2002
Source: USGS
Scale: 1" = 500'
Comment:

Address: APNs 540-210-009 and 540-210-010, Banning, CA
Approx Center: -116.88011532,33.9224622

Order No: 21110500005

ERIS



Year: 1996
Source: USGS
Scale: 1" = 500'
Comment:

Address: APNs 540-210-009 and 540-210-010, Banning, CA
Approx Center: -116.88011532,33.9224622

Order No: 21110500005

ERIS



Year: 1994
Source: USGS
Scale: 1" = 500'
Comment:

Address: APNs 540-210-009 and 540-210-010, Banning, CA
Approx Center: -116.88011532,33.9224622

Order No: 21110500005

ERIS



Year: 1990
Source: USGS
Scale: 1" = 500'
Comment:

Address: APNs 540-210-009 and 540-210-010, Banning, CA
Approx Center: -116.88011532,33.9224622

Order No: 21110500005

ERIS



Year: 1985
Source: USGS
Scale: 1" = 500'
Comment:

Address: APNs 540-210-009 and 540-210-010, Banning, CA
Approx Center: -116.88011532,33.9224622

Order No: 21110500005

ERIS



Year: 1980
Source: USGS
Scale: 1" = 500'
Comment:

Address: APNs 540-210-009 and 540-210-010, Banning, CA
Approx Center: -116.88011532,33.9224622

Order No: 21110500005

ERIS



Year: 1979
Source: USGS
Scale: 1" = 500'
Comment:

Address: APNs 540-210-009 and 540-210-010, Banning, CA
Approx Center: -116.88011532,33.9224622

Order No: 21110500005

ERIS



Year: 1972
Source: USGS
Scale: 1" = 500'
Comment:

Address: APNs 540-210-009 and 540-210-010, Banning, CA
Approx Center: -116.88011532,33.9224622

Order No: 21110500005

ERIS



Year: 1967
Source: ASCS
Scale: 1" = 500'
Comment:

Address: APNs 540-210-009 and 540-210-010, Banning, CA
Approx Center: -116.88011532,33.9224622

Order No: 21110500005

ERIS



Year: 1962
Source: FAIRCHILD
Scale: 1" = 500'
Comment:

Address: APNs 540-210-009 and 540-210-010, Banning, CA
Approx Center: -116.88011532,33.9224622

Order No: 21110500005

ERIS



Year: 1953
Source: ASCS
Scale: 1" = 500'
Comment:

Address: APNs 540-210-009 and 540-210-010, Banning, CA
Approx Center: -116.88011532,33.9224622

Order No: 21110500005

ERIS



Year: 1939
Source: FAIRCHILD
Scale: 1" = 500'
Comment:

Address: APNs 540-210-009 and 540-210-010, Banning, CA
Approx Center: -116.88011532,33.9224622

Order No: 21110500005

ERIS

CITY DIRECTORY

Project Property:	*APNs 540-210-009 and 540-210-010*
	APNs 540-210-009 and 540-210-010
	Banning, CA
Project No:	
Requested By:	*Weis Environmental, LLC*
Order No:	*21110500005*
Date Completed:	*November 9, 2021*

Environmental Risk Information Services
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1.866.517.5204 | info@erisinfo.com | erisinfo.com

November 9, 2021
RE: CITY DIRECTORY RESEARCH
APNs 540-210-009 and 540-210-010
APNs 540-210-009 and 540-210-010 Banning, CA

Thank you for contac ng ERIS for an City Directory Search for the site described above. Our staff has conducted a reverse lis ng City Directory search to determine prior occupants of the subject site and adjacent proper es. We have provided the nearest addresses(s) when adjacent addresses are not listed. If we have searched a range of addresses, all addresses in that range found in the Directory are included.

Note: Reverse Lis ng Directories generally are focused on more highly developed areas. Newly developed areas may be covered in the more recent years, but the older directories will tend to cover only the "central" parts of the city. To complete the search, we have either u lized the ACPL, Library of Congress, State Archives, and/or a regional library or history center as well as mul ple digi zed directories. These do not claim to be a complete collec on of all reverse lis ng city directories produced.

ERIS has made every effort to provide accurate and complete informa on but shall not be held liable for missing, incomplete or inaccurate informa on. To complete this search we used the general range(s) below to search for relevant findings. If you believe there are addi onal addresses or streets that require searching please contact us at 866-517-5204.

Search Criteria:
100-700 of W Lincoln Street
all of S 4th Street

Search Results Summary

Date	Source	Comment
2020	DIGITAL BUSINESS DIRECTORY	
2016	DIGITAL BUSINESS DIRECTORY	
2012	DIGITAL BUSINESS DIRECTORY	
2008	DIGITAL BUSINESS DIRECTORY	
2003	DIGITAL BUSINESS DIRECTORY	
1999	DIGITAL BUSINESS DIRECTORY	
1996	HAINES	
1991	HAINES	
1986	HAINES	
1971	HAINES	

63 **RIVERSIDE COUNTY DEPT PUBLIC**...*State Governmentsocial/human Resources*
63 **RIVERSIDE COUNTY DEPT PUBLIC**...*County Government-social/human Resources*
63 **RIVERSIDE COUNTY PUBLIC SOCIAL**...*Government Offices-county*
63 **RIVERSIDE COUNTY PUBLIC SOCIAL**...*Federal Government Contractors*
63 **STEELE, NADINE**...*Counselorscouples*
63 **STEELE, NADINE**...*Counselors*

101 **APOLLO MASTERS CORP**...*Magnetic/optical Recording Media (mfrs)*
161 **KSD INC**...*Federal Government Contractors*
161 **KSD INC**...*Machine Shops (mfrs)*
161 **KSD INC**...*Construction Companies*
161 **KSD INC**...*Welding*
201 **PRO-LINE**...*Hobby & Model Constr Supplies-mfrs*
201 **PRO-LINE**...*Oilsfuel (whls)*
201 **PROLINE RACING**...*Hobby & Model Constr Supplies-mfrs*
266 **HYDRO FOG INC**...*Misting Systems-outdoor (whls)*
268 **PRECISION MATERIAL HANDLING**...*Material Handling Equipment (whls)*
270 **KENNY STRICKLAND INC**...*Oil Companies*
270 **KENNY STRICKLAND INC WAREHOUSE**...*Warehouses-merchandise & Self Storage*
274 **QST**...*Tractor Equipment & Parts (whls)*
300 **BURGESS NORTH AMERICAN**...*Movers*
300 **BURGESS NORTH AMERICAN**...*Storage*
300 **BURGESS NORTH AMERICAN**...*Storage-household & Commercial*

63 **RIVERSIDE COUNTY DEPT PUBLIC**...*County Government-social/human Resources*
63 **RIVERSIDE COUNTY PUBLIC SOCIAL**...*Government Offices-county*
63 **STEELE, NADINE**...*Counselors*
494 **UNITED POWER CONTRACTORS INC**...*New Single-family Hsng Constr (exc For-sale Bldrs)*

101 **APOLLO MASTERS CORP**...*Magnetic/optical Recording Media (mfrs)*
101 **APOLLO MASTERS CORP**...*Recorders-sound/video Equip/supls (mfrs)*
161 **KSD INC**...*Machine Shops (mfrs)*
161 **KSD INC**...*Federal Government Contractors*
201 **PRO-LINE**...*Hobby & Model Constr Supplies-mfrs*
266 **HYDRO FOG INC**...*Misting Systems-outdoor (whls)*
268 **PRECISION MATERIAL HANDLING**...*Material Handling Equipment (whls)*
270 **KENNY STRICKLAND INC WAREHOUSE**...*Warehouses-merchandise & Self Storage*
274 **QST**...*Tractor Equipment & Parts (whls)*
300 **BURGESS NORTH AMERICAN**...*Movers*
300 **BURGESS NORTH AMERICAN**...*Storage-household & Commercial*
300 **BURGESS NORTHAMERICAN**...*Storage-household & Commercial*
679 **APPLE LEE FIELDS LLC**...*Hydroponics Equipment & Supplies*

2012
SOURCE: DIGITAL BUSINESS DIRECTORY

S 4TH STREET

63 **RIVERSIDE COUNTY DEPT PUBLIC**...*County Government-social/human Resources*
63 **RIVERSIDE COUNTY PUBLIC SOCIAL**...*Government Offices-county*
494 **TRUSS CO**...*Trusses-construction Whls & Mfrs*

2012
SOURCE: DIGITAL BUSINESS DIRECTORY

W LINCOLN STREET

101 **APOLLO MASTERS CORP**...*Magnetic/optical Recording Media (mfrs)*
161 **KSD INC**...*Machine Shops (mfrs)*
274 **QST**...*Tractor Equipment & Parts (whls)*
300 **BURGESS NORTH AMERICAN**...*Movers*
300 **HYDRO FOG INC**...*Misting Systems-outdoor (whls)*

63 **PUBLIC SOCIAL SERVICES**...*Administrative Social/manpower Programs*
63 **RIVERSIDE COUNTY PUBLIC SOCIAL**...*Exec Offs,state-local*
63 **RIVERSIDE COUNTY PUBLIC SOCIAL**...*Government Offices-county*
494 **TRUSS CO**...*Trusses-construction Whol & Mfrs*
494 **TRUSS CO**...*Structural Wd Membr*

101 **APOLLO MASTERS CORP**...*Mag, Opt Recording*
101 **APOLLO MASTERS DIV**...*Magnetic/optical Recording Media (mfrs)*
161 **KSD INC**...*Machine Shops*
161 **KSD INC**...*Industrial Mchy Nec*
201 **PRO-LINE**...*Games,toys,chld Vhs*
201 **PRO-LINE**...*Hobby & Model Constr Supplies-mfrs*
264 **AIMSCO**...*Whl Indus Supplies*
266 **HYDRO FOG INC**...*Plumbing/heating/air Cond Contractor*
272 **DVX RACING CO**...*Race Tracks*
274 **BANNCO INC**...*Contractors-equip/supls-dlrs/svc (whol)*
274 **QST**...*Farm & Garden Mchy*
300 **BURGESS NORTH AMERICAN**...*Movers*
300 **BURGESS NORTH AMERICAN**...*Lcl Trckg With Stor*
300 **HYDRO FOG INC**...*Plbg & Heating Eqp*
368 **W W CRAFTSMEN INC**...*Cabinets-manufacturers*
679 **LOS QUATROS AMIGOS**...*Trucking-motor Freight*
679 **M G BANNING**...*Subdividers & Devel*
679 **NORWEST EXPRESS**...*Frt Transp Arrange*
679 **SANTEE DAIRIES INC**...*Dairy Products-wholesale*

63 **RIVERSIDE COUNTY PUBLIC SOCIAL**...
63 **VIDEO PLUS**...*Records, Audio Discs, And Tapes*
494 **TRUSS CO**...

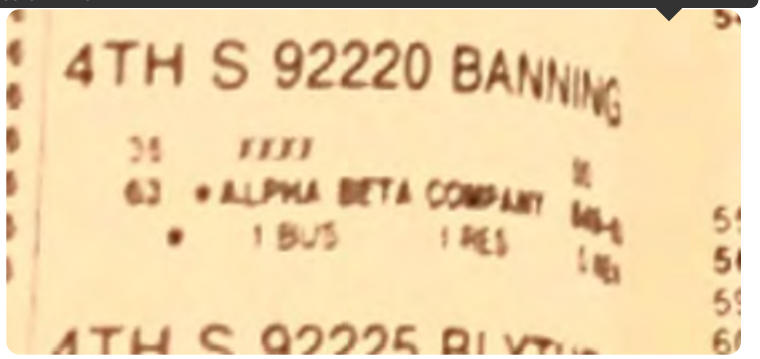
101 **APOLLO MASTERS DIV**...
161 **KSD INC**...*Machine And Other Job Shop Work*
201 **PRO-LINE**...*Toy Novelties And Amusements*
264 **AIMSCO**...
264 **M K ROSS CO**...
272 **T Q CONVERSIONS**...
300 **BURGESS NORTH AMERICAN INC**...
368 **W W CRAFTSMEN INC**...
679 **LOS QUATROS AMIGOS**...

63 **VIDEO PLUS**...*Video Tape Rental*

101 **APOLLO MASTERS CORP**...
161 **BANNING DRIVELINE SERVICE**...*Motor Vehicle Parts And Accessories*
161 **SEVEN STAR FOOD STORE**...*Grocery Stores*
201 **MODEL RACING PRODUCTS**...*Toys And Hobby Goods And Supplies*
201 **PRO LINE**...*Toys And Hobby Goods And Supplies*
272 **TRAVEL QUEST INC**...*Auto And Home Supply Stores*
300 **BURGESS NORTH AMERICAN**...*Local Trucking With Storage*
300 **BURGESS NORTH AMERICAN FROM REDLANDS TELEPHONES CALL**...*Local Trucking With Storage*
368 **W W CRAFTSMEN INC**...*Wood Kitchen Cabinets*

1996
SOURCE: HAINES

S 4TH STREET



1996
SOURCE: HAINES

W LINCOLN STREET



1991
SOURCE: HAINES

S 4TH STREET

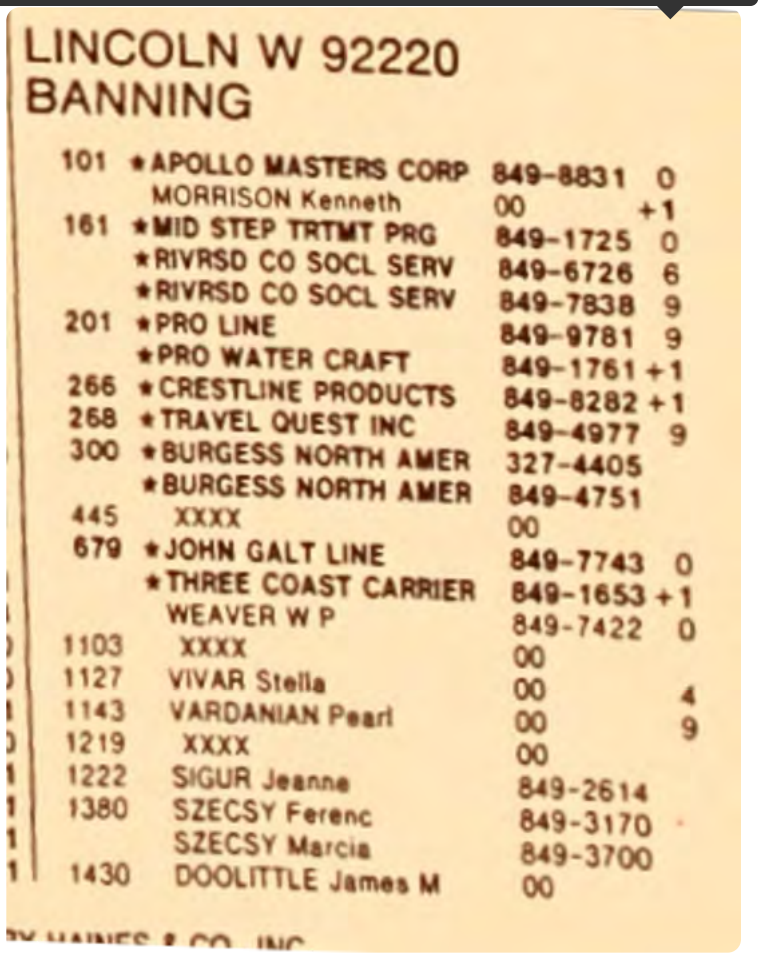


4TH S 92220 BANNING

35	XXXX	00
63	★ALPHA BETA	849-9968
NO #	★H C I TECHNOLOGIES	849-1121 0
★	2 BUS 1 RES	0 NEW

1991
SOURCE: HAINES

W LINCOLN STREET



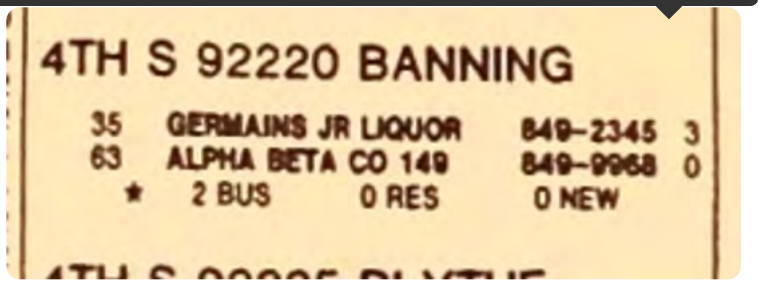
LINCOLN W 92220 BANNING

101	★APOLLO MASTERS CORP	849-8831 0
	MORRISON Kenneth	00 +1
161	★MID STEP TRTMT PRG	849-1725 0
	★RIVRSD CO SOCL SERV	849-6726 6
	★RIVRSD CO SOCL SERV	849-7838 9
201	★PRO LINE	849-9781 9
	★PRO WATER CRAFT	849-1761 +1
266	★CRESTLINE PRODUCTS	849-8282 +1
268	★TRAVEL QUEST INC	849-4977 9
300	★BURGESS NORTH AMER	327-4405
	★BURGESS NORTH AMER	849-4751
445	XXXX	00
679	★JOHN GALT LINE	849-7743 0
	★THREE COAST CARRIER	849-1653 +1
	WEAVER W P	849-7422 0
1103	XXXX	00
1127	VIVAR Stella	00 4
1143	VARDANIAN Pearl	00 9
1219	XXXX	00
1222	SIGUR Jeanne	849-2614
1380	SZECSY Ferenc	849-3170
	SZECSY Marcia	849-3700
1430	DOOLITTLE James M	00

BY HAINES & CO., INC.

1986
SOURCE: HAINES

S 4TH STREET



4TH S 92220 BANNING

35	GERMAINS JR LIQUOR	849-2345	3
63	ALPHA BETA CO 149	849-9968	0
★	2 BUS	0 RES	0 NEW

1986
SOURCE: HAINES

W LINCOLN STREET



LINCOLN W 92220
BANNING

		00	
101	XXXX		
161	ADVANCED BLLSTC CHT	849-4648	+6
	HANDBURY PRODUCTS	849-1817	+6
	REYRSO CO DA SPRT	849-7118	+6
	REYRSO CO JTPA	849-5483	+6
	REYRSO CO SOCL SERV	849-6726	+6
300	BURGESS N AMER INC	849-4751	0
	BURGESS NO AMER INC	652-3548	4
	BURGESS NORTH AMERCN	327-4405	8
	NORTH AM VAN LINES	849-4751	
	NORTH AMER LINES	652-3548	1
	NORTH AMER VAN LNS	327-4405	9
		00	
445	XXXX		
679	CAPPS ROBT	849-7841	5
1103	SCHWESOW JEFFREY	849-1348	1
	SCHWESOW PATRICIA	849-1348	
		00	
1127	XXXX		

1971
SOURCE: HAINES

S 4TH STREET

4TH S 92220 BANNING

35*GERMAIN BROS LIQUOR849-2345
63*ALPHA BETA MKT 149 849-9968
* 2 BUS 0 RES

1971
SOURCE: HAINES

W LINCOLN STREET

LINCOLN W 92220 BANNING

300*BANNING VAN&STORAGE849-4751
*NORTH AM VAN LINES 849-4751
679*CITY EXPRESS 849-4671
*LOS ANGLS CTY EXPRS849-4671
1143 VARDANIAN ARMEN 849-2378
1219 SKARE HARLAN S 849-2760
1222 SIGUR JEANNE 849-2614
1430 DOOLITTLE JAS M 849-2606
1522 RENTFROW KENNETH 849-4246
1574 BUTLER CECIL R 849-6597
1661 HALL BOB W 849-3801
1692 RING P W 849-3982
1706 COOK W T 849-6465
1897 KENNEDY JAY R 849-4228
2005 HARVEY H M 849-4167
2008 SCHAFER ALBERT G 849-7345
SCHAFER LOUISE E 849-7345

--- END REPORT ---

FIRE INSURANCE MAPS

Project Property:	APNs 540-210-009 and 540-210-010 APNs 540-210-009 and 540-210-010 Banning CA
Project No:	
Requested By:	Weis Environmental, LLC
Order No:	21110500005
Date Completed:	November 19, 2021

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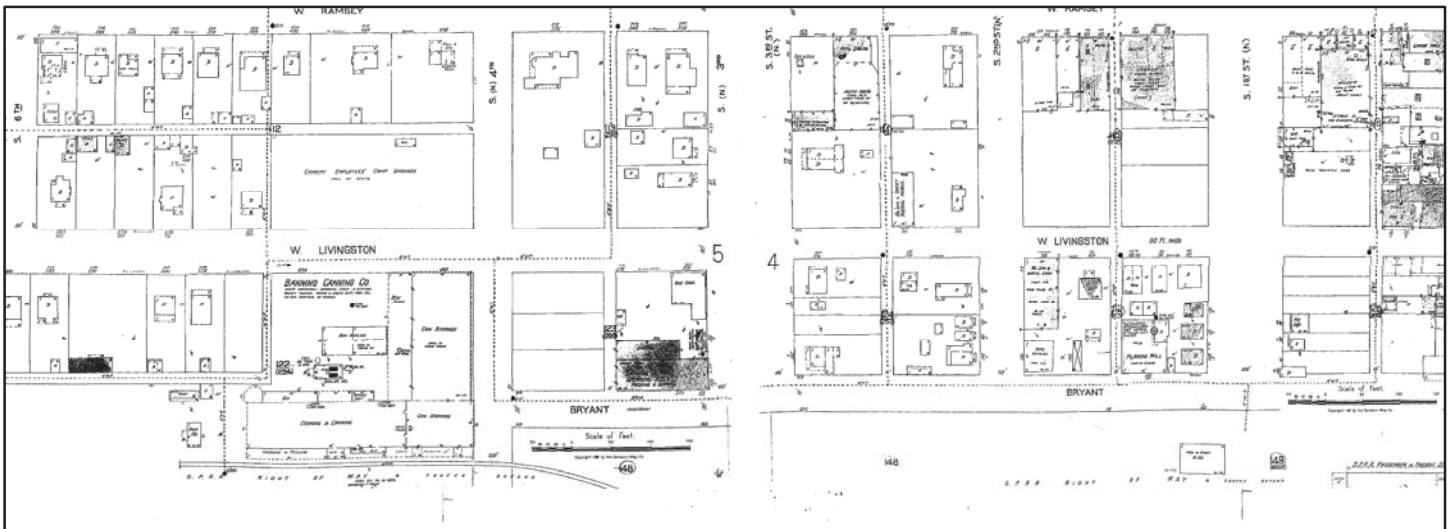
Listed below, please find the results of our search for historic fire insurance maps from our in-house collection, performed in conjuction with your ERIS report.

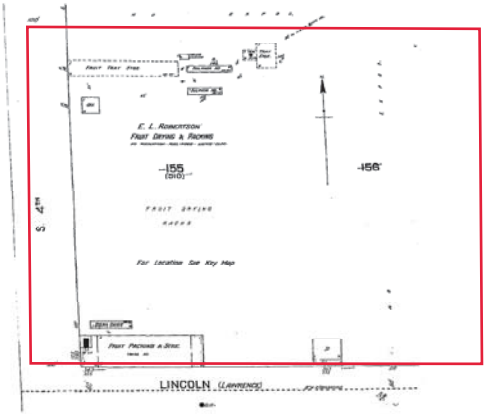
Date	City	State	Volume	Sheet Number(s)
1936	Banning	California		1, 4, 5
1926	Banning	California		1, 4, 5
1907	Banning	California		1

Individual Fire Insurance Maps for the subject property and/or adjacent sites are included with the ERIS environmental database report to be used for research purposes only and cannot be resold for any other commercial uses other than for use in a Phase I environmental assessment.

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Fire Insurance Map





1936

0 120 240 480 720 960

Feet

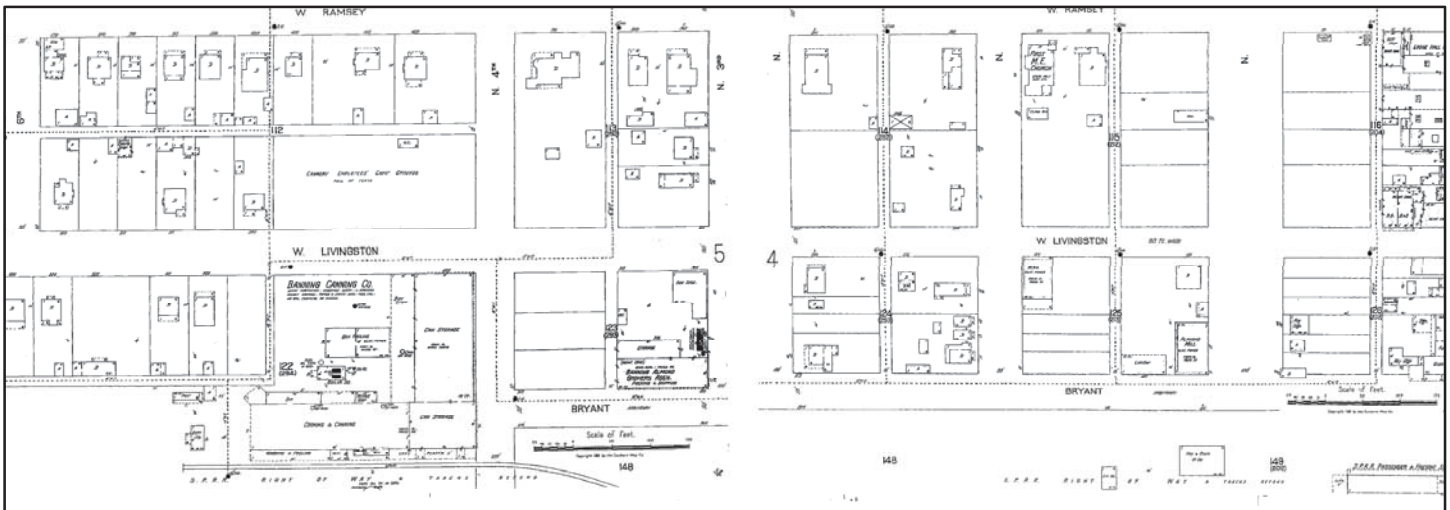
Address: APNs 540-210-009 and 540-210-010 Banning CA

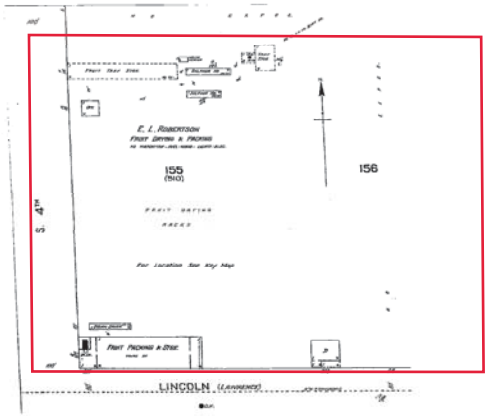
04A	05
01B	

Map sheet(s):
Volume NA:1,4,5;

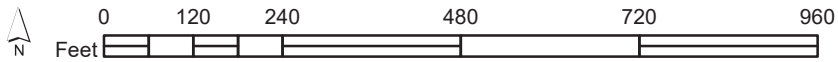
Order Number 21110500005

Fire Insurance Map

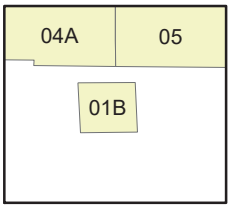




1926



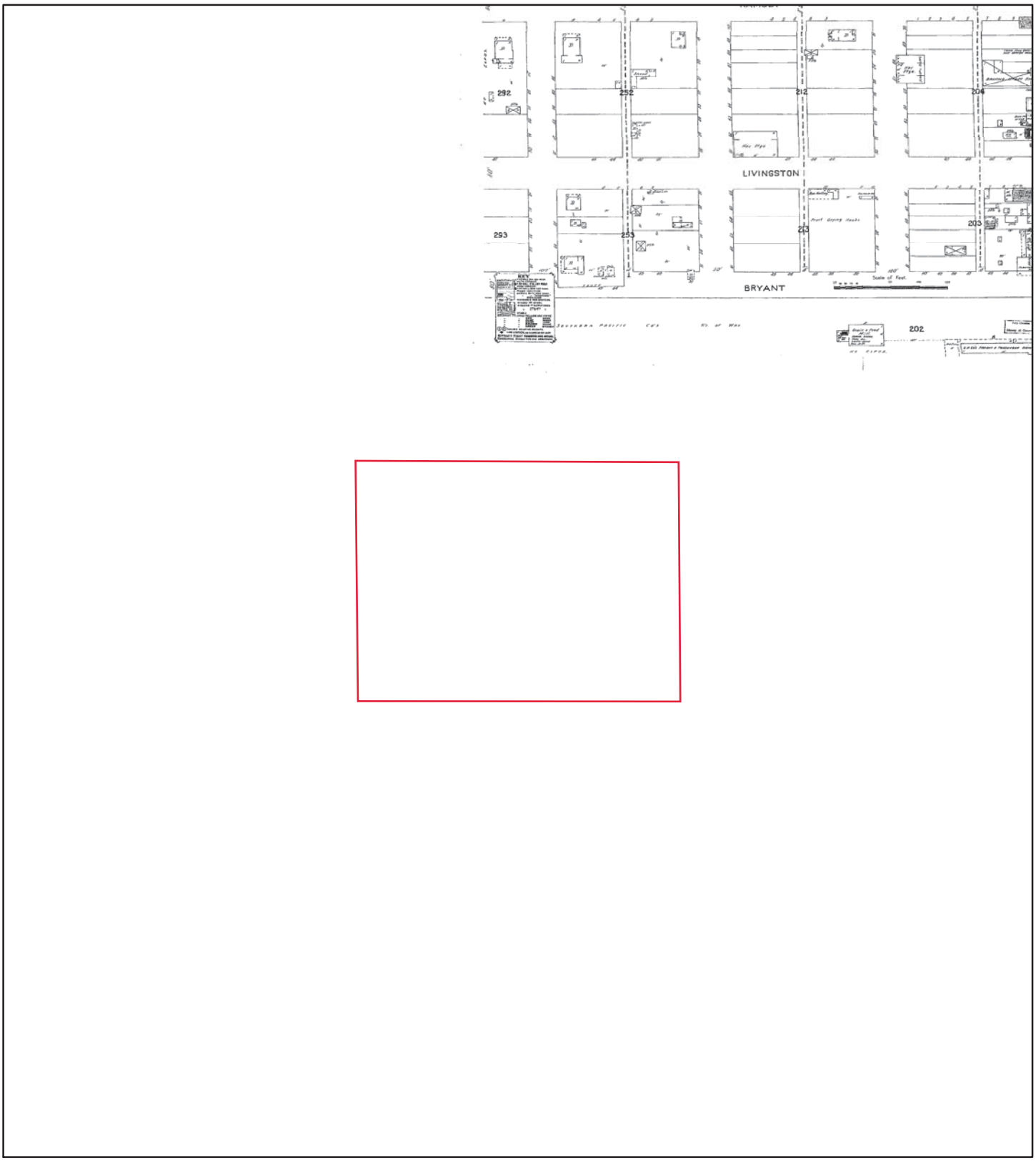
Address: APNs 540-210-009 and 540-210-010 Banning CA



Map sheet(s):
Volume NA:1,4,5;

Order Number 21110500005

Fire Insurance Map



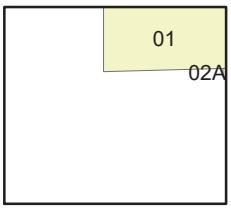
1907

N

0 120 240 480 720 960

Feet

Address: APNs 540-210-009 and 540-210-010 Banning CA



Map sheet(s):
Volume NA:1;

Order Number 21110500005

ERIS

APPENDIX F
PHOTOGRAPHS



1. View of the Site from the southwest.



2. View looking north from the southwest corner of the Site.



3. View of the Site from the northwest.



4. View of the Site from the northeast.



5. View of the Site from the southeast.



6. Trash and debris along asphalt paved road (western Site boundary).

Photograph Log

Northeast Corner of W Lincoln Street and 4th Street
Banning, California



7. Utility related placard.



8. Northern adjoining property.



9. Petroleum pipeline placard (appears to be off-Site to the north).



10. Western adjacent property.



11. Eastern adjacent property.



12. Southern adjacent W Lincoln Street and commercial buildings.

APPENDIX G
QUALIFICATIONS

Dan Weis, R.E.H.S.

ENVIRONMENTAL MANAGER

1938 Kellogg Avenue, Suite 116, Carlsbad, CA 92008

(760) 585-7070 // (760) 672-6338 // dw@weisenviro.com // www.weisenviro.com

Professional Summary

Environmental Manager and California Registered Environmental Health Specialist with extensive expertise in environmental science and assessment, environmental and public health, risk assessment, health and safety, remedial design and implementation, strategic planning and project/program design and implementation. Over 20 years of professional experience and achievement. Successful completion of projects for a wide range of clientele including, but not limited to, local government entities, developers (affordable housing and market rate), educational institutions, Federal government entities, law firms, architectural and engineering firms, lending institutions, life insurance companies, conservancies, commercial/industrial real estate owners/managers, insurance companies, wireless telecommunication carriers and real estate developers. Extensive experienced in the completion of assessment, construction and remediation quality assurance during the completion of urban redevelopment/brownfields projects and public works projects, many of which have been located in downtown areas of San Diego, Los Angeles, Oakland, San Francisco, and other urban communities throughout the State of California. Proven ability to train and mentor professional, technical and support staff. Manages a comprehensive health and safety program. Holds a Master of Science in Public Health with an emphasis in environmental health science, risk assessment, health and safety, toxicology and environmental policy. Registered Environmental Health Specialist #8172 in the State of California.

Education and Professional Certification

- University of Delaware, Bachelor of Arts, 1995
- San Diego State University, Master of Science, Public/Environmental Health, 2001
- State of California Registered Environmental Health Specialist #8172
- Centers for Disease Control and Prevention National Center for Environmental Health Division of Emergency and Environmental Health Services - Environmental Health Training in Emergency Response
- Occupational Safety and Health Administration (OSHA) 40 Hour Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) Training and Annual 8 Hour HAZWOPER Refresher Training
- OSHA 8 Hour HAZWOPER Supervisor Training

Relevant Skills and Qualifications

- Proven ability to manage staff and programs/projects in challenging and diverse environments and regulatory settings. Consistently meets project schedules, goals, deadlines and budgetary restrictions.
- Completed or managed over 3,000 due diligence related environmental assessments and completed or managed over 500 subsurface environmental investigations of soil gas, soil, groundwater and other media. Investigations have included human health and ecological risk assessments, evaluations of indoor air conditions based on interpretations of subsurface conditions, underground storage tank (UST) evaluation/closure and hazardous waste characterization/management. Subsurface activities performed include the completion of soil borings using various drilling technologies, soil and groundwater sampling, installation and sampling of groundwater monitoring wells, free product evaluations, exploratory trenching and real-time delineation using mobile analytical laboratories and other soil screening technology.
- Managed over 100 remediation or construction management related projects primarily related to source removal of subsurface contaminants, including but not limited to, petroleum hydrocarbons, chlorinated solvents, heavy metals, organochlorine pesticides and other agricultural related chemicals, dioxins and furans and polychlorinated biphenyls. Has also assisted in cost recovery efforts from private parties and State/Federal funding programs for environmental assessment and remediation work and has served as an expert witness during legal proceedings pertaining to environmental related claims.
- Strong collaboration and negotiation skills with environmental regulatory agencies regarding project planning, initiation, status, approvals and implementation. Direct experience in interfacing with members of regulatory agencies including but not limited to the United States Environmental Protection Agency (EPA), California EPA Department of Toxic Substances

Control and Office of Environmental Health Hazard Assessment, County of San Diego Departments of Environmental Health (DEH), Public Works and Planning and Land Use, San Diego Air Pollution Control District, South Coast Air Quality Management District, Riverside County DEH, San Francisco City and County Department of Public Health (DPH), Arizona Department of Environmental Quality, County of Los Angeles County DPH and other local Certified Unified Program Agencies. Develop, manage and implement compliance and best practices efforts with Federal and State laws and regulations.

- Conducted and/or managed hundreds of public/environmental health related assessments including electromagnetic field surveys, radionuclide surveys, indoor air quality investigations, radon surveys, drinking water assessments, asbestos containing materials and lead-based paint surveys and mold/microbial evaluations.
- Recovered over $10,000,000 of assessment and cleanup costs for clientele from various sources including State of California Cleanup Funds, United States Environmental Protection Agency Brownfield grants and private parties including major oil companies.
- Responsible for facilitating a safe and healthy work environment in concert with the mission of the company while ensuring compliance with applicable Federal, State, and local regulations.
- Published technical papers pertaining to geogenic concentrations of metals in San Diego County, radioactive dating and pollutant chronologies in estuarine sediments and various urban runoff related implications.
- Delivered presentations pertaining to various environmental topics including human health risk assessment to membership at local and national trade conferences

Project Experience (Projects Completed at Multiple Firms)

- 14th and Island, San Diego, California – Development of Site Mitigation Plan, contaminated soil management and disposal concurrent with site construction activities at the superblock construction site in downtown San Diego and achievement of regulatory closure with the County of San Diego Department of Environmental Health.
- 2198 Market Street, San Francisco, California – Phase I and II Environmental Site Assessments, supplemental subsurface investigation, Site Mitigation Plan development, contaminated soil management and disposal concurrent with site construction activities and negotiation/achievement of regulatory closure with the City of San Francisco Department of Public Health.
- Former EZ Serve, 9305 Mission Gorge Road, Santee, California – Closure report preparation and San Diego Regional Water Quality Control Board interface and negotiation/achievement of regulatory closure under State of California low-threat policy.
- French Field – Former Vista Burn Dump, Oceanside, California – Oversight of the capping of a former burn dump/landfill facility and restoration for public use as a sports facility. Negotiation and achievement of regulatory closure with the California Department of Toxic Substances Control with concurrence from the San Diego Regional Water Quality Control Board and the County of San Diego Local Enforcement Agency.
- Indoor Skydiving Facility, 1401 Imperial Avenue, San Diego, California – Development of Soil Management Plan and contaminated soil management and disposal concurrent with site construction activities in downtown San Diego.
- Lemon Grove Avenue Realignment Project, Lemon Grove, California – Development of Impacted Soil Management Plan, Community Health and Safety Plan and Worker Health and Safety Plan and oversight of the implementation of such plans during construction activities.
- North Side Interior Road and Utilities Project at San Diego International Airport, San Diego, California - Subsurface assessment, development of Soil Management Plan and Work Health and Safety Plan and implementation and monitoring of soil management strategies.
- Olympic and Hill, Los Angeles, California – Removal of multiple underground storage tanks and underlying contaminated soil and achievement of regulatory closure with the City of Los Angeles Fire Department.
- San Ysidro - U.S. Land Port of Entry, San Diego, California – Subsurface assessment and development and implementation of soil management strategies.
- VA Medical Center Long Beach, 5901 East 7th Street, Long Beach, California - VA Long Beach: Seismic Corrections – Mental Health, Community Living Center and Chiller Replacements Project – Asbestos containing materials and lead-based paint surveys and preparation of abatement contractor bid specifications.

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APPENDIX H

RIVERSIDE COUNTY AIRPORT LAND USE COMMISSION DEVELOPMENT REVIEW DETERMINATION

RIVERSIDE COUNTY
AIRPORT LAND USE COMMISSION

November 28, 2022

Mark De Manincor, Project Planner
City of Banning Community Development Department – Planning Division
99 E. Ramsey Street
Banning, CA 92220

CHAIR
Steve Manos
Lake Elsinore

VICE CHAIR
Russell Betts
Desert Hot Springs

COMMISSIONERS

John Lyon
Riverside

Steven Stewart
Palm Springs

Richard Stewart
Moreno Valley

Michael Geller
Riverside

Vernon Poole
Murrieta

STAFF

Director
Paul Rull

Simon A. Housman
Barbara Santos
Jackie Vega

County Administrative Center
4080 Lemon St., 14th Floor
Riverside, CA 92501
(951) 955-5132

www.rcaluc.org

RE: AIRPORT LAND USE COMMISSION (ALUC) DEVELOPMENT REVIEW – DIRECTOR'S DETERMINATION

File No.:	ZAP1048BA22
Related File No.:	DR22-7003 (Development Plan Review), TPM22-4001 (Tentative Parcel Map)
APN:	540-210-009 & 540-210-020

Dear Mr. DeManincor,

Under the delegation of the Riverside County Airport Land Use Commission (ALUC) pursuant to ALUC's general delegation as per Policy 1.5.2(d) of the Countywide Policies of the 2004 Riverside County Airport Land Use Compatibility Plan, staff reviewed City of Banning Case No. DR22-7003 (Development Plan Review), TPM22-4001 (Tentative Parcel Map), a proposal to construct a 118,786 square foot manufacturing building with mezzanines on 6.45 acres, located on the northeast corner of SH-243 and Fourth Street.

The site is located within Airport Compatibility Zone D of the Banning Municipal Airport Influence Area (AIA). Zone D restricts non-residential intensity to 200 people per average acre and 800 people per single acre. The project proposes 108,786 square feet of manufacturing area 5,000 square feet of office area, 5,000 square feet of second floor office mezzanine area, accommodating 594 people, resulting in an average acre intensity of 92 people and a single acre intensity of 243 people, both of which are consistent with the Zone D intensity criteria.

The elevation of Runway 8-26 at its westerly terminus is 2,119 feet above mean sea level (AMSL). At a distance of approximately 6,098 feet from the runway to the site, Federal Aviation Administration Obstruction Evaluation Service (FAA OES) review would be required for any structures with top of roof exceeding 2,180 feet AMSL. The site's finished floor elevation is 2,328 feet AMSL and the proposed building height is 55 feet, for a top point elevation of 2,383 feet AMSL. Therefore, FAA Obstruction Evaluation Service review for height/elevation reasons was required. The applicant submitted Form 7460-1 to the FAA OES. A "Determination of No Hazard to Air Navigation" letter for Aeronautical Study No. 2022-AWP-19298-OE was issued on November 28, 2022. The study revealed that the proposed facility would not exceed obstruction standards and would not be a hazard to air navigation provided conditions are met. These FAA OES conditions have been incorporated into this finding.

Land use practices that attract or sustain hazardous wildlife populations on or near airports significantly increase the potential of Bird Aircraft Strike Hazards (BASH). The FAA strongly recommends that storm water management systems located within 5,000 or 10,000 feet of the Airport Operations Area, depending on the type of aircraft, be designed and operated so as not to create above-ground standing water. To facilitate the control of hazardous wildlife, the FAA recommends the use of steep-sided, rip-rap lined, narrow, linearly shaped water detention basins. All vegetation in and around detention basins that provide food or cover for hazardous

wildlife should be eliminated. (FAA Advisory Circular 5200-33C).

Although the nearest portion of the proposed project is located within 10,000 feet of the runway (approximately 6,098 feet), the project utilizes underground detention systems which will not contain surface water or attract wildlife and, therefore, would not constitute a hazard to flight.

As ALUC Director, I hereby find the above-referenced project **CONSISTENT** with the 2004 Banning Municipal Airport Land Use Compatibility Plan, as amended in 2016, provided that the City of Banning applies the following recommended conditions:

CONDITIONS:

1. Any outdoor lighting installed shall be hooded or shielded to prevent either the spillage of lumens or reflection into the sky. Outdoor lighting shall be downward facing.

2. The following uses shall be prohibited:

   (a) Any use which would direct a steady light or flashing light of red, white, green, or amber colors associated with airport operations toward an aircraft engaged in an initial straight climb following takeoff or toward an aircraft engaged in a straight final approach toward a landing at an airport, other than an FAA-approved navigational signal light or visual approach slope indicator.

   (b) Any use which would cause sunlight to be reflected towards an aircraft engaged in an initial straight climb following takeoff or towards an aircraft engaged in a straight final approach towards a landing at an airport.

   (c) Any use which would generate smoke or water vapor or which would attract large concentrations of birds, or which may otherwise affect safe air navigation within the area. (Such uses include landscaping utilizing water features, aquaculture, outdoor production of cereal grains, sunflower, and row crops, composting operations, wastewater management facilities, artificial marshes, trash transfer stations that are open on one or more sides, recycling centers containing putrescible wastes, construction and demolition debris facilities, fly ash disposal, and incinerators.)

   (d) Any use which would generate electrical interference that may be detrimental to the operation of aircraft and/or aircraft instrumentation.

   (e) Highly noise-sensitive outdoor nonresidential uses.

   (f) Any use which results in a hazard to flight, including physical (e.g., tall objects), visual, and electronic forms of interference with the safety of aircraft operations.

3. The attached "Notice of Airport in Vicinity" shall be provided to all prospective purchasers and occupants of the property and be recorded as a deed notice. In the event that the Office of the Riverside County Assessor-Clerk-Recorder declines to record said notice, the text of the notice shall be included on the Environmental Constraint Sheet (ECS) of the final parcel map, if an ECS is otherwise required.

4. Any proposed stormwater basins or facilities shall be designed and maintained to provide for a maximum 48-hour detention period following the design storm, and remain totally dry between rainfalls. Vegetation in and around the basins that would provide food or cover for birds would be incompatible with airport operations and shall not be utilized in project landscaping. Trees shall be spaced so as to prevent large expanses of

contiguous canopy, when mature. Landscaping in and around the basin(s) shall not include trees or shrubs that produce seeds, fruits, or berries.

Landscaping in the stormwater basin, if not rip-rap, should be in accordance with the guidance provided in ALUC "LANDSCAPING NEAR AIRPORTS" brochure, and the "AIRPORTS, WILDLIFE AND STORMWATER MANAGEMENT" brochure available at RCALUC.ORG which list acceptable plants from Riverside County Landscaping Guide or other alternative landscaping as may be recommended by a qualified wildlife hazard biologist.

A notice sign, in a form similar to that attached hereto, shall be permanently affixed to the stormwater basin with the following language: "There is an airport nearby. This stormwater basin is designed to hold stormwater for only 48 hours and not attract birds. Proper maintenance is necessary to avoid bird strikes". The sign will also include the name, telephone number or other contact information of the person or entity responsible to monitor the stormwater basin

5. This project has been evaluated as a manufacturing building with mezzanines, consistent of 108,786 square feet of manufacturing area 5,000 square feet of office area, 5,000 square feet of second floor office mezzanine area. Any increase in building area or change in use will require an amended review by the Airport Land Use Commission.

6. The Federal Aviation Administration has conducted aeronautical studies of the proposed structure (Aeronautical Study No. 2022-AWP-19298-OE) and has determined that neither marking nor lighting of the structures is necessary for aviation safety. However, if marking and/or lighting for aviation safety are accomplished on a voluntary basis, such marking and/or lighting (if any) shall be installed in accordance with FAA Advisory Circular 70/7460-1 L Change 2 and shall be maintained in accordance therewith for the life of the project.

8. The maximum height of the proposed structures to top point shall not exceed 55 feet above ground level, and the maximum elevation at the top of the structures shall not exceed 2,383 feet above mean sea level.

9. The maximum height and top point elevation specified above shall not be amended without further review by the Airport Land Use Commission and the Federal Aviation Administration; provided, however, that reduction in structure height or elevation shall not require further review by the Airport Land Use Commission.

10. Temporary construction equipment used during actual construction of the structures shall not exceed 55 feet in height and a maximum elevation of 2,383 feet above mean sea level, unless separate notice is provided to the Federal Aviation Administration through the Form 7460-1 process.

11. Within five (5) days after construction of each structure reaches its greatest height, FAA Form 7460-2 (Part II), Notice of Actual Construction or Alteration, shall be completed by the project proponent or his/her designee and e-filed with the Federal Aviation Administration. (Go to https://oeaaa.faa.gov for instructions.) This requirement is also applicable in the event the project is abandoned or a decision is made not to construct the applicable structure.

If you have any questions, please contact me at (951) 955-6893.

Sincerely,
RIVERSIDE COUNTY AIRPORT LAND USE COMMISSION



Paul Rull, ALUC Director

Attachment: Notice of Airport in Vicinity

cc: First Industrial Realty Trust, Inc. (applicant/ property owner)
Stephen Crevoiserat (representative)
Art Vela, P.E., City of Banning Director of Public Works
Carl Szoyka, Manager, Banning Municipal Airport
ALUC Case File

X:\AIRPORT CASE FILES\Banning\ZAP1048BA22\ZAP1046BA22.LTR.doc

NOTICE OF AIRPORT IN VICINITY

This property is presently located in the vicinity of an airport, within what is known as an airport influence area. For that reason, the property may be subject to some of the annoyances or inconveniences associated with proximity to airport operations (for example: noise, vibration, or odors). Individual sensitivities to those annoyances [can vary from person to person. You may wish to consider what airport annoyances], if any, are associated with the property before you complete your purchase and determine whether they are acceptable to you. Business & Professions Code Section 11010 (b)(13)(A)

NOTICE

THERE IS AN AIRPORT NEARBY.

THIS STORM WATER BASIN IS DESIGNED TO HOLD STORM WATER FOR ONLY 48 HOURS AND NOT TO ATTRACT BIRDS

PROPER MAINTENANCE IS NECESSARY TO AVOID BIRD STRIKES

RIVERSIDE COUNTY AIRPORT LAND USE COMMISSION ALUC

IF THIS BASIN IS OVERGROWN, PLEASE CONTACT:

Name: _____ Phone: _____

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2022-AWP-19298-OE

Issued Date: 11/28/2022

Paul Loubet
First Industrial Realty Trust, Inc
898 N. Pacific Coast Hwy, Suite 175
El Segundo, CA 90245

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Building Warehouse Distribution Building
Location:	Banning, CA
Latitude:	33-55-22.60N NAD 83
Longitude:	116-52-45.50W
Heights:	2328 feet site elevation (SE)
	55 feet above ground level (AGL)
	2383 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

The structure considered under this study lies in proximity to an airport and occupants may be subjected to noise from aircraft operating to and from the airport.

This determination expires on 05/28/2024 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.

(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

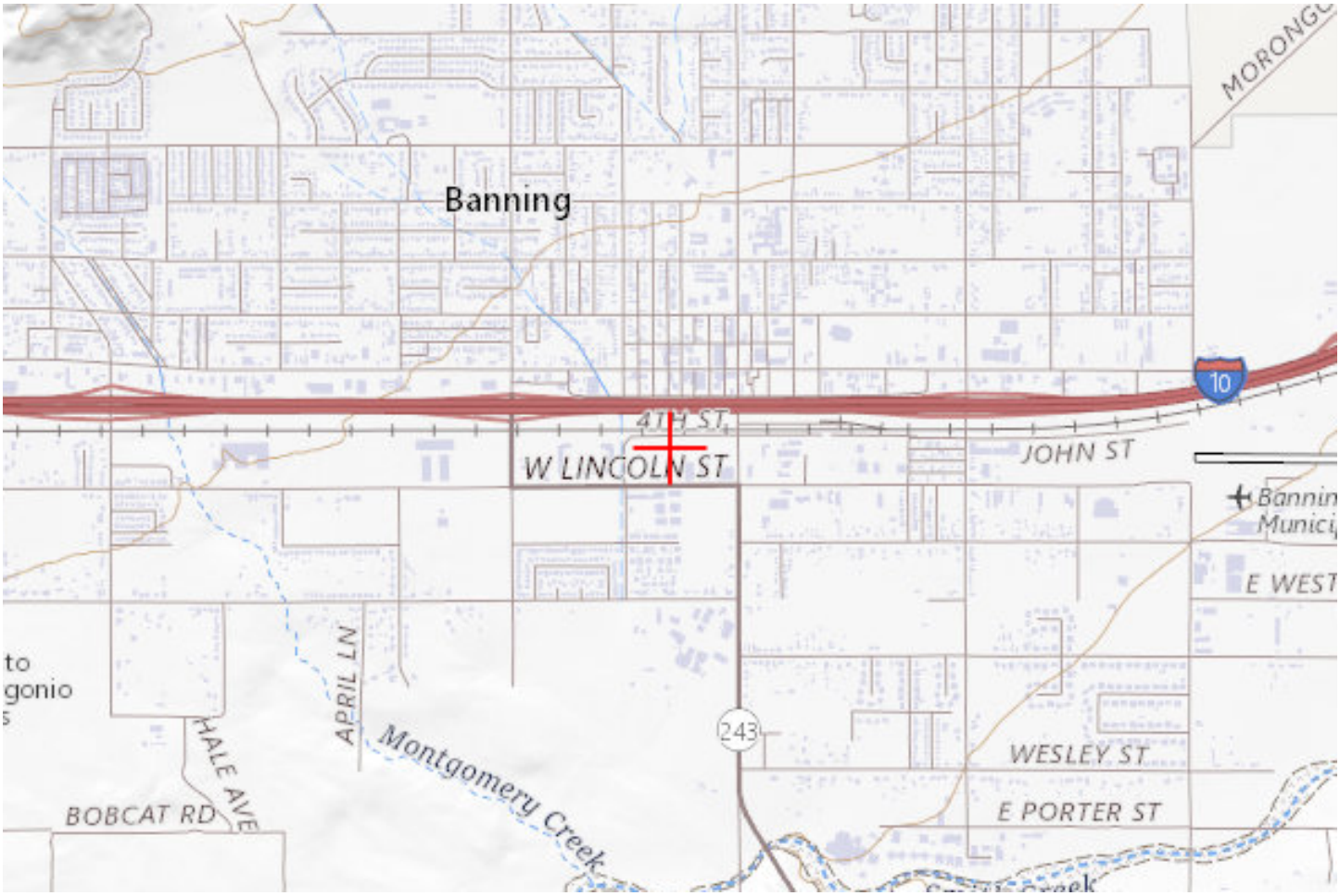
This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (847) 294-7575, or vivian.vilaro@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2022-AWP-19298-OE.

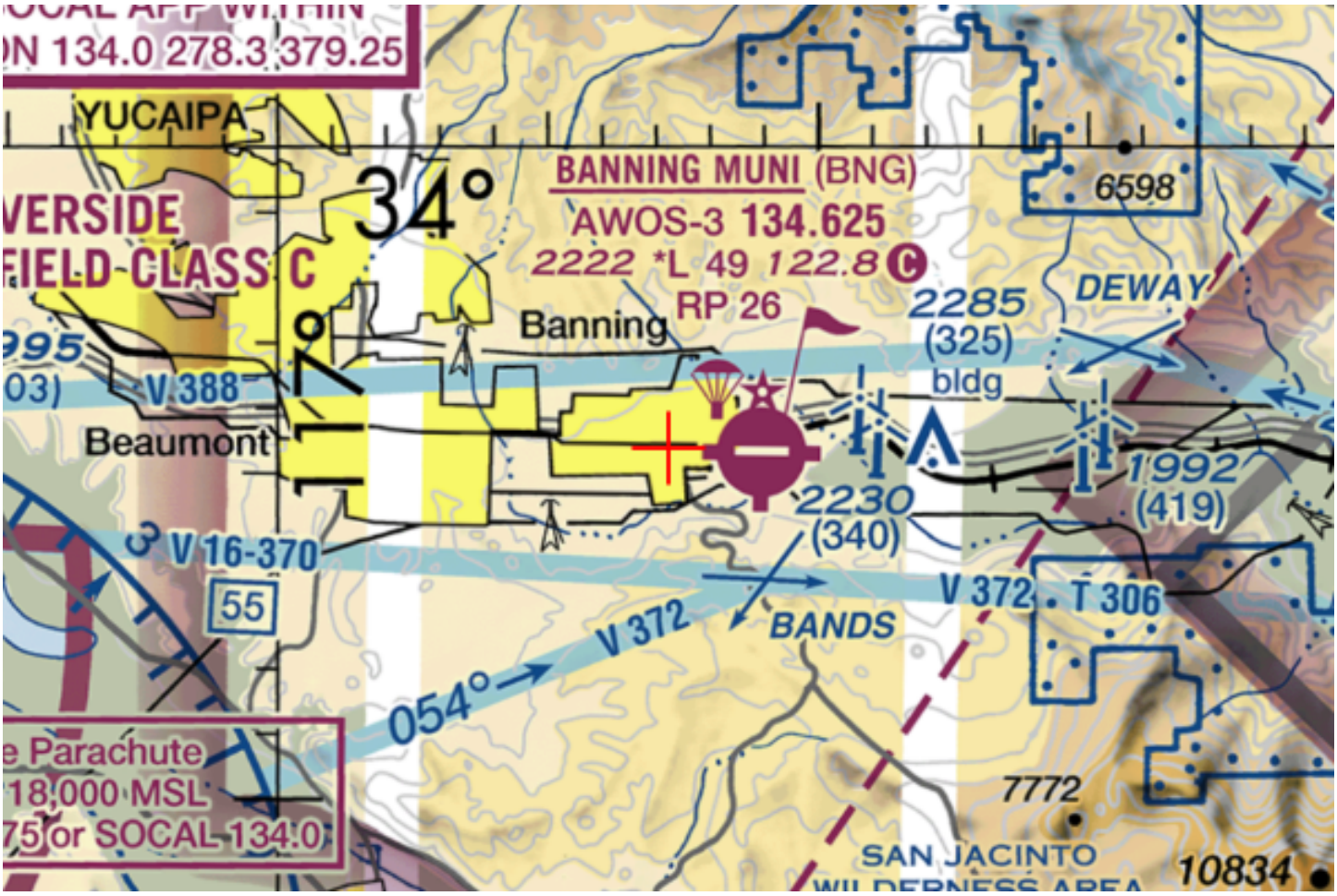
Signature Control No: 557646431-562757200 (DNE)
Vivian Vilaro
Specialist

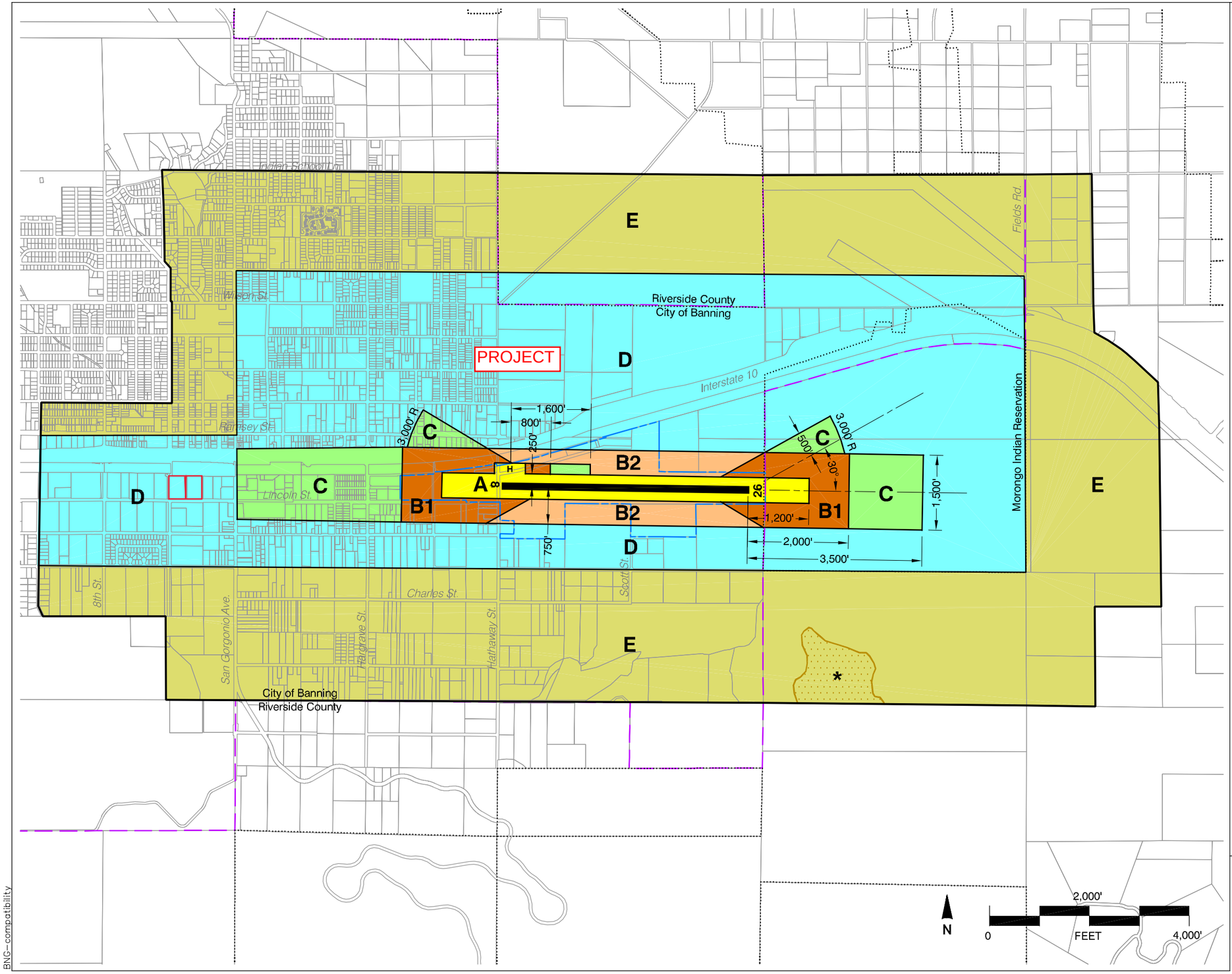
Attachment(s)
Map(s)

TOPO Map for ASN 2022-AWP-19298-OE



Sectional Map for ASN 2022-AWP-19298-OE





Legend

Compatibility Zones

- Airport Influence Area Boundary
- Zone A
- Zone B1
- Zone B2
- Zone C
- Zone D
- Zone E
- Height Review Overlay Zone

Boundary Lines

- Airport Property Line
- City Limits
- Morongo Indian Reservation

Note

Dimensions measured from runway ends and centerlines.

See Chapter 2, Table 2A for compatibility criteria associated with this map.

Riverside County
Airport Land Use Commission

Riverside County
Airport Land Use Compatibility Plan
Policy Document

(Adopted October 2004)

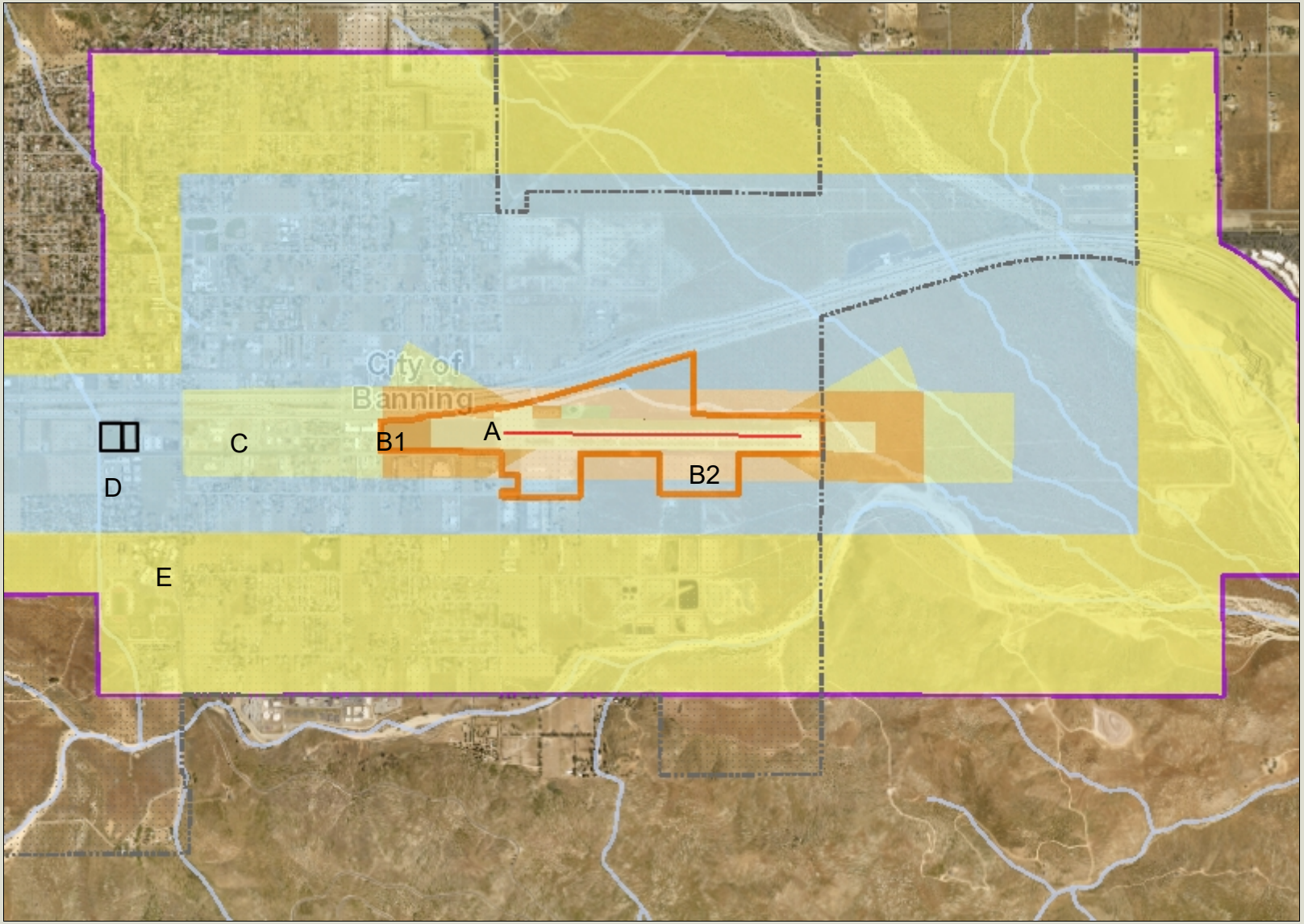
Map BN-1

Compatibility Map

Banning Municipal Airport

BNG--compatibility

Map My County Map





Legend

- Runways
- Airports
- Airport Influence Areas
- Airport Compatibility Zones
  - OTHER COMPATIBILITY ZONE
  - A
  - A-EXC1
  - B1
  - B1-APZ I
  - B1-APZ I-EXC1
  - B1-APZ II
  - B1-APZ II-EXC1
  - B1-EXC1
  - B2
  - B2-EXC1
  - C
  - C1
  - C1-EXC1
  - C1-EXC3
  - C1-EXC4
  - C1-HIGHT
  - C2
  - C2-EXC1
  - C2-EXC2
  - C2-EXC3
  - C2-EXC5
  - C2-EXC6

0 3,079 6,157 Feet

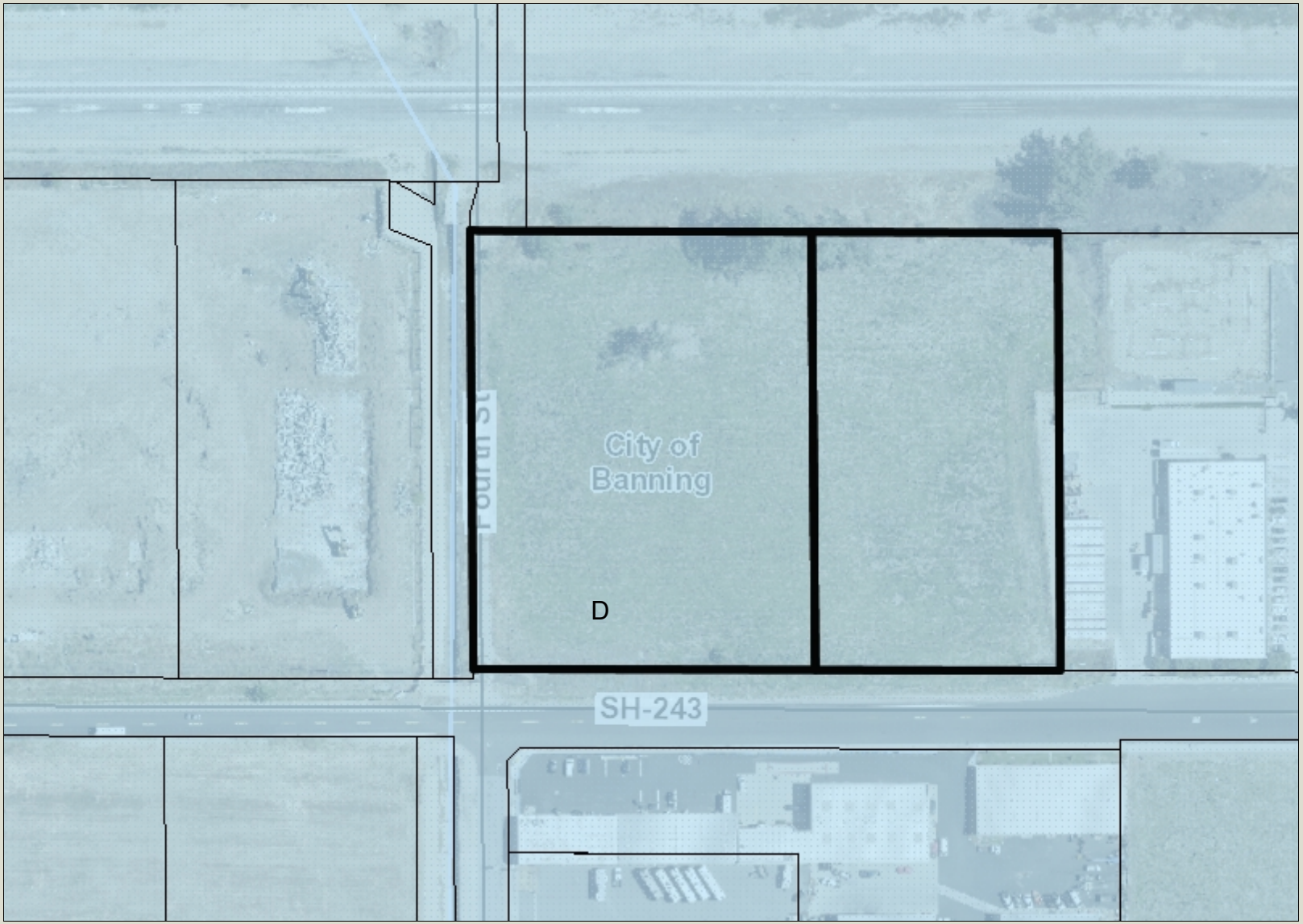
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Notes

Map My County Map





Legend

- Parcels
- Runways
- Airports
- Airport Influence Areas
- Airport Compatibility Zones
  - OTHER COMPATIBILITY ZONE
  - A
  - A-EXC1
  - B1
  - B1-APZ I
  - B1-APZ I-EXC1
  - B1-APZ II
  - B1-APZ II-EXC1
  - B1-EXC1
  - B2
  - B2-EXC1
  - C
  - C1
  - C1-EXC1
  - C1-EXC3
  - C1-EXC4
  - C1-HIGHT
  - C2
  - C2-EXC1
  - C2-EXC2
  - C2-EXC3
  - C2-EXC5

0 192 385 Feet

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Notes

Map My County Map





Legend

- Parcels
- County Centerline Names
- County Centerlines
- Blueline Streams
- City Areas
- World Street Map

0 192 385 Feet

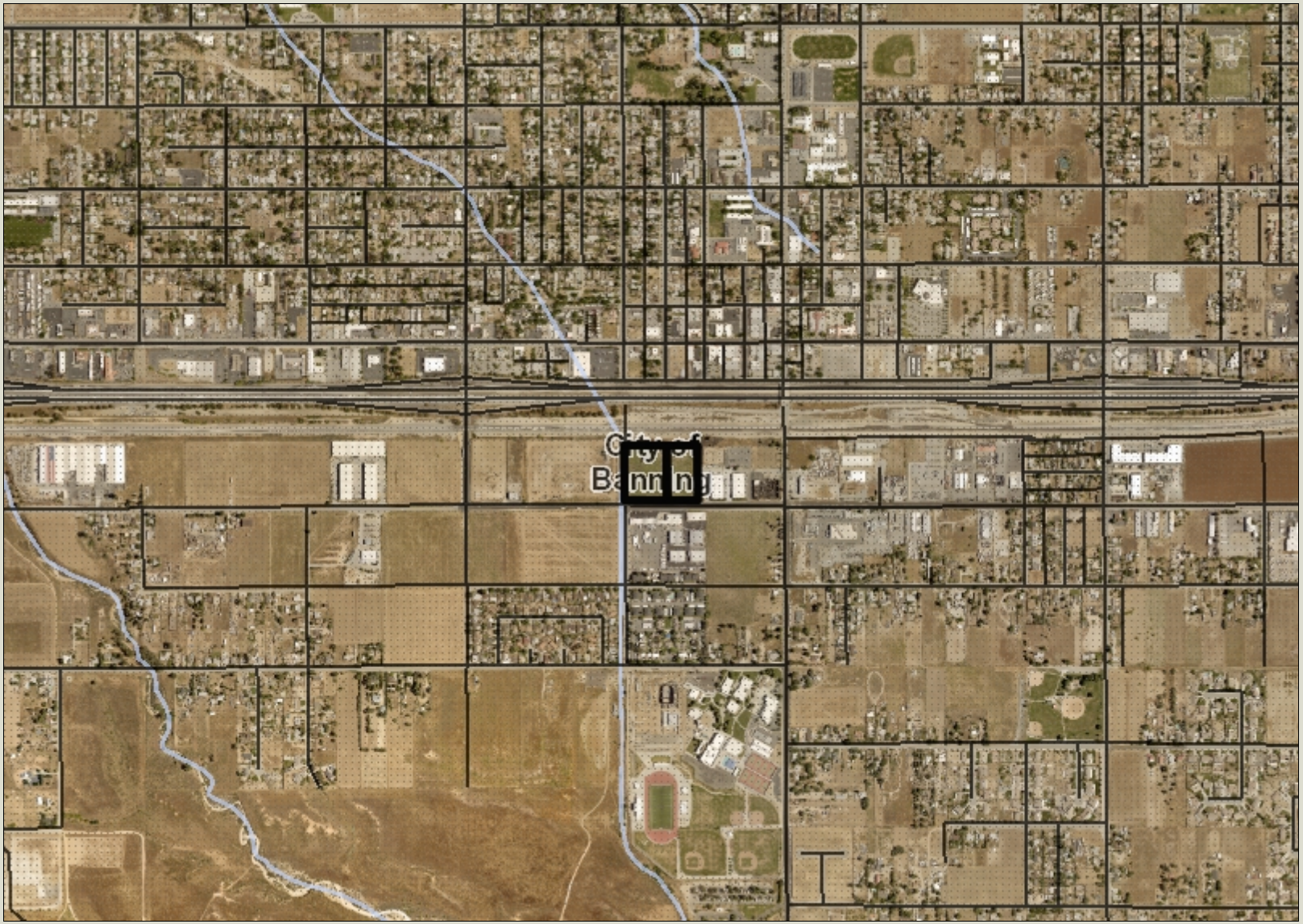
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Notes

Map My County Map





Legend

- County Centerline Names
- County Centerlines
- Blueline Streams
- City Areas
- World Street Map

0 1,539 3,079 Feet

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Notes

Map My County Map





Legend

- County Centerline Names
- County Centerlines
- Blueline Streams
- City Areas
- World Street Map

0 770 1,539 Feet

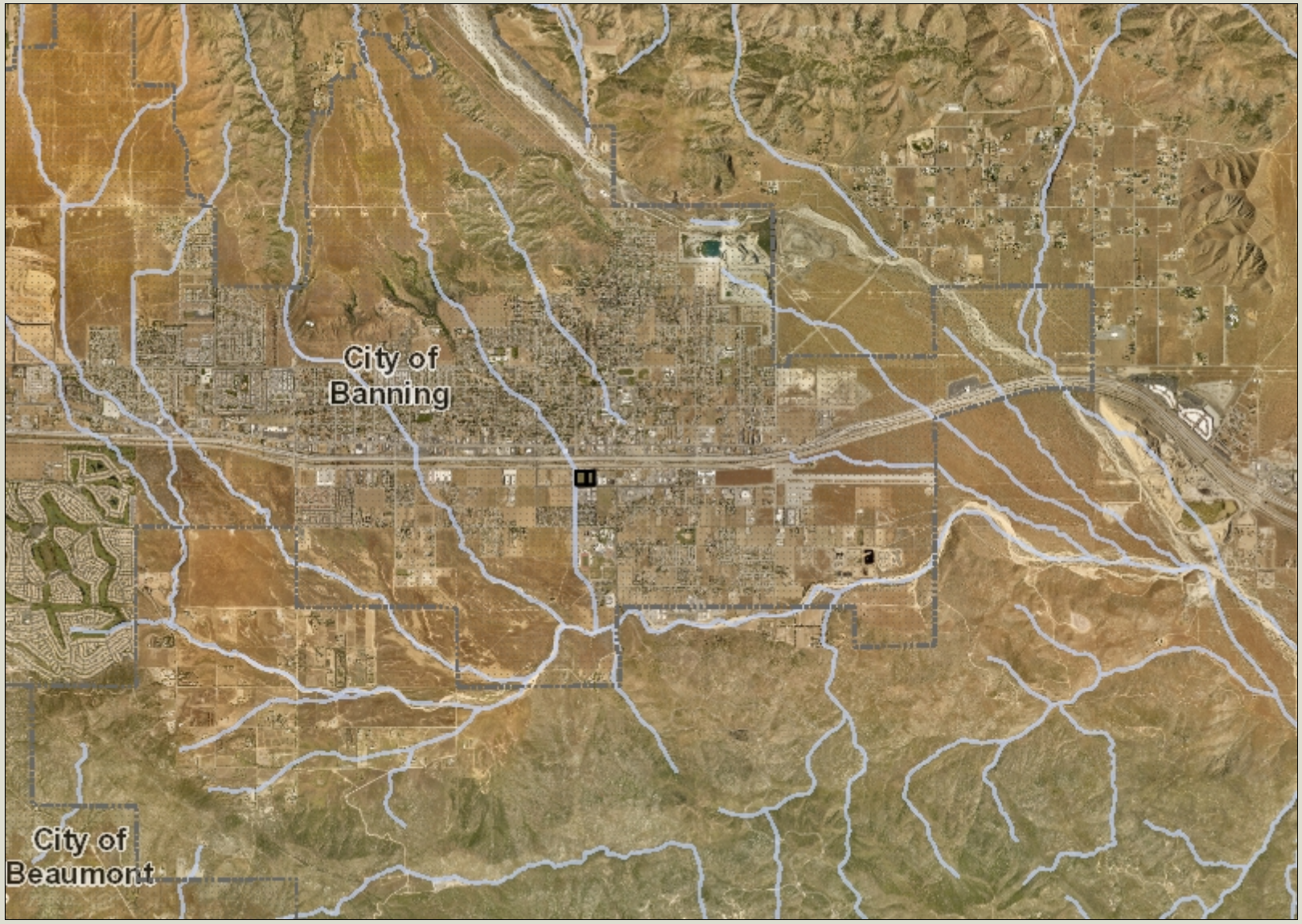
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Notes

Map My County Map





Legend

- Blueline Streams
- City Areas
- World Street Map

0 6, 12,314 Feet
157

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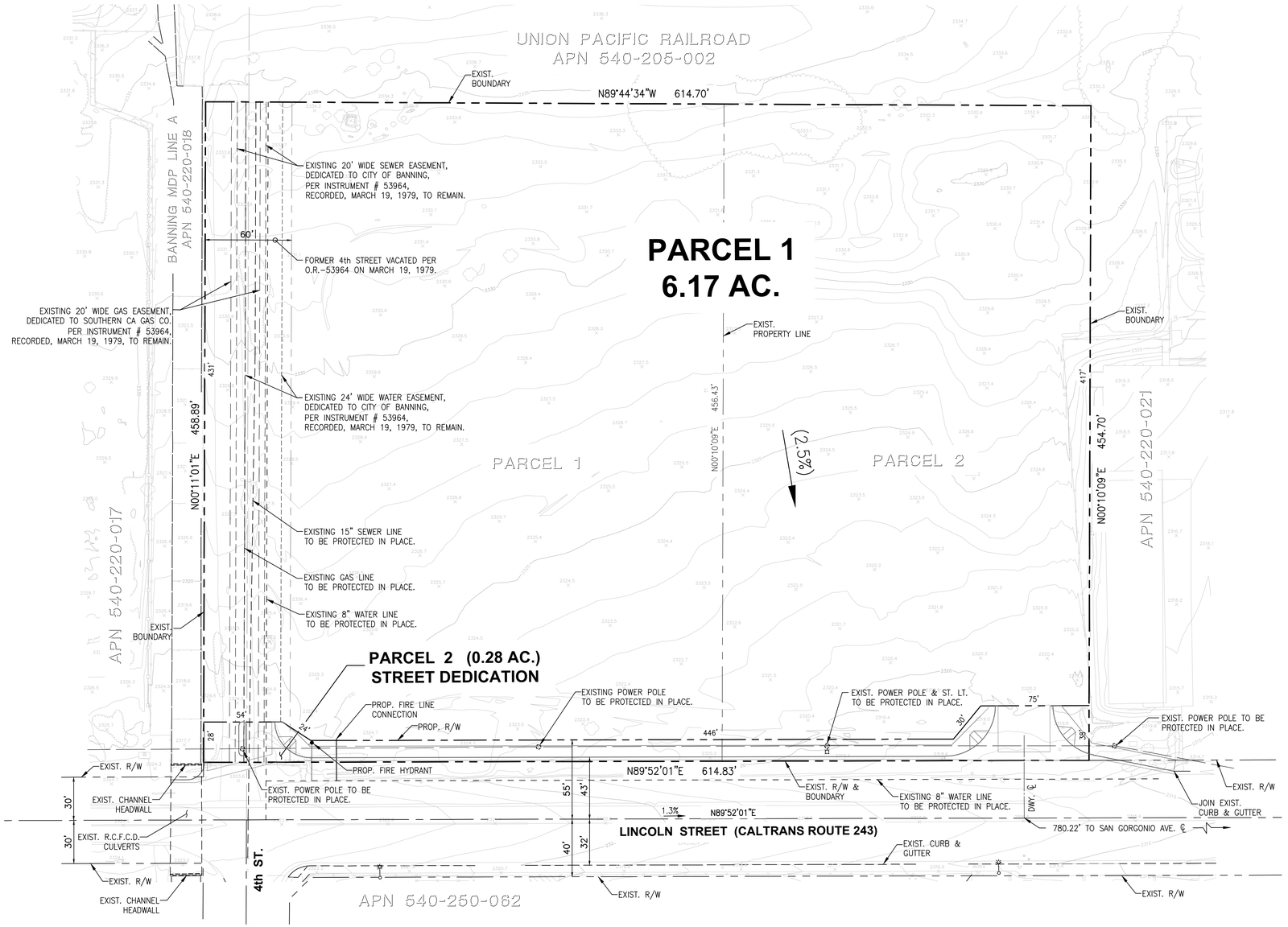
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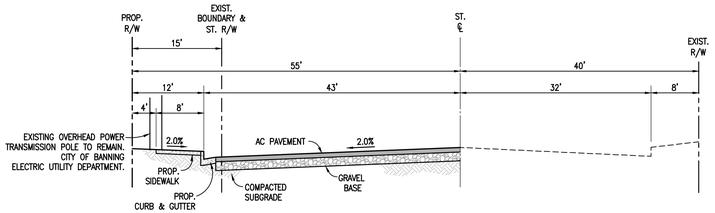
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Notes

TENTATIVE PARCEL MAP NO. 38437

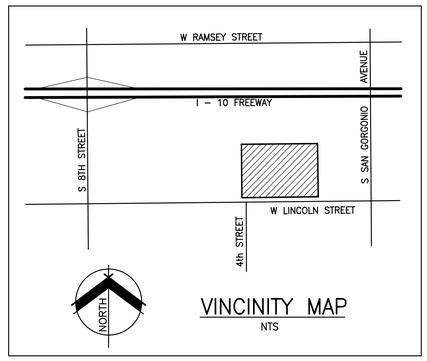
BLOCKS 220 & 232 OF AMENDED MAP OF THE BANNING LAND COMPANY, IN THE CITY OF BANNING, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 9, PAGE 44, OF MAPS, OF SAN BERNARDINO COUNTY, CALIFORNIA.





LINCOLN STREET (CALTRANS ROUTE 243)

CITY OF BANNING
ARTERIAL HIGHWAY
(CITY STD. DWG. NO. 101.1)



VINCINITY MAP
NTS

OWNER:
FR CA PROPERTY HOLDING, LP
898 N. SEPULVEDA BLVD., SUITE 175
EL SEGUNDO, CA 90245
(310) 606-1634

DEVELOPER:
FIRST INDUSTRIAL REALTY TRUST, INC.
898 N. SEPULVEDA BLVD., SUITE 175
EL SEGUNDO, CA 90245
(310) 606-1634

ENGINEER / REP.
STANTEC CONSULTING, INC.
735 E. CARNEGIE DRIVE, SUITE 280
SAN BERNARDINO, CA 92408
ATT: STEPHEN CREVOISERAT, PE.
R.C.E. # 78576
(949) 537-1300

ASSESSOR'S PARCEL NO:
ASSESSOR'S PARCEL NO: 540-210-009 & 540-210-020

ACREAGE:
TOTALS:
GROSS: 6.45 AC.
NET: 6.17 AC.

ZONING DATA:
EXISTING GENERAL PLAN & ZONE: INDUSTRIAL
PROPOSED GENERAL PLAN & ZONE: INDUSTRIAL

LAND USE:
EXISTING: VACANT
PROPOSED: (WAREHOUSE DISTRIBUTION, LIGHT INDUSTRIAL)
EXISTING SURROUNDING LAND USE: INDUSTRIAL & GENERAL COMMERCIAL

LEGAL DESCRIPTION:
BLOCKS 220 & 232 OF AMENDED MAP OF THE BANNING LAND COMPANY, IN THE CITY OF BANNING, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 9, PAGE 44, OF MAPS, OF SAN BERNARDINO COUNTY, CALIFORNIA.

BENCH MARK:
NGS BM DX3597 ELEVATION= 2364.82' NAVD88
PER NATIONAL GEODETIC SURVEY (NGS) DATA SHEET.

TOPOGRAPHY SOURCE:
ROBERT J. LUNG & ASSOCIATES, 11/10/2021

FLOOD ZONE DESIGNATION:
THE AREA OF LAND SHOWN DOES NOT LIE WITHIN A FLOOD ZONE.

GENERAL NOTES:
1. TOTAL NUMBER OF PARCELS: 2
2. THERE ARE NO KNOWN EXISTING WELLS ON THE PROPERTY OR WITHIN 200' OF THE PROJECT.
3. THERE ARE NOT EXISTING BUILDINGS ON THE PROPERTY.

LEGEND

- MAP BOUNDARY
- EXIST. PARCEL LINE
- PROPOSED R/W
- EXIST. OVERHEAD ELECTRIC LINE
- EXIST. WATER LINE
- PROP. WATER LATERAL
- EXIST. POWER POLE
- EXIST. STREET LIGHT
- FIRE HYDRANT

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

NORTH

EARTHWORK QUANTITIES:
CUT = 19,000 C.Y.
FILL = 19,000 C.Y.

REGISTERED PROFESSIONAL ENGINEER
STEPHEN F. CREVOISERAT
78576
CIVIL
STATE OF CALIFORNIA

MAY 2022

PREPARED BY:
Stantec
735 E. CARNEGIE DRIVE, SUITE 280
SAN BERNARDINO, CA 92408
909.335.6116 stantec.com

PREPARED FOR:
FIRST INDUSTRIAL REALTY TRUST
FIRST INDUSTRIAL REALTY TRUST, INC.
898 N. PACIFIC COAST HWY., SUITE 175
EL SEGUNDO, CA 90245 PH: (310) 606-1634

MARK	REVISIONS	APPR.	DATE	APPR.	DATE
		DESIGN ENG'R.		CITY ENG'R.	

DESIGNED BY: ____ DRAWN BY: ____ CHECKED BY: ____

CITY OF BANNING
APPROVED BY: _____ DATE: _____
BENCHMARK:
BM DX3470 ELEV: 2118.09 NAVD88
PER NATIONAL GEODETIC SURVEY (NGS) DATA SHEET.

TENTATIVE PARCEL MAP NO. 38437

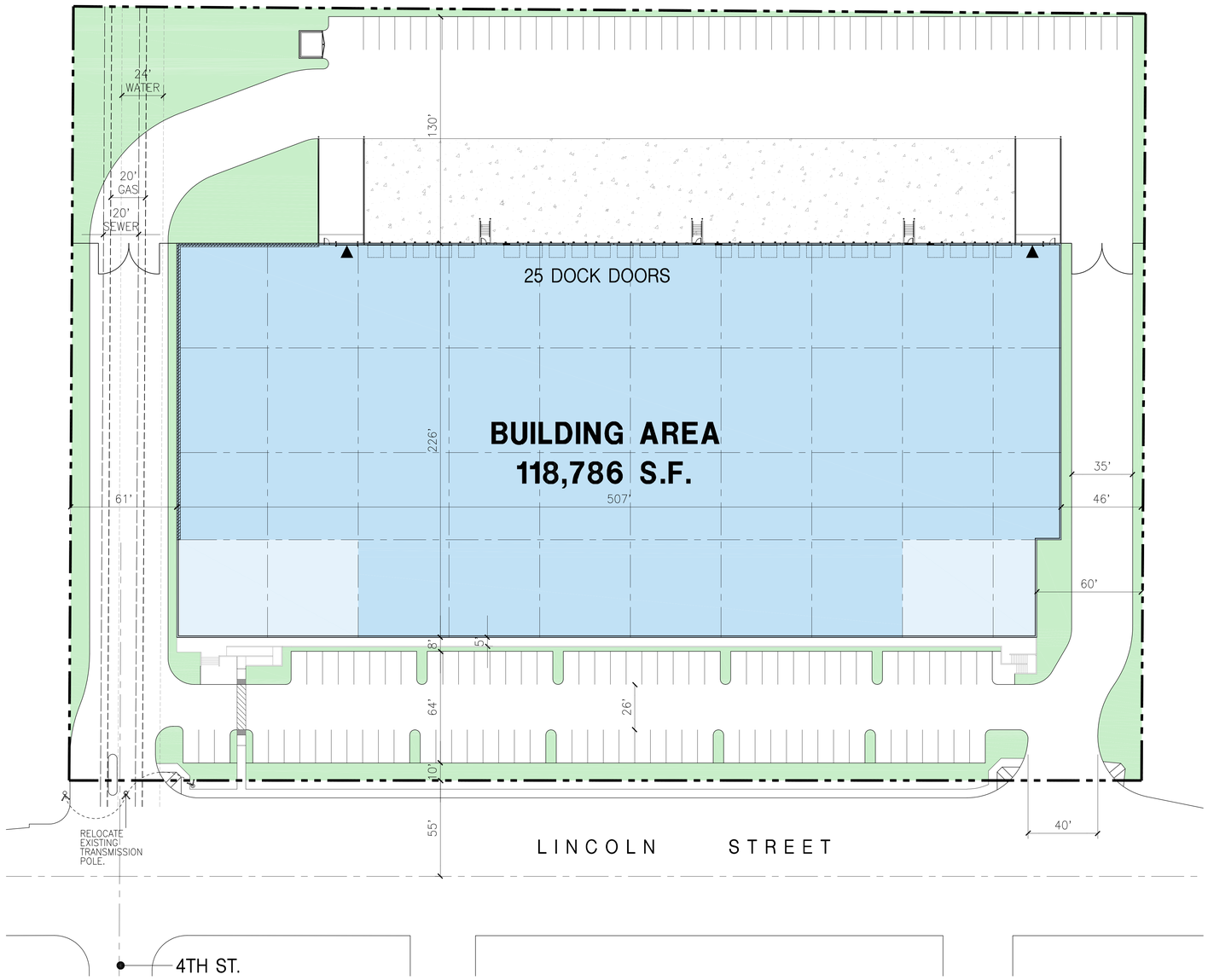
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HORIZONTAL SCALE: 1" = 40' VERTICAL SCALE: N/A

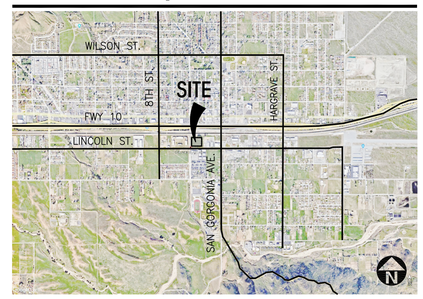
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CAUTION: IF THIS SHEET IS NOT 30"X42", IT IS A REDUCED PRINT



Aerial Map



Tabulation

SITE AREA		
In s.f.	271,594	s.f.
In acres	6.23	ac
BUILDING AREA		
Office - 1st floor	5,000	s.f.
Office - 2nd floor	5,000	s.f.
Warehouse	108,786	s.f.
TOTAL	118,786	s.f.
COVERAGE	43.7%	
AUTO PARKING REQUIRED		
Office: 2,001-7,500 s.f. @ 1/250 s.f.	40	stalls
Whse: over 20K @ 22 stalls + 1/2,000 s.f.	76	stalls
TOTAL	116	stalls
AUTO PARKING PROVIDED		
Standard (9' x 19')	138	stalls

ZONING ORDINANCE FOR CITY
Zoning Designation - Industrial

MAXIMUM BUILDING HEIGHT ALLOWED
Height - 50'

MAXIMUM BUILDING COVERAGE
Coverage - 60%

LANDSCAPE REQUIREMENT
Percentage - to be verified

SETBACKS
Front - 10'
Interiror side - 0'
Street side - 10'
Rear - 0'. If adjacent to R zone - 10'

Legend

POTENTIAL OFFICE W/ 2ND FLOOR

WAREHOUSE

▼ DRIVE THRU DOOR

Note: This is a conceptual plan. It is based on preliminary information which is not fully verified and may be incomplete. It is meant as a comparative aid in examining alternate development strategies and any quantities indicated are subject to revision as more reliable information becomes available.

north

1" = 30'
0 30 60 90

Conceptual Site Plan

NC Lincoln St. and 4th St.

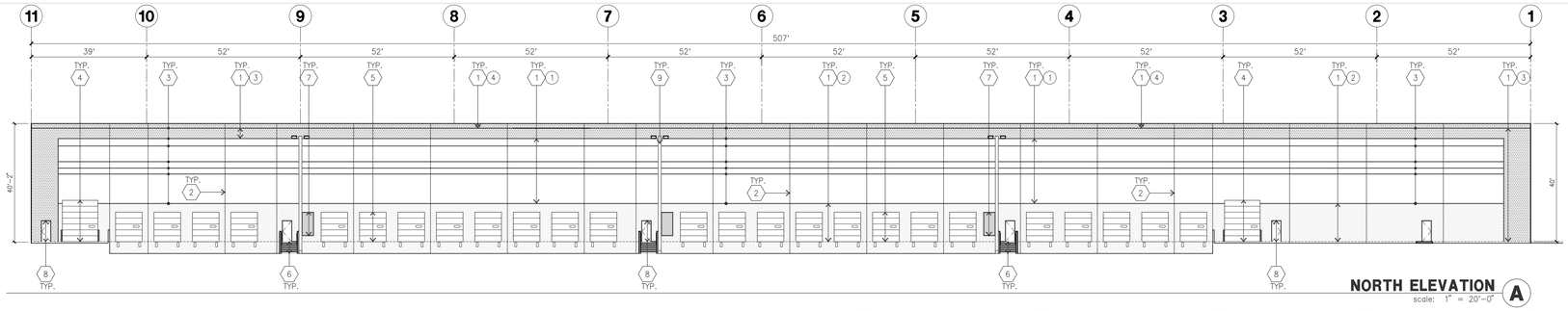
Banning, CA

HPA architecture
18831 Bardeen Ave. - Ste. #100
Irvine, CA 92612
(949) 863-1770
www.hparchs.com

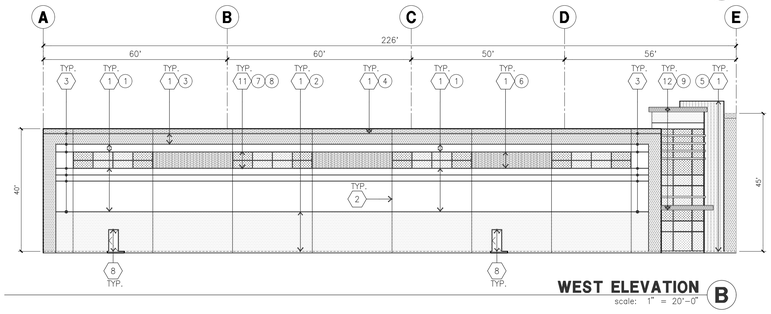
FIRST INDUSTRIAL REALTY·TRUST

March 22, 2022 / Job #21654

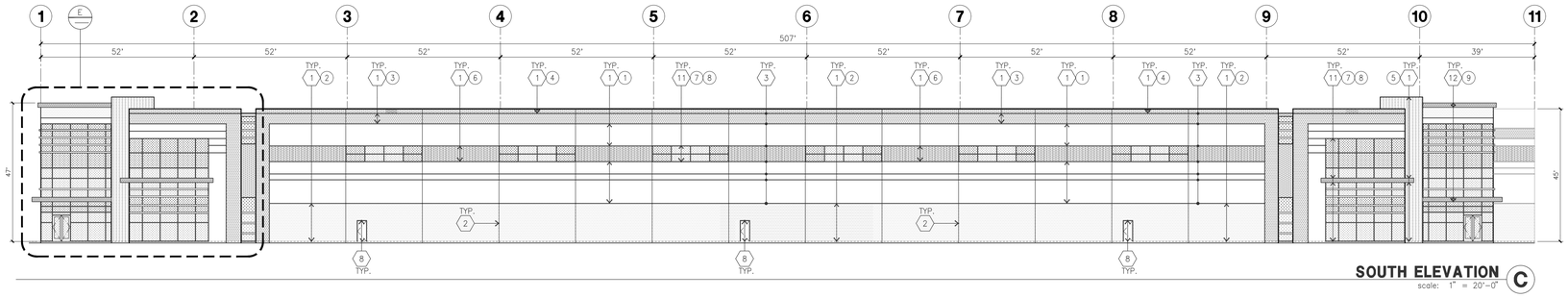
Scheme 9



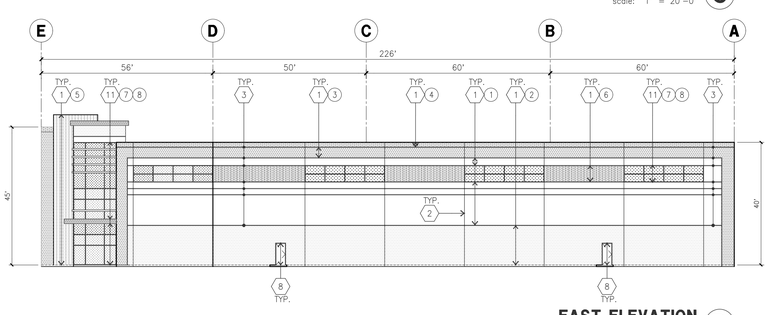
NORTH ELEVATION
scale: 1" = 20'-0" A



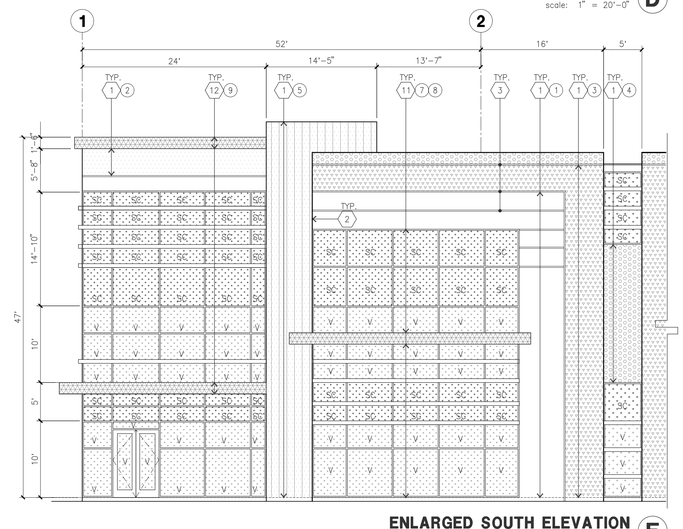
WEST ELEVATION
scale: 1" = 20'-0" B



SOUTH ELEVATION
scale: 1" = 20'-0" C



EAST ELEVATION
scale: 1" = 20'-0" D



ENLARGED SOUTH ELEVATION
scale: 1/8" = 1'-0" E

KEYNOTES - ELEVATIONS

1. CONCRETE TILT-UP PANEL(PAINTED). FINISH GRADE VARIES. SEE "C" DRAWINGS. WATERPROOF ALL WALLS WHERE GRADE IS HIGHER AND EXPOSED TO THE WEATHER ONE SIDE. WATERPROOFING TO BE PROTECTED WITH PROTECTION BOARD AND A MIN. OF 6" OF GRAVEL. PROVIDE TRENCH DRAIN AT BOTTOM AND DAYLIGHT TO CURB OR TAKE TO STORM DRAIN. NOT REQUIRED AT DOCK HIGH CONDITION OR AT RAMP WALLS.
2. PANEL JOINT.
3. PANEL REVEAL. ALL REVEALS TO HAVE A MAX. OF 3/8" CHAMFER. REVEAL COLOR TO MATCH ADJACENT BUILDING FIELD COLOR. U.N.O.
4. OVERHEAD DOOR @ DRIVE THRU. SEE DOOR SCHEDULE. PROVIDE COMPLETE WEATHER-STRIPPING PROTECTION ALL AROUND.
5. OVERHEAD DOOR @ DOCK HIGH. SEE DOOR SCHEDULE. PROVIDE COMPLETE WEATHER-STRIPPING PROTECTION ALL AROUND.
6. CONCRETE STAIR, LANDING AND GUARDRAIL W/ METAL PIPE HANDRAIL. PROVIDE NON SKID NOSING TO MEET ADA REQUIREMENTS. PROVIDE CONTRASTING COLORED 3" WIDE WARNING STRIPE INTEGRAL TO CONCRETE AT TOP LANDING AND BOTTOM TREAD PER ADA REQUIREMENTS.
7. METAL LOUVER, PAINT TO MATCH BUILDING COLOR.
8. HOLLOW METAL DOORS. SEE DOOR SCHEDULE. PROVIDE COMPLETE WEATHER STRIPING ALL AROUND DOOR. PROVIDE FOR RAIN DIVERTER ABOVE DOOR.
9. EXTERIOR DOWNSPOUT AND OVERFLOW SCUPPER
10. DOCK BUMPER
11. ALUMINUM STOREFRONT FRAMING WITH TEMPERED GLAZING AT ALL DOORS, SIDELITES ADJACENT TO DOORS AND GLAZING WITH BOTTOMS LESS THAN 18" ABOVE FINISH FLOOR ELEVATION.
12. TUBE STEEL CANOPY WITH 3 FORM CODA XT COVER OVER ENTRANCE.
13. METAL SIDING
14. INTERIOR ROOF DRAIN AND OVERFLOW SCUPPERS

GENERAL NOTES - ELEVATIONS

A. ALL PAINT COLOR CHANGES TO OCCUR AT INSIDE CORNERS UNLESS NOTED OTHERWISE.
B. ALL PAINT FINISHES ARE TO BE FLAT UNLESS NOTED OTHERWISE.
C. T.O.P. EL.= TOP OF PARAPET ELEVATION.
D. F.F. = FINISH FLOOR ELEVATION.
E. STOREFRONT CONSTRUCTION; GLASS, METAL ATTACHMENTS AND LINTELS SHALL BE DESIGNED TO RESIST 90 MPH. EXPOSURE "C" WINDS. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS PRIOR TO INSTALLATION.
F. CONTRACTOR SHALL FULLY PAINT ONE CONCRETE PANEL W/ SELECTED COLORS. ARCHITECT AND OWNER SHALL APPROVE PRIOR TO PAINTING REMAINDER OF BUILDING.
G. BACK SIDE OF PARAPETS TO HAVE SMOOTH FINISH AND BE PAINTED WITH ELASTOMERIC PAINT.
H. FOR SPANDREL GLAZING, ALLOW SPACE BEHIND SPANDREL TO BREATH.
J. USE ADHESIVE BACK WOOD STRIPS FOR ALL REVEAL FORMS.
K. THE FIRST COAT OF PAINT TO BE ROLLED-ON AND THE SECOND COAT TO BE SPRAYED-ON

COLOR SCHEDULE - ELEVATIONS

1. CONCRETE TILT-UP PANEL PAINT BRAND SHERWIN-WILLIAMS SW7005 PURE WHITE
2. CONCRETE TILT-UP PANEL PAINT BRAND SHERWIN-WILLIAMS SW7071 GRAY SCREEN
3. CONCRETE TILT-UP PANEL PAINT BRAND SHERWIN-WILLIAMS SW7073 NETWORK GRAY
4. CONCRETE TILT-UP PANEL PAINT BRAND SHERWIN-WILLIAMS SW7075 WEB GRAY
5. CONCRETE TILT-UP PANEL FORMLINER PAINTED IN SHERWIN -WILLIAMS SW7071 GRAY SCREEN
6. CONCRETE TILT-UP PANEL FORMLINER PAINTED IN SHERWIN -WILLIAMS SW7075 WEB GRAY
7. MULLIONS COLOR CLEAR ANODIZED
8. GLAZING COLOR BLUE REFLECTIVE GLAZING
9. METAL CANOPY COLOR SW ACRYLIC LATEX SYSTEMS HIGH GLOSS /HIGH PERFORMANCE 7075 WEB GRAY

GLAZING LEGEND

NOTE: ALL EXTERIOR AND INTERIOR GLAZING SHALL BE TEMPERED.

IV INSULATED VISION GLASS
SC SPANDREL GLASS WITH CONCRETE BEHIND
V SINGLE LITE VISION GLASS
S SPANDREL GLASS

IV : INSULATED VISION GLASS
1/4" **ATLANTICA** + 1/4" **SUNGATE 400** CLEAR
1" INSULATED GLASS UNIT WITH 1/2" AIRSPACE AND 1/4" LITES
U: **0.27** SHGC: **0.35** VLT: **58%**
MINIMUM VT TO BE 0.42 PER 2016 CEC TABLE 140.3-B

SC : SPANDREL WITH CONCRETE BEHIND
1/4" **CLEAR** WITH **ATLANTIC WATERS** OPACICOAT PAINTED ON REFLECTIVE. INSTALLED ON CONCRETE.

V : VISION GLASS
1/4" **ATLANTICA**

MULLIONS : **ANODIZED CLEAR**.

HPA architecture

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18831 bardeen avenue, - ste. #100
irvine, ca
92612
tel: 949•863•1770
fax: 949•863•0851
email: hpa@hparchs.com

LICENSED ARCHITECT
HONG NAM
C-29451
3-31-23
RENEWAL DATE
STATE OF CALIFORNIA

Owner:

FIRST INDUSTRIAL REALTY TRUST

898 N PACIFIC COAST HWY, Suite 750
El Segundo, CA 90245

tel: 310-414-5400

Project:

FIRST INDUSTRIAL LINCOLN

FIRST INDUSTRIAL WAY
BANNING, CA

Consultants:

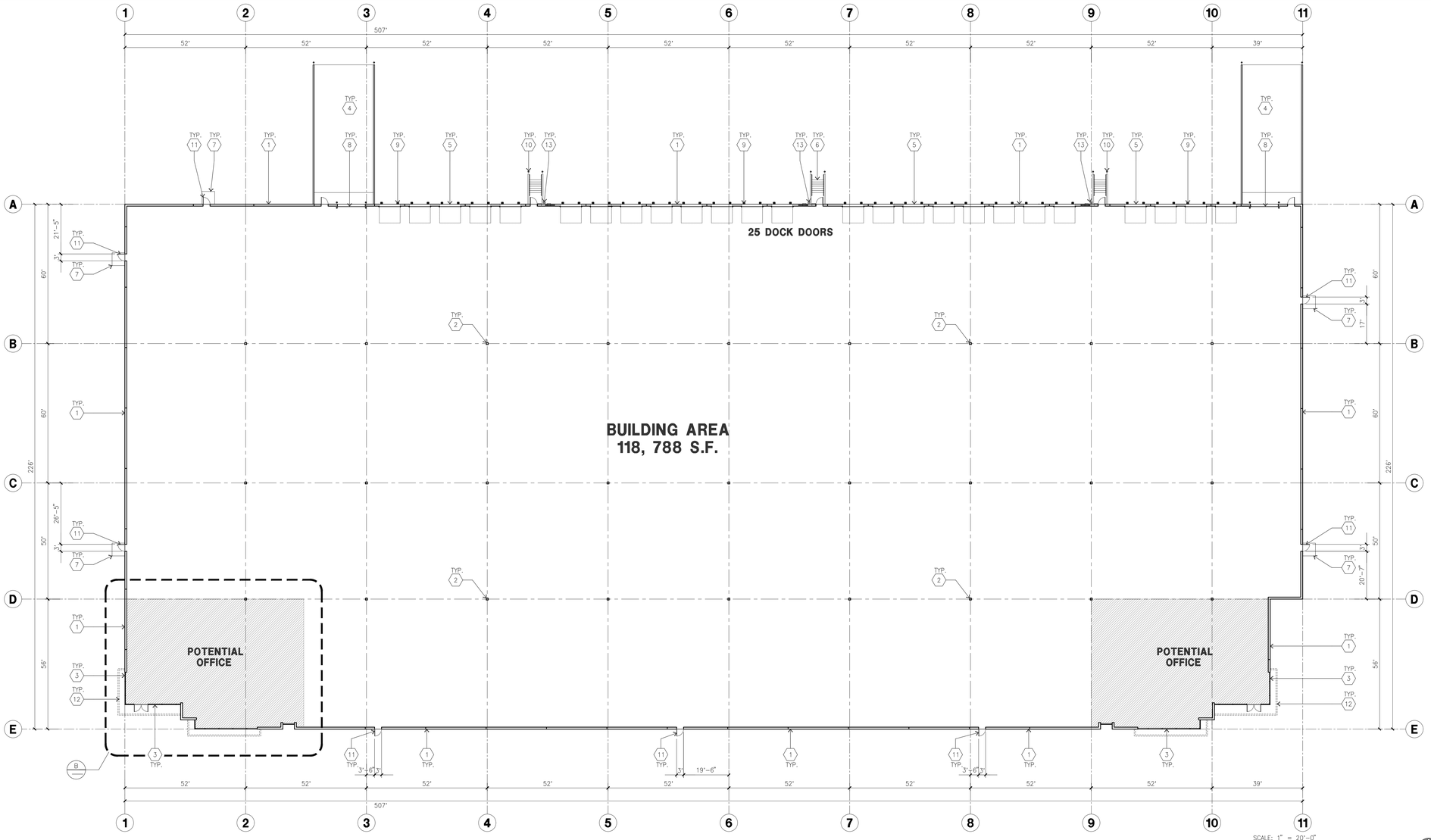
CIVIL	STANTEC
STRUCTURAL	-
MECHANICAL	-
PLUMBING	-
ELECTRICAL	-
LANDSCAPE	SPLA
FIRE PROTECTION	-
SOILS ENGINEER	-

Title: ELEVATIONS

Project Number: 21654
Drawn by: RC
Date: 04/27/2022
Revision:

Sheet:

DAB-A3.1

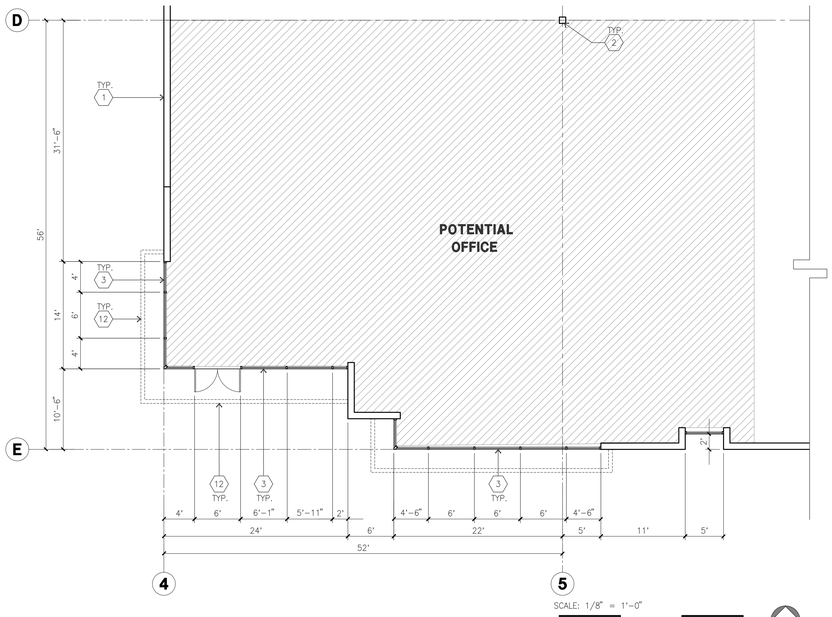


OVERALL FLOOR PLAN

scale: 1" = 20'-0" (A)

SCALE: 1" = 20'-0"

0 20' 40' 60' TRUE NORTH



ENLARGED FLOOR PLAN

scale: 1/8" = 1'-0" (B)

SCALE: 1/8" = 1'-0"

0 8' 16' 24' TRUE NORTH

KETNOTES - FLOOR PLAN

1. CONCRETE TILT-UP PANEL.
2. STRUCTURAL STEEL COLUMN.
3. TYPICAL STOREFRONT SYSTEM WITH GLAZING. SEE OFFICE BLOW-UP AND ELEVATIONS FOR SIZE, COLOR AND LOCATIONS.
4. CONCRETE RAMP W/ 42"HIGH CONC TILT-UP GUARD WALL OR BUILDING WALL ON BOTH SIDE OF RAMP.
5. 9'-0" X 10' TRUCK DOOR, SECTIONAL O'H., STANDARD GRADE.
6. EXTERIOR CONCRETE STAIR
7. 5'-6"X5'-6"X4" THICK CONCRETE EXTERIOR LANDING PAD TYPICAL AT ALL EXTERIOR MAN DOORS TO LANDSCAPED AREA. FINISH TO BE MEDIUM BLOOM FINISH. SLOPE TO BE 1/4" : 12" MAX. PROVIDE WALK TO HARD SURFACE PER CITY REQUIREMENTS.
8. 12' X 14' DRIVE THRU. SECTIONAL OH., STANDARD GRADE.
9. DOCK DOOR BUMPER
10. CONC. FILLED GUARD POST. 6" DIA. U.N.O., 42"H.
11. 3'X7' HOLLOW METAL EXTERIOR MAN DOOR.
12. SOFFIT LINE ABOVE
13. EXTERIOR DOWNSPOUT WITH OVERFLOW SCUPPER,
14. TUBE STEEL CANOPY.
15. Z GUARD

GENERAL NOTES - FLOOR PLAN

A. THIS BUILDING IS DESIGNED FOR HIGH PILE STORAGE WITH FIRE ACCESS MAN DOORS AT 100' MAXIMUM O.C. A SEPARATE PERMIT WILL BE REQUIRED FOR ANY RACKING/CONVEYER SYSTEMS.

B. FIRE HOSE LOCATIONS SHALL BE APPROVED PER FIRE DEPARTMENT.

C. THE BUILDING FLOOR SLAB IS SLOPED, SEE "C" DRAWINGS FOR FINISH SURFACE ELEVATIONS.

D. NOT USED

E. WAREHOUSE INTERIOR CONCRETE WALLS ARE PAINTED WHITE. COLUMNS ARE TO RECEIVE PRIMER ONLY. ALL OYP. BD. WALLS IN WAREHOUSE TO RECEIVE 1 COAT OF WHITE TO COVER.

F. SLOPE POUR STRIP 1/2" TO EXTERIOR AT ALL MANDOOR EXITS. SEE "S" DRAWINGS FOR POUR STRIP LOCATION.

G. ALL DIMENSIONS ARE TO THE FACE OF CONCRETE PANEL WALL, GRIDLINE, OR FACE OF STUD U.N.O.

H. SEE CIVIL DRAWINGS FOR POINT OF CONNECTIONS TO OFF-SITE UTILITIES. CONTRACTOR TO VERIFY ACTUAL UTILITY LOCATIONS. PLUMBING/ELECTRICAL COORDINATION.

I. FOR DOOR TYPES AND SIZES, SEE DETAIL SHEET AD.4. NOTE: ALL DOORS PER DOOR SCHEDULE ARE FINISH OPENINGS.

J. CONTRACTOR TO PROTECT AND KEEP THE FLOOR SLAB CLEAN. ALL EQUIPMENT TO BE DIAPERED INCLUDING CARS AND TRUCKS.

K. ALL EXIT MAN DOORS IN WAREHOUSE TO HAVE ILLUMINATED EXIT SIGN. HARDWARE.

L. HIGHLY FLAMMABLE AND COMBUSTIBLE MATERIAL SHALL NOT BE USED OR STORED IN THIS BUILDING.

M. EACH EXTERIOR EXIT DOOR SHALL BE IDENTIFIED BY A TACTILE EXIT SIGN WITH THE WORDS "EXIT". THE MOUNTING HEIGHT FOR SUCH SIGNAGE SHALL BE 60" FROM FINISH FLOOR LEVEL TO THE CENTER OF THE SIGN.

N. NON-ACCESSIBLE DOOR. PROVIDE WARNING SIGN LOCATED IN THE INTERIOR SIDE PER CBC 1133B.1.1.1

O. ALL ROOF MOUNTED MATERIALS SHALL BE FULLY SCREENED FROM PUBLIC VIEW, SEE A/A4.1 OFFICE SECTION.

HPA architecture

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18831 bardeen avenue, - ste. #100
irvine, ca
92612
tel: 949•863•1770
fax: 949•863•0851
email: hpa@hparchs.com

LICENSED ARCHITECT — HONG NAM — C-29451 — 3-31-23 RENEWAL DATE — STATE OF CALIFORNIA

Owner:

FIRST INDUSTRIAL REALTY TRUST

898 N PACIFIC COAST HWY, Suite 750
El Segundo, CA 90245

tel: 310-414-5400

Project:

FIRST INDUSTRIAL
LINCOLN

FIRST INDUSTRIAL WAY
BANNING, CA

Consultants:

CIVIL	STANTEC
STRUCTURAL	-
MECHANICAL	-
PLUMBING	-
ELECTRICAL	-
LANDSCAPE	SPLA
FIRE PROTECTION	-
SOILS ENGINEER	-

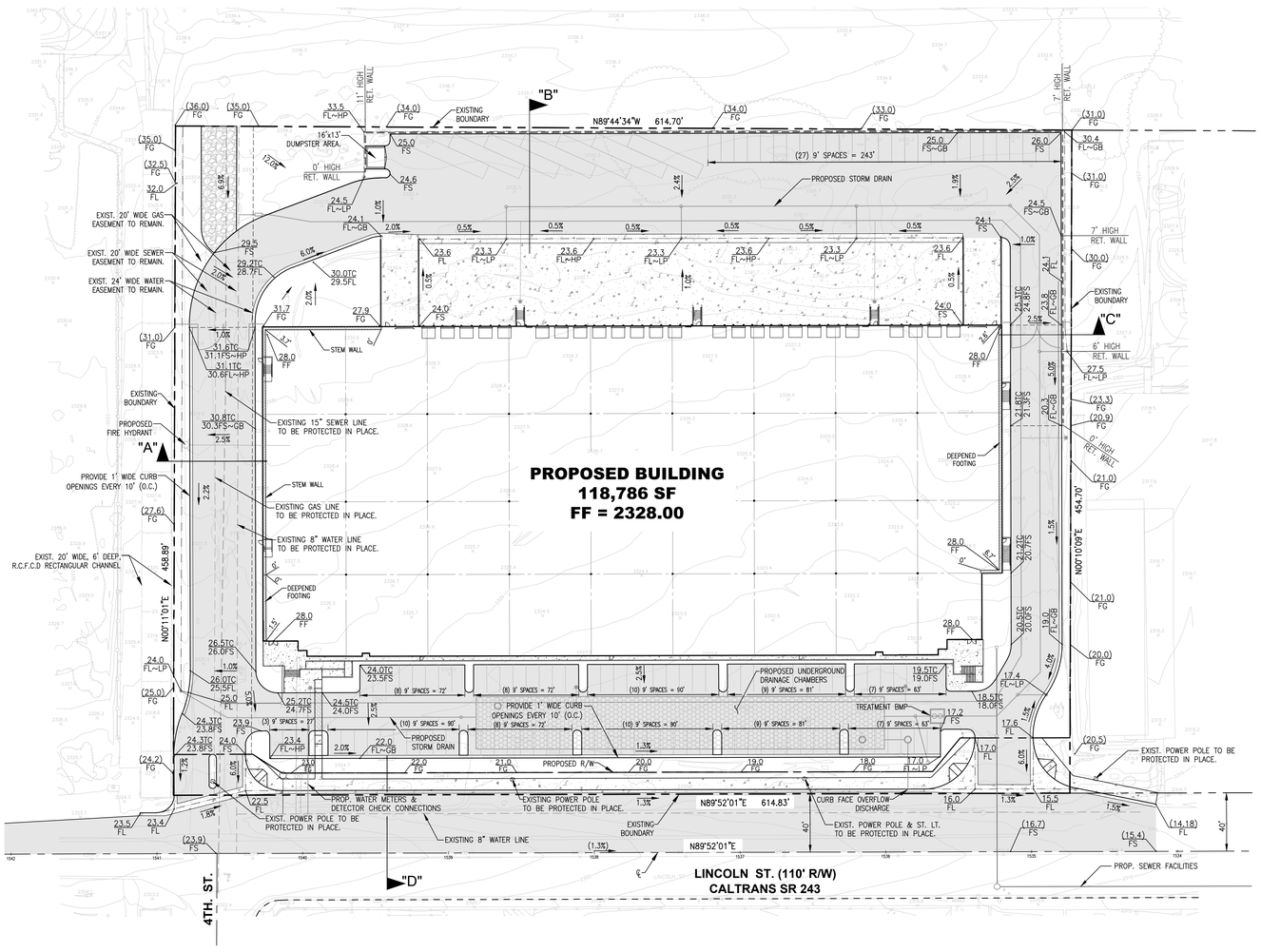
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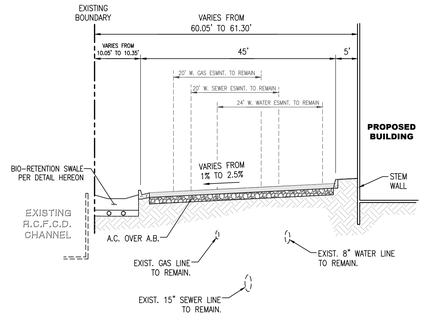
Project Number: 21654
Drawn by: RC
Date: 04/27/2022
Revision:

Sheet:

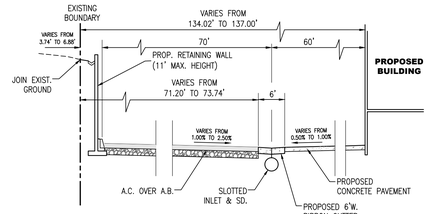
DAB-A2.1

PRELIMINARY GRADING & DRAINAGE PLAN
FOR
FIRST LINCOLN LOGISTICS



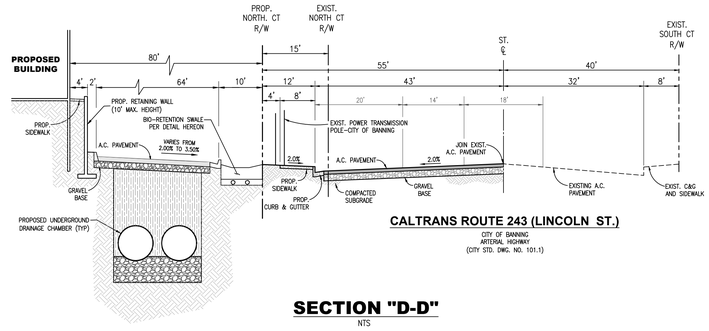


SECTION "A-A"
NTS



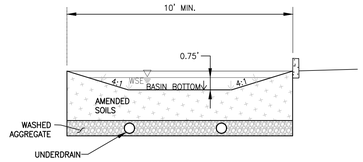
SECTION "B-B"
NTS

SECTION "C-C"
NTS

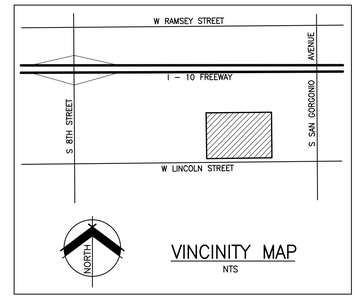


CALTRANS ROUTE 243 (LINCOLN ST.)
CITY OF BANNING
ARTERIAL HIGHWAY
(CITY STD. DWG. NO. 101.1)

SECTION "D-D"
NTS



BIO-RETENTION SWALE DETAIL
NTS



VINCINITY MAP
NTS

LEGEND
- PROPOSED A.C. PAVEMENT
- PROPOSED P.C. CONCRETE
- PROPOSED GRAVEL
- UNDERGROUND CHAMBERS
- RETAINING WALL
- MAP BOUNDARY
- PROPOSED R/W
- EXIST. STREET ℄
- EXIST. EASEMENT
- PROPOSED STRIPING
- EXIST. POWER POLE
- EXIST. STREET LIGHT
- PROPOSED FIRE HYDRANT

NORTH

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

EARTHWORK QUANTITIES:
CUT = 19,000 C.Y.
FILL = 19,000 C.Y.

OWNER:
FR CA PROPERTY HOLDING, L.P.
898 N. PACIFIC COAST HWY., SUITE 175
EL SEGUNDO, CA 90245
(310) 606-1634

DEVELOPER:
FIRST INDUSTRIAL REALTY TRUST, INC.
898 N. PACIFIC COAST HWY., SUITE 175
EL SEGUNDO, CA 90245
(310) 606-1634

ENGINEER / REP.
STANTEC CONSULTING, INC.
735 E. CARNEGIE DRIVE, SUITE 280
SAN BERNARDINO, CA 92408
ATT: STEPHEN CREVOISERAT, PE.
R.C.E. # 78576
(949) 537-1300

LEGAL DESCRIPTION:
BLOCKS 220 & 232 OF AMENDED MAP OF THE BANNING LAND COMPANY, IN THE CITY OF BANNING, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 9, PAGE 44, OF MAPS, OF SAN BERNARDINO COUNTY, CALIFORNIA.

ASSESSOR'S PARCEL NO:
ASSESSOR'S PARCEL NO: 540-210-009 & 540-210-020

SOILS ENGINEER:
SO CAL GEO
22885 SAVI RANCH PARKWAY, SUITE "E"
YORBA LINDA, CA 92887
(714) 685-1115

ACREAGE:
TOTALS:
GROSS: 6.45 AC.
NET: 6.17 AC.

BENCH MARK:
NGS BM DX3597 ELEVATION= 2364.82' NAVD88
PER NATIONAL GEODETIC SURVEY (NGS) DATA SHEET.

FLOOD ZONE DESIGNATION:
THE AREA OF LAND SHOWN DOES NOT LIE WITHIN A FLOOD ZONE.

AUGUST 2022

PREPARED FOR:
FIRST INDUSTRIAL REALTY TRUST
FIRST INDUSTRIAL ACQUISITION II, LLC
898 N. PACIFIC COAST HWY., SUITE 175
EL SEGUNDO, CA 90245 PH: (310) 606-1634

PREPARED BY:
Stantec
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SAN BERNARDINO, CA 92408
909.335.6116 stantec.com

08/31/22
REGISTERED PROFESSIONAL ENGINEER STEPHEN F. CREVOISERAT 78576 CIVIL STATE OF CALIFORNIA

CITY OF BANNING
RECOMMENDED FOR APPROVAL BY:
KEVIN D. SIN, RCE # 71299 EXP. DATE
SENIOR CIVIL ENGINEER
RECOMMENDED FOR APPROVAL BY:
NATHAN SMITH, RCE # EXP. DATE
ASST. PWD/CITY ENGINEER

PRELIMINARY GRADING & DRAINAGE PLAN
FOR
FIRST LINCOLN LOGISTICS
BANNING, CA

HORIZONTAL SCALE: 1" = 100' VERTICAL SCALE: N/A

2042611702

SHEET 1 OF 1

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APPENDIX I

INFILTRATION REPORT

December 17, 2021

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

First Industrial Realty Trust, Inc.
898 N. Pacific Coast Highway. Suite 175
El Segundo, CA 90245

Attention: Mr. Matt Pioli
Investment Officer

Project No.: **21G271-2**

Subject: **Results of Infiltration Testing**
Proposed Warehouse
NEC Lincoln Avenue and 4th Street
Banning, California

Reference: Geotechnical Investigation, Proposed Warehouse, NEC Lincoln Avenue and 4th Street, Banning, California, prepared for First Industrial Realty Trust, Inc., by Southern California Geotechnical, Inc. (SCG), SCG Project No. 21G271-1, dated December 17, 2021.

Mr. Pioli:

In accordance with your request, we have conducted infiltration testing at the subject site. We are pleased to present this report summarizing the results of the infiltration testing and our design recommendations.

Scope of Services

The scope of services performed for this project was in general accordance with our Proposal No. 21P476, dated November 4, 2021. The scope of services included site reconnaissance, subsurface exploration, field testing, and engineering analysis to determine the infiltration rates of the onsite soils. The infiltration testing was performed in general accordance with the guidelines published in Riverside County – Low Impact Development BMP Design Handbook – Section 2.3 of Appendix A, prepared for the Riverside County Department of Environmental Health (RCDEH), dated December, 2013.

Site and Project Description

The subject site is located at the northeast corner of Lincoln Street and 4th Street in Banning, California. The site is bounded to the north by a railroad easement, to the west by Gilman Home Storm Channel, to the south by Lincoln Street, and to the east by an existing commercial/industrial building. The general location of the site is illustrated on the Site Location Map, enclosed as Plate 1 in this report.

The site is comprised to two (2) contiguous parcels totaling 6.23± acres in size. The site is currently vacant and undeveloped and appears to have been recently disced, or tilled, and cleared of heavy vegetation. Several large trees are located along the northern boundary of the site.

Ground surface cover for currently consists of exposed soil with negligible native grass and weed growth.

Topographic information was included in the conceptual site plan provided by Stantec. Based on the review of this plan, the overall site topography slopes downward to the south to southeast at a gradient of approximately 2½ percent. There is up to 16± feet of elevation differential across the subject site. The site appears to be 4 to 7± feet higher in elevation than the adjacent commercial lot located to the southeast. A descending slope, separates the project site from the adjacent commercial property.

Proposed Development

SCG was provided with a preliminary site plan which was prepared by Stantec. Based on the site plan, the site will be developed with one (1) warehouse. The warehouse will be located in the central area of the site and will be 118,786± ft² in size. Dock-high doors will be constructed along a portion of the northern building wall. The building is assumed to be surrounded by asphaltic concrete pavements in the parking and drive areas, Portland cement concrete pavements in the truck court areas, and limited areas of concrete flatwork and landscape planters.

We understand that the proposed development will include on-site storm water infiltration. The type, location and depth of the infiltration system was not available at the time of our investigation. Based on our experience with similar projects in the vicinity of the subject site, the infiltration system is expected to consist of one (1) below-grade chamber system, located in the northern area of the site. The bottom of the infiltration system is expected to be 10± feet below the existing site grades.

Concurrent Study

SCG concurrently conducted a geotechnical investigation at the subject site, which is referenced above. As part of this study, five (5) borings were advanced to depths of 20 to 50± feet below existing site grades. Two of these borings were used as a part of a liquefaction evaluation. Artificial fill soils were encountered at the ground surface at all of the boring locations, extending to depths of 2½ to 5½± feet below the existing site grades. The fill soils generally consist of medium dense silty fine sands with varying medium to coarse sand and fine gravel content. These materials possess pinhole porosity with some fine root fibers. Native alluvium was encountered beneath the fill soils at all of the boring locations. The near-surface alluvium generally consists of medium dense silty fine sands, clayey fine sands and fine sandy silts with varying medium to coarse sand, fine gravel and varying clay content, extending to depths of 20 to 32± feet. The near-surface alluvium possesses pinhole porosity and some Calcareous nodules and veining. Below these materials, Boring Nos. B-1 and B-4 encountered older alluvium, extending to at least the maximum depth explored of 50± feet. The older alluvium generally consists of medium dense to very dense fine to coarse sands with varying silt and fine to coarse gravel content.

Groundwater

Free water was not encountered during the drilling of any of the borings. Based on the lack of any water within the borings, and the moisture contents of the recovered soil samples, the static

groundwater table is considered to have existed at a depth in excess of 50± feet at the time of the subsurface exploration.

As a part of our research, we reviewed available groundwater data in order to determine groundwater levels for the site. Water level data was obtained from the California Department of Water Resources Water Data Library website, https://wdl.water.ca.gov/waterdatalibrary/. The nearest monitoring well on record is located 1,500± feet southeast of the site. Water level readings within this monitoring well indicate a groundwater level of 500± feet below the ground surface in December 2005.

Subsurface Exploration

Scope of Exploration

The subsurface exploration conducted for the infiltration testing consisted of two (2) infiltration test borings, advanced to a depth of 10± feet below the existing site grades. The infiltration borings were advanced using a truck-mounted drilling rig, equipped with 8-inch-diameter hollow stem augers and were logged during drilling by a member of our staff. The approximate locations of the infiltration test borings (identified as I-1 and I-2) are indicated on the Infiltration Test Location Plan, enclosed as Plate 2 of this report.

Geotechnical Conditions

Artificial fills soils were encountered at the ground surface at both of the infiltration test locations, extending to a depth of 6± feet below the existing site grades. The artificial fill soils consist of silty fine sands with varying medium to coarse sand content. Native alluvium was encountered at the artificial fill soils at both of the infiltration test locations, extending to at least the maximum explored depth of 10± feet below existing site grades. The alluvial soils consist of medium dense clayey fine sands as well as very stiff fine sandy clays, with varying medium to coarse sands and silt content. The Boring Logs, which illustrate the conditions encountered at the infiltration test locations, are presented in this report.

Infiltration Testing

As previously mentioned, the infiltration testing was performed in general accordance with the Riverside County guidelines: Riverside County – Low Impact Development BMP Design Handbook – Section 2.3 of Appendix A.

Pre-soaking

In accordance with the county infiltration standards both of the infiltration test borings were pre-soaked prior to the infiltration testing. The pre-soaking process consisted of filling the test borings by inverting a full 5-gallon bottle of clear water supported over each hole so that the water level reaches a level of at least 5 times the hole's radius above the gravel at the bottom of each hole. The pre-soaking was completed after all of the water had percolated through each test hole or after 15 hours since initiating the pre-soak. Based on the results of the pre-soaking process, different infiltration procedures were used during the infiltration testing at the infiltration boring locations.

Infiltration Testing

Following the pre-soaking process of the infiltration test borings, SCG performed the infiltration testing. Each test hole was filled with water to a depth of at least 5 times the hole's radius above the gravel at the bottom of each test hole, and less than or equal to the water level used during the pre-soaking process. In accordance with the Riverside County guidelines, since "sandy soils" were encountered at the bottom of the infiltration borings (when two-consecutive measurements show that 6 inches of water seep away in less than 25 minutes), these tests were run for an additional hour with measurements taken at 10-minute intervals. After each reading, the borings were refilled to the correct water level above the gravel at the bottom of each test hole. The water level readings are presented on the spreadsheets enclosed with this report. The infiltration rates for each of the timed intervals are also tabulated on the spreadsheets.

The infiltration rates from the test are tabulated in inches per hour. In accordance with the typically accepted practice, it is recommended that the most conservative reading from the latter part of the infiltration tests be used as the design infiltration rate. The rates are summarized below:

Infiltration Test No.	Depth (feet)	Soil Description	Infiltration Rate (inches/hour)
I-1	10	Clayey fine to medium Sand, little coarse Sand, little Silt	0.8
I-2	10	Clayey fine Sand to fine Sandy Clay, trace to little medium to coarse Sand, little Silt	0.2

Design Recommendations

Two (2) infiltration tests were performed at the subject site. As note above, the calculated infiltration rates at the infiltration test locations range from 0.2 to 0.8 inches per hour. **Based on the results of infiltration testing, we recommend an infiltration rate of 0.5 inches per hour to be used for the design of the proposed infiltration system located in the northern region of the subject site, if the bottom of the infiltration system extends to 10± feet below the existing site grades.**

We recommend that a representative from the geotechnical engineer be on-site during the construction of the proposed infiltration system to identify the soil classification at the base of the infiltration basin. It should be confirmed that the soils at the base of the proposed infiltration system corresponds with those presented in this report to ensure that the performance of the system will be consistent with the rates reported herein.

The design of the storm water infiltration system should be performed by the project civil engineer, in accordance with the City of Banning and/or County of Riverside guidelines. It is recommended that the system be constructed so as to facilitate removal of silt and clay, or other deleterious materials from any water that may enter the systems. The presence of such materials would decrease the effective infiltration rates. **It is recommended that the project civil**

engineer apply an appropriate factor of safety. The infiltration rates recommended above is based on the assumption that only clean water will be introduced to the subsurface profile. Any fines, debris, or organic materials could significantly impact the infiltration rate. It should be noted that the recommended infiltration rates are based on infiltration testing at two (2) discrete locations and that the overall infiltration rates of the proposed infiltration system could vary considerably.

Infiltration Rate Considerations

The infiltration rates presented herein was determined in accordance with the Riverside County guidelines and are considered valid only for the time and place of the actual test. Varying subsurface conditions will exist in other areas of the site, which could alter the recommended infiltration rates presented above. The infiltration rates will decline over time between maintenance cycles as silt or clay particles accumulate on the BMP surface. The infiltration rate is highly dependent upon a number of factors, including density, silt and clay content, grainsize distribution throughout the range of particle sizes, and particle shape. Small changes in these factors can cause large changes in the infiltration rates.

Infiltration rates are based on unsaturated flow. As water is introduced into soils by infiltration, the soils become saturated and the wetting front advances from the unsaturated zone to the saturated zone. Once the soils become saturated, infiltration rates become zero, and water can only move through soils by hydraulic conductivity at a rate determined by pressure head and soil permeability. Changes in soil moisture content will affect the infiltration rate. Infiltration rates should be expected to decrease until the soils become saturated. Soil permeability values will then govern groundwater movement. Permeability values may be on the order of 10 to 20 times less than infiltration rates. The system designer should incorporate adequate factors of safety and allow for overflow design into appropriate traditional storm drain systems, which would transport storm water off-site.

Construction Considerations

The infiltration rates presented in this report are specific to the tested locations and tested depths. Infiltration rates can be significantly reduced if the soils are exposed to excessive disturbance or compaction during construction. Compaction of the soils at the bottom of the infiltration system can significantly reduce the infiltration ability of the chamber system. Therefore, the subgrade soils within proposed infiltration system areas should not be over-excavated, undercut or compacted in any significant manner. **It is recommended that a note to this effect be added to the project plans and/or specifications.**

We recommend that a representative from the geotechnical engineer be on-site during the construction of the proposed infiltration systems to identify the soil classification at the base of each system. It should be confirmed that the soils at the base of the proposed infiltration system correspond with those presented in this report to ensure that the performance of the system will be consistent with the rates reported herein.

We recommend that scrapers and other rubber-tired heavy equipment not be operated on the basin bottom, or at levels lower than 2 feet above the bottom of the system, particularly within

basins. As such, the bottom 24 inches of the infiltration system should be excavated with non-rubber-tired equipment, such as excavators.

Location of Infiltration Systems

The use of on-site storm water infiltration systems carries a risk of creating adverse geotechnical conditions. Increasing the moisture content of the soil can cause the soil to lose internal shear strength and increase its compressibility, resulting in a change in the designed engineering properties. Overlying structures and pavements in the infiltration area could potentially be damaged due to saturation of the subgrade soils. **The proposed infiltration system for this site should be located at least 25 feet away from any structures, including retaining walls**. Even with this provision of locating the infiltration system at least 25 feet from the building(s), it is possible that infiltrating water into the subsurface soils could have an adverse effect on the proposed or existing structures. It should also be noted that utility trenches which happen to collect storm water can also serve as conduits to transmit storm water toward the structure, depending on the slope of the utility trench. Therefore, consideration should also be given to the proposed locations of underground utilities which may pass near the proposed infiltration system.

The infiltration system designer should also give special consideration to the effect that the proposed infiltration system may have on nearby subterranean structures, open excavations, or descending slopes. In particular, infiltration systems should not be located near the crest of descending slopes, particularly where the slopes are comprised of granular soils. Such systems will require specialized design and analysis to evaluate the potential for slope instability, piping failures and other phenomena that typically apply to earthen dam design. This type of analysis is beyond the scope of this infiltration test report, but these factors should be considered by the infiltration system designer when locating the infiltration systems.

General Comments

This report has been prepared as an instrument of service for use by the client in order to aid in the evaluation of this property and to assist the architects and engineers in the design and preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, structural engineer, and/or civil engineer. The design of the proposed storm water infiltration system is the responsibility of the civil engineer. The role of the geotechnical engineer is limited to determination of infiltration rate only. By using the design infiltration rate contained herein, the civil engineer agrees to indemnify, defend, and hold harmless the geotechnical engineer for all aspects of the design and performance of the proposed storm water infiltration system. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur.

The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between boring locations and testing depths. If the conditions encountered during construction vary significantly from those detailed herein, we

should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted. The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

Closure

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

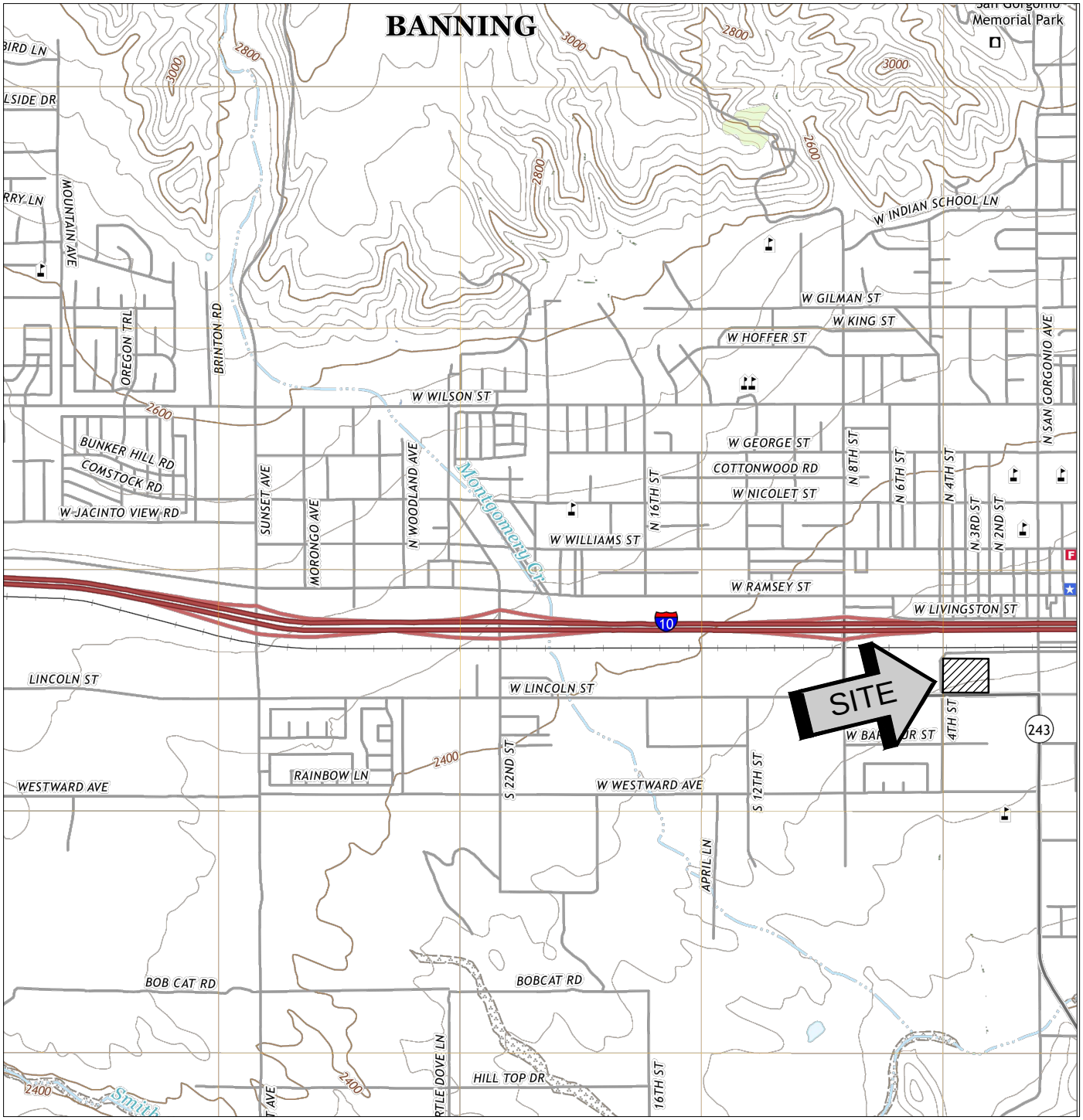
Pablo Montes Jr.
Staff Engineer

Robert G. Trazo, GE 2655
Principal Engineer



Distribution: (1) Addressee

Enclosures: Plate 1 - Site Location Map
Plate 2 - Boring Location Plan
Boring Log Legend and Logs (4 pages)
Infiltration Test Results Spreadsheets (2 pages)
Grain Size Distribution Graphs (2 pages)



SOURCE: USGS TOPOGRAPHIC MAP OF THE BEAUMONT QUADRANGLE, RIVERSIDE COUNTY, CALIFORNIA, 2018

SITE LOCATION MAP

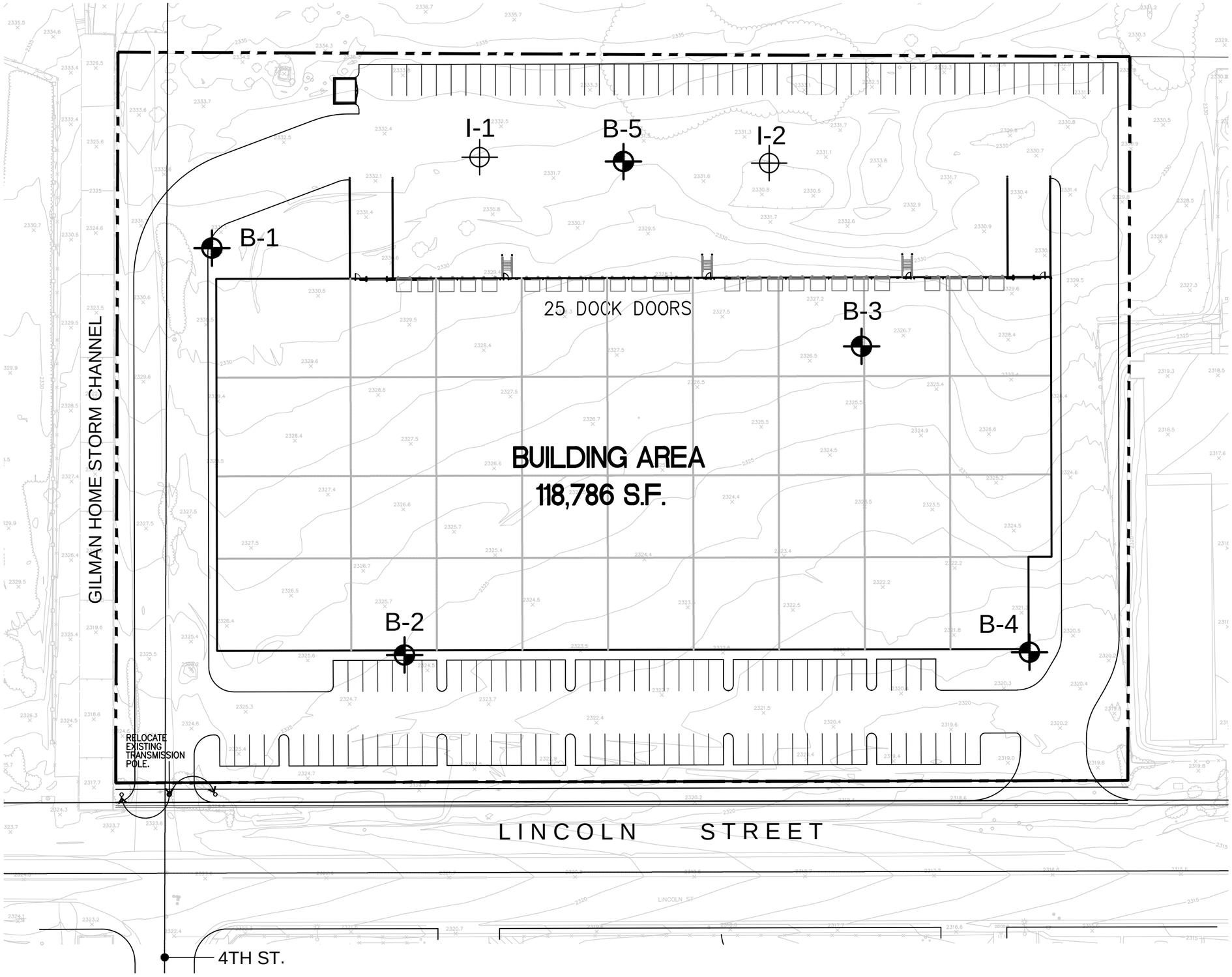
PROPOSED WAREHOUSE

BANNING, CALIFORNIA

SCALE: 1" = 2000'	
DRAWN: PM CHKD: RGT	
SCG PROJECT 21G271-2	
PLATE 1	

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



GEOTECHNICAL LEGEND

- APPROXIMATE INFILTRATION TEST LOCATION
- APPROXIMATE BORING LOCATION (SCG PROJECT NO. 21G271-1)

NOTE: BASE SITE PLAN PREPARED BY STANTEC.

INFILTRATION TEST LOCATION PLAN

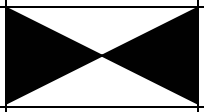
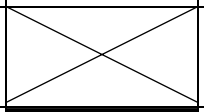
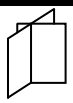
PROPOSED WAREHOUSE

BANNING, CALIFORNIA

SCALE: 1" = 60'	
DRAWN: PM CHKD: RGT	
SCG PROJECT 21G271-2	
PLATE 2	

SOUTHERN CALIFORNIA GEOTECHNICAL

BORING LOG LEGEND

SAMPLE TYPE	GRAPHICAL SYMBOL	SAMPLE DESCRIPTION
AUGER		SAMPLE COLLECTED FROM AUGER CUTTINGS, NO FIELD MEASUREMENT OF SOIL STRENGTH. (DISTURBED)
CORE		ROCK CORE SAMPLE: TYPICALLY TAKEN WITH A DIAMOND-TIPPED CORE BARREL. TYPICALLY USED ONLY IN HIGHLY CONSOLIDATED BEDROCK.
GRAB		SOIL SAMPLE TAKEN WITH NO SPECIALIZED EQUIPMENT, SUCH AS FROM A STOCKPILE OR THE GROUND SURFACE. (DISTURBED)
CS		CALIFORNIA SAMPLER: 2-1/2 INCH I.D. SPLIT BARREL SAMPLER, LINED WITH 1-INCH HIGH BRASS RINGS. DRIVEN WITH SPT HAMMER. (RELATIVELY UNDISTURBED)
NSR		NO RECOVERY: THE SAMPLING ATTEMPT DID NOT RESULT IN RECOVERY OF ANY SIGNIFICANT SOIL OR ROCK MATERIAL.
SPT		STANDARD PENETRATION TEST: SAMPLER IS A 1.4 INCH INSIDE DIAMETER SPLIT BARREL, DRIVEN 18 INCHES WITH THE SPT HAMMER. (DISTURBED)
SH		SHELBY TUBE: TAKEN WITH A THIN WALL SAMPLE TUBE, PUSHED INTO THE SOIL AND THEN EXTRACTED. (UNDISTURBED)
VANE		VANE SHEAR TEST: SOIL STRENGTH OBTAINED USING A 4 BLADED SHEAR DEVICE. TYPICALLY USED IN SOFT CLAYS-NO SAMPLE RECOVERED.

COLUMN DESCRIPTIONS

DEPTH: Distance in feet below the ground surface.

SAMPLE: Sample Type as depicted above.

BLOW COUNT: Number of blows required to advance the sampler 12 inches using a 140 lb hammer with a 30-inch drop. 50/3" indicates penetration refusal (>50 blows) at 3 inches. WH indicates that the weight of the hammer was sufficient to push the sampler 6 inches or more.

POCKET PEN.: Approximate shear strength of a cohesive soil sample as measured by pocket penetrometer.

GRAPHIC LOG: Graphic Soil Symbol as depicted on the following page.

DRY DENSITY: Dry density of an undisturbed or relatively undisturbed sample in lbs/ft^3.

MOISTURE CONTENT: Moisture content of a soil sample, expressed as a percentage of the dry weight.

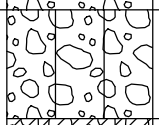
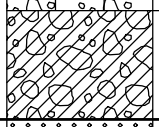
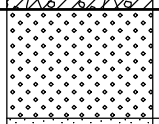
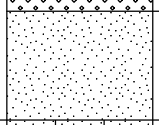
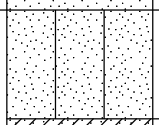
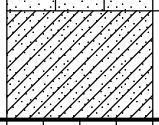
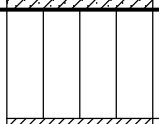
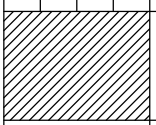
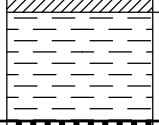
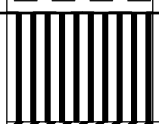
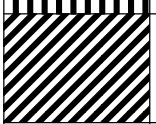
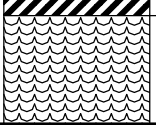
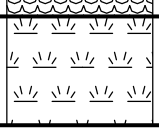
LIQUID LIMIT: The moisture content above which a soil behaves as a liquid.

PLASTIC LIMIT: The moisture content above which a soil behaves as a plastic.

PASSING #200 SIEVE: The percentage of the sample finer than the #200 standard sieve.

UNCONFINED SHEAR: The shear strength of a cohesive soil sample, as measured in the unconfined state.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-1

JOB NO.: 21G271-2
PROJECT: Proposed Warehouse
LOCATION: Banning California

DRILLING DATE: 11/9/21
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Oscar Sandoval

WATER DEPTH: Dry
CAVE DEPTH: N/A
READING TAKEN: @ Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
5		25			FILL: Light Brown Silty fine Sand, trace medium to coarse Sand, medium dense-damp		4					
					ALLUVIUM: Light Brown Clayey fine to medium Sand, little coarse Sand, little Silt, trace Calcareous veining, little fine roots, medium dense-damp							
10		20					6			28		
					Boring Terminated at 10'							

TBL 21G271-2.GPJ SOCALGEO.GDT 12/17/21

TEST BORING LOG

PLATE B-1

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-2

JOB NO.: 21G271-2
PROJECT: Proposed Warehouse
LOCATION: Banning California

DRILLING DATE: 11/9/21
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Oscar Sandoval

WATER DEPTH: Dry
CAVE DEPTH: N/A
READING TAKEN: @ Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
5		22			FILL: Light Gray Brown Silty fine Sand, little medium to coarse Sand, medium dense-damp		3					
10		21			ALLUVIUM: Light Brown Clayey fine Sand to fine Sandy Clay, trace to little medium to coarse Sand, little Silt, medium dense to very stiff-damp		4			51		
					Boring Terminated at 10'							

TBL 21G271-2.GPJ SOCALGEO.GDT 12/17/21

TEST BORING LOG **PLATE B-2**

INFILTRATION CALCULATIONS

Project Name	Proposed Warehouse
Project Location	Banning, CA
Project Number	21G171-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	10.15	(ft)

Infiltration Test Hole	I-1

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	7:45 AM	25.00	19.00	23.04	YES	SANDY SOILS
	Final	8:10 AM		20.92			
2	Initial	8:10 AM	25.00	19.00	23.16	YES	SANDY SOILS
	Final	8:35 AM		20.93			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	8:35 AM	10.00	7.20	0.28	2.81	1.13
	Final	8:45 AM		7.48			
2	Initial	8:45 AM	10.00	7.20	0.21	2.85	0.84
	Final	8:55 AM		7.41			
3	Initial	8:55 AM	10.00	7.20	0.20	2.85	0.80
	Final	9:05 AM		7.40			
4	Initial	9:05 AM	10.00	7.20	0.19	2.86	0.75
	Final	9:15 AM		7.39			
5	Initial	9:15 AM	10.00	7.20	0.20	2.85	0.80
	Final	9:25 AM		7.40			
6	Initial	9:25 AM	10.00	7.20	0.20	2.85	0.80
	Final	9:35 AM		7.40			
7	Initial	9:25 AM	10.00	7.20	0.19	2.86	0.75
	Final	9:35 AM		7.39			
8	Initial	9:25 AM	10.00	7.20	0.20	2.85	0.80
	Final	9:35 AM		7.40			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed Warehouse
Project Location	Banning, CA
Project Number	21G171-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	10.10	(ft)

Infiltration Test Hole: I-2

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	10:00 AM	25.00	19.00	23.04	YES	SANDY SOILS
	Final	10:25 AM		20.92			
2	Initial	10:25 AM	25.00	19.00	23.16	YES	SANDY SOILS
	Final	10:50 AM		20.93			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	10:50 AM	10.00	7.10	0.15	2.93	0.58
	Final	11:00 AM		7.25			
2	Initial	11:00 AM	10.00	7.10	0.10	2.95	0.39
	Final	11:10 AM		7.20			
3	Initial	11:10 AM	10.00	7.10	0.08	2.96	0.31
	Final	11:20 AM		7.18			
4	Initial	11:20 AM	10.00	7.20	0.08	2.86	0.32
	Final	11:30 AM		7.28			
5	Initial	11:30 AM	10.00	7.10	0.07	2.97	0.27
	Final	11:40 AM		7.17			
6	Initial	11:50 AM	10.00	7.10	0.06	2.97	0.23
	Final	12:00 PM		7.16			
7	Initial	12:00 PM	10.00	7.10	0.06	2.97	0.23
	Final	12:10 PM		7.16			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

Grain Size Distribution

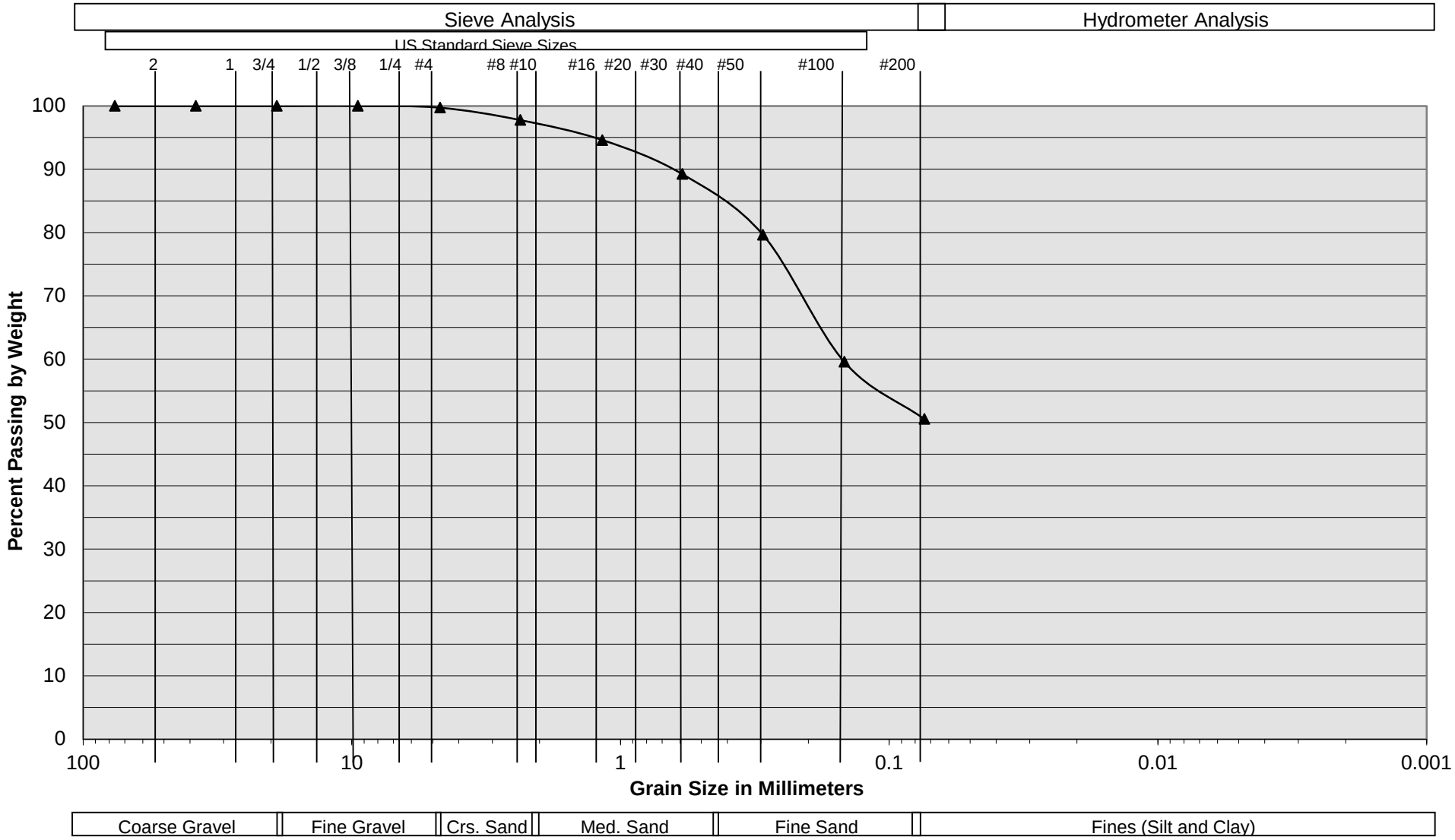


Sample Description	I-1 @ 8½'
Soil Classification	Light Brown Clayey fine to medium Sand, little coarse Sand, little Silt

Proposed Warehouse
Banning, California
Project No. 21G271-2
PLATE C- 1

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution



Sample Description	I-2 @ 8½'
Soil Classification	Light Brown Clayey fine Sand to fine Sandy Clay, trace to little medium to coarse Sand, little Silt

Proposed Warehouse
Banning, California
Project No. 21G271-2
PLATE C- 2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

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APPENDIX J

WATER QUALITY MANAGEMENT PLAN

Project Specific

Draft Preliminary Water Quality Management Plan

For: **First Lincoln Logistics**

Northeast Corner of Lincoln Street and 4th Street, Banning, CA 92220

ENTITLEMENT NO'S: **TENTATIVE PARCEL MAP 38437 – TPM 22-4001**
DESIGN REVIEW – DR 22-7003
ENVIRONMENTAL ASSESSMENT – ENV 22-1504

Prepared for:

FR CA Property Holding, L.P.
898 N. Pacific Coast Hwy., Suite 175
El Segundo, CA 90245
Telephone: (310) 321-3805 Direct

Prepared by:
Vince Delgado Jr
Under Supervision of
Stephen Crevoiserat, PE
Stantec Consulting Inc.
735 E. Carnegie Drive, Ste. 280
San Bernardino, CA 92408
Telephone: (909) 335-6116



jn:2042611702.200.009

Original Date Prepared: May 18, 2022

Revision Date(s): Date: February 8, 2023; November 18, 2022; August 22, 2022

February 8, 2023

DocuSign Envelope ID: AD3E2A0C-7C6E-4AB3-B91C-221919E35D2E

OWNER'S CERTIFICATION

This project-specific Water Quality Management Plan (WQMP) has been prepared for:

FR CA Property Holding, L.P.

for the project known as **First Lincoln Logistics** at **Northeast Corner of Lincoln Street and 4th Street, Banning, CA 92220**.

This WQMP is intended to comply with the requirements of **City of Banning** for **TENTATIVE PARCEL MAP 38437, TPM 22-4001, DESIGN REVIEW DR 22-7003 AND ENVIRONMENTAL ASSESSMENT ENV 22-1504**, which includes the requirement for the preparation and implementation of a project-specific WQMP.

The undersigned, while owning the property/project described in the preceding paragraph, shall be responsible for the implementation of this WQMP and will ensure that this WQMP is amended as appropriate to reflect up-to-date conditions on the site. This WQMP will be reviewed with the facility operator, facility supervisors, employees, tenants, maintenance and service contractors, or any other party (or parties) having responsibility for implementing portions of this WQMP. At least one copy of this WQMP will be maintained at the project site or project office in perpetuity.

The undersigned is authorized to certify and to approve implementation of this WQMP. The undersigned is aware that implementation of this WQMP is enforceable under **City of Banning** Water Quality Ordinance 1415 (Municipal Code Section 13.24.010).

If the undersigned transfers its interest in the subject property/project, the undersigned shall notify the successor in interest of its responsibility to implement this WQMP.

"I, the undersigned, certify under penalty of law that I am the owner of the property that is the subject of this WQMP, and that the provisions of this WQMP have been reviewed and accepted and that the WQMP will be transferred to future successors in interest."

DocuSigned by:
Paul Loubet
D6119DEA18F24D3...
Owner's Signature

Paul Loubet
Owner's Printed Name

Entitlement Officer
Owner's Title/Position

February 13, 2023
Date

FR CA Property Holding, L.P.
898 N. Pacific Coast Hwy., Suite 175
El Segundo, CA 90245
Telephone: (310) 321-3805 Direct

ATTEST

Notary Signature

Printed Name

Title/Position

Date

THIS FORM SHALL BE NOTARIZED BEFORE ACCEPTANCE OF THE
FINAL PROJECT SPECIFIC WQMP

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APPENDICES

A. Conditions of Approval (to be included in final WQMP)
B. Vicinity Map, WQMP Site Plan, and Receiving Waters Map
C. Supporting Detail Related to Hydrologic Conditions of Concern (If Applicable)
D. Educational Materials
E. Soils Report (to be included in final WQMP)
F. Structural BMP and/or Retention Facility Sizing Calculations and Design Details (to be included in final WQMP)
G. Agreements – CC&Rs, Covenant and Agreements, BMP Maintenance Agreements and/or Other Mechanisms for ensuring ongoing Operation, Maintenance, Funding and Transfer of Requirements for this project-specific WQMP (not applicable)
H. Phase 1 Environmental Site Assessment – Summary of Site Remediation Conducted and Use Restrictions (to be included in final WQMP)
I. Project-Specific WQMP Summary Data Form

I. Project Description

Project Owner: FR CA Property Holding LP
898 N. Pacific Coast Hwy., Suite 175
El Segundo, CA 90245

WQMP Preparer: Stephen Crevoiserat, PE
Stantec Consulting Inc.

735 E. Carnegie Drive, Ste. 280
San Bernardino, CA 92408
(909) 335-6116

Project Site Address:	**NorthEast Corner of 4th and Lincoln Streets** **Banning, CA 92220**
Planning Area/ Community Name/ Development Name:	**First Lincoln Logistics / TPM 38437**
APN Number(s):	**APN: 540-210-009 and 540-210-020**
Latitude & Longitude:	**33.9224°, -116.8804°**
Receiving Water:	**Smith Creek to the San Gorgonio Creek to the Whitewater Creek to the Coachella Valley Storm Channel to the Salton Sea**
Project Site Size:	**Parcel 1: 6.5 acres (gross), 6.1 acres (net)**

Standard Industrial Classification (SIC) Code: **SIC Code 4225 - General warehousing and Storage**

Formation of Home Owners' Association (HOA) or Property Owners Association (POA): Y ☐ N ☒

Additional Permits/Approvals required for the Project:

AGENCY	Permit required
State Department of Fish and Wildlife, Fish and Game Code §1602 Streambed Alteration Agreement	Y ☐ N☒
State Water Resources Control Board, Clean Water Act (CWA) Section 401 Water Quality Certification	Y ☐ N☒
US Army Corps of Engineers, CWA Section 404 permit	Y ☐ N☒
US Fish and Wildlife, Endangered Species Act Section 7 biological opinion	Y ☐ N☒
Statewide Construction General Permit Coverage	Y ☒ N☐
Statewide Industrial General Permit Coverage	Y ☐ N☒
Other *(please list in the space below as required)* City of Banning Grading Permit, City of Banning Building Permit, State of California Encroachment Permit	

The project proposes a 120,000 SF Warehouse Distribution building with associated truck docks, trailer and passenger vehicle parking located on 6.5-acres (apn 540-210-009 & 010). The subject property fronts Lincoln Street which is a planned major highway or arterial highway per the City's proposed 2017 circulation element. The current half street dedication is 40' wide on the north side of Lincoln and there are existing overhead power transmission poles located at approximately 50 feet north of the centerline of Lincoln. The project is bound to the north by the Union Pacific Railroad and I-10 Freeway, to the south by Lincoln Street, to the east by an existing industrial development and to the west by a 10' x 8" concrete lined storm drain channel (Line A) abutting the westerly property line which conveys storm water from the north side of I-10. 4th Street has been vacated north of Lincoln. The land use for this project will be light industrial which is a compatible use for the Industrial zoning designation for this property, as referenced on the City's General Plan and Zoning overlay map.

The site is currently vacant, and at a gradient of 2.5 percent, the terrain slopes in a northwest-to-southeast pattern.

Improvements constructed to support the operations of the business will include loading/unloading docks, tractor-trailer parking, and employee/customer parking areas. The site will be enhanced with LID features and landscaped areas, which when combined will account for approximately 10 percent of the total project area.

The parking areas will be finished with AC Pavement. Landscaped areas will border buildings and parking areas. Due to the daily operations, and the expected frequency of trips generated by tractor-trailers on this site, permeable pavements are infeasible for this project.

The design infiltration rate is determined after applying a Factor of Safety of 3.0 to the recommended infiltration rate of 0.5 in/hr. Based on the findings of on-site Infiltration Tests, and after applying the factor of safety, the design infiltration rate for this site was determined to be 0.17 in/hr. As such, treatment control Infiltration BMPs are deemed infeasible. Please refer to the project data contained in: *Results of Infiltration Testing, Southern California Geotechnical, Project No.: 21G271-2, December 17, 2021,* **included in Appendix E.**

To address the water quality goals, the project will include two Bioretention facilities (with underdrains). One facility is planned to be constructed along the east property line and the other along the southerly property line. The Bioretention facilities will be implemented to the Maximum Extent Practicable (MEP).

In addition to the Bioretention BMPs, project improvements will include an Underground Detention System. The storm water stored within the detention facility will be discharged onto Lincoln Street via a small pump station package that controls the discharge rate and velocity.

Considering the absence of a LID BMP within DMA A, a flow-based Bio-Treatment Control device will be installed to effectively remove pollutants of concern. This device, presently selected as a Modular Wetland Biofiltration System, will also house a pre-filter for debris and sediment.

With the goal of meeting the criteria for Condition "C" of the WQMP Guidance Document (Section 3.4), the pump system shall be designed such that discharge rates onto Lincoln Street will be limited to pre-project run-off rates for the 2-year and 10-year peak storm events. Storm volumes, as a Hydrologic Conditions of Concern, are presented in Appendix C. It is determined that the prevailing storm volume occurs in a 10yr – 24hr storm event. Accordingly, the detention system is preliminarily designed to mitigate and maintain existing storm volumes.

Findings presented in this report are preliminary and are intended for determining project feasibility only. Site topography constraints and structural inundation setbacks are design considerations that will be considered in the Final WQMP report.

Although the Local Jurisdiction Requires On-Site Retention of Urban Runoff, it is concluded (due to the poor results of site-specific infiltration tests) that the project is not suitable for onsite infiltration of urban runoff. Consequently, achieving the NPDES goals will be accomplished with Bioretention Facilities (DMAs B and C) and a flow-based Bio-Treatment Control BMP for DMA A. The Bioretention Facilities will be designed per the WWR BMP Design Handbook, and the Treatment Control Device is presently planned as a Contech Modular Wetland System.

Appendix A of this Preliminary project specific WQMP includes a copy of the preliminary application conference comments. Final Conditions of Approval will be provided at a later date once they are made available by the City after entitlements are approved. Appendix B of this Preliminary project-specific WQMP includes:

a. A Vicinity Map identifying the project site and surrounding planning areas in sufficient detail; and

b. A Site Plan for the project. The Site Plan included as part of Appendix B depicts the following project features:

- Location and identification of all structural BMPs, including Source Control, LID/Site Design and Treatment Control BMPs.
- Landscaped areas.
- Paved areas and intended uses (i.e., parking, outdoor work area, outdoor material storage area, sidewalks, patios, tennis courts, etc.).
- Number and type of structures and intended uses (i.e., buildings, tenant spaces, dwelling units, community facilities such as pools, recreation facilities, tot lots, etc.).
- Infrastructure (i.e., streets, storm drains, etc.) that will revert to public agency ownership and operation.
- Location of existing and proposed public and private storm drainage facilities (i.e., storm drains, channels, basins, etc.), including catch basins and other inlets/outlet structures. Existing and proposed drainage facilities should be clearly differentiated.
- Location(s) of Receiving Waters to which the project directly or indirectly discharges.

- Location of points where onsite (or tributary offsite) flows exit the property/project site.
- Delineation of proposed drainage area boundaries, including tributary offsite areas, for each location where flows exit the project site and existing site (where existing site flows are required to be addressed). Each tributary area should be clearly denoted.
- Pre- and post-project topography.

Appendix I is a one page form that summarizes pertinent information relative to this project-specific WQMP.

II. Site Characterization

Land Use Designation or Zoning:	**Land Use Existing: Vacant** **Land Use Proposed: Warehouse Distribution, Light Industrial** **Zoning Existing and Proposed: Industrial**
Current Property Use:	**The subject land is currently vacant**
Proposed Property Use:	**Warehouse Distribution with Office Space.**
Availability of Soils Report:	Y ☒ N ☐ *Note: A soils report is required if infiltration BMPs are utilized. Attach report in Appendix E.*
Phase 1 Site Assessment:	Y ☒ N ☐ *Note: If prepared, attached remediation summary and use restrictions in Appendix H.*

Receiving Waters for Urban Runoff from Site

Receiving Waters	EPA Approved 303(d) List Impairments	Designated Beneficial Uses	Proximity to RARE Beneficial Use Designated Receiving Waters
Smith Creek	None	MUN (P), AGR, GWR, REC 1 (P), REC 2, WARM, WILD	Not Designated as RARE
San Gorgonio River	None	MUN (P), AGR, GWR, REC 1 (P), REC 2, COLD, WILD	Not Designated as RARE
Whitewater River	None	MUN, AGR, GWR, REC 1, REC 2, WARM, COLD, WILD, POW	Not Designated as RARE
Coachella Valley Storm Drain	DDT, Dieldrin, Indicator Bacteria, PCBs Nitrogen, ammonia (Total Ammonia) Toxaphene, Toxicity	FRSH, REC 1, REC 2, WARM, WILD, RARE	Designated as RARE
Salton Sea	Arsenic, Chloride, Chlorpyrifos, DDT Enterococcus, Low Dissolved Oxygen, Nitrogen (Ammonia), Nutrients, Salinity, Toxicity	AQUA, IND, REC 1, REC 2, WARM, WILD, RARE	Designated as RARE

III. Pollutants of Concern

Table 1. Pollutant of Concern Summary

Pollutant Category	Potential for Project and/or Existing Site	Causing Receiving Water Impairment
Bacteria/Virus	Potential - Bacteria	Coachella Valley Storm Drain (Indicator Bacteria) Salton Sea (Enterococcus)
Heavy Metals	No	No
Nutrients (Nitrogen-ammonia)	Potential Landscaping	Salton Sea Coachella Storm Channel
Toxic Organic Compounds	No	No
Sediment/Turbidity	No	No
Trash & Debris	Potential	No
Oil & Grease	Potential	No
Other (specify pollutant): Salinity	No	Salton Sea
Other (specify pollutant):		

IV. Hydrologic Conditions of Concern

Local Jurisdiction Requires On-Site Retention of Urban Runoff:

Yes ☐ The project will be required to retain urban runoff onsite in conformance with local ordinance (See Table 6 of the WQMP Guidance document, "Local Land use Authorities Requiring Onsite Retention of Stormwater"). This section does not need to be completed; however, retention facility design details and sizing calculations must be included in Appendix F.

No ☒ This section must be completed.

This Project meets the following condition:

☐ **Condition A**: 1) Runoff from the Project is discharged directly to a publicly-owned, operated and maintained MS4 or engineered and maintained channel, 2) the discharge is in full compliance with local land use authority requirements for connections and discharges to the MS4 (including both quality and quantity requirements), 3) the discharge would not significantly impact stream habitat in proximate Receiving Waters, **and** 4) the discharge is authorized by the local land use authority.

☐ **Condition B**: The project disturbs less than 1 acre and is not part of a larger common plan of development that exceeds 1 acre of disturbance. The disturbed area calculation must include all disturbances associated with larger plans of development.

☒ **Condition C**: The project's runoff flow rate, volume, velocity and duration for the post-development condition do not exceed the pre-development condition for the 2-year, 24-hour and 10-year 24-hour rainfall events. This condition can be achieved by, where applicable, complying with the local land use authority's on-site retention ordinance, or minimizing impervious area on a site and incorporating other Site-Design BMP concepts and LID/Site Design BMPs that assure non-exceedance of pre-development conditions. This condition must be substantiated by hydrologic modeling methods acceptable to the local land use authority.

☐ **None:** Refer to Section 3.4 of the Whitewater River Region WQMP Guidance document for additional requirements.

Supporting engineering studies, calculations, and reports are included in Appendix C.

	2 year – 24 hour		10 year – 24 hour	
	Precondition	**Post-condition**	**Precondition**	**Post-condition**
Discharge (cfs)	3.4 CFS	A Pump discharge curve will regulate outflow rates. The outflow design rate will be less than pre-condition flow	10.5 CFS	A Pump discharge curve will regulate outflow rates. The outflow design rate will be less than pre-condition flow

Velocity (fps)		To be addressed in Final WQMP		To be addressed in Final WQMP
Volume (cubic feet)	0.16 AC-FT	0.33 AC-FT	0.36 AC-FT	1.07 AC-FT
Duration (minutes)		To be addressed in Final WQMP		To be addressed in Final WQMP

V. Best Management Practices

This project implements Best Management Practices (BMPs) to address the Pollutants of Concern that may potentially be generated from the use of the Project Site. These BMPs have been selected and implemented to comply with Section 3.5 of the WQMP Guidance document, and consist of Site Design BMP concepts, Source Control, LID/Site Design and, if/where necessary, Treatment Control BMPs as described herein.

V.1 Site Design BMP Concepts, LID/Site Design and Treatment Control BMPs

Local Jurisdiction Requires On-Site Retention of Urban Runoff:

Yes ☐ The project will be required to retain Urban Runoff onsite in conformance with local ordinance (See Table 6 of the WQMP Guidance document, "Local Land use Authorities Requiring Onsite Retention of Stormwater). **The LID/Site Design measurable goal has thus been met (100%), and Sections V.1.A and V.1.B do not need to be completed**; however, retention facility design details and sizing calculations must be included in Appendix F, and '100%' should be entered into Column 3 of Table 6 below.

No ☒ Section V.1 must be completed.

This section of the Project-Specific WQMP documents the LID/Site Design BMPs and, if/where necessary, the Treatment Control BMPs that will be implemented on the project to meet the requirements detailed within Section 3.5.1 of the WQMP Guidance document. Section 3.5.1 includes requirements to implement Site Design Concepts and BMPs, and includes requirements to address Pollutants of Concern with BMPs. Further, sub-section 3.5.1.1 specifically requires that Pollutants of Concern be addressed with LID/Site Design BMPs to the extent feasible.

LID/Site Design BMPs are those BMPs listed within Table 2 below which promote retention and/or feature a natural treatment mechanism; off-site and regionally-based BMPs are also LID/Site Design BMPs, and therefore count towards the measurable goal, if they fit these criteria. This project incorporates LID/Site Design BMPs to fully address the Treatment Control BMP requirement where and to the extent feasible. If and where it has been acceptably demonstrated to the local land use authority that it is infeasible to fully meet this requirement with LID/Site Design BMPs, Section V.1.B (below) includes a description of the conventional Treatment Control BMPs that will be substituted to meet the same requirements.

In addressing Pollutants of Concern, BMPs are selected using Table 2 below.

Table 2. BMP Selection Matrix Based Upon Pollutant of Concern Removal Efficiency (1)

(Sources: Riverside County Flood Control & Water Conservation District Design Handbook for Low Impact Development Best Management Practices, dated September 2011, the Orange County Technical Guidance Document for Water Quality Management Plans, dated May 19, 2011, and the Caltrans Treatment BMP Technology Report, dated April 2010 and April 2008)

Pollutant of Concern	Landscape Swale[2, 3]	Landscape Strip[2, 3]	Biofiltration (with underdrain)[2, 3]	Extended Detention Basin[2]	Sand Filter Basin[2]	Infiltration Basin[2]	Infiltration Trench[2]	Permeable Pavement[2]	Bioretention (w/o underdrain)[2, 3]	Other BMPs Including Proprietary BMPs[4, 6]
Sediment & Turbidity	M	M	H	M	H	H	H	H	H	Varies by Product[5]
Nutrients	L/M	L/M	M	L/M	L/M	H	H	H	H	
Toxic Organic Compounds	M/H	M/H	M/H	L	L/M	H	H	H	H	
Trash & Debris	L	L	H	H	H	H	H	L	H	
Bacteria & Viruses (also: Pathogens)	L	M	H	L	M	H	H	H	H	
Oil & Grease	M	M	H	M	H	H	H	H	H	
Heavy Metals	M	M/H	M/H	L/M	M	H	H	H	H	

Abbreviations:

L: Low removal efficiency M: Medium removal efficiency H: High removal efficiency

Notes:

(1) Periodic performance assessment and updating of the guidance provided by this table may be necessary.

(2) Expected performance when designed in accordance with the most current edition of the document, "Riverside County, Whitewater River Region Stormwater Quality Best Management Practice Design Handbook".

(3) Performance dependent upon design which includes implementation of thick vegetative cover. Local water conservation and/or landscaping requirements should be considered; approval is based on the discretion of the local land use authority.

(4) Includes proprietary stormwater treatment devices as listed in the CASQA Stormwater Best Management Practices Handbooks, other stormwater treatment BMPs not specifically listed in this WQMP (including proprietary filters, hydrodynamic separators, inserts, etc.), or newly developed/emerging stormwater treatment technologies.

(5) Expected performance should be based on evaluation of unit processes provided by BMP and available testing data. Approval is based on the discretion of the local land use authority.

(6) When used for primary treatment as opposed to pre-treatment, requires site-specific approval by the local land use authority.

V.1.A SITE DESIGN BMP CONCEPTS AND LID/SITE DESIGN BMPS

This section documents the Site Design BMP concepts and LID/Site Design BMPs that will be implemented on this project to comply with the requirements detailed in Section 3.5.1 of the WQMP Guidance document.

- Table 3 herein documents the implementation of the Site Design BMP Concepts described in sub-sections 3.5.1.3 and 3.5.1.4.
- Table 4 herein documents the extent to which this project has implemented the LID/Site Design goals described in sub-section 3.5.1.1.

Table 3. Implementation of Site Design BMP Concepts

Design Concept	Technique	Specific BMP	Included			Brief Reason for BMPs Indicated as No or N/A
			Yes	No	N/A	
Site Design BMP Concept 1	**Minimize Urban Runoff, Minimize Impervious Footprint, and Conserve Natural Areas** **(See WQMP Section 3.5.1.3)**	Conserve natural areas by concentrating or clustering development on the least environmentally sensitive portions of a site while leaving the remaining land in a natural, undisturbed condition.	☐	☐	☒	Site is free of environmental sensitive areas
		Conserve natural areas by incorporating the goals of the Multi-Species Habitat Conservation Plan or other natural resource plans.	☐	☐	☒	Site is free of MSHCP designation
		Preserve natural drainage features and natural depressional storage areas on the site.	☒	☐	☐	Existing Discharge location is maintained
		Maximize canopy interception and water conservation by preserving existing native trees and shrubs, and planting additional native or drought tolerant trees and large shrubs.	☐	☐	☒	Site is vacant of trees and large shrubs
		Use natural drainage systems.	☐	☒	☐	BioRetention and Underground Detentions are proposed
		Where applicable, incorporate Self-Treating Areas	☐	☐	☒	Not applicable
		Where applicable, incorporate Self-Retaining Areas	☐	☐	☒	Poor Infiltration creates a need for Outflow
		Increase the building floor to area ratio (i.e., number of stories above or below ground).	☐	☒	☐	Multistory is not conducive to Planned Use
		Construct streets, sidewalks and parking lot aisles to minimum widths necessary, provided that public safety and a walkable environment for pedestrians are not compromised.	☒	☐	☐	On-site circulation is consistent with City Standards.
		Reduce widths of streets where off-street parking is available.	☐	☒	☐	Frontage is a State Highway
		Minimize the use of impervious surfaces, such as decorative concrete, in the landscape design.	☒	☐	☐	Landscape areas to include a minimum amount of impervious surfaces.
		Other comparable and equally effective Site Design BMP concept(s) as approved by the local land use authority (Note: Additional narrative required to describe BMP and how it addresses site design concept).	☐	☐	☐	

Table 3. Site Design BMP Concepts (continued)

Design Concept	Technique	Specific BMP	Included			Brief Reason for Each BMP Indicated as No or N/A
			Yes	No	N/A	
Site Design BMP Concept 2	**Minimize Directly Connected Impervious Area** **(See WQMP Section 3.5.1.4)**	Design residential and commercial sites to contain and infiltrate roof runoff, or direct roof runoff to landscaped swales or buffer areas.	☒	☐	☐	Where practicable roof drains will be directed into landscape area. Terrain and structural constraints are present.
		Drain impervious sidewalks, walkways, trails, and patios into adjacent landscaping.	☒	☐	☐	Where practicable, as there are structural constraints (i.e., perimeter retaining walls, foundations, and building footings)
		Incorporate landscaped buffer areas between sidewalks and streets.	☒	☐	☐	
		Use natural or landscaped drainage swales in lieu of underground piping or imperviously lined swales.	☒	☐	☐	Where practicable swales are proposed. Terrain and structural constraints are present.
		Where soil conditions are suitable, use perforated pipe or gravel filtration pits for low flow infiltration.	☐	☐	☒	Site has poor infiltration soils
		Maximize the permeable area by constructing walkways, trails, patios, overflow parking, alleys, driveways, low-traffic streets, and other low-traffic areas with open-jointed paving materials or permeable surfaces such as pervious concrete, porous asphalt, unit pavers, and granular materials.	☐	☒	☐	Infeasible: As Permeable surfaces are not conducive to the anticipated H20 loads from tractor-trailers.
		Use one or more of the following:				
		Rural swale system: street sheet flows to landscaped swale or gravel shoulder, curbs used at street corners, and culverts used under driveways and street crossings.	☐	☐	☒	Infeasible: As Site is located in an urban setting
		Urban curb/swale system: street slopes to curb; periodic swale inlets drain to landscaped swale or biofilter.	☐	☐	☒	Infeasible as public street is a state highway.
		Dual drainage system: first flush captured in street catch basins and discharged to adjacent vegetated swale or gravel shoulder; high flows connect directly to MS4s.	☐	☐	☒	Public Storm Drain is not available. No Public Catch Basins are proposed.
		Other comparable and equally effective Site Design BMP concept(s) as approved by the local land use authority (Note: Additional narrative required to describe BMP and how it addresses site design concept).	☐	☐	☐	
		Use one or more of the following for design of driveways and private residential parking areas:				

Design Concept	Technique	Specific BMP	Included			Brief Reason for Each BMP Indicated as No or N/A
			Yes	No	N/A	
		Design driveways with shared access, flared (single lane at street), or wheel strips (paving only under the tires).	☐	☐	☒	Infeasible: As City Ordinance (1) requires a paved parking surface and (2) regulates drive aisle widths
		Uncovered temporary or guest parking on residential lots paved with a permeable surface, or designed to drain into landscaping.	☐	☐	☒	This concept is intended for Residential Projects

Table 3. Site Design BMP Concepts (continued)

Design Concept	Technique	Specific BMP	Included: Yes	Included: No	Included: N/A	Brief Reason for Each BMP Indicated as No or N/A
Site Design BMP Concept 2 (cont'd)	**Minimize Directly Connected Impervious Area (See WQMP Section 3.5.1.4)**	Other comparable and equally effective Site Design BMP concept(s) as approved by the local land use authority (Note: Additional narrative required to describe BMP and how it addresses site design concept).	☐	☐	☐	
		Use one or more of the following for design of parking areas:				
		Where landscaping is proposed in parking areas, incorporate parking area landscaping into the drainage design.	☒	☐	☐	Where practicable this technique is implemented. Curb openings are to be placed on eastern drive aisle and the south parking area. West drive aisle has structural constraints (i.e., retaining walls, building foundations and footings)
		Overflow parking (parking stalls provided in excess of the Permittee's minimum parking requirements) may be constructed with permeable pavement.	☐	☐	☒	Parking area to be design to meet the minimum parking requirements
		Other comparable and equally effective Site Design BMP (or BMPs) as approved by the local land use authority (Note: Additional narrative required describing BMP and how it addresses site design concept).	☐	☐	☐	

Project Site Design BMP Concepts:

Natural drainage patterns are maintained, and post-project peak run-off will be limited to the pre-project flow rates.

Where practicable, impervious pavement is designed so that storm water run-off is directed into adjacent landscaped areas. Roof top drains will be disconnected from the underground storm drain system and, where practicable, storm flows will be directed toward landscaped areas.

Alternative Project Site Design BMP Concepts:

Not Applicable

Table 4. LID/Site Design BMPs Meeting the LID/Site Design Measurable Goal

(1) DRAINAGE SUB-AREA ID OR NO.	(2) LID/SITE DESIGN BMP TYPE* (See Table 2)	(3) POTENTIAL POLLUTANTS OF CONCERN WITHIN DRAINAGE SUB-AREA (Refer to Table 1)	(4) POTENTIAL POLLUTANTS WITHIN SUB-AREA CAUSING RECEIVING WATER IMPAIRMENTS (Refer to Table 1)	(5) EFFECTIVENESS OF LID/SITE DESIGN BMP AT ADDRESSING IDENTIFIED POTENTIAL POLLUTANTS (U, L, M, H/M, H; see Table 2)	(6) BMP MEETS WHICH DESIGN CRITERIA? (Identify as V_{BMP} OR Q_{BMP})	(7) TOTAL AREA WITHIN DRAINAGE SUB-AREA (Nearest 0.1 acre)
DMA B	BIOFILTRATION W/UNDERDRAIN	BACTERIA, NITROGEN-AMMONIA, DEBRIS, OIL AND GREASE	BACTERIA AND NITROGEN-AMMONIA	M (BACTERIA) H (OIL & GREASE)	V BMP	0.6 ACRE
DMA C	BIOFILTRATION W/UNDERDRAIN	BACTERIA, NITROGEN-AMMONIA, DEBRIS, OIL AND GREASE	BACTERIA AND NITROGEN-AMMONIA	M (BACTERIA) H (OIL & GREASE)	V BMP	1.6 ACRE
TOTAL PROJECT AREA TREATED WITH LID/SITE DESIGN BMPs (NEAREST 0.1 ACRE)						**2.2 ACRES**

*** LID/Site Design BMPs listed in this table are those that <u>completely</u> address the 'Treatment Control BMP requirement' for their drainage sub-area.**

Justification of infeasibility for sub-areas not addressed with LID/Site Design BMPs

DMA A :

Terrain constraints and poor infiltration rates make it impracticable to place LID BMPs within the collection area for DMA A. Therefore, storm flows will be collected by inlets then channeled within conduits. The conduits will route the flows into an Underground Detention system for detention and storage. A wet well and pumping system will be designed to regulate the outflow to pre-project conditions.

V.1.B TREATMENT CONTROL BMPS

Conventional Treatment Control BMPs shall be implemented to address the project's Pollutants of Concern as required in WQMP Section 3.5.1 where, and to the extent that, Section V.1.A has demonstrated that it is infeasible to meet these requirements through implementation of LID/Site Design BMPs.

☒ The LID/Site Design BMPs described in Section V.1.A of this project-specific WQMP completely address the 'Treatment Control BMP requirement' for the entire project site (and where applicable, entire existing site) as required in Section 3.5.1.1 of the WQMP Guidance document. Supporting documentation for the sizing of these LID/Site Design BMPs is included in Appendix F. ***Section V.1.B does not need to be completed**.

☐ The LID/Site Design BMPs described in Section V.1.A of this project-specific WQMP do **NOT** completely address the 'Treatment Control BMP requirement' for the entire project site (or where applicable, entire existing site) as required in Section 3.5.1.1 of the WQMP. ***Section V.1.B must be completed.**

The Treatment Control BMPs identified in this section are selected, sized and implemented to treat the design criteria of V_{BMP} and/or Q_{BMP} for all project (and if required, existing site) drainage sub-areas which were not fully addressed using LID/Site Design BMPs. Supporting documentation for the sizing of these Treatment Control BMPs is included in Appendix F.

Table 5: Treatment Control BMP Summary

(1) DRAINAGE SUB-AREA ID OR NO.	(2) TREATMENT CONTROL BMP TYPE* (See Table 2)	(3) POTENTIAL POLLUTANTS OF CONCERN WITHIN DRAINAGE SUB-AREA (Refer to Table 1)	(4) POTENTIAL POLLUTANTS WITHIN SUB-AREA CAUSING RECEIVING WATER IMPAIRMENTS (Refer to Table 1)	(5) EFFECTIVENESS OF TREATMENT CONTROL BMP AT ADDRESSING IDENTIFIED POTENTIAL POLLUTANTS (U, L, M, H/M, H; see Table 2)	(6) BMP MEETS WHICH DESIGN CRITERIA? (Identify as V_{BMP} OR Q_{BMP})	(7) TOTAL AREA WITHIN DRAINAGE SUB-AREA (Nearest 0.1 acre)
DMA A	UNDERGROUND DETENTION FACILITY	BACTERIA, NITROGEN-AMMONIA, DEBRIS, OIL AND GREASE	BACTERIA AND NITROGEN-AMMONIA	NONE	V-BMP	3.9
DMA A	**PROPRIETARY** CONTECH MODULAR WETLAND BIOFILTRATION SYSTEM	BACTERIA, NITROGEN-AMMONIA, DEBRIS, OIL AND GREASE	BACTERIA AND NITROGEN-AMMONIA	H	Q-BMP	3.9
	TOTAL PROJECT AREA TREATED WITH TREATMENT CONTROL BMPs (NEAREST 0.1 ACRE)					3.9

V.1.C MEASURABLE GOAL SUMMARY

This section documents the extent to which this project has met the measurable goal described in WQMP Section 3.5.1.1 of addressing 100% of the project's 'Treatment Control BMP requirement' with LID/Site Design BMPs. Projects required to retain Urban Runoff onsite in conformance with local ordinance are considered to have met the measurable goal; for these instances, '100%' is entered into Column 3 of the Table.

Table 6: Measurable Goal Summary

(1) Total Area Treated with LID/Site Design BMPs (Last row of Table 4)	(2) Total Area Treated with Treatment Control BMPs (Last row of Table 5)	(3) % of Treatment Control BMP Requirement addressed with LID/Site Design BMPs
2.2	3.9	100

V.2 SOURCE CONTROL BMPS

This section identifies and describes the Source Control BMPs applicable and implemented on this project.

Table 7. Source Control BMPs

BMP Name	Check One		If not applicable, state brief reason
	Included	Not Applicable	
Non-Structural Source Control BMPs			
Education for Property Owners, Operators, Tenants, Occupants, or Employees	☒	☐	
Activity Restrictions	☒	☐	
Irrigation System and Landscape Maintenance	☒	☐	
Common Area Litter Control	☒	☐	
Street Sweeping Private Streets and Parking Lots	☒	☐	
Drainage Facility Inspection and Maintenance	☒	☐	
Structural Source Control BMPs			
Storm Drain Inlet Stenciling and Signage	☒	☐	
Landscape and Irrigation System Design	☒	☐	
Protect Slopes and Channels	☒	☐	
Provide Community Car Wash Racks	☐	☒	Not applicable
Properly Design*:			
Fueling Areas	☐	☒	Not Applicable
Air/Water Supply Area Drainage	☒	☐	Surface water will be routed to a drainage basin
Trash Storage Areas	☒	☐	Trash enclosures to be included on Site Plan
Loading Docks	☒	☐	Park trucks so that spills or leaks can be contained Add to training manual for proper spill containment and cleanup
Maintenance Bays	☐	☒	Maintenance will not be performed on-site
Vehicle and Equipment Wash Areas	☐	☒	No Planned wash areas are part of this project

Outdoor Material Storage Areas	☐	☒	No outdoor storage of materials
Outdoor Work Areas or Processing Areas	☐	☒	No outdoor processes will be performed.
Provide Wash Water Controls for Food Preparation Areas	☐	☒	Not a Restaurant or Food Distribution center

*Details demonstrating proper design must be included in Appendix F.

Source Control BMPs

All catch basins shall be appropriately marked with Storm Drain Stenciling per CASQA BMP #SD-13. The signage shall be placed on top of the curb. The stenciling shall be reapplied when signs of fading appear. NO DUMPING DRAINS TO SEA will be added to the final design plans.

- Landscape maintenance and Irrigation systems will employ LID principles and be regularly maintained per CASQA BMP #SC-41.
- Trash Enclosures shall be roofed and maintained per CASQA BMP #SD-32.
- Litter Control and Parking Lot Sweeping shall be consistent with CASQA BMP #SC-43.
- Loading Dock and Drainage System shall be maintained and inspected by owner per CASQA BMP #SC-44.

Tenant/Occupant Restrictions:

- No fueling of vehicle shall occur on the premises.
- No mechanical repairs shall occur on the premises.

Appendix D includes copies of the educational materials (described in Section 3.5.2.1 of the WQMP Guidance document) that will be used in implementing this project-specific WQMP.

V.3 EQUIVALENT TREATMENT CONTROL BMP ALTERNATIVES

Not Applicable, this project will meet 100 percent of the measurable goal for On-Site treatment.

V.4 REGIONALLY-BASED BMPS

Not Applicable, this project will include Site specific detention systems.

VI. Operation and Maintenance Responsibility for BMPs

The final edition of this document will include Appendix G. It will consist of project specific CC&Rs, Covenant and Agreements, BMP Maintenance Agreement and/or other mechanisms used to ensure the ongoing operation, maintenance, funding, transfer, and implementation of the project-specific WQMP requirements.

Treatment Control BMPs

General maintenance of the Bioretention Facilities should follow these recommendations, as extracted from fact sheet TC-32 (CASQA Stormwater Best Management Practice, September 2014).

- Inspect soil and repair eroded areas.
- Inspect for erosion or damage to vegetation, preferably at the end of the wet season and before major fall runoff to be sure the strips are ready for winter. However, additional inspection after periods of heavy runoff is desirable.
- Inspect to ensure grass is well established. If not, either prepare soil and reseed or replace with alternative species. Install erosion control blanket.
- Check for debris and litter, and areas of sediment accumulation.
- Inspect health of trees and shrubs.

Post Development BMP Inspection and Maintenance Responsibility			
BMP Designation	**Responsible Party**	**Description of Inspection and Maintenance Activity**	**Frequency of Maintenance**
Efficient Irrigation	Property Owner	Verify that runoff minimizing landscape design continues to function by checking that water sensors are functioning properly, that irrigation heads are adjusted properly to eliminate overspray to hardscape areas, and to verify that irrigation timing and cycle lengths are adjusted in accordance with water demands, given time of year, weather and day or night time temperatures.	Weekly maintenance
Trash Container Areas	Property Owner and/or tenants	Sweep area clean, spot clean using a mop and water (no detergents), and contact the City's solid waste department to remove any large debris in the area that does not fit in the dumpster itself.	Weekly maintenance
Catch Basin Stenciling	Property Owner	Inspect stenciled message for legibility. Re-stencil as necessary.	Bi-annual maintenance
Tenant Education	Property Owner	Provide all members tenants/occupants with stormwater BMP education materials (made available by municipalities) in Appendix D.	Upon initial leasing or sale of property to residents, occupants, and/or tenants, and annually thereafter
Common Area Landscape Management	Property Owner	Manage landscaping in accordance with applicable ordinances and with management guidelines for use of fertilizers and pesticides per CASQA BMP #SC-41.	Ongoing
Loading Dock and Common Area Litter Control	Property Owner and/or tenants	Inspect for, remove, and properly dispose of litter. Sweep Dock Area	Weekly
Common Area Catch Basin Inspection	Property Owner	Inspect to verify inlets and gutters are clean. Also, inspect for evidence of illegal/illicit dumping of materials into storm drains. Cleanup as necessary and investigate sources to prevent further incidents.	Monthly
Street Sweeping Private Streets and Parking Lots	Property Owner	Vacuum Sweep parking lots and paved areas.	Monthly
Protect Slopes & Channels	Property Owner	Inspect slopes and channels for erosion	Bi-annual and after a storm event
Water Quality Inlets	Property Owner	Remove floating petroleum product and floating debris.	Monthly maintenance
		Remove and properly dispose of sediment, sludge and floating debris which may accumulated in the separator.	Bi-annual maintenance
Detention / Infiltration Structures	Property Owner	Inspect system and remove any accumulated trash, debris and visible sediment from the recharge surface	Quarterly (1st year) Bi-Annual Inspection & Maintenance

VII. Funding

FR CA Property Holding, LP, will be solely responsible for operating, maintaining, and funding the proper care of the project BMP Facilities. The maintenance responsibilities include, drainage systems, basin landscaping, trash enclosures, underground detention storage, the pump system and pavement sweeping.

First Industrial Realty Trust Inc.
898 N. Pacific Coast Hwy., Suite 175
El Segundo, CA 90245
Telephone: (310) 606-1634

Appendix A

For this is a Preliminary Report:

Pre-Application Conference (PAC) Comments are included within.

Final WQMP to include Conditions of Approval

Planning Commission Resolution _____

Dated _____

M E M O R A N D U M

C I T Y O F B A N N I N G

DATE: November 29, 2021

TO: Adam Rush, Community Development Director

FROM: Kevin Sin, Senior Civil Engineer

SUBJECT: Engineering Conditions of Approval for PAC No. 21-17; First Lincoln Logistics (APNs 540-210-009 & 010); NEC of Lincoln Street and 4th Street

The Department of Public Works recommends the Conditions of Approval listed herein for the abovementioned project. Unless stated otherwise, all conditions shall be completed by the applicant at no cost to any government agency.

The Applicant may contact the Engineering Division at (951) 922-3130 for compliance with the following conditions:

A. General Requirements

1. A Public Works Permit shall be required prior to commencement of any work within the public right-of-way. The contractor working within the public right-of-way shall submit proof of a Class "A" State Contractor's License, City of Banning Business License, and Liability Insurance. Any existing public improvements, or public improvements not accepted by the City that are damaged during construction shall be removed and replaced as determined by the City Engineer or his/her representative.

2. Prior to the issuance of any grading, construction, or public works permit by the City, the applicant shall obtain any necessary clearances and/or permits from the following agencies:

   - Fire Marshal (access)
   - Public Works Department (grading permits, street improvement permits)
   - Riverside County Flood Control & Water Conservation District (storm drain)
   - California Regional Water Quality Control Board Colorado River Basin (RWQCB)
   - South Coast Air Quality Management District (SCAQMD)

   The applicant is responsible for meeting all requirements of permits and/or clearances from the above listed agencies. When the requirements include approval of improvement plans, the applicant shall furnish proof of such approvals when submitting improvements plans to the City.

3. The following improvement plans shall be prepared by a Civil Engineer licensed by the State of California and submitted to the Engineering Division for review and approval. A separate set of plans shall be prepared for each line item listed below. Unless otherwise authorized in writing by the City Engineer, the plans shall utilize the minimum scale specified and shall be drawn on 24" x 36" Mylar film. Plans may be prepared at a larger scale if additional detail or plan clarity is desired (Note: the applicant may be required to prepare other improvement

plans not listed here pursuant to improvements required by other agencies and utility purveyors):

a. Rough Grading Plans (All Conditions of Approval shall be reproduced on last sheet of set)	1" = 40' horizontal
b. Haul Route Plans	1" = 40' horizontal
c. Clearing Plans (Include construction fencing plan)	1" = 50' horizontal
d. Erosion Control & SWPPP, WQMP (Note: a, b, c & d shall be reviewed and approved concurrently)	1" = 40' Horizontal
e. Street Improvement Plans	1" = 40' Horizontal 1" = 4' Vertical
f. Precise Grading Plans	1" = 40' Horizontal
g. Landscaping Plans	1" = 20 Horizontal

Other engineered improvement plans prepared for City approval that are not listed herein shall be prepared in formats approved by the City Engineer prior to commencing plan preparation.

A small index map shall be included on the title sheet of each set of plans, showing the overall view of the entire work area.

4. Upon completion of construction, the Developer shall furnish the City with reproducible record drawings on Mylar film of all improvement plans that were approved by the City Engineer. Each sheet shall be clearly marked "As-Built" or "As-Constructed" and shall be stamped and signed by the engineer or surveyor certifying the accuracy and completeness of the drawings. The applicant shall have all AutoCAD files submitted to the City, revised to reflect the "As-Built" conditions.

B. Right-of-Way/Street Improvements

5. This segment of Lincoln Street is a State Highway (SR-243) and therefore the Applicant shall offer to dedicate to the State of California Transportation Department (Caltrans) the additional right-of-way for Lincoln Street (55 feet one-half width) fronting the south side of the site as an Arteria Highway for public street and utilities purposes. Legal descriptions and plats of street dedication shall be provided to Caltrans for review and approval.

6. Construct Lincoln Street (55 feet from the centerline) fronting the property including street lighting, curb and gutter, driveway approaches, sidewalk, parkway, asphalt concrete paving, traffic signs and striping, and any transitions. Applicant's geotechnical engineer shall provide the design of the pavement section based upon the Caltrans method. An Encroachment Permit is required from Caltrans for the construction of right-of-way improvements.

7. Other street improvements may be required as identified in the traffic impact analysis (TIA).

8. All street improvement designs shall provide pavement and lane transitions per City of Banning and Caltrans standards for transition to existing street sections.

9. Any public improvements damaged during the course of construction shall be replaced to the satisfaction of the City Engineer, or his/her designee.

10. The applicant shall plant and perpetually maintain trees, shrubs, and ground cover placed in the parkway, slopes adjacent to public right-of-ways constructed in connection with the project. This includes providing irrigation and the clearing of debris and weed removal. The applicant shall be required to enter into a Landscape Maintenance Agreement for the perpetual maintenance of landscaping within the public right-of-way fronting the project site.

11. All required public improvements for the project shall be completed, tested, and approved by City of Banning and/or Caltrans prior to issuance of any Certificate of Occupancy.

C. Grading and Drainage

12. Submit a Drainage Study with hydrologic and hydraulic analysis for developed and undeveloped (existing) conditions to the Engineering Division for review and approval. The study and analysis shall be prepared by a civil engineer licensed by the State of California. Drainage design shall be in accordance with Banning Master Drainage Plan adopted by Riverside County Flood Control and Water Conservation District (RCFCD), RCFCD Hydrology Manual, and standard plans and specifications. The 10-year storm flow shall be contained within the street curbs, and the 100-year storm shall be contained within the street right-of-way; when this criteria is exceeded, additional drainage facilities shall be designed and constructed.

13. At a minimum, all development will make provisions to store runoff from rainfall events up to and including the one-hundred three-hour during event. Post-development peak urban runoff discharge rates shall not exceed pre-development peak urban runoff discharge rates.

14. Prior to issuance of any building permit, the applicant shall install trash filters in all catch basins adjacent to the site and/or will be constructed as part of the storm drain improvements for this development. The trash filters shall comply with the requirements of the Trash Amendment as amended and approved in accordance with California Regional Water Quality Control Board Colorado River Basin Region Order No. R7-2013-0011.

15. If the site is located in a Flood Area as identified in Flood Insurance Rate Map dated August 28, 2008 the applicant is responsible for providing a certification by a registered professional engineer or architect demonstrating that encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.

16. The project grading shall be designed in a manner that perpetuates the existing natural drainage patterns with respect to tributary drainage areas, outlet points and outlet conditions. Otherwise, a drainage easement shall be obtained for the release of concentrated or diverted storm flows. The project shall accept and convey storm flows from the adjacent property to the north and west.

17. The applicant shall comply with Chapter 13.24 “Stormwater Management Systems” of the Banning Municipal Code (BMC) and Title 18 “Grading, Erosion and Sediment Control” of the California Building Code related to excavation and grading; and, the State Water Resources Control Board’s orders, rules and regulations.

    For construction activities including clearing, grading or excavation of land that disturbs one (1) acre or more of land, or that disturbs less than one (1) acre of land, but which is a part of a construction project that encompasses more than one (1) acre of land, the applicant shall be required to submit a Storm Water Pollution Protection Plan (SWPPP) and file a Notice of Intent (NOI) with the Regional Water Quality Control Board (RWQCB).

The applicant shall provide proof that the SWPPP has been approved by the RWQCB prior to issuance of any permits.

The applicant shall ensure that the required SWPPP is available for inspection at the project site at all times through and including acceptance of all improvements by the City.

The applicant's SWPPP shall include provisions for all of the following Best Management Practices ("BMPs"):

- Temporary Soil Stabilization (erosion control).
- Temporary Sediment Control.
- Wind Erosion Control.
- Tracking Control.
- Non-Storm Water Management.
- Waste Management and Materials Pollution Control.

All erosion and sediment control BMPs proposed by the applicant shall be designed using the CASQA BMP handbook and approved by the City Engineer prior to any onsite or offsite grading, pursuant to this project.

The approved SWPPP and BMPs shall remain in effect for the entire duration of project construction until all improvements are completed and accepted by the City.

18. Prior to issuance of any grading or building permit, a Project-Specific Water Quality Management Plan (WQMP) shall be reviewed and approved by the City Engineer in accordance with the California Regional Water Quality Control Board Colorado River Basin Region Order No. R7-2013-0011.

19. Prior to the issuance of any building permit(s), a precise grading plan shall be submitted to the City Engineer for review and approval. A grading permit shall be obtained prior to commencement of any grading activity.

20. The following notation shall be placed on the grading plan: "No more than three days prior to removing trees, shrubs or tall herbaceous vegetation during the breeding season for migratory birds (February 15 to August 31) a qualified biologist shall conduct a nesting bird survey."

D. Traffic/Airport Safety Zone

21. Prior to the issuance of a grading permit or building permit, the applicant shall submit and obtain approval in writing from the Fire Marshall for the plans for all public or private access drives or streets. The plans shall include plan and sectional views and indicate the grade and width of the access road measured flow-line to flow-line. When a dead-end access exceeds 150 feet or when otherwise required, a clearly marked fire apparatus access turnaround must be provided and approved by the Fire Marshall. Applicable covenant, conditions or restrictions or other approved documents shall contain provisions which prohibit obstructions such as speed bumps/humps, control gates or other modifications within said easement or access road unless prior approval of the Fire Marshall is granted.

22. Driveway grades shall not exceed eight percent unless approved by the City Engineer.

23. Access drives to the public right-of-way shall be restricted to those approved by the City Engineer as shown on the approved plans.

24. Prior to the issuance of any certificate of occupancy, all fire hydrants shall have a blue reflective pavement marker indicating the hydrant location on the street/access driveway as approved by the Fire Marshall, and must be maintained in good condition by the property owner until the street is accepted for maintenance.

25. The applicant shall apply the current version of the "City of Banning Traffic Impact Analysis Guidelines for Local Transportation Analysis and Vehicle Miles Traveled Analysis", all exemptions identified in the TIA Guidelines shall apply. If it is determined, according to the TIA Guidelines, that a TIA is required, then a Scoping Agreement shall also be required.

26. The site is located within an airport safety zone as designated in the Riverside County Airport Land Use Compatibility Plan. Prior to approval of any building permit, the project shall be submitted to the Riverside Airport Land Use Commission for a consistency determination and the Applicant shall provide written evidence that the project meets all conditions set forth by said Commission.

E. Trash/Recycling

27. Construction debris shall be disposed of at a certified recycling site. It is the responsibility of the developer to contact the City's franchised solid waste hauler, Waste Management of the Inland Valley, at 1-800-423-9986 for disposal of construction debris.

28. The developer shall participate in the City's recycling and diversion programs by providing a solid waste enclosure to accommodate necessary solid waste containers.

29. All new development projects including, but not limited to, industrial and business buildings and facilities, as well as, multi-family complexes shall provide a solid waste enclosure to accommodate trash, recycle and organics waste bins and/or containers. Solid waste enclosures for multiple tenant properties, such as a shopping center, must design the enclosure to accommodate all waste containers of the property.

30. Solid waste enclosures shall be located on the site to be serviced.

31. The enclosure shall be designed for the exclusive use of housing solid waste containers including trash, recyclable and organics materials.

32. Enclosures Design Criteria:

    a. The size and dimensions of the trash enclosure shall be based on the required number and size of containers at a minimum accommodating one (1) container each for trash, recyclables and organics materials.

    b. Enclosure shall be architecturally compatible with the primary building on site to provide a coordinated design.

    c. Exterior materials and colors of the enclosure shall match the building walls.

    d. Chain link fencing with or without/plastic slats is prohibited.

    e. Enclosure shall have solid metal or wood gates with latches that can be secured in an open or closed position.

    f. Enclosures shall be lockable and/or contain locking bins. Locking mechanisms on enclosures and/or bins shall be approved by the City of Banning Solid Waste Franchise Hauler.

    g. Enclosures shall be constructed in a permanent manner.

h. Exterior must be fully enclosed with solid roofing to prevent rainfall from entering the enclosure and to prevent wind dispersal, as well as, offsite transport of trash and recycling.

i. Provide the minimum clearance for collector and user accessibility.

33. City Engineer approval shall be obtained in writing prior to the construction of any solid waste enclosure.

F. Fees

34. Prior to the issuance of a building permit, all applicable development impact fees shall be paid.

35. Plan check fees for professional report review (geotechnical, drainage, WQMP, etc.), and all improvement plans review, shall be paid at the time of submittal of said documents for review and approval in accordance with the fee schedule in effect at the time of submittal.

36. Public Works Inspection fees shall be paid prior to issuance of any permits in accordance with the fee schedule in effect at time of time of scheduling.

37. A plan storage fee shall be paid for any engineering plans that may be required prior to issuance of certificate of occupancy in accordance with the fee schedule in effect at the time the fee is paid.

M E M O R A N D U M
C I T Y O F B A N N I N G

DATE: November 30, 2021

TO: Adam Rush, Community Development Director

FROM: Luis Cardenas, Senior Civil Engineer

SUBJECT: **PAC 21-17 WAREHOUSE ON NEC OF LINCOLN & 4TH**
Water & Wastewater – Comments and Conditions of Approval

WATER

1. Applicant shall prepare and submit a Site Utilities Plan showing the existing and proposed water improvements.

2. There is an existing 8-inch water main along the vacated 4th street alignment. This water main is in an easement and should be protected in place.

3. Onsite fire hydrants shall be privately owned and maintained. Placement of private fire hydrants, if needed, shall be coordinated with the Fire Department, and painted red to differentiate from public fire hydrants which are typically yellow.

4. RP backflow prevention devices must be installed for each service connection to the public water system. Backflow devices must be tested and certified before final inspection.

5. Proposed water services for the new development shall use radio read (AMI) meters per City of Banning standards and be connected to the 8-inch water main on the north side of Lincoln.

SEWER

6. Sewer plans may be combined with the water plans in a Site Utilities Plan, showing existing and proposed sewer improvements.

7. There is an existing 15-inch VCP sewer main along the vacated 4th street alignment. This sewer main is in an easement and should be protected in place.

8. The sewer point of connection may be on 4th Street or on Lincoln Street.

9. A single sewer lateral, 6” or larger, shall connect this project to the public sewer system.

10. When tenant information is available, an Industrial Waste Survey form shall be completed and turned in to the City of Banning Public Works Department.

FEES

Water and Sewer Impact Fees will be calculated after review of the Site Utilities Plan. Water impact fees are determined by the required meter sizes and sewer impact fees are based on both the quantity and quality of anticipated discharge flows. Impact fees shall be paid prior to issuance of a building permit.

Water impact fees are determined by meter size. Sewer impact fees are determined by equivalent dwelling units, calculated by discharge quantity and quality for commercial/industrial customers.

City of Banning Fire Services

Office of the Fire Marshal

Project Comments/Conditions

Date: 11/30/2021
City Case Number: PAC 21-17
Project Name: First Industrial Acquisitions
Planner: Mark de Manincor, Planner
Reviewed By: Paul Lindley, Fire Safety Specialist
Fire Department Permit Number: PAC 21-18
City of Banning Office of the Fire Marshal

It is the responsibility of the recipient of these Fire Department conditions to forward them to all interested parties. The permit number (**as it is noted above**) is required on all correspondence.

Additional information is available at our website: www.rvcfire.org

Questions should be directed to the Riverside County Fire Department, Office of the Fire Marshal at 99 E. Ramsey St. Banning, CA 92220 (951) 922-3167.

With respect to the conditions of approval for the referenced project, the Fire Department requires the following fire protection measures be provided in accordance with Riverside County Ordinances and/or recognized fire protection standards:

With respect to the conditions of approval for the referenced project, the Fire Department requires the following fire protection measures be provided in accordance with Riverside County Ordinances and/or recognized fire protection standards:

1. Fire Hydrants and Fire Flow: Prior to the issuance of building permits, plans for the water system shall be submitted to the fire department for review and approval. The water system shall be capable of delivering the required fire flow. Fire hydrant(s) location and spacing shall comply with the fire code. An approved water supply for fire protection during construction shall be made available prior to the arrival of combustible materials on site. Reference 2019 California Fire Code (CFC) 507.5.1, 3312, Appendices B and C.

2. Fire Department Access: Prior to building permit issuance, provide a site plan showing the fire lanes. Access roads shall be provided to within 150 feet to all portions of the exterior building walls and shall have an unobstructed width of not less than 24 feet. The construction of the access roads shall be all weather and capable of sustaining 40,000 lbs. over two axles for areas of residential development and 60,000 lbs. over two axels for commercial developments. Approved vehicle access, either permanent or temporary, shall be provided during construction Ref. CFC 503.1.1, 3310.1 and 503.2.1

3. Requests for installation of traffic calming designs/devices on fire apparatus access roads shall be submitted and approved by the Office of the Fire Marshal. Ref. CFC 503.4.1

4. Grading Permit Fire Department Review: Submittal to the Office of the Fire Marshal for Precise Grading Permit will be required.

5. Construction Permits Fire Department Review: Submittal of construction plans to the Office of the Fire Marshal for development, construction, installation, and operational use permitting will be required. Final fire and life safety conditions will be addressed when the Office of the Fire Marshal reviews these plans. These conditions will be based on occupancy, use, California Building Code (CBC), California Fire Code, and related codes, which are in effect at the time of building plan submittal.

6. Phased Construction Access: If construction is phased, each phase shall provide approved access for fire protection prior to any construction. Ref. CFC 503.1

7. Fire Sprinkler System: All new commercial structures 3,600 square feet or larger shall be protected with a fire sprinkler system. Ref CFC 903.2 as amended by the City of Banning.

8. Fire Alarm and Detection System: A water flow monitoring system and/or fire alarm system may be required and determined at time of building plan review. Ref. CFC 903.4, CFC 907.2 and NFPA 72

9. Knox Box and Gate Access: Buildings shall be provided with a Knox Box. The Knox Box shall be installed in an accessible location approved by the Office of the Fire Marshal. All electronically operated gates shall be provided with Knox key switches and automatic sensors for access. Ref. CFC 506.1

10. Addressing: All residential dwellings shall display street numbers in a prominent location on the street side of the residence. All commercial buildings shall display street numbers in a prominent location on the address side and additional locations as required. Ref. CFC 505.1 and County of Riverside Office of the Fire Marshal Standard #07-01

11. Emergency Responder Radio Coverage Systems: Projects that do not meet the exceptions set forth by the Riverside County Office of the Fire Marshal shall provide plans for an emergency responder radio coverage system. Ref. CFC 510.1 and Riverside County Office of the Fire Marshal Technical Policy #TP19-002

    Use the above statement only if the project does not meet the exceptions (two most common below):

    1. Buildings and structures that are three (3) stories or less, do not exceed 50,000 square feet in area on any single story, and do not have any complete or partial below grade building levels…

    2. Wood-constructed residential buildings and structures four (4) stories or less that do not have any complete or partial below grade building levels…

Should you have any questions, or if some items are unclear, please phone our office at 951-922-3167and speak with Fire Safety Specialist Paul Lindley to assist you with these conditions.

Paul Lindley
Fire Safety Specialist/Office of the County Fire Marshal
City of Banning Fire Services
CAL FIRE/Riverside County Fire Department

City of Banning

99 E. Ramsey Street · P.O. Box 998 · Banning, CA 92220-0998 · (951) 922-3125 · Fax (951) 922-3128

Date	11-11-21
Jurisdiction	City of Banning
Department	Building & Safety
Plan Check/Permit Number	PAC 21-17
Project Description	Propose Warehouse
Site Address	NE Corner Lincoln St. and 4th St.
Plans Examiner/Phone Number	Patrick Johnson, P.E. / 909-963-0565

These design documents have been reviewed to help ensure conformance with the 2019 California Building Codes

Building & Safety Comments:

1. The propose structure shall be designed per the current adopted building codes, which is currently 2019 California Building Code.
2. Structural plans and calculations shall be provided by a California licensed engineer or California licensed architect.
3. Clearly identify the distance from the rear north property line to the nearest corner of the building.
4. Provide occupancy separations per CBC Table 508.4.
5. Accessible parking spaces shall be provided on the Site Plan in accordance with CBC Chapter 11B.
6. For new buildings 10,000 square feet and over, building commissioning shall be included in the design and construction processes of the building project to verify that the building systems and components meet the owner's or owner representative's project requirements. Please comply with all the requirements within **CGBSC Section 5.410.2**. Subject to further review.
7. Provide and identify on the site plan locations of designated parking spaces for any combination of low-emitting, fuel-efficient and car pool/ van pool vehicles per CGBSC Table 5.106.5.2. Provide calculations on the plans for the required number of spaces per CGBSC sec. 5.106.5.2. Low-emitting, fuel-efficient vehicle parking spaces shall be identified with the words "CLEAN AIR / VANPOOL / EV"". The bottom edge of the last word shall align with the end of the stall striping and be visible beneath a parked vehicle. Provide information on the site plans. CGBSC sec. 5.106.5.2.1
8. Construction shall comply with CGBSC Section 5.106.5.3.1 or Section 5.106.5.3.2 to facilitate future installation of electric vehicle supply equipment (EVSE). Provide calculation accordingly for the number of electric vehicle charging stations per CGBSC Table 5.106.5.3.3.
9. Long Term: Provide and identify secure bicycle parking for buildings with more than (10) ten employees, or for additions or alterations that add 10 or more tenant vehicular

parking spaces as outlined per CGBSC sec. 5.106.4.1.2. Bike rack spaces shall total 5% of vehicle parking spaces with a minimum of one space.

10. Accessible parking spaces and an accessible path of travel shall be provided from the public sidewalk to the main entrance of the office/warehouse areas.

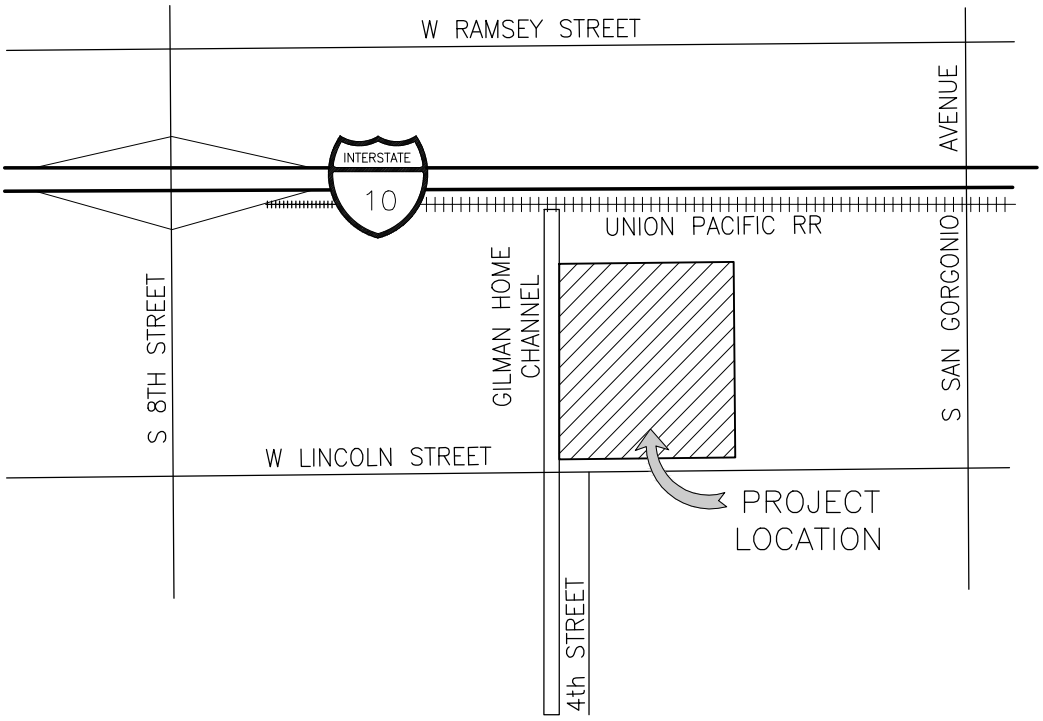
11. All entrances and exterior ground-floor exit doors to buildings and facilities shall be made accessible to persons with disabilities. (CBC 11B-206.4.1)

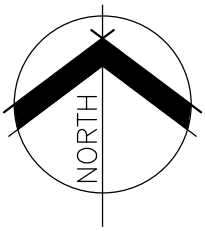
12. Provide a complete accessible path of travel to the street and to the accessible parking space. Identify all slopes and curb conditions along the accessible path of travel. Walks shall be a minimum of 48 inches in width with a maximum cross slope of 2% and a maximum slope in the direction of travel of 5%. Walks exceeding 5% shall conform to the requirements of a ramp. Curb ramps and truncated domes shall be detailed on the drawing plans. (CBC Section 11B-403.5.1)

13. Show location for the propose trash enclosure. The trash enclosure shall be accessible to persons with disabilities and located on an accessible route. The accessible route shall extend from the trash enclosure to the building it serves. Detail accessibility on the plans. (CBC Section 11B-206.2.2)

Appendix B

Vicinity Map
APN Ownership Map
Tentative Parcel Map
WQMP Site Plan
Receiving Waters Map
WQMP DMA Map





VICINITY MAP

NOT TO SCALE

WQMP Exhibit "A"

PREPARED BY:

Stantec

735 E. Carnegie Drive, Suite 280
San Bernardino, CA 92408
909.335.6116 stantec.com

PREPARED FOR:

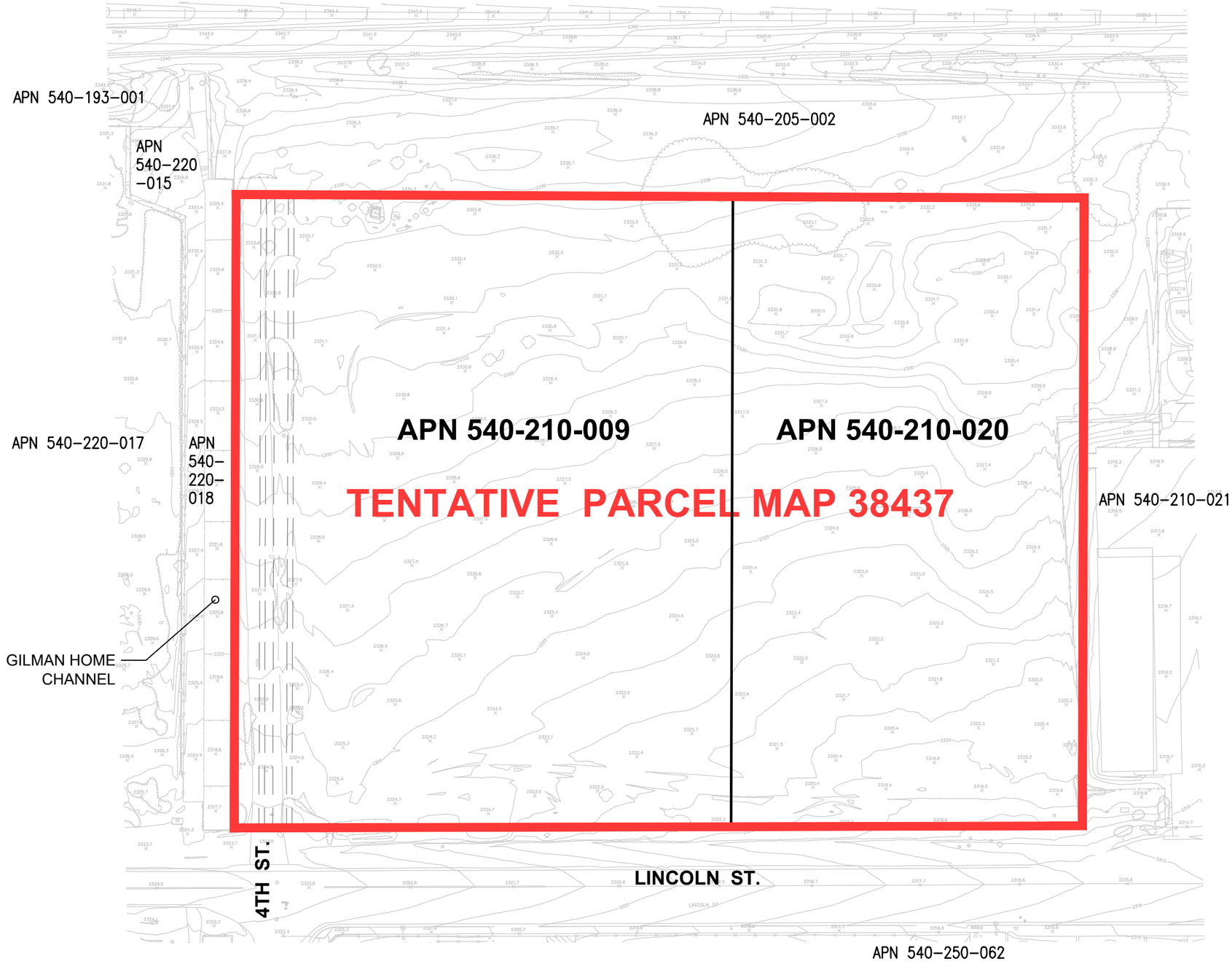
First Industrial Acquisition II, LLC
898 N. Pacific Coast Hwy., Suite 175
El Segundo, CA 90245
PH: (310) 606-1634

First Lincoln Logistics

BANNING, CALIFORNIA

Tentative Parcel Map 38437

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PRELIMINARY STUDY
WQMP Exhibit "B"

Stantec
735 E. Carnegie Drive, Suite 280
San Bernardino, CA 92408
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PREPARED FOR:
FIRST INDUSTRIAL ACQUISITION II, LLC
898 N. PACIFIC COAST HWY., SUITE 175
EL SEGUNDO, CA 90245
PH: (310) 606-1634

FIRST LINCOLN LOGISTICS
ASSESSOR PARCEL LISTINGS
TENTATIVE PARCEL MAP 38437
BANNING, CALIFORNIA

WQMP# _____

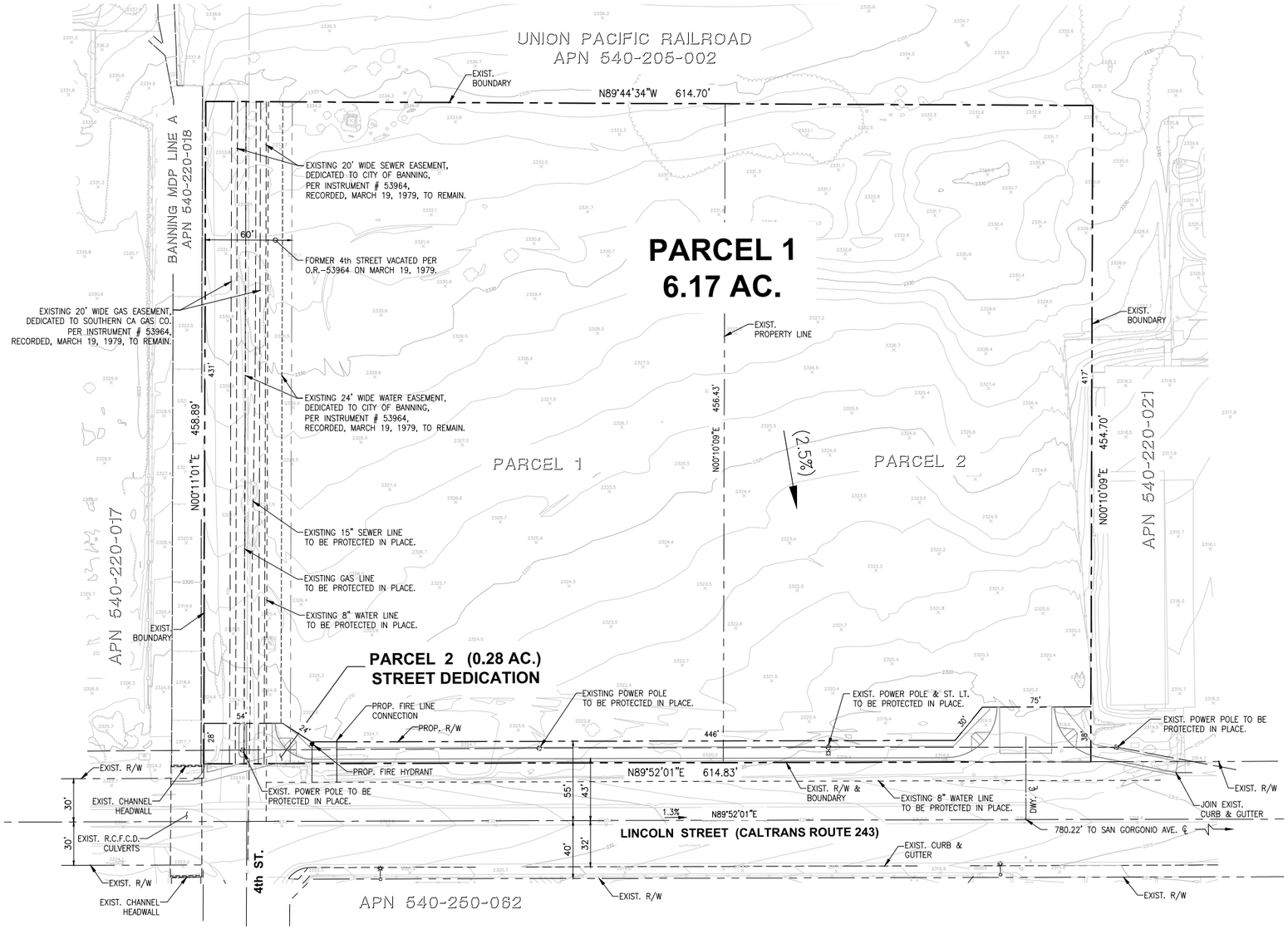
SHEET 1 OF 1

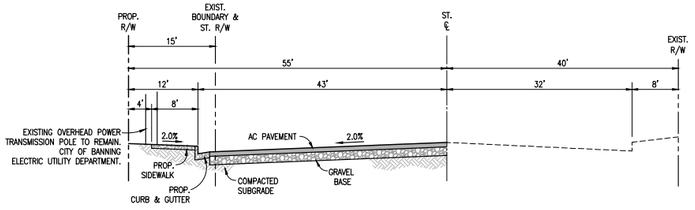
MARCH 2022

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TENTATIVE PARCEL MAP NO. 38437

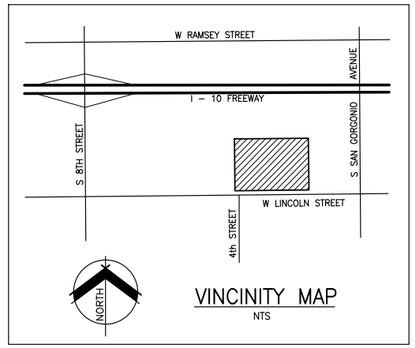
BLOCKS 220 & 232 OF AMENDED MAP OF THE BANNING LAND COMPANY, IN THE CITY OF BANNING, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 9, PAGE 44, OF MAPS, OF SAN BERNARDINO COUNTY, CALIFORNIA.





LINCOLN STREET (CALTRANS ROUTE 243)

CITY OF BANNING
ARTERIAL HIGHWAY
(CITY STD. DWG. NO. 101.1)



VINCINITY MAP
NTS

OWNER:
FR CA PROPERTY HOLDING, LP
898 N. SEPULVEDA BLVD., SUITE 175
EL SEGUNDO, CA 90245
(310) 606-1634

DEVELOPER:
FIRST INDUSTRIAL REALTY TRUST, INC.
898 N. SEPULVEDA BLVD., SUITE 175
EL SEGUNDO, CA 90245
(310) 606-1634

ENGINEER / REP.
STANTEC CONSULTING, INC.
735 E. CARNEGIE DRIVE, SUITE 280
SAN BERNARDINO, CA 92408
ATT: STEPHEN CREVOISERAT, PE.
R.C.E. # 78576
(949) 537-1300

ASSESSOR'S PARCEL NO:
ASSESSOR'S PARCEL NO: 540-210-009 & 540-210-020

ACREAGE:
TOTALS:
GROSS: 6.45 AC.
NET: 6.17 AC.

ZONING DATA:
EXISTING GENERAL PLAN & ZONE: INDUSTRIAL
PROPOSED GENERAL PLAN & ZONE: INDUSTRIAL

LAND USE:
EXISTING: VACANT
PROPOSED: (WAREHOUSE DISTRIBUTION, LIGHT INDUSTRIAL)
EXISTING SURROUNDING LAND USE: INDUSTRIAL & GENERAL COMMERCIAL

LEGAL DESCRIPTION:
BLOCKS 220 & 232 OF AMENDED MAP OF THE BANNING LAND COMPANY, IN THE CITY OF BANNING, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 9, PAGE 44, OF MAPS, OF SAN BERNARDINO COUNTY, CALIFORNIA.

BENCH MARK:
NGS BM DX3597 ELEVATION= 2364.82' NAVD88
PER NATIONAL GEODETIC SURVEY (NGS) DATA SHEET.

TOPOGRAPHY SOURCE:
ROBERT J. LUNG & ASSOCIATES, 11/10/2021

FLOOD ZONE DESIGNATION:
THE AREA OF LAND SHOWN DOES NOT LIE WITHIN A FLOOD ZONE.

GENERAL NOTES:
1. TOTAL NUMBER OF PARCELS: 2
2. THERE ARE NO KNOWN EXISTING WELLS ON THE PROPERTY OR WITHIN 200' OF THE PROJECT.
3. THERE ARE NOT EXISTING BUILDINGS ON THE PROPERTY.

EARTHWORK QUANTITIES:
CUT = 19,000 C.Y.
FILL = 19,000 C.Y.

REGISTERED PROFESSIONAL ENGINEER
STEPHEN F. CREVOISERAT
78576
CIVIL
STATE OF CALIFORNIA

LEGEND
- MAP BOUNDARY
- EXIST. PARCEL LINE
- PROPOSED R/W
- EXIST. OVERHEAD ELECTRIC LINE
- EXIST. WATER LINE
- PROP. WATER LATERAL
- EXIST. POWER POLE
- EXIST. STREET LIGHT
- FIRE HYDRANT

WQMP EXHIBIT "C"
-NOT TO SCALE-

NORTH

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

MAY 2022

PREPARED BY:
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SAN BERNARDINO, CA 92408
909.335.6116 stantec.com

PREPARED FOR:
FIRST INDUSTRIAL REALTY TRUST, INC.
898 N. PACIFIC COAST HWY., SUITE 175
EL SEGUNDO, CA 90245 PH: (310) 606-1634

MARK	REVISIONS	APPR.	DATE	APPR.	DATE
	DESIGNED BY: ____ DRAWN BY: ____ CHECKED BY: ____		DESIGN ENG'R.		CITY ENG'R.

CITY OF BANNING
APPROVED BY:_____ DATE:____
BENCHMARK:
BM DX3470 ELEV: 2118.09 NAVD88
PER NATIONAL GEODETIC SURVEY (NGS) DATA SHEET.
HORIZONTAL SCALE: 1" = 40' VERTICAL SCALE: N/A

TENTATIVE PARCEL MAP NO. 38437

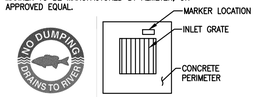
2042611702

SHEET 1 OF 1

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SOURCE CONTROL BMPs

(A) ATTACH METALLIC STORM WATER PLATE TO DRAINAGE INLETS AT THE LOCATION INDICATED BELOW. MARKER TO BE MANUFACTURED BY ALMETEK, OR APPROVED EQUAL.

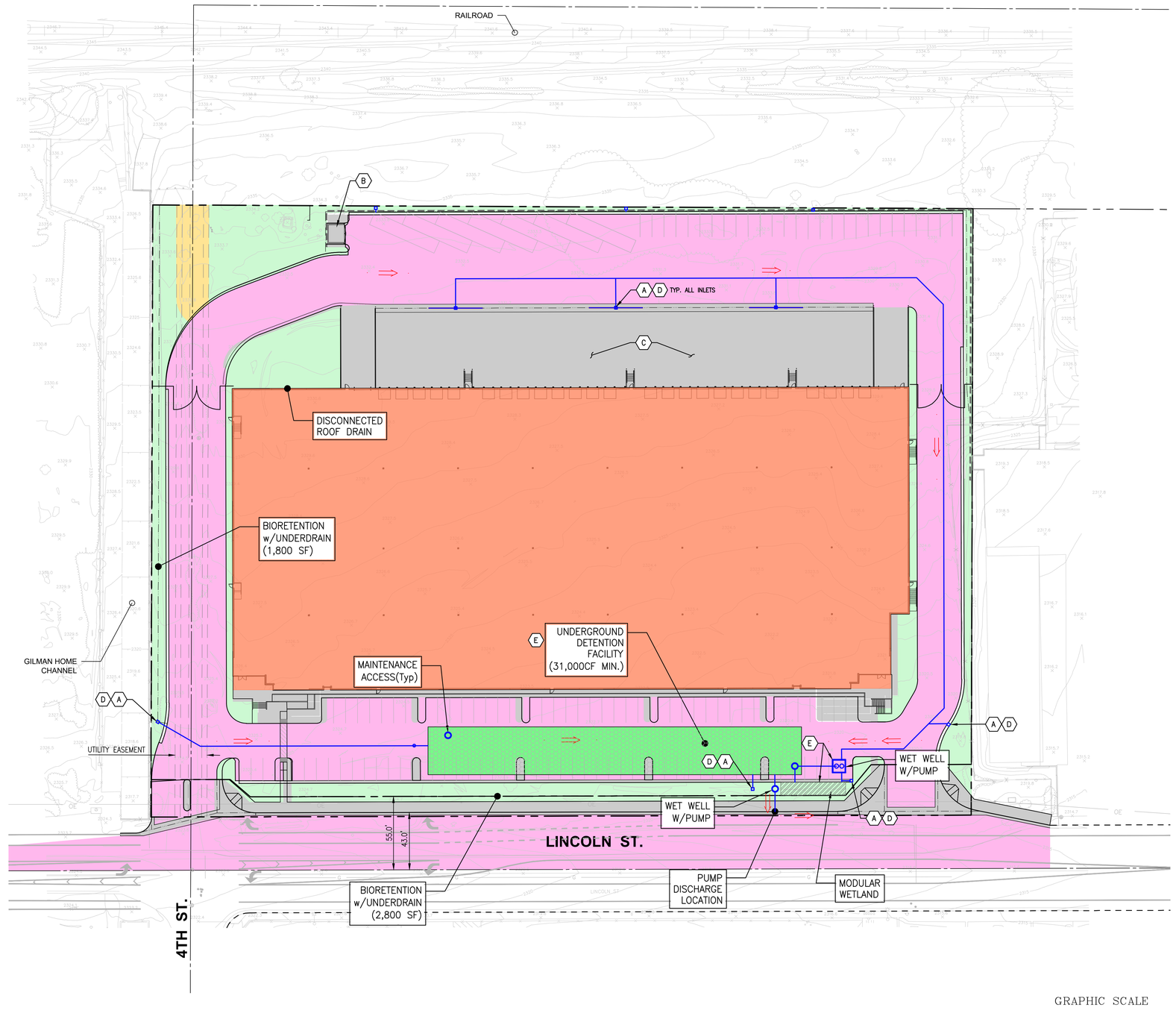


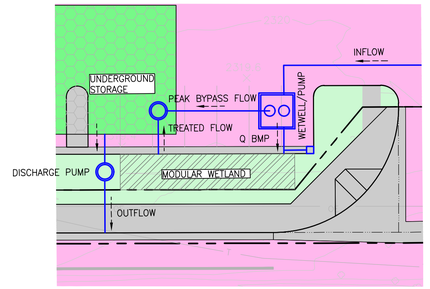
(B) TRASH ENCLOSURE TO BE PAVED WITH CANOPY-STYLE ROOF. ALL TRASH CONTAINERS SHALL BE LEAK PROOF WITH ATTACHED COVERS.

(C) LOADING DOCKS SHALL BE KEPT CLEAN AND REGULARLY MAINTAINED. SWEEPING AND CLEARING OF DEBRIS SHALL OCCUR ON A WEEKLY BASIS.

(D) INLETS SHALL BE INSPECTED FOR DEBRIS ON A MONTHLY BASIS. SEDIMENT AND SLUDGE SHALL BE REMOVED ON A BI-ANNUAL BASIS.

(E) FACILITY TO BE MAINTAINED PER MANUFACTURER RECOMMENDATIONS PROVIDED IN APPENDIX F AND PER GUIDELINES OUTLINED ON PAGE 1-31 OF THIS PWQMP.





TREATMENT BMP LAYOUT

NTS

LEGEND

- PROPOSED STORM DRAIN
- PROPOSED UNDERGROUND CHAMBERS
- AC PAVING
- CONCRETE CEMENT
- LANDSCAPING
- STORM FLOW DIRECTION
- DRAIN INLET WITH 5MM DEBRIS SCREEN
- SLOTTED DRAIN INLET

GRAPHIC SCALE
40 20 0 40 80
SCALE: 1"=40'

PREPARED BY:
Stantec
735 E. Carnegie Drive, Suite 280
San Bernardino, CA 92408
909.335.6116 stantec.com

PREPARED FOR:
FIRST INDUSTRIAL REALTY TRUST
FIRST INDUSTRIAL ACQUISITION II, LLC
898 N. PACIFIC COAST HWY., SUITE 175
EL SEGUNDO, CA 90245 PH: (310) 606-1634

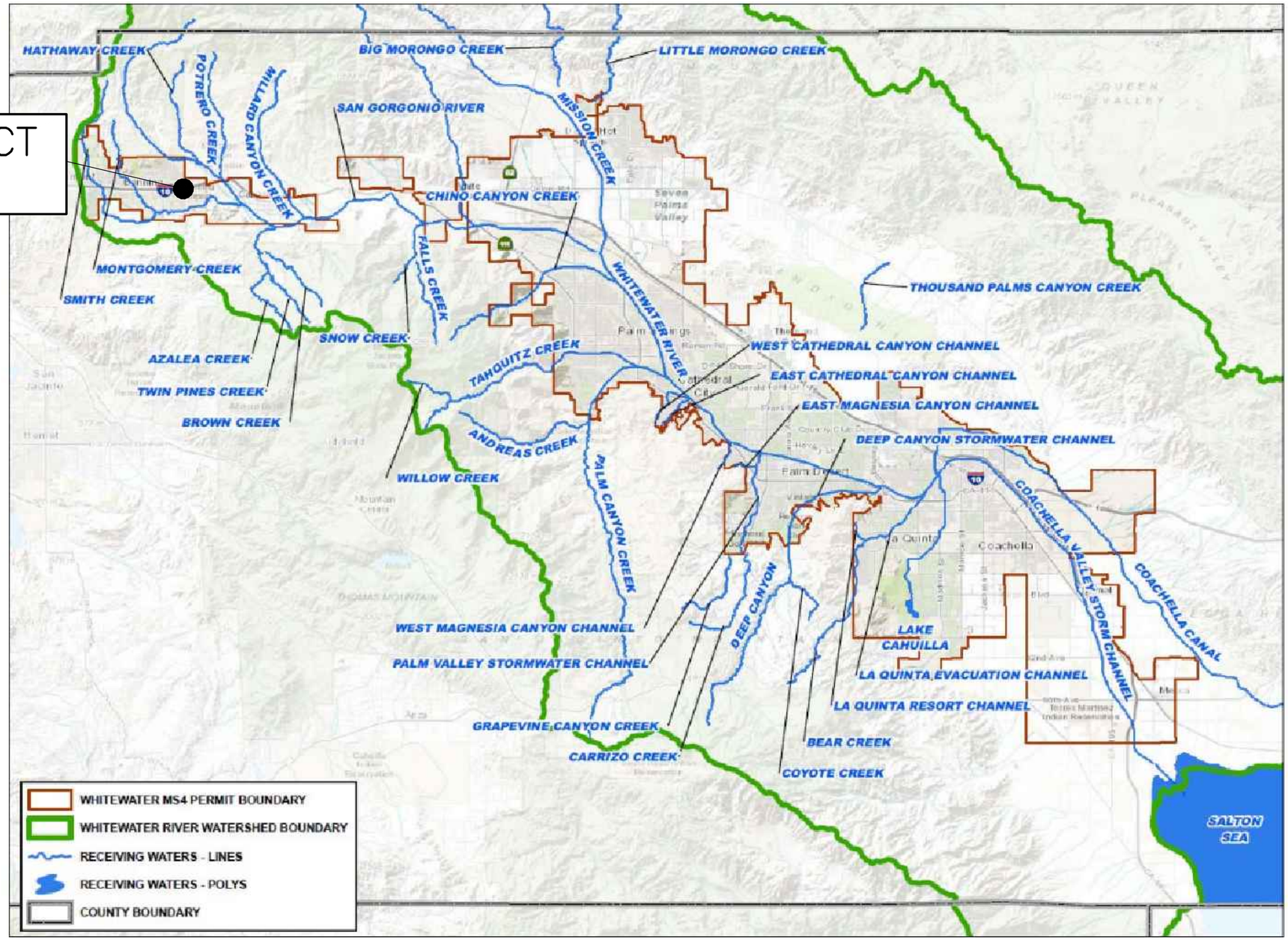
FIRST LINCOLN LOGISTICS
Tentative Parcel Map 38437
WQMP SITE PLAN
BANNING, CALIFORNIA

DATE: 11/17/22
SHEET 1 OF 1
JOB NO. 2042 611702

PRELIMINARY STUDY
WQMP Exhibit "D"

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PROJECT SITE



NOT TO SCALE

IMAGE SOURCE: 2015 WHITE WATER RIVER REGION WQMP GUIDANCE DOCUMENT

PRELIMINARY STUDY
WQMP Exhibit "E"

Stantec
735 E. Carnegie Drive, Suite 280
San Bernardino, CA 92408
909.335.6116 stantec.com

PREPARED FOR:
First Industrial Realty
898 N. Pacific Coast Hwy., Suite 175
El Segundo, CA 90245
PH: (310) 606-1634

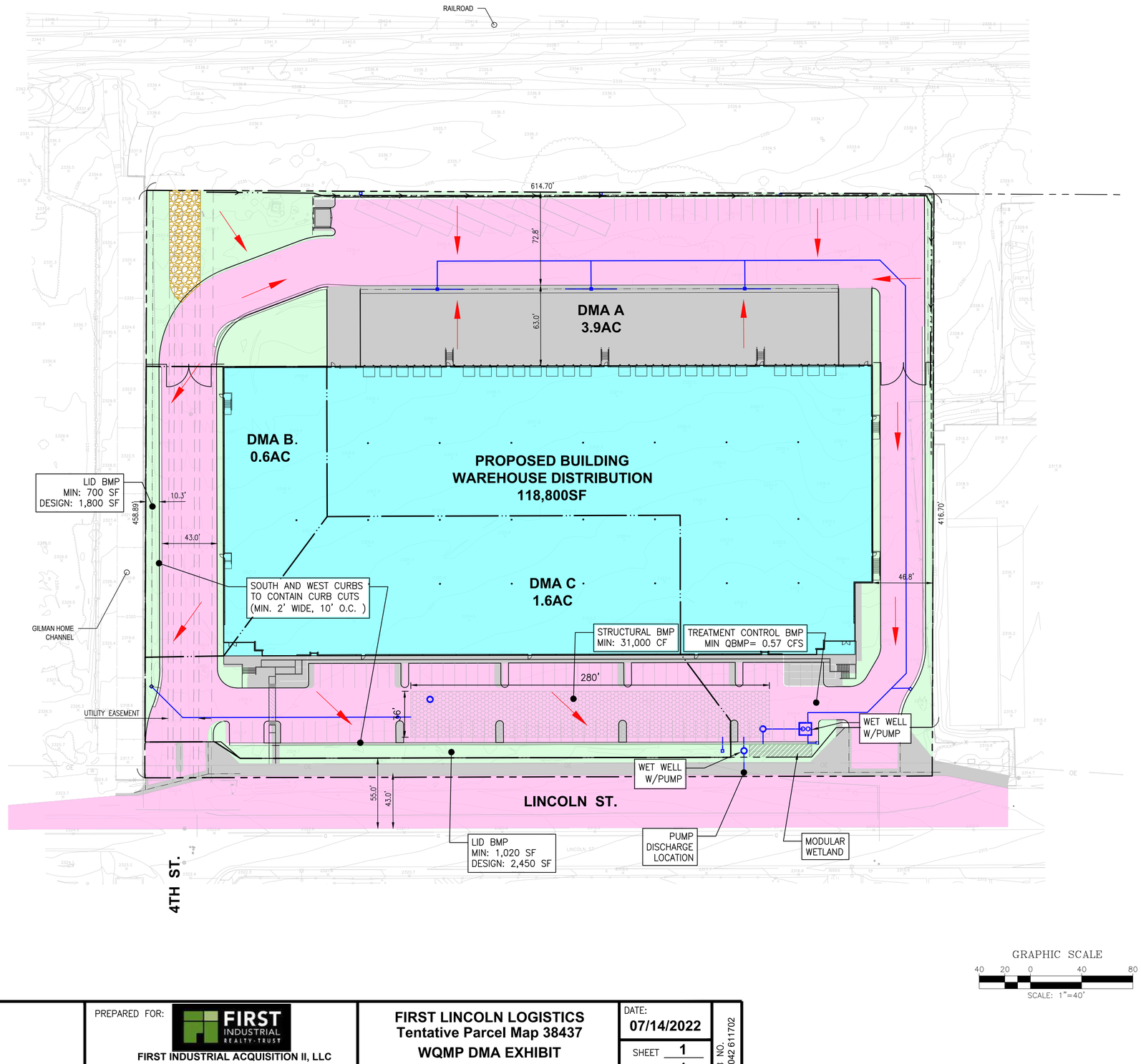
FIRST LINCOLN LOGISTICS
RECEIVING WATERS
TENTATIVE PARCEL MAP 38437
BANNING, CALIFORNIA

WQMP# _____

SHEET 1 OF 1

MAY 2022

V:\2042\active\204261170 2\drawing\Exhibit_Files\611702C-AX7007.dwg vdelgadojr 5.12.2022



DMA A

LANDSCAPE:	0.35 AC
AGGREGATE:	0.04 AC
IMPERVIOUS:	3.51 AC
TOTAL:	3.9 AC

DMA B

LANDSCAPE:	0.06 AC
IMPERVIOUS:	0.54 AC
TOTAL:	0.6 AC

DMA C

LANDSCAPE:	0.16 AC
IMPERVIOUS:	1.44 AC
TOTAL:	1.6 AC

LEGEND

- PROPOSED A.C. PAVEMENT
- PROPOSED P.C. CONCRETE
- PROPOSED AGGREGATE BASE
- UNDERGROUND CHAMBERS
- PROPOSED LANDSCAPE
- PROPOSED BUILDING
- RETAINING WALL
- MAP BOUNDARY
- PROPOSED STORM DRAIN
- DIRECTION OF SURFACE FLOW
- DRAINAGE MANAGEMENT AREA BOUNDARY

LANDSCAPE:	0.6 AC
AGGREGATE:	0.04 AC
IMPERVIOUS:	5.46 AC
TOTAL:	6.1 AC

PRELIMINARY FEASIBILITY NOTES:

- **DMA's = 90% IMPERVIOUS.**
- **ROOF DRAINAGE PATTERN IS PRESUMED.**

GRAPHIC SCALE

40 20 0 40 80

SCALE: 1"=40'

PREPARED BY:
Stantec
735 E. Carnegie Drive, Suite 280
San Bernardino, CA 92408
909.335.6116 stantec.com

PREPARED FOR:
FIRST INDUSTRIAL REALTY TRUST
FIRST INDUSTRIAL ACQUISITION II, LLC
898 N. PACIFIC COAST HWY., SUITE 175
EL SEGUNDO, CA 90245 PH: (310) 606-1634

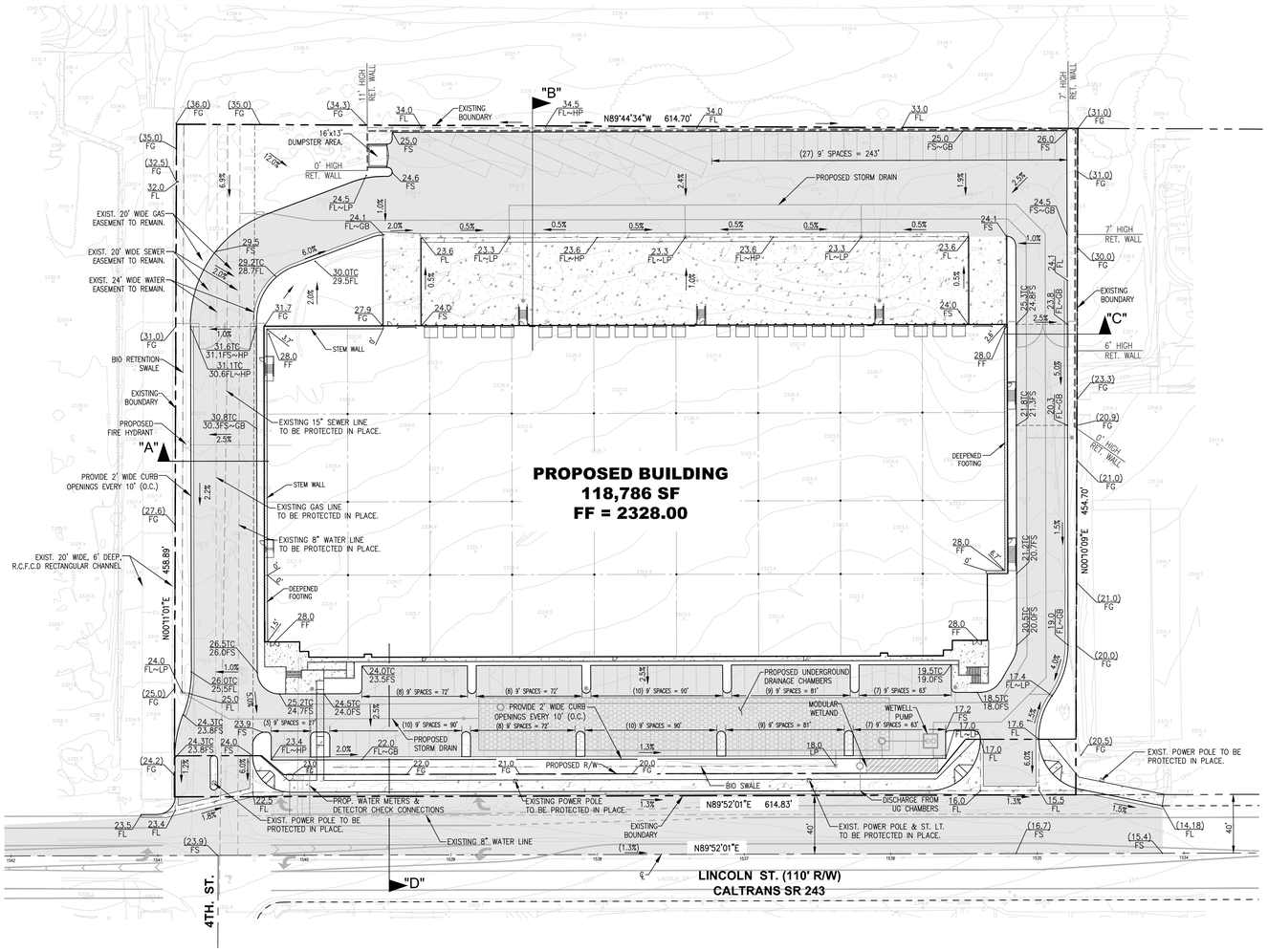
FIRST LINCOLN LOGISTICS
Tentative Parcel Map 38437
WQMP DMA EXHIBIT
BANNING, CALIFORNIA

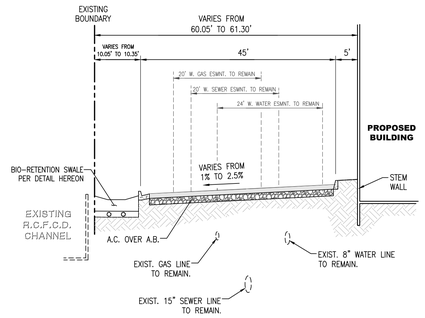
DATE: 07/14/2022
SHEET 1 OF 1
JOB NO. 2042 611702

PRELIMINARY STUDY
WQMP Exhibit "F"

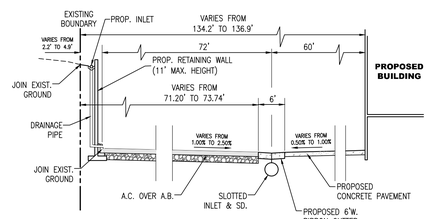
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PRELIMINARY GRADING & DRAINAGE PLAN
FOR
FIRST LINCOLN LOGISTICS

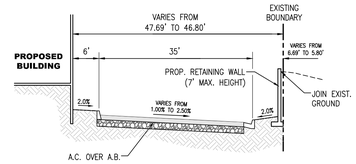




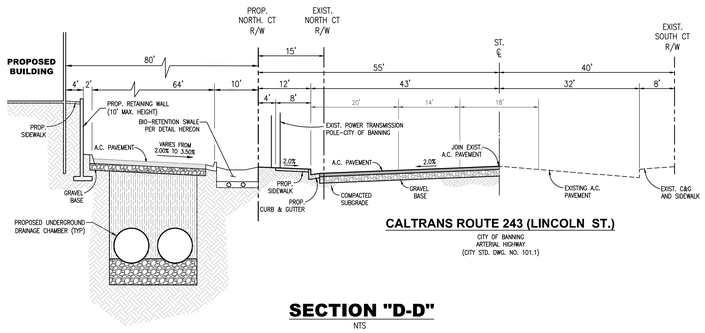
SECTION "A-A"
NTS



SECTION "B-B"
NTS

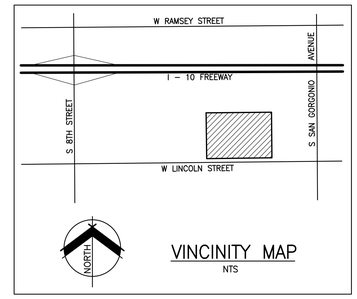


SECTION "C-C"
NTS

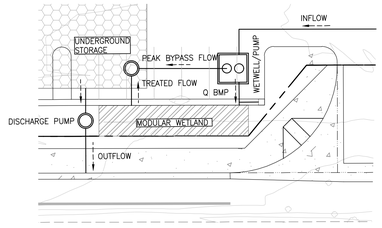


CALTRANS ROUTE 243 (LINCOLN ST.)
CITY OF BANNING
ARTERIAL HIGHWAY
(CITY STD. DWG. NO. 101.1)

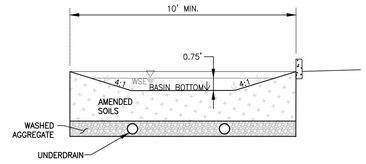
SECTION "D-D"
NTS



VINCINITY MAP
NTS



TREATMENT BMP LAYOUT
NTS



BIO-RETENTION SWALE DETAIL
NTS

OWNER:
FR CA PROPERTY HOLDING, L.P.
898 N. PACIFIC COAST HWY., SUITE 175
EL SEGUNDO, CA 90245
(310) 606-1634

DEVELOPER:
FIRST INDUSTRIAL REALTY TRUST, INC.
898 N. PACIFIC COAST HWY., SUITE 175
EL SEGUNDO, CA 90245
(310) 606-1634

ENGINEER / REP.
STANTEC CONSULTING, INC.
735 E. CARNEGIE DRIVE, SUITE 280
SAN BERNARDINO, CA 92408
ATT: STEPHEN CREVOISERAT, PE.
R.C.E. # 78576
(949) 537-1300

LEGAL DESCRIPTION:
BLOCKS 220 & 232 OF AMENDED MAP OF THE BANNING LAND COMPANY, IN THE CITY OF BANNING, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 9, PAGE 44, OF MAPS, OF SAN BERNARDINO COUNTY, CALIFORNIA.

ASSESSOR'S PARCEL NO:
ASSESSOR'S PARCEL NO: 540-210-009 & 540-210-020

SOILS ENGINEER:
SO CAL GEO
22885 SAVI RANCH PARKWAY, SUITE "E"
YORBA LINDA, CA 92887
(714) 685-1115

ACREAGE:
TOTALS:
GROSS: 6.45 AC.
NET: 6.17 AC.

BENCH MARK:
NGS BM DX3597 ELEVATION= 2364.82' NAVD88
PER NATIONAL GEODETIC SURVEY (NGS) DATA SHEET.

FLOOD ZONE DESIGNATION:
THE AREA OF LAND SHOWN DOES NOT LIE WITHIN A FLOOD ZONE.

LEGEND
- PROPOSED A.C. PAVEMENT
- PROPOSED P.C. CONCRETE
- PROPOSED GRAVEL
- UNDERGROUND CHAMBERS
- MODULAR WETLAND
- RETAINING WALL
- MAP BOUNDARY
- PROPOSED R/W
- EXIST. STREET ℄
- EXIST. EASEMENT
- PROPOSED STRIPING
- EXIST. POWER POLE
- EXIST. STREET LIGHT
- PROPOSED FIRE HYDRANT
- PROPOSED WQMP MANHOLE
- PROPOSED SD INLET

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

EARTHWORK QUANTITIES:
CUT = 29,000 C.Y.
FILL = 9,000 C.Y.
EXPORT = 20,000 C.Y.

WQMP EXHIBIT "G"

NOVEMBER 2022

PREPARED FOR:
FIRST INDUSTRIAL REALTY TRUST
FIRST INDUSTRIAL ACQUISITION II, LLC
898 N. PACIFIC COAST HWY., SUITE 175
EL SEGUNDO, CA 90245 PH: (310) 606-1634

PREPARED BY:
Stantec
735 E. CARNEGIE DRIVE, SUITE 280
SAN BERNARDINO, CA 92408
909.335.6116 stantec.com

REGISTERED PROFESSIONAL ENGINEER STEPHEN F. CREVOISERAT 78576 CIVIL STATE OF CALIFORNIA

CITY OF BANNING
RECOMMENDED FOR APPROVAL BY:
KEVIN D. SIN, RCE # 71299 EXP. DATE
SENIOR CIVIL ENGINEER
RECOMMENDED FOR APPROVAL BY:
NATHAN SMITH, RCE # EXP. DATE
ASST. PWD/CITY ENGINEER

PRELIMINARY GRADING & DRAINAGE PLAN
FOR
FIRST LINCOLN LOGISTICS
BANNING, CA

2042611702

HORIZONTAL SCALE: 1" = 100' VERTICAL SCALE: N/A

SHEET 1 OF 1

DRAWING: c:\2042\active\2042611702\drawing\exhibit_files\611702c-px7005.dwg PLOTTED: 11/16/2022 7:07 PM BY: Delgado, Vince

Appendix C

Supporting Details Related to Hydrologic Conditions of Concern

Condition C is the basis of design for the detention system

Prevailing Volume is based on 10yr-24hr Storm.

FINAL WQMP to Include

PUMP curve: which will regulate peak flows rates to pre-project Q's

Pre-project
2 year peak run-off

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
Rational Hydrology Study Date: 07/11/22 File:lin2yrprelimpre.out

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First Lincoln Logistics; Banning, CA
pre project TPM preliminary
2yr jn:2042611703
vadjr 07.11.2022

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 6026

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 2.00 Antecedent Moisture Condition = 1

2 year, 1 hour precipitation = 0.600(In.)
100 year, 1 hour precipitation = 1.770(In.)

Storm event year = 2.0
Calculated rainfall intensity data:
1 hour intensity = 0.600(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 10.010 to Point/Station 10.020
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 785.000(Ft.)
Top (of initial area) elevation = 2339.400(Ft.)
Bottom (of initial area) elevation = 2318.500(Ft.)
Difference in elevation = 20.900(Ft.)
Slope = 0.02662 s(percent)= 2.66
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 15.746 min.
Rainfall intensity = 1.219(In/Hr) for a 2.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.407
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 1) = 47.40
Pervious area fraction = 1.000; Impervious fraction = 0.000
Initial subarea runoff = 3.475(CFS)
Total initial stream area = 7.010(Ac.)
Pervious area fraction = 1.000
End of computations, total study area = 7.01 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number = 67.0

Post Project
2yr Peak Runoff

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
Rational Hydrology Study Date: 07/12/22 File:lin2yrprelimpost.out

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First Lincoln Logistics; Banning, CA
Post Project Preliminary Study
2yr jn:2042611702
vadjr 7.12.2022

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 6026

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 2.00 Antecedent Moisture Condition = 1

2 year, 1 hour precipitation = 0.600(In.)
100 year, 1 hour precipitation = 1.770(In.)

Storm event year = 2.0
Calculated rainfall intensity data:
1 hour intensity = 0.600(In/Hr)
Slope of intensity duration curve = 0.5000

++
Process from Point/Station 20.010 to Point/Station 20.020
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 420.000(Ft.)
Top (of initial area) elevation = 2339.400(Ft.)
Bottom (of initial area) elevation = 2323.300(Ft.)
Difference in elevation = 16.100(Ft.)
Slope = 0.03833 s(percent)= 3.83
TC = k(0.336)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 7.226 min.
Rainfall intensity = 1.729(In/Hr) for a 2.0 year storm
MOBILE HOME PARK subarea type
Runoff Coefficient = 0.720
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 1) = 16.20
Pervious area fraction = 0.250; Impervious fraction = 0.750
Initial subarea runoff = 4.980(CFS)
Total initial stream area = 4.000(Ac.)
Pervious area fraction = 0.250

++
Process from Point/Station 20.020 to Point/Station 20.030
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****

Post Project
2yr Peak Runoff

```
Upstream point/station elevation =  2317.300(Ft.)
Downstream point/station elevation =  2311.000(Ft.)
Pipe length  =   695.00(Ft.)   Manning's N = 0.014
No. of pipes = 1  Required pipe flow  =     4.980(CFS)
Nearest computed pipe diameter  =     15.00(In.)
Calculated individual pipe flow  =     4.980(CFS)
Normal flow depth in pipe =   10.84(In.)
Flow top width inside pipe =   13.43(In.)
Critical Depth =   10.86(In.)
Pipe flow velocity =      5.24(Ft/s)
Travel time through pipe =    2.21 min.
Time of concentration (TC) =     9.44 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       20.030 to Point/Station       20.030
**** SUBAREA FLOW ADDITION ****
------------------------------------------------------------------------------
COMMERCIAL subarea type
Runoff Coefficient = 0.826
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 1)  =  16.20
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =     9.44 min.
Rainfall intensity =      1.513(In/Hr) for a     2.0 year storm
Subarea runoff =      4.000(CFS) for      3.200(Ac.)
Total runoff =      8.980(CFS)      Total area =       7.200(Ac.)
End of computations, total study area =            7.20 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.183
Area averaged RI index number =  32.0
```

RCFC & WCD	SYNTHETIC UNIT HYDROGRAPH METHOD Unit Hydrograph and Effective Rain Calculation Form	Project: **First Lincoln Logistics -TPM 38437** Banning, CA	Date: 07-11-2022	Sheet 1 of 3

[1] Concentration Point	**1**	[2] Area Designation	**PreProject A**
[3] Drainage Area Sq Miles (THIS WORKSHEET in ACRES)	**7**	[4] Ultimate Discharge-CFS-HRS/IN (645*[3])	**n/a**
[5] Unit Time Minutes (SAMPLE 100% -200% of LAG)	**15**	[6] LAG Time Minutes (0.8*Tc)	**12.6**
[7] Unit Time-Percent of Lag (100*[5]/[6])	**n/a**	[8] S-Curve	**n/a**
[9] Storm Frequency & Duration (SAMPLE 100 year 3 Hour)	**2yr-24hr**	[10] Total Adjusted Storm Rain- INCHES	**2.81**
[11] Variable Loss Rate(AVG) - INCHES/HOUR	**n/a**	[12] Minimum Loss Rate (for VAR. LOSS) - IN/HR	**n/a**
[13] Constant Loss Rate - INCHES/HOUR (see note 1)	**0.597**	[14] Low Loss Rate- PERCENT	**90**

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]		[23]	[24]
	Unit time period	Time percent of LAG	Cumlative average percent of ultimate discharge	Distrib Graph percent	Unit Hydrograph CFS HRS/IN	Pattern Percent	Strom Rain IN/HR	LOSS RATE IN/HR		Effective Rain IN/HR	FLOW CFS
		[7] * [15]	(S-Graph)	[17]m-[17]m-1	([4]*[18])/100	(PL E-5.9)	60*[10]*[20]/100*[5]	Max	Low	[21]-[22]	[3]*[23]
							0.1124*[20]		[21]-(([21]*([14]/100))		[3]*[23]
1		**n/a**	**n/a**	**n/a**	**n/a**	0.2	0.022	0.597	0.020	0.002	0.0
2						0.3	0.034	0.597	0.030	0.004	0.0
3						0.3	0.034	0.597	0.030	0.004	0.0
4						0.4	0.045	0.597	0.040	0.005	0.0
5						0.3	0.034	0.597	0.030	0.004	0.0
6						0.3	0.034	0.597	0.030	0.004	0.0
7						0.3	0.034	0.597	0.030	0.004	0.0
8		**SHORTCUT METHOD**				0.4	0.045	0.597	0.040	0.005	0.0
9						0.4	0.045	0.597	0.040	0.005	0.0
10						0.4	0.045	0.597	0.040	0.005	0.0
11						0.5	0.056	0.597	0.051	0.005	0.0
12						0.5	0.056	0.597	0.051	0.005	0.0
13						0.5	0.056	0.597	0.051	0.005	0.0
14						0.5	0.056	0.597	0.051	0.005	0.0
15						0.5	0.056	0.597	0.051	0.005	0.0
16						0.6	0.067	0.597	0.061	0.006	0.0
17						0.6	0.067	0.597	0.061	0.006	0.0
18						0.7	0.079	0.597	0.071	0.008	0.1
19						0.7	0.079	0.597	0.071	0.008	0.1
20						0.8	0.090	0.597	0.081	0.009	0.1
21						0.6	0.067	0.597	0.061	0.006	0.0
22						0.7	0.079	0.597	0.071	0.008	0.1
23						0.8	0.090	0.597	0.081	0.009	0.1
24						0.8	0.090	0.597	0.081	0.009	0.1
25						0.9	0.101	0.597	0.091	0.010	0.1
26						0.9	0.101	0.597	0.091	0.010	0.1
27						1	0.112	0.597	0.101	0.011	0.1
28						1	0.112	0.597	0.101	0.011	0.1
29						1	0.112	0.597	0.101	0.011	0.1
30						1.1	0.124	0.597	0.111	0.013	0.1
31						1.2	0.135	0.597	0.121	0.014	0.1
32						1.3	0.146	0.597	0.132	0.014	0.1
33						1.5	0.169	0.597	0.152	0.017	0.1
34						1.5	0.169	0.597	0.152	0.017	0.1
35						1.6	0.180	0.597	0.162	0.018	0.1
36						1.7	0.191	0.597	0.172	0.019	0.1
37						1.9	0.214	0.597	0.192	0.022	0.2
38						2	0.225	0.597	0.202	0.023	0.2
39						2.1	0.236	0.597	0.212	0.024	0.2

RCFC & WCD	SYNTHETIC UNIT HYDROGRAPH METHOD Unit Hydrograph and Effective Rain Calculation Form	Project: **First Lincoln Logistics -TPM 38437** Banning, CA	Date: 07-11-2022	Sheet 2 of 3

[1] Concentration Point	**1**	[2] Area Designation	**PreProject A**
[3] Drainage Area Sq Miles (THIS WORKSHEET in ACRES)	**7**	[4] Ultimate Discharge-CFS-HRS/IN (645*[3])	**n/a**
[5] Unit Time Minutes (SAMPLE 100% -200% of LAG)	**15**	[6] LAG Time Minutes (0.8*Tc)	**12.6**
[7] Unit Time-Percent of Lag (100*[5]/[6])	**n/a**	[8] S-Curve	**n/a**
[9] Storm Frequency & Duration (SAMPLE 100 year 3 Hour)	**2yr-24hr**	[10] Total Adjusted Storm Rain- INCHES	**2.81**
[11] Variable Loss Rate(AVG) - INCHES/HOUR	**n/a**	[12] Minimum Loss Rate (for VAR. LOSS) - IN/HR	**n/a**
[13] Constant Loss Rate - INCHES/HOUR (see note 1)	**0.597**	[14] Low Loss Rate- PERCENT	**90**

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]		[23]	[24]
	Unit time period	Time percent of LAG	Cumlative average percent of ultimate discharge	Distrib Graph percent	Unit Hydrograph CFS HRS/IN	Pattern Percent	Strom Rain IN/HR	LOSS RATE IN/HR		Effective Rain IN/HR	FLOW CFS
		[7] * [15]	(S-Graph)	[17]m-[17]m-1	([4]*[18])/100	(PL E-5.9)	60*[10]*[20]/100*[5]	Max	Low	[21]-[22]	[3]*[23]
							0.1124*[20]		[21]-(([21]*([14]/100))		[3]*[23]
40						2.2	0.247	0.597	0.223	0.024	0.2
41						1.5	0.169	0.597	0.152	0.017	0.1
42						1.5	0.169	0.597	0.152	0.017	0.1
43						2	0.225	0.597	0.202	0.023	0.2
44						2	0.225	0.597	0.202	0.023	0.2
45						1.9	0.214	0.597	0.192	0.022	0.2
46						1.9	0.214	0.597	0.192	0.022	0.2
47						1.7	0.191	0.597	0.172	0.019	0.1
48						1.8	0.202	0.597	0.182	0.020	0.1
49						2.5	0.281	0.597	0.253	0.028	0.2
50						2.6	0.292	0.597	0.263	0.029	0.2
51						2.8	0.315	0.597	0.283	0.032	0.2
52						2.9	0.326	0.597	0.293	0.033	0.2
53						3.4	0.382	0.597	0.344	0.038	0.3
54						3.4	0.382	0.597	0.344	0.038	0.3
55						2.3	0.259	0.597	0.233	0.026	0.2
56						2.3	0.259	0.597	0.233	0.026	0.2
57						2.7	0.303	0.597	0.273	0.030	0.2
58						2.6	0.292	0.597	0.263	0.029	0.2
59						2.6	0.292	0.597	0.263	0.029	0.2
60						2.5	0.281	0.597	0.253	0.028	0.2
61						2.4	0.270	0.597	0.243	0.027	0.2
62						2.3	0.259	0.597	0.233	0.026	0.2
63						1.9	0.214	0.597	0.192	0.022	0.2
64						1.9	0.214	0.597	0.192	0.022	0.2
65						0.4	0.045	0.597	0.040	0.005	0.0
66						0.4	0.045	0.597	0.040	0.005	0.0
67						0.3	0.034	0.597	0.030	0.004	0.0
68						0.3	0.034	0.597	0.030	0.004	0.0
69						0.5	0.056	0.597	0.051	0.005	0.0
70						0.5	0.056	0.597	0.051	0.005	0.0
71						0.5	0.056	0.597	0.051	0.005	0.0
72						0.4	0.045	0.597	0.040	0.005	0.0
73						0.4	0.045	0.597	0.040	0.005	0.0
74						0.4	0.045	0.597	0.040	0.005	0.0
75						0.3	0.034	0.597	0.030	0.004	0.0
76						0.2	0.022	0.597	0.020	0.002	0.0
77						0.3	0.034	0.597	0.030	0.004	0.0
78						0.4	0.045	0.597	0.040	0.005	0.0

RCFC & WCD	SYNTHETIC UNIT HYDROGRAPH METHOD Unit Hydrograph and Effective Rain Calculation Form	Project: **First Lincoln Logistics -TPM 38437** Banning, CA	Date: 07-11-2022	Sheet 1 of 3

[1] Concentration Point	1	[2] Area Designation	PreProject A
[3] Drainage Area Sq Miles (THIS WORKSHEET in ACRES)	7	[4] Ultimate Discharge-CFS-HRS/IN (645*[3])	n/a
[5] Unit Time Minutes (SAMPLE 100% -200% of LAG)	15	[6] LAG Time Minutes (0.8*Tc)	12.6
[7] Unit Time-Percent of Lag (100*[5]/[6])	n/a	[8] S-Curve	n/a
[9] Storm Frequency & Duration (SAMPLE 100 year 3 Hour)	2yr-24hr	[10] Total Adjusted Storm Rain- INCHES	2.81
[11] Variable Loss Rate(AVG) - INCHES/HOUR	n/a	[12] Minimum Loss Rate (for VAR. LOSS) - IN/HR	n/a
[13] Constant Loss Rate - INCHES/HOUR (see note 1)	0.597	[14] Low Loss Rate- PERCENT	90

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]		[23]	[24]
	Unit time period	Time percent of LAG	Cumlative average percent of ultimate discharge	Distrib Graph percent	Unit Hydrograph CFS HRS/IN	Pattern Percent	Strom Rain IN/HR	LOSS RATE IN/HR		Effective Rain IN/HR	FLOW CFS
		[7] * [15]	(S-Graph)	[17]m-[17]m-1	([4]*[18])/100	(PL E-5.9)	60*[10]*[20]/100*[5]	Max	Low	[21]-[22]	[3]*[23]
							0.1124*[20]		[21]-(([21]*([14]/100))		[3]*[23]
79						0.3	0.034	0.597	0.030	0.004	0.0
80						0.2	0.022	0.597	0.020	0.002	0.0
81						0.3	0.034	0.597	0.030	0.004	0.0
82						0.3	0.034	0.597	0.030	0.004	0.0
83						0.3	0.034	0.597	0.030	0.004	0.0
84						0.2	0.022	0.597	0.020	0.002	0.0
85						0.3	0.034	0.597	0.030	0.004	0.0
86						0.2	0.022	0.597	0.020	0.002	0.0
87						0.3	0.034	0.597	0.030	0.004	0.0
88						0.2	0.022	0.597	0.020	0.002	0.0
89						0.3	0.034	0.597	0.030	0.004	0.0
90						0.2	0.022	0.597	0.020	0.002	0.0
91						0.2	0.022	0.597	0.020	0.002	0.0
92						0.2	0.022	0.597	0.020	0.002	0.0
93						0.2	0.022	0.597	0.020	0.002	0.0
94						0.2	0.022	0.597	0.020	0.002	0.0
95						0.2	0.022	0.597	0.020	0.002	0.0
96						0.2	0.022	0.597	0.020	0.002	0.0
						100			SUM	1.13	

Notes:

1. Fp obtained from Plate E-6.2; Loss Rate (F) from page E-8
where F=Fp if 100 percent pervious cover

Effective Rain= Sum[23] * Unit Time (HRS)
= 1.133*(15/60)= 1.133*0.25
= **0.28** **INCHES**

Flood Volume = Effective Rain * Area
= 0.28*(1/12)*7 ACRES
0.17 **ACRE-FEET**

Plate E-2.2

RCFC & WCD	SYNTHETIC UNIT HYDROGRAPH METHOD Unit Hydrograph and Effective Rain Calculation Form	Project: **First Lincoln Logistics -TPM 38437** Banning, CA	Date: 05-13-2022	Sheet 1 of 3

[1] Concentration Point	**1**	[2] Area Designation	**Post Project A**
[3] Drainage Area Sq Miles (THIS WORKSHEET in ACRES)	**7.2**	[4] Ultimate Discharge-CFS-HRS/IN (645*[3])	**n/a**
[5] Unit Time Minutes (SAMPLE 100% -200% of LAG)	**15**	[6] LAG Time Minutes (0.8*Tc)	**7.5**
[7] Unit Time-Percent of Lag (100*[5]/[6])	**n/a**	[8] S-Curve	**n/a**
[9] Storm Frequency & Duration (SAMPLE 100 year 3 Hour)	**2yr-24hr**	[10] Total Adjusted Storm Rain- INCHES	**2.81**
[11] Variable Loss Rate(AVG) - INCHES/HOUR	**n/a**	[12] Minimum Loss Rate (for VAR. LOSS) - IN/HR	**n/a**
[13] Constant Loss Rate - INCHES/HOUR (see note 1)	**0.23**	[14] Low Loss Rate- PERCENT	**80**

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]		[23]	[24]
	Unit time period	Time percent of LAG	Cumlative average percent of ultimate discharge	Distrib Graph percent	Unit Hydrograph CFS HRS/IN	Pattern Percent	Strom Rain IN/HR	LOSS RATE IN/HR		Effective Rain IN/HR	FLOW CFS
		[7] * [15]	(S-Graph)	[17]m-[17]m-1	([4]*[18])/100	(PL E-5.9)	60*[10]*[20]/100*[5]	Max	Low	[21]-[22]	[3]*[23]
							0.1124*[20]		[21]-(([21]*([14]/100))		[3]*[23]
1		**n/a**	**n/a**	**n/a**	**n/a**	0.2	0.022	0.23	0.018	0.004	0.0
2						0.3	0.034	0.23	0.027	0.007	0.0
3						0.3	0.034	0.23	0.027	0.007	0.0
4						0.4	0.045	0.23	0.036	0.009	0.1
5						0.3	0.034	0.23	0.027	0.007	0.0
6						0.3	0.034	0.23	0.027	0.007	0.0
7						0.3	0.034	0.23	0.027	0.007	0.0
8		**SHORTCUT METHOD**				0.4	0.045	0.23	0.036	0.009	0.1
9						0.4	0.045	0.23	0.036	0.009	0.1
10						0.4	0.045	0.23	0.036	0.009	0.1
11						0.5	0.056	0.23	0.045	0.011	0.1
12						0.5	0.056	0.23	0.045	0.011	0.1
13						0.5	0.056	0.23	0.045	0.011	0.1
14						0.5	0.056	0.23	0.045	0.011	0.1
15						0.5	0.056	0.23	0.045	0.011	0.1
16						0.6	0.067	0.23	0.054	0.013	0.1
17						0.6	0.067	0.23	0.054	0.013	0.1
18						0.7	0.079	0.23	0.063	0.016	0.1
19						0.7	0.079	0.23	0.063	0.016	0.1
20						0.8	0.090	0.23	0.072	0.018	0.1
21						0.6	0.067	0.23	0.054	0.013	0.1
22						0.7	0.079	0.23	0.063	0.016	0.1
23						0.8	0.090	0.23	0.072	0.018	0.1
24						0.8	0.090	0.23	0.072	0.018	0.1
25						0.9	0.101	0.23	0.081	0.020	0.1
26						0.9	0.101	0.23	0.081	0.020	0.1
27						1	0.112	0.23	0.090	0.022	0.2
28						1	0.112	0.23	0.090	0.022	0.2
29						1	0.112	0.23	0.090	0.022	0.2
30						1.1	0.124	0.23	0.099	0.025	0.2
31						1.2	0.135	0.23	0.108	0.027	0.2
32						1.3	0.146	0.23	0.117	0.029	0.2
33						1.5	0.169	0.23	0.135	0.034	0.2
34						1.5	0.169	0.23	0.135	0.034	0.2
35						1.6	0.180	0.23	0.144	0.036	0.3
36						1.7	0.191	0.23	0.153	0.038	0.3
37						1.9	0.214	0.23	0.171	0.043	0.3
38						2	0.225	0.23	0.180	0.045	0.3
39						2.1	0.236	0.23		0.006	0.0

RCFC & WCD	SYNTHETIC UNIT HYDROGRAPH METHOD Unit Hydrograph and Effective Rain Calculation Form	Project: **First Lincoln Logistics -TPM 38437** Banning, CA	Date: 05-13-2022	Sheet 2 of 3

[1] Concentration Point	**1**	[2] Area Designation	**Post Project A**
[3] Drainage Area Sq Miles (THIS WORKSHEET in ACRES)	**7.2**	[4] Ultimate Discharge-CFS-HRS/IN (645*[3])	**n/a**
[5] Unit Time Minutes (SAMPLE 100% -200% of LAG)	**15**	[6] LAG Time Minutes (0.8*Tc)	**7.5**
[7] Unit Time-Percent of Lag (100*[5]/[6])	**n/a**	[8] S-Curve	**n/a**
[9] Storm Frequency & Duration (SAMPLE 100 year 3 Hour)	**2yr-24hr**	[10] Total Adjusted Storm Rain- INCHES	**2.81**
[11] Variable Loss Rate(AVG) - INCHES/HOUR	**n/a**	[12] Minimum Loss Rate (for VAR. LOSS) - IN/HR	**n/a**
[13] Constant Loss Rate - INCHES/HOUR (see note 1)	**0.23**	[14] Low Loss Rate- PERCENT	**80**

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]		[23]	[24]
	Unit time period	Time percent of LAG	Cumlative average percent of ultimate discharge	Distrib Graph percent	Unit Hydrograph CFS HRS/IN	Pattern Percent	Strom Rain IN/HR	LOSS RATE IN/HR		Effective Rain IN/HR	FLOW CFS
		[7] * [15]	(S-Graph)	[17]m-[17]m-1	([4]*[18])/100	(PL E-5.9)	60*[10]*[20]/100*[5]	Max	Low	[21]-[22]	[3]*[23]
							0.1124*[20]		[21]-(([21]*([14]/100))		[3]*[23]
40						2.2	0.247	0.23		0.017	0.1
41						1.5	0.169	0.23	0.135	0.034	0.2
42						1.5	0.169	0.23	0.135	0.034	0.2
43						2	0.225	0.23	0.180	0.045	0.3
44						2	0.225	0.23	0.180	0.045	0.3
45						1.9	0.214	0.23	0.171	0.043	0.3
46						1.9	0.214	0.23	0.171	0.043	0.3
47						1.7	0.191	0.23	0.153	0.038	0.3
48						1.8	0.202	0.23	0.162	0.040	0.3
49						2.5	0.281	0.23		0.051	0.4
50						2.6	0.292	0.23		0.062	0.4
51						2.8	0.315	0.23		0.085	0.6
52						2.9	0.326	0.23		0.096	0.7
53						3.4	0.382	0.23		0.152	1.1
54						3.4	0.382	0.23		0.152	1.1
55						2.3	0.259	0.23		0.029	0.2
56						2.3	0.259	0.23		0.029	0.2
57						2.7	0.303	0.23		0.073	0.5
58						2.6	0.292	0.23		0.062	0.4
59						2.6	0.292	0.23		0.062	0.4
60						2.5	0.281	0.23		0.051	0.4
61						2.4	0.270	0.23		0.040	0.3
62						2.3	0.259	0.23		0.029	0.2
63						1.9	0.214	0.23	0.171	0.043	0.3
64						1.9	0.214	0.23	0.171	0.043	0.3
65						0.4	0.045	0.23	0.036	0.009	0.1
66						0.4	0.045	0.23	0.036	0.009	0.1
67						0.3	0.034	0.23	0.027	0.007	0.0
68						0.3	0.034	0.23	0.027	0.007	0.0
69						0.5	0.056	0.23	0.045	0.011	0.1
70						0.5	0.056	0.23	0.045	0.011	0.1
71						0.5	0.056	0.23	0.045	0.011	0.1
72						0.4	0.045	0.23	0.036	0.009	0.1
73						0.4	0.045	0.23	0.036	0.009	0.1
74						0.4	0.045	0.23	0.036	0.009	0.1
75						0.3	0.034	0.23	0.027	0.007	0.0
76						0.2	0.022	0.23	0.018	0.004	0.0
77						0.3	0.034	0.23	0.027	0.007	0.0
78						0.4	0.045	0.23	0.036	0.009	0.1

RCFC & WCD	SYNTHETIC UNIT HYDROGRAPH METHOD Unit Hydrograph and Effective Rain Calculation Form	Project: **First Lincoln Logistics -TPM 38437** Banning, CA	Date: 05-13-2022	Sheet 3 of 3

[1] Concentration Point	**1**	[2] Area Designation	**Post Project A**
[3] Drainage Area Sq Miles (THIS WORKSHEET in ACRES)	**7.2**	[4] Ultimate Discharge-CFS-HRS/IN (645*[3])	**n/a**
[5] Unit Time Minutes (SAMPLE 100% -200% of LAG)	**15**	[6] LAG Time Minutes (0.8*Tc)	**7.5**
[7] Unit Time-Percent of Lag (100*[5]/[6])	**n/a**	[8] S-Curve	**n/a**
[9] Storm Frequency & Duration (SAMPLE 100 year 3 Hour)	**2yr-24hr**	[10] Total Adjusted Storm Rain- INCHES	**2.81**
[11] Variable Loss Rate(AVG) - INCHES/HOUR	**n/a**	[12] Minimum Loss Rate (for VAR. LOSS) - IN/HR	**n/a**
[13] Constant Loss Rate - INCHES/HOUR (see note 1)	**0.23**	[14] Low Loss Rate- PERCENT	**80**

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]		[23]	[24]
	Unit time period	Time percent of LAG	Cumlative average percent of ultimate discharge	Distrib Graph percent	Unit Hydrograph CFS HRS/IN	Pattern Percent	Strom Rain IN/HR	LOSS RATE IN/HR		Effective Rain IN/HR	FLOW CFS
		[7] * [15]	(S-Graph)	[17]m-[17]m-1	([4]*[18])/100	(PL E-5.9)	60*[10]*[20]/100*[5]	Max	Low	[21]-[22]	[3]*[23]
							0.1124*[20]		[21]-(([21]*([14]/100))		[3]*[23]
79						0.3	0.034	0.23	0.027	0.007	0.0
80						0.2	0.022	0.23	0.018	0.004	0.0
81						0.3	0.034	0.23	0.027	0.007	0.0
82						0.3	0.034	0.23	0.027	0.007	0.0
83						0.3	0.034	0.23	0.027	0.007	0.0
84						0.2	0.022	0.23	0.018	0.004	0.0
85						0.3	0.034	0.23	0.027	0.007	0.0
86						0.2	0.022	0.23	0.018	0.004	0.0
87						0.3	0.034	0.23	0.027	0.007	0.0
88						0.2	0.022	0.23	0.018	0.004	0.0
89						0.3	0.034	0.23	0.027	0.007	0.0
90						0.2	0.022	0.23	0.018	0.004	0.0
91						0.2	0.022	0.23	0.018	0.004	0.0
92						0.2	0.022	0.23	0.018	0.004	0.0
93						0.2	0.022	0.23	0.018	0.004	0.0
94						0.2	0.022	0.23	0.018	0.004	0.0
95						0.2	0.022	0.23	0.018	0.004	0.0
96						0.2	0.022	0.23	0.018	0.004	0.0
						100			SUM	2.26	

Notes:

1. Fp obtained from Plate E-6.2; Loss Rate (F) from page E-8
where F=Fp if 100 percent pervious cover

Effective Rain= Sum[23] * Unit Time (HRS)
= 2.26*(15/60)= 2.26*0.25
= **0.56** **INCHES**

Flood Volume = Effective Rain * Area
= 0.56*(1/12)*7.2 ACRES
0.34 **ACRE-FEET**

Plate E-2.2

Pre-project
10 year peak run-off

```
            Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
      Rational Hydrology Study        Date: 07/11/22  File:lin10yrprelimpre.out
------------------------------------------------------------------------
First Lincoln Logistics; Banning, CA
pre project TPM prelimiary
10yr jn2042611703
vadjr 07.11.2022
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 6026

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =   10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation =  0.600(In.)
100 year, 1 hour precipitation =  1.770(In.)

Storm event year =  10.0
Calculated rainfall intensity data:
1 hour intensity =  1.081(In/Hr)
Slope of intensity duration curve = 0.5300


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       10.010 to Point/Station       10.020
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------
Initial area flow distance =   785.000(Ft.)
Top (of initial area) elevation =  2339.400(Ft.)
Bottom (of initial area) elevation =  2318.500(Ft.)
Difference in elevation =    20.900(Ft.)
Slope =    0.02662  s(percent)=       2.66
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   15.746 min.
Rainfall intensity =      2.197(In/Hr) for a    10.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.693
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  67.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =     10.673(CFS)
Total initial stream area =        7.010(Ac.)
Pervious area fraction = 1.000
End of computations, total study area =            7.01 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  67.0
```

Post Project
10yr Peak Runoff

```
            Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
      Rational Hydrology Study        Date: 07/12/22  File:lin10yrprelimpost.out
------------------------------------------------------------------------
First Lincoln Logistics; Banning, CA
Post Project Preliminary Study
10yr preliminary post
vadjr 7.12.2022 jn: 2042611703
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 6026

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =   10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation =  0.600(In.)
100 year, 1 hour precipitation =  1.770(In.)

Storm event year =  10.0
Calculated rainfall intensity data:
1 hour intensity =  1.081(In/Hr)
Slope of intensity duration curve = 0.5300




++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       20.010 to Point/Station       20.020
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------
Initial area flow distance =   420.000(Ft.)
Top (of initial area) elevation =  2339.400(Ft.)
Bottom (of initial area) elevation =  2323.300(Ft.)
Difference in elevation =    16.100(Ft.)
Slope =    0.03833  s(percent)=       3.83
TC = k(0.336)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    7.226 min.
Rainfall intensity =      3.320(In/Hr) for a    10.0 year storm
MOBILE HOME PARK subarea type
Runoff Coefficient = 0.796
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  32.00
Pervious area fraction =  0.250; Impervious fraction =  0.750
Initial subarea runoff =     10.577(CFS)
Total initial stream area =        4.000(Ac.)
Pervious area fraction = 0.250


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       20.020 to Point/Station       20.030
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
```

Post Project
10yr Peak Runoff

```
Upstream point/station elevation =  2317.300(Ft.)
Downstream point/station elevation =  2311.000(Ft.)
Pipe length  =   695.00(Ft.)   Manning's N = 0.014
No. of pipes = 1  Required pipe flow  =    10.577(CFS)
Nearest computed pipe diameter  =     21.00(In.)
Calculated individual pipe flow  =    10.577(CFS)
Normal flow depth in pipe =   13.64(In.)
Flow top width inside pipe =   20.04(In.)
Critical Depth =   14.55(In.)
Pipe flow velocity =      6.40(Ft/s)
Travel time through pipe =    1.81 min.
Time of concentration (TC) =     9.04 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       20.030 to Point/Station       20.030
**** SUBAREA FLOW ADDITION ****
-------------------------------------------------------------------------------
COMMERCIAL subarea type
Runoff Coefficient = 0.856
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  32.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =     9.04 min.
Rainfall intensity =      2.949(In/Hr) for a    10.0 year storm
Subarea runoff =      8.078(CFS) for      3.200(Ac.)
Total runoff =     18.654(CFS)      Total area =       7.200(Ac.)
End of computations, total study area =            7.20 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.183
Area averaged RI index number =  32.0
```

RCFC & WCD	SYNTHETIC UNIT HYDROGRAPH METHOD Unit Hydrograph and Effective Rain Calculation Form	Project: **First Lincoln Logistics -TPM 38437** Banning, CA	Date: 07-11-2022	Sheet 1 of 3

[1] Concentration Point	**1**	[2] Area Designation	**PreProject A**
[3] Drainage Area Sq Miles (THIS WORKSHEET in ACRES)	**7**	[4] Ultimate Discharge-CFS-HRS/IN (645*[3])	**n/a**
[5] Unit Time Minutes (SAMPLE 100% -200% of LAG)	**15**	[6] LAG Time Minutes (0.8*Tc)	**12.6**
[7] Unit Time-Percent of Lag (100*[5]/[6])	**n/a**	[8] S-Curve	**n/a**
[9] Storm Frequency & Duration (SAMPLE 100 year 3 Hour)	**10yr-24hr**	[10] Total Adjusted Storm Rain- INCHES	**4.45**
[11] Variable Loss Rate(AVG) - INCHES/HOUR	**n/a**	[12] Minimum Loss Rate (for VAR. LOSS) - IN/HR	**n/a**
[13] Constant Loss Rate - INCHES/HOUR (see note 1)	**0.38**	[14] Low Loss Rate- PERCENT	**90**

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]		[23]	[24]
	Unit time period	Time percent of LAG	Cumlative average percent of ultimate discharge	Distrib Graph percent	Unit Hydrograph CFS HRS/IN	Pattern Percent	Strom Rain IN/HR	LOSS RATE IN/HR		Effective Rain IN/HR	FLOW CFS
		[7] * [15]	(S-Graph)	[17]m-[17]m-1	([4]*[18])/100	(PL E-5.9)	60*[10]*[20]/100*[5]	Max	Low	[21]-[22]	[3]*[23]
							0.178*[20]		[21]-(([21]*([14]/100))		[3]*[23]
1		**n/a**	**n/a**	**n/a**	**n/a**	0.2	0.036	0.38	0.032	0.004	0.0
2						0.3	0.053	0.38	0.048	0.005	0.0
3						0.3	0.053	0.38	0.048	0.005	0.0
4						0.4	0.071	0.38	0.064	0.007	0.1
5						0.3	0.053	0.38	0.048	0.005	0.0
6						0.3	0.053	0.38	0.048	0.005	0.0
7						0.3	0.053	0.38	0.048	0.005	0.0
8		**SHORTCUT METHOD**				0.4	0.071	0.38	0.064	0.007	0.1
9						0.4	0.071	0.38	0.064	0.007	0.1
10						0.4	0.071	0.38	0.064	0.007	0.1
11						0.5	0.089	0.38	0.080	0.009	0.1
12						0.5	0.089	0.38	0.080	0.009	0.1
13						0.5	0.089	0.38	0.080	0.009	0.1
14						0.5	0.089	0.38	0.080	0.009	0.1
15						0.5	0.089	0.38	0.080	0.009	0.1
16						0.6	0.107	0.38	0.096	0.011	0.1
17						0.6	0.107	0.38	0.096	0.011	0.1
18						0.7	0.125	0.38	0.112	0.013	0.1
19						0.7	0.125	0.38	0.112	0.013	0.1
20						0.8	0.142	0.38	0.128	0.014	0.1
21						0.6	0.107	0.38	0.096	0.011	0.1
22						0.7	0.125	0.38	0.112	0.013	0.1
23						0.8	0.142	0.38	0.128	0.014	0.1
24						0.8	0.142	0.38	0.128	0.014	0.1
25						0.9	0.160	0.38	0.144	0.016	0.1
26						0.9	0.160	0.38	0.144	0.016	0.1
27						1	0.178	0.38	0.160	0.018	0.1
28						1	0.178	0.38	0.160	0.018	0.1
29						1	0.178	0.38	0.160	0.018	0.1
30						1.1	0.196	0.38	0.176	0.020	0.1
31						1.2	0.214	0.38	0.192	0.022	0.2
32						1.3	0.231	0.38	0.208	0.023	0.2
33						1.5	0.267	0.38	0.240	0.027	0.2
34						1.5	0.267	0.38	0.240	0.027	0.2
35						1.6	0.285	0.38	0.256	0.029	0.2
36						1.7	0.303	0.38	0.272	0.031	0.2
37						1.9	0.338	0.38	0.304	0.034	0.2
38						2	0.356	0.38	0.320	0.036	0.3
39						2.1	0.374	0.38	0.336	0.038	0.3

RCFC & WCD	SYNTHETIC UNIT HYDROGRAPH METHOD Unit Hydrograph and Effective Rain Calculation Form	Project:	Date: 07-11-2022	Sheet
		First Lincoln Logistics -TPM 38437		2 of 3
		Banning, CA		

[1] Concentration Point	**1**	[2] Area Designation	**PreProject A**
[3] Drainage Area Sq Miles (THIS WORKSHEET in ACRES)	**7**	[4] Ultimate Discharge-CFS-HRS/IN (645*[3])	**n/a**
[5] Unit Time Minutes (SAMPLE 100% -200% of LAG)	**15**	[6] LAG Time Minutes (0.8*Tc)	**12.6**
[7] Unit Time-Percent of Lag (100*[5]/[6])	**n/a**	[8] S-Curve	**n/a**
[9] Storm Frequency & Duration (SAMPLE 100 year 3 Hour)	**10yr-24hr**	[10] Total Adjusted Storm Rain- INCHES	**4.45**
[11] Variable Loss Rate(AVG) - INCHES/HOUR	**n/a**	[12] Minimum Loss Rate (for VAR. LOSS) - IN/HR	**n/a**
[13] Constant Loss Rate - INCHES/HOUR (see note 1)	**0.38**	[14] Low Loss Rate- PERCENT	**90**

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]		[23]	[24]
	Unit time period	Time percent of LAG	Cumlative average percent of ultimate discharge	Distrib Graph percent	Unit Hydrograph CFS HRS/IN	Pattern Percent	Strom Rain IN/HR	LOSS RATE IN/HR		Effective Rain IN/HR	FLOW CFS
		[7] * [15]	(S-Graph)	[17]m-[17]m-1	([4]*[18])/100	(PL E-5.9)	60*[10]*[20]/100*[5]	Max	Low	[21]-[22]	[3]*[23]
							0.178*[20]		[21]-(([21]*([14]/100))		[3]*[23]
40						2.2	0.392	0.38		0.012	0.1
41						1.5	0.267	0.38	0.240	0.027	0.2
42						1.5	0.267	0.38	0.240	0.027	0.2
43						2	0.356	0.38	0.320	0.036	0.3
44						2	0.356	0.38	0.320	0.036	0.3
45						1.9	0.338	0.38	0.304	0.034	0.2
46						1.9	0.338	0.38	0.304	0.034	0.2
47						1.7	0.303	0.38	0.272	0.031	0.2
48						1.8	0.320	0.38	0.288	0.032	0.2
49						2.5	0.445	0.38		0.065	0.5
50						2.6	0.463	0.38		0.083	0.6
51						2.8	0.498	0.38		0.118	0.8
52						2.9	0.516	0.38		0.136	1.0
53						3.4	0.605	0.38		0.225	1.6
54						3.4	0.605	0.38		0.225	1.6
55						2.3	0.409	0.38		0.029	0.2
56						2.3	0.409	0.38		0.029	0.2
57						2.7	0.481	0.38		0.101	0.7
58						2.6	0.463	0.38		0.083	0.6
59						2.6	0.463	0.38		0.083	0.6
60						2.5	0.445	0.38		0.065	0.5
61						2.4	0.427	0.38		0.047	0.3
62						2.3	0.409	0.38		0.029	0.2
63						1.9	0.338	0.38	0.304	0.034	0.2
64						1.9	0.338	0.38	0.304	0.034	0.2
65						0.4	0.071	0.38	0.064	0.007	0.1
66						0.4	0.071	0.38	0.064	0.007	0.1
67						0.3	0.053	0.38	0.048	0.005	0.0
68						0.3	0.053	0.38	0.048	0.005	0.0
69						0.5	0.089	0.38	0.080	0.009	0.1
70						0.5	0.089	0.38	0.080	0.009	0.1
71						0.5	0.089	0.38	0.080	0.009	0.1
72						0.4	0.071	0.38	0.064	0.007	0.1
73						0.4	0.071	0.38	0.064	0.007	0.1
74						0.4	0.071	0.38	0.064	0.007	0.1
75						0.3	0.053	0.38	0.048	0.005	0.0
76						0.2	0.036	0.38	0.032	0.004	0.0
77						0.3	0.053	0.38	0.048	0.005	0.0
78						0.4	0.071	0.38	0.064	0.007	0.1

RCFC & WCD	SYNTHETIC UNIT HYDROGRAPH METHOD Unit Hydrograph and Effective Rain Calculation Form	Project: **First Lincoln Logistics -TPM 38437** Banning, CA	Date: 07-11-2022	Sheet 3 of 3

[1] Concentration Point	**1**	[2] Area Designation	**PreProject A**
[3] Drainage Area Sq Miles (THIS WORKSHEET in ACRES)	**7**	[4] Ultimate Discharge-CFS-HRS/IN (645*[3])	**n/a**
[5] Unit Time Minutes (SAMPLE 100% -200% of LAG)	**15**	[6] LAG Time Minutes (0.8*Tc)	**12.6**
[7] Unit Time-Percent of Lag (100*[5]/[6])	**n/a**	[8] S-Curve	**n/a**
[9] Storm Frequency & Duration (SAMPLE 100 year 3 Hour)	**10yr-24hr**	[10] Total Adjusted Storm Rain- INCHES	**4.45**
[11] Variable Loss Rate(AVG) - INCHES/HOUR	**n/a**	[12] Minimum Loss Rate (for VAR. LOSS) - IN/HR	**n/a**
[13] Constant Loss Rate - INCHES/HOUR (see note 1)	**0.38**	[14] Low Loss Rate- PERCENT	**90**

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]		[23]	[24]
	Unit time period	Time percent of LAG	Cumlative average percent of ultimate discharge	Distrib Graph percent	Unit Hydrograph CFS HRS/IN	Pattern Percent	Strom Rain IN/HR	LOSS RATE IN/HR		Effective Rain IN/HR	FLOW CFS
		[7] * [15]	(S-Graph)	[17]m-[17]m-1	([4]*[18])/100	(PL E-5.9)	60*[10]*[20]/100*[5]	Max	Low	[21]-[22]	[3]*[23]
							0.178*[20]		[21]-(([21]*([14]/100))		[3]*[23]
79						0.3	0.053	0.38	0.048	0.005	0.0
80						0.2	0.036	0.38	0.032	0.004	0.0
81						0.3	0.053	0.38	0.048	0.005	0.0
82						0.3	0.053	0.38	0.048	0.005	0.0
83						0.3	0.053	0.38	0.048	0.005	0.0
84						0.2	0.036	0.38	0.032	0.004	0.0
85						0.3	0.053	0.38	0.048	0.005	0.0
86						0.2	0.036	0.38	0.032	0.004	0.0
87						0.3	0.053	0.38	0.048	0.005	0.0
88						0.2	0.036	0.38	0.032	0.004	0.0
89						0.3	0.053	0.38	0.048	0.005	0.0
90						0.2	0.036	0.38	0.032	0.004	0.0
91						0.2	0.036	0.38	0.032	0.004	0.0
92						0.2	0.036	0.38	0.032	0.004	0.0
93						0.2	0.036	0.38	0.032	0.004	0.0
94						0.2	0.036	0.38	0.032	0.004	0.0
95						0.2	0.036	0.38	0.032	0.004	0.0
96						0.2	0.036	0.38	0.032	0.004	0.0
						100			SUM	2.49	

Notes:

1. Fp obtained from Plate E-6.2; Loss Rate (F) from page E-8
where F=Fp if 100 percent pervious cover

Effective Rain= Sum[23] * Unit Time (HRS)
= 2.49*(15/60)= 2.49*0.25
= **0.62** **INCHES**

Flood Volume = Effective Rain * Area
= 0.62*(1/12)*7 ACRES
0.36 **ACRE-FEET**

Plate E-2.2

RCFC & WCD	SYNTHETIC UNIT HYDROGRAPH METHOD Unit Hydrograph and Effective Rain Calculation Form	Project: **First Lincoln Logistics -TPM 38437** Banning, CA	Date: 05-13-2022	Sheet 1 of 3

[1] Concentration Point	**1**	[2] Area Designation	**Post-Project A**
[3] Drainage Area Sq Miles (THIS WORKSHEET in ACRES)	**7.2**	[4] Ultimate Discharge-CFS-HRS/IN (645*[3])	**n/a**
[5] Unit Time Minutes (SAMPLE 100% -200% of LAG)	**15**	[6] LAG Time Minutes (0.8*Tc)	**7.2**
[7] Unit Time-Percent of Lag (100*[5]/[6])	**n/a**	[8] S-Curve	**n/a**
[9] Storm Frequency & Duration (SAMPLE 100 year 3 Hour)	**10yr-24hr**	[10] Total Adjusted Storm Rain- INCHES	**4.45**
[11] Variable Loss Rate(AVG) - INCHES/HOUR	**n/a**	[12] Minimum Loss Rate (for VAR. LOSS) - IN/HR	**n/a**
[13] Constant Loss Rate - INCHES/HOUR (see note 1)	**0.196**	[14] Low Loss Rate- PERCENT	**80**

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]		[23]	[24]
	Unit time period	Time percent of LAG	Cumlative average percent of ultimate discharge	Distrib Graph percent	Unit Hydrograph CFS HRS/IN	Pattern Percent	Strom Rain IN/HR	LOSS RATE IN/HR		Effective Rain IN/HR	FLOW CFS
		[7] * [15]	(S-Graph)	[17]m-[17]m-1	([4]*[18])/100	(PL E-5.9)	60*[10]*[20]/100*[5]	Max	Low	[21]-[22]	[3]*[23]
							0.178*[20]		[21]-(([21]*([14]/100))		[3]*[23]
1		**n/a**	**n/a**	**n/a**	**n/a**	0.2	0.036	0.196	0.029	0.007	0.1
2						0.3	0.053	0.196	0.042	0.011	0.1
3						0.3	0.053	0.196	0.042	0.011	0.1
4						0.4	0.071	0.196	0.057	0.014	0.1
5						0.3	0.053	0.196	0.042	0.011	0.1
6						0.3	0.053	0.196	0.042	0.011	0.1
7						0.3	0.053	0.196	0.042	0.011	0.1
8		**SHORTCUT METHOD**				0.4	0.071	0.196	0.057	0.014	0.1
9						0.4	0.071	0.196	0.057	0.014	0.1
10						0.4	0.071	0.196	0.057	0.014	0.1
11						0.5	0.089	0.196	0.071	0.018	0.1
12						0.5	0.089	0.196	0.071	0.018	0.1
13						0.5	0.089	0.196	0.071	0.018	0.1
14						0.5	0.089	0.196	0.071	0.018	0.1
15						0.5	0.089	0.196	0.071	0.018	0.1
16						0.6	0.107	0.196	0.086	0.021	0.2
17						0.6	0.107	0.196	0.086	0.021	0.2
18						0.7	0.125	0.196	0.100	0.025	0.2
19						0.7	0.125	0.196	0.100	0.025	0.2
20						0.8	0.142	0.196	0.114	0.028	0.2
21						0.6	0.107	0.196	0.086	0.021	0.2
22						0.7	0.125	0.196	0.100	0.025	0.2
23						0.8	0.142	0.196	0.114	0.028	0.2
24						0.8	0.142	0.196	0.114	0.028	0.2
25						0.9	0.160	0.196	0.128	0.032	0.2
26						0.9	0.160	0.196	0.128	0.032	0.2
27						1	0.178	0.196	0.142	0.036	0.3
28						1	0.178	0.196	0.142	0.036	0.3
29						1	0.178	0.196	0.142	0.036	0.3
30						1.1	0.196	0.196		0.000	0.0
31						1.2	0.214	0.196		0.018	0.1
32						1.3	0.231	0.196		0.035	0.3
33						1.5	0.267	0.196		0.071	0.5
34						1.5	0.267	0.196		0.071	0.5
35						1.6	0.285	0.196		0.089	0.6
36						1.7	0.303	0.196		0.107	0.8
37						1.9	0.338	0.196		0.142	1.0
38						2	0.356	0.196		0.160	1.2
39						2.1	0.374	0.196		0.178	1.3

RCFC & WCD	SYNTHETIC UNIT HYDROGRAPH METHOD Unit Hydrograph and Effective Rain Calculation Form	Project:	Date: 05-13-2022	Sheet
		First Lincoln Logistics -TPM 38437		2 of 3
		Banning, CA		

[1] Concentration Point	**1**	[2] Area Designation	**Post-Project A**
[3] Drainage Area Sq Miles (THIS WORKSHEET in ACRES)	**7.2**	[4] Ultimate Discharge-CFS-HRS/IN (645*[3])	**n/a**
[5] Unit Time Minutes (SAMPLE 100% -200% of LAG)	**15**	[6] LAG Time Minutes (0.8*Tc)	**7.2**
[7] Unit Time-Percent of Lag (100*[5]/[6])	**n/a**	[8] S-Curve	**n/a**
[9] Storm Frequency & Duration (SAMPLE 100 year 3 Hour)	**10yr-24hr**	[10] Total Adjusted Storm Rain- INCHES	**4.45**
[11] Variable Loss Rate(AVG) - INCHES/HOUR	**n/a**	[12] Minimum Loss Rate (for VAR. LOSS) - IN/HR	**n/a**
[13] Constant Loss Rate - INCHES/HOUR (see note 1)	**0.196**	[14] Low Loss Rate- PERCENT	**80**

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]		[23]	[24]
	Unit time period	Time percent of LAG	Cumlative average percent of ultimate discharge	Distrib Graph percent	Unit Hydrograph CFS HRS/IN	Pattern Percent	Strom Rain IN/HR	LOSS RATE IN/HR		Effective Rain IN/HR	FLOW CFS
		[7] * [15]	(S-Graph)	[17]m-[17]m-1	([4]*[18])/100	(PL E-5.9)	60*[10]*[20]/100*[5]	Max	Low	[21]-[22]	[3]*[23]
							0.178*[20]		[21]-(([21]*([14]/100))		[3]*[23]
40						2.2	0.392	0.196		0.196	1.4
41						1.5	0.267	0.196		0.071	0.5
42						1.5	0.267	0.196		0.071	0.5
43						2	0.356	0.196		0.160	1.2
44						2	0.356	0.196		0.160	1.2
45						1.9	0.338	0.196		0.142	1.0
46						1.9	0.338	0.196		0.142	1.0
47						1.7	0.303	0.196		0.107	0.8
48						1.8	0.320	0.196		0.124	0.9
49						2.5	0.445	0.196		0.249	1.8
50						2.6	0.463	0.196		0.267	1.9
51						2.8	0.498	0.196		0.302	2.2
52						2.9	0.516	0.196		0.320	2.3
53						3.4	0.605	0.196		0.409	2.9
54						3.4	0.605	0.196		0.409	2.9
55						2.3	0.409	0.196		0.213	1.5
56						2.3	0.409	0.196		0.213	1.5
57						2.7	0.481	0.196		0.285	2.1
58						2.6	0.463	0.196		0.267	1.9
59						2.6	0.463	0.196		0.267	1.9
60						2.5	0.445	0.196		0.249	1.8
61						2.4	0.427	0.196		0.231	1.7
62						2.3	0.409	0.196		0.213	1.5
63						1.9	0.338	0.196		0.142	1.0
64						1.9	0.338	0.196		0.142	1.0
65						0.4	0.071	0.196	0.057	0.014	0.1
66						0.4	0.071	0.196	0.057	0.014	0.1
67						0.3	0.053	0.196	0.042	0.011	0.1
68						0.3	0.053	0.196	0.042	0.011	0.1
69						0.5	0.089	0.196	0.071	0.018	0.1
70						0.5	0.089	0.196	0.071	0.018	0.1
71						0.5	0.089	0.196	0.071	0.018	0.1
72						0.4	0.071	0.196	0.057	0.014	0.1
73						0.4	0.071	0.196	0.057	0.014	0.1
74						0.4	0.071	0.196	0.057	0.014	0.1
75						0.3	0.053	0.196	0.042	0.011	0.1
76						0.2	0.036	0.196	0.029	0.007	0.1
77						0.3	0.053	0.196	0.042	0.011	0.1
78						0.4	0.071	0.196	0.057	0.014	0.1

RCFC & WCD	SYNTHETIC UNIT HYDROGRAPH METHOD Unit Hydrograph and Effective Rain Calculation Form	Project: **First Lincoln Logistics -TPM 38437** Banning, CA	Date: 05-13-2022	Sheet 3 of 3

[1] Concentration Point	**1**	[2] Area Designation	**Post-Project A**
[3] Drainage Area Sq Miles (THIS WORKSHEET in ACRES)	**7.2**	[4] Ultimate Discharge-CFS-HRS/IN (645*[3])	**n/a**
[5] Unit Time Minutes (SAMPLE 100% -200% of LAG)	**15**	[6] LAG Time Minutes (0.8*Tc)	**7.2**
[7] Unit Time-Percent of Lag (100*[5]/[6])	**n/a**	[8] S-Curve	**n/a**
[9] Storm Frequency & Duration (SAMPLE 100 year 3 Hour)	**10yr-24hr**	[10] Total Adjusted Storm Rain- INCHES	**4.45**
[11] Variable Loss Rate(AVG) - INCHES/HOUR	**n/a**	[12] Minimum Loss Rate (for VAR. LOSS) - IN/HR	**n/a**
[13] Constant Loss Rate - INCHES/HOUR (see note 1)	**0.196**	[14] Low Loss Rate- PERCENT	**80**

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]		[23]	[24]
	Unit time period	Time percent of LAG	Cumlative average percent of ultimate discharge	Distrib Graph percent	Unit Hydrograph CFS HRS/IN	Pattern Percent	Strom Rain IN/HR	LOSS RATE IN/HR		Effective Rain IN/HR	FLOW CFS
		[7] * [15]	(S-Graph)	[17]m-[17]m-1	([4]*[18])/100	(PL E-5.9)	60*[10]*[20]/100*[5]	Max	Low	[21]-[22]	[3]*[23]
							0.178*[20]		[21]-(([21]*([14]/100))		[3]*[23]
79						0.3	0.053	0.196	0.042	0.011	0.1
80						0.2	0.036	0.196	0.029	0.007	0.1
81						0.3	0.053	0.196	0.042	0.011	0.1
82						0.3	0.053	0.196	0.042	0.011	0.1
83						0.3	0.053	0.196	0.042	0.011	0.1
84						0.2	0.036	0.196	0.029	0.007	0.1
85						0.3	0.053	0.196	0.042	0.011	0.1
86						0.2	0.036	0.196	0.029	0.007	0.1
87						0.3	0.053	0.196	0.042	0.011	0.1
88						0.2	0.036	0.196	0.029	0.007	0.1
89						0.3	0.053	0.196	0.042	0.011	0.1
90						0.2	0.036	0.196	0.029	0.007	0.1
91						0.2	0.036	0.196	0.029	0.007	0.1
92						0.2	0.036	0.196	0.029	0.007	0.1
93						0.2	0.036	0.196	0.029	0.007	0.1
94						0.2	0.036	0.196	0.029	0.007	0.1
95						0.2	0.036	0.196	0.029	0.007	0.1
96						0.2	0.036	0.196	0.029	0.007	0.1
						100			SUM	7.20	

Notes:

1. Fp obtained from Plate E-6.2; Loss Rate (F) from page E-8
where F=Fp if 100 percent pervious cover

Effective Rain= Sum[23] * Unit Time (HRS)
= 7.2*(15/60)= 7.2*0.25
= **1.80** **INCHES**

Flood Volume = Effective Rain * Area
= 1.8*(1/12)*7.2 ACRES
1.08 **ACRE-FEET**

Plate E-2.2

Prevailing Chamber Volume

1.08 ac-ft - 0.36 ac-ft = 0.72 ac-ft = 31,400 cu.ft.

Pre-project
100 year peak run-off

```
            Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
      Rational Hydrology Study        Date: 07/11/22  File:lin100yrtpmpre.out
------------------------------------------------------------------------
First Lincoln Logistics; Banning, CA
Pre Project Preliminary Model
100yr TPM preliminary study
vadjr 07.11.2022
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 6026

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =  100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation =  0.600(In.)
100 year, 1 hour precipitation =  1.770(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity =  1.770(In/Hr)
Slope of intensity duration curve = 0.5300


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       10.010 to Point/Station       10.020
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------
Initial area flow distance =   785.000(Ft.)
Top (of initial area) elevation =  2339.400(Ft.)
Bottom (of initial area) elevation =  2318.500(Ft.)
Difference in elevation =    20.900(Ft.)
Slope =    0.02662  s(percent)=       2.66
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   15.746 min.
Rainfall intensity =      3.597(In/Hr) for a   100.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.761
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  67.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =     19.188(CFS)
Total initial stream area =        7.010(Ac.)
Pervious area fraction = 1.000
End of computations, total study area =            7.01 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  67.0
```

Post Project
100yr Peak Runoff

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
Rational Hydrology Study Date: 07/12/22 File:lin100yrtpmpost.out

---

First Lincoln Logistics; Banning, CA
Post Project Preliminary Study
100 year 2042611703
vadjr 7.12.2022

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 6026

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.600(In.)
100 year, 1 hour precipitation = 1.770(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.770(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 20.010 to Point/Station 20.020
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 420.000(Ft.)
Top (of initial area) elevation = 2339.400(Ft.)
Bottom (of initial area) elevation = 2323.300(Ft.)
Difference in elevation = 16.100(Ft.)
Slope = 0.03833 s(percent)= 3.83
TC = k(0.336)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 7.226 min.
Rainfall intensity = 5.435(In/Hr) for a 100.0 year storm
MOBILE HOME PARK subarea type
Runoff Coefficient = 0.823
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 32.00
Pervious area fraction = 0.250; Impervious fraction = 0.750
Initial subarea runoff = 17.888(CFS)
Total initial stream area = 4.000(Ac.)
Pervious area fraction = 0.250

++
Process from Point/Station 20.020 to Point/Station 20.030
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****

Post Project
100yr Peak Runoff

```
Upstream point/station elevation =  2317.300(Ft.)
Downstream point/station elevation =  2311.000(Ft.)
Pipe length  =   695.00(Ft.)   Manning's N = 0.014
No. of pipes = 1  Required pipe flow  =    17.888(CFS)
Nearest computed pipe diameter  =     24.00(In.)
Calculated individual pipe flow  =    17.888(CFS)
Normal flow depth in pipe =   17.72(In.)
Flow top width inside pipe =   21.10(In.)
Critical Depth =   18.28(In.)
Pipe flow velocity =      7.20(Ft/s)
Travel time through pipe =    1.61 min.
Time of concentration (TC) =     8.84 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       20.030 to Point/Station       20.030
**** SUBAREA FLOW ADDITION ****
------------------------------------------------------------------------------
COMMERCIAL subarea type
Runoff Coefficient = 0.867
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  32.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =     8.84 min.
Rainfall intensity =      4.885(In/Hr) for a   100.0 year storm
Subarea runoff =     13.553(CFS) for      3.200(Ac.)
Total runoff =     31.442(CFS)      Total area =       7.200(Ac.)
End of computations, total study area =            7.20 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.183
Area averaged RI index number =  32.0
```

RCFC & WCD	SYNTHETIC UNIT HYDROGRAPH METHOD Unit Hydrograph and Effective Rain Calculation Form	Project: **First Lincoln Logistics -TPM 38437** Banning, CA	Date: 07-11-2022	Sheet 1 of 1

[1] Concentration Point	1	[2] Area Designation	PreProject A
[3] Drainage Area Sq Miles (THIS WORKSHEET in ACRES)	7	[4] Ultimate Discharge-CFS-HRS/IN (645*[3])	n/a
[5] Unit Time Minutes (SAMPLE 100% -200% of LAG)	10	[6] LAG Time Minutes (0.8*Tc)	12.6
[7] Unit Time-Percent of Lag (100*[5]/[6])	n/a	[8] S-Curve	n/a
[9] Storm Frequency & Duration (SAMPLE 100 year 3 Hour)	100yr-3hr	[10] Total Adjusted Storm Rain- INCHES	2.66
[11] Variable Loss Rate(AVG) - INCHES/HOUR	n/a	[12] Minimum Loss Rate (for VAR. LOSS) - IN/HR	n/a
[13] Constant Loss Rate - INCHES/HOUR (see note 1)	0.4	[14] Low Loss Rate- PERCENT	90

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]		[23]	[24]
	Unit time period	Time percent of LAG	Cumlative average percent of ultimate discharge	Distrib Graph percent	Unit Hydrograph CFS-HRS/IN	Pattern Percent	Strom Rain IN/HR	LOSS RATE IN/HR		Effective Rain IN/HR	FLOW CFS
		[7] * [15]	(S-Graph)	[17]m-[17]m-1	([4]*[18])/100	(PL E-5.9)	60*[10]*[20]/100*[5]	Max	Low	[21]-[22]	[3]*[23]
							0.1596*[20]		[21]-(([21]*([14]/100))		[3]*[23]
1		n/a	n/a	n/a	n/a	2.6	0.415	0.4		0.01	0.1
2						2.6	0.415	0.4		0.01	0.1
3						3.3	0.527	0.4		0.13	0.9
4						3.3	0.527	0.4		0.13	0.9
5						3.3	0.527	0.4		0.13	0.9
6						3.4	0.543	0.4		0.14	1.0
7						4.4	0.702	0.4		0.30	2.1
8		SHORTCUT METHOD				4.2	0.670	0.4		0.27	1.9
9						5.3	0.846	0.4		0.45	3.1
10						5.1	0.814	0.4		0.41	2.9
11						6.4	1.021	0.4		0.62	4.4
12						5.9	0.942	0.4		0.54	3.8
13						7.3	1.165	0.4		0.77	5.4
14						8.5	1.357	0.4		0.96	6.7
15						14.1	2.250	0.4		1.85	13.0
16						14.1	2.250	0.4		1.85	13.0
17						3.8	0.606	0.4		0.21	1.4
18						2.4	0.383	0.4	0.35	0.35	2.4
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											
31											
32											
33											
34											
35											
36											
						100			SUM	9.13	

Notes:

1. Fp obtained from Plate E-6.2; Loss Rate (F) from page E-8

where F=Fp if 100 percent pervious cover

Effective Rain= Sum[23] * Unit Time (HRS)

= 9.13*(10/60)= 9.13*0.1667

= **1.52** **INCHES**

Flood Volume = Effective Rain * Area

= 1.52*(1/12)*7 ACRES

0.89 **ACRE-FEET**

Plate E-2.2

RCFC & WCD	SYNTHETIC UNIT HYDROGRAPH METHOD Unit Hydrograph and Effective Rain Calculation Form	Project: **First Lincoln Logistics -TPM 38437** Banning, CA	Date: 05-13-2022	Sheet 1 of 1

[1] Concentration Point	**1**	[2] Area Designation	**Post Project A**
[3] Drainage Area Sq Miles (THIS WORKSHEET in ACRES)	**7.2**	[4] Ultimate Discharge-CFS-HRS/IN (645*[3])	**n/a**
[5] Unit Time Minutes (SAMPLE 100% -200% of LAG)	**10**	[6] LAG Time Minutes (0.8*Tc)	**9**
[7] Unit Time-Percent of Lag (100*[5]/[6])	**n/a**	[8] S-Curve	**n/a**
[9] Storm Frequency & Duration (SAMPLE 100 year 3 Hour)	**100yr-3hr**	[10] Total Adjusted Storm Rain- INCHES	**2.66**
[11] Variable Loss Rate(AVG) - INCHES/HOUR	**n/a**	[12] Minimum Loss Rate (for VAR. LOSS) - IN/HR	**n/a**
[13] Constant Loss Rate - INCHES/HOUR (see note 1)	**0.2**	[14] Low Loss Rate- PERCENT	**80**

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]		[23]	[24]
	Unit time period	Time percent of LAG	Cumlative average percent of ultimate discharge	Distrib Graph percent	Unit Hydrograph CFS-HRS/IN	Pattern Percent	Strom Rain IN/HR	LOSS RATE IN/HR		Effective Rain IN/HR	FLOW CFS
		[7] * [15]	(S-Graph)	[17]m-[17]m-1	([4]*[18])/100	(PL E-5.9)	60*[10]*[20]/100*[5]	Max	Low	[21]-[22]	[3]*[23]
							0.1596*[20]		[21]-(([21]*([14]/100))		[3]*[23]
1		**n/a**	**n/a**	**n/a**	**n/a**	2.6	0.415	0.2		0.21	1.5
2						2.6	0.415	0.2		0.21	1.5
3						3.3	0.527	0.2		0.33	2.4
4						3.3	0.527	0.2		0.33	2.4
5						3.3	0.527	0.2		0.33	2.4
6						3.4	0.543	0.2		0.34	2.5
7						4.4	0.702	0.2		0.50	3.6
8		**SHORTCUT METHOD**				4.2	0.670	0.2		0.47	3.4
9						5.3	0.846	0.2		0.65	4.7
10						5.1	0.814	0.2		0.61	4.4
11						6.4	1.021	0.2		0.82	5.9
12						5.9	0.942	0.2		0.74	5.3
13						7.3	1.165	0.2		0.97	6.9
14						8.5	1.357	0.2		1.16	8.3
15						14.1	2.250	0.2		2.05	14.8
16						14.1	2.250	0.2		2.05	14.8
17						3.8	0.606	0.2		0.41	2.9
18						2.4	0.383	0.2		0.18	1.3
19											
20											
21											
22											
23											
24											
25											
26											
27											
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31											
32											
33											
34											
35											
36											
						100			SUM	12.36	

Notes:

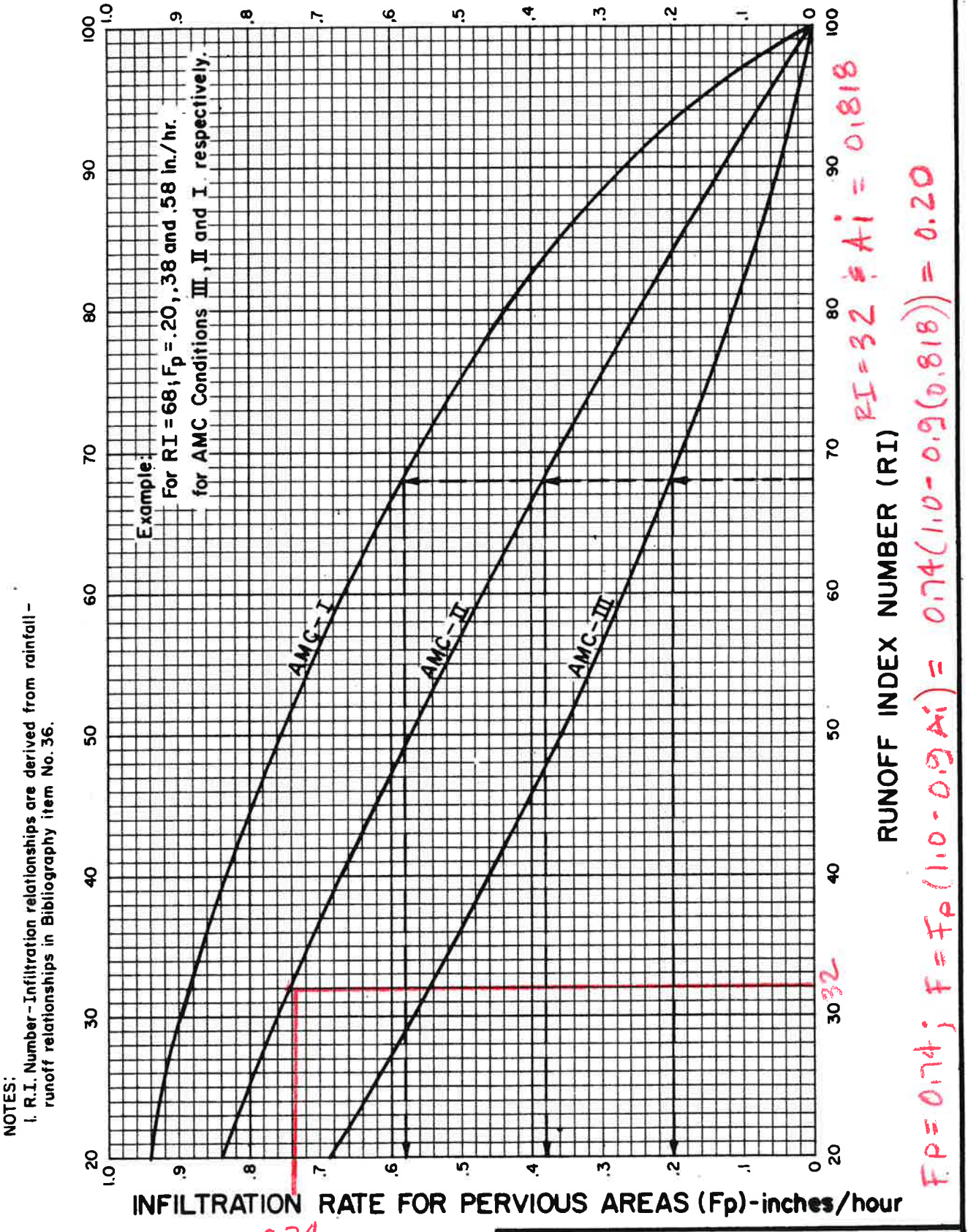
1. Fp obtained from Plate E-6.2; Loss Rate (F) from page E-8
where F=Fp if 100 percent pervious cover

Effective Rain= Sum[23] * Unit Time (HRS)
= 12.36*(10/60)= 12.36*0.1667
= **2.06** **INCHES**

Flood Volume = Effective Rain * Area
= 2.06*(1/12)*7.2 ACRES
1.24 **ACRE-FEET**

Plate E-2.2

POST PROJECT



NOTES:
1. R.I. Number-Infiltration relationships are derived from rainfall-runoff relationships in Bibliography item No. 36.

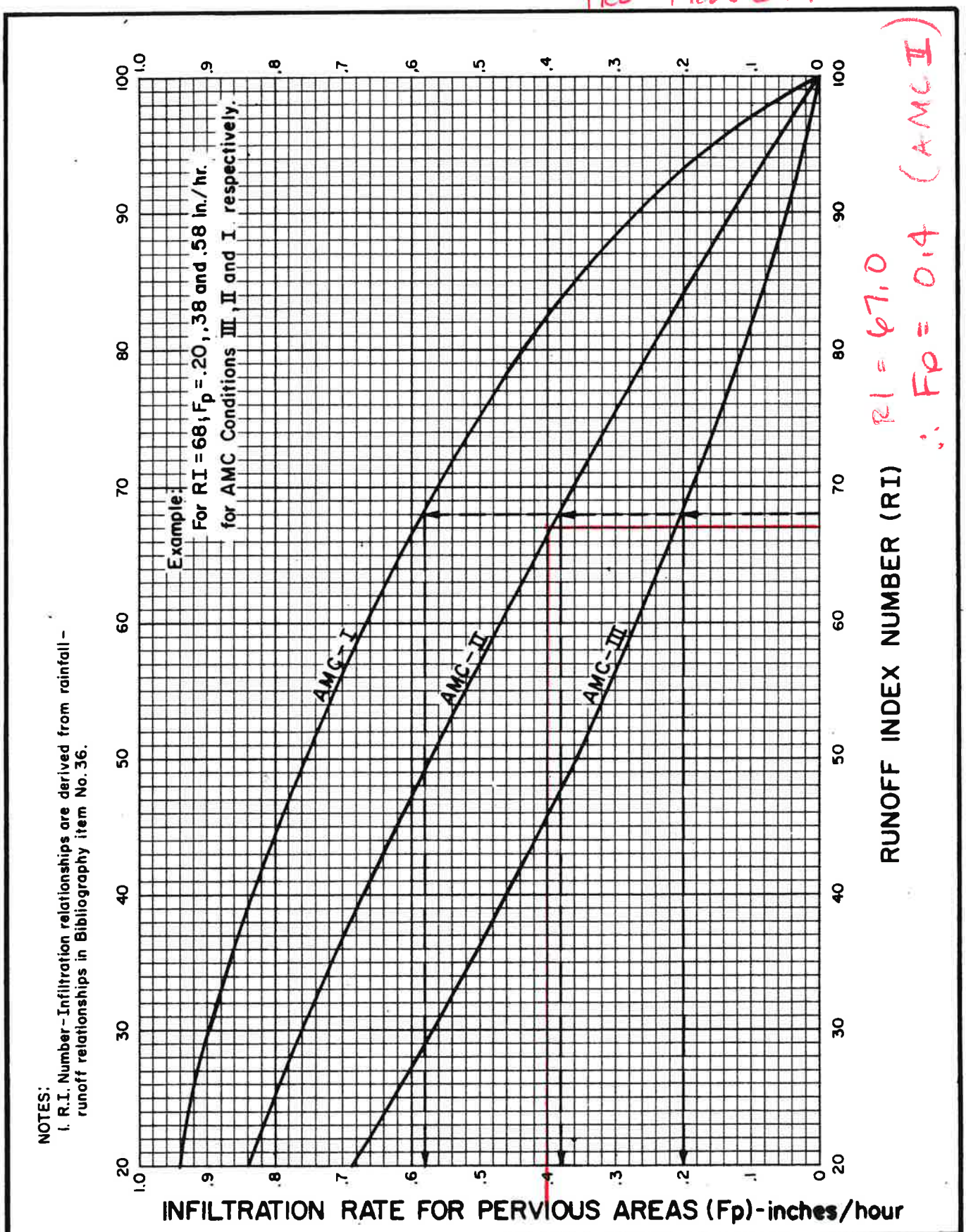
RCFC & WCD

HYDROLOGY MANUAL

INFILTRATION RATE FOR PERVIOUS AREAS VERSUS RUNOFF INDEX NUMBERS

PLATE E-6.2

PRE-PROJECT



RI = 67.0
∴ Fp = 0.4 (AMC II)

NOTES:
1. R.I. Number-Infiltration relationships are derived from rainfall-runoff relationships in Bibliography item No. 36.

RCFC & WCD

HYDROLOGY MANUAL

INFILTRATION RATE FOR PERVIOUS AREAS VERSUS RUNOFF INDEX NUMBERS

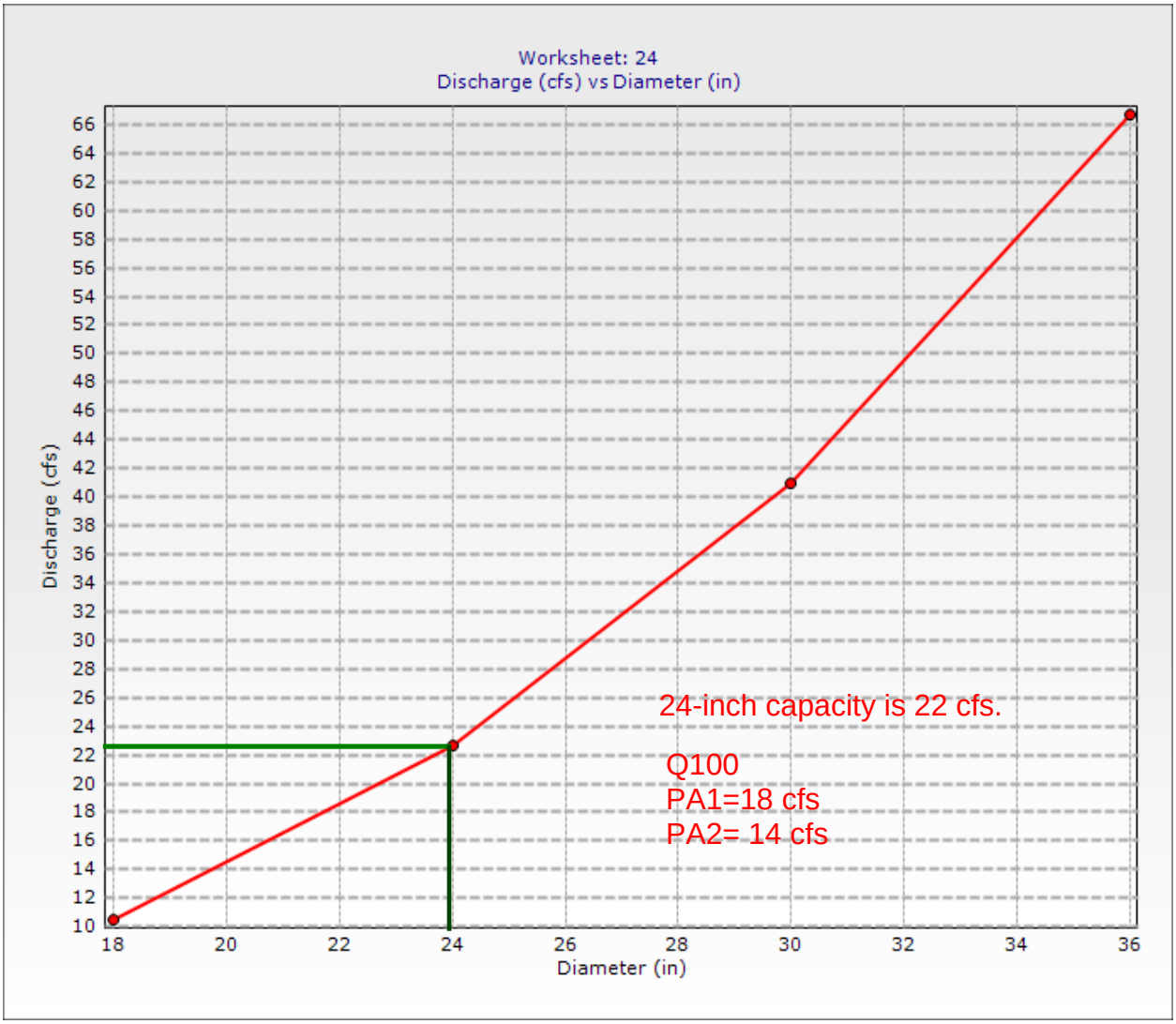
PLATE E-6.2

-Preliminary-
SUBJECT TO VALUE ENGINEERING

PreliminaryPipeCapacity

Project Description	
Friction Method	Manning Formula
Solve For	Full Flow Capacity

Input Data	
Roughness Coefficient	0.013
Channel Slope	0.010 ft/ft
Normal Depth	2.00 ft
Diameter	24.0 in
Discharge	22.62 cfs



Storm drain pipe size of 24-inches is applicable to on-site conveyance system.

-Preliminary-
SUBJECT TO VALUE ENGINEERING

Worksheet for Dock-Area-Slotted-Drain

Project Description	
Solve For	Spread

Input Data	
Discharge	18.00 cfs
Gutter Width	3.00 ft
Gutter Cross Slope	0.010 ft/ft
Road Cross Slope	0.010 ft/ft
Slot Width	0.15 ft
Slot Length	40.00 ft
Local Depression	0.0 in
Local Depression Width	0.0 in

Results	
Spread	32.05 ft
Depth	0.32 ft
Gutter Depression	0.0 in
Total Depression	0.0 in
Open Slot Area	6.0 ft²

Notes:

Based on Contech Slotted Drain.

Opening width = 1 3/4 inches.

-Preliminary-
SUBJECT TO VALUE ENGINEERING

Worksheet for Drainage-Inlets

Project Description	
Solve For	Spread

Input Data	
Discharge	14.00 cfs
Left Side Slope	0.010 H:V
Right Side Slope	0.040 H:V
Bottom Width	3.00 ft
Grate Width	2.00 ft
Grate Length	6.66 ft
Local Depression	0.0 in
Local Depression Width	0.0 in
Grate Type	P-50 mm (P-1 -7/8")
Clogging	50.0 %

Results	
Spread	3.02 ft
Depth	0.45 ft
Wetted Perimeter	3.91 ft
Top Width	3.02 ft
Open Grate Area	6.0 ft²
Active Grate Weir Length	15.32 ft

Notes:

Grating Per SPPWC Std. 305-3
Grating Catch Basin

Frame and Grate per SPPWC Std. 311-3

Single Grate
40 3/8 inches x 24 1/4 inches

Appendix D

Educational Materials

Appendix D

Table of Contents

1.0 GENERAL INFORMATION I

2.0 RECYCLING II

3.0 PROCEDURES & MAINTENANCE III

4.0 GENERAL BUSINESS PROCEDURES/BMPS IV

5.0 LANDSCAPE RELATED BMPS V

6.0 CONSTRUCTION RELATED VI

1.0 GENERAL INFORMATION

After the Storm
The Ocean Begins at Your Front Door
When It Rains, It Drains
The Ocean is Close Than You Think
Common Pollutants and Non-Industrial Pollutant Sources Associated with Urban Runoff
Storm Drains are for Rain – they're not recycling centers
Quick Reference Table for Disposal Alternatives

After the Storm

A Citizen's Guide to Understanding Stormwater

EPA 833-B-03-002

January 2003

Internet Address (URL) • HTTP://www.epa.gov
Recycled/Recyclable • Printed With Vegetable Oil Based Inks on 100% Postconsumer, Process Chlorine Free Recycled Paper

For more information contact:

or visit
www.epa.gov/npdes/stormwater
www.epa.gov/nps

What is stormwater runoff?



Stormwater runoff occurs when precipitation from rain or snowmelt flows over the ground. Impervious surfaces like driveways, sidewalks, and streets prevent stormwater from naturally soaking into the ground.



Stormwater can pick up debris, chemicals, dirt, and other pollutants and flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing, and providing drinking water.

Why is stormwater runoff a problem?

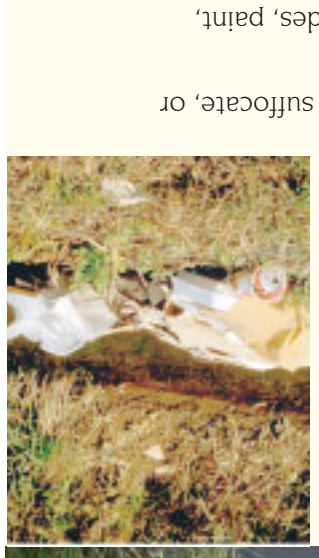


The effects of pollution

Polluted stormwater runoff can have many adverse effects on plants, fish, animals, and people.

- Sediment can cloud the water and make it difficult or impossible for aquatic plants to grow. Sediment also can destroy aquatic habitats.
- Excess nutrients can cause algae blooms. When algae die, they sink to the bottom and decompose in a process that removes oxygen from the water. Fish and other aquatic organisms can't exist in water with low dissolved oxygen levels.
- Bacteria and other pathogens can wash into swimming areas and create health hazards, often making beach closures necessary.
- Debris—plastic bags, six-pack rings, bottles, and cigarette butts—washed into waterbodies can choke, suffocate, or disable aquatic life like ducks, fish, turtles, and birds.
- Household hazardous wastes like insecticides, pesticides, paint, solvents, used motor oil, and other auto fluids can poison aquatic life. Land animals and people can become sick or die from eating diseased fish and shellfish or ingesting polluted water.
- Polluted stormwater often affects drinking water sources. This, in turn, can affect human health and increase drinking water treatment costs.







Stormwater Pollution Solutions



Residential

Recycle or properly dispose of household products that contain chemicals, such as insecticides, pesticides, paint, solvents, and used motor oil and other auto fluids. Don't pour them onto the ground or into storm drains.

Lawn care



Excess fertilizers and pesticides applied to lawns and gardens wash off and pollute streams. In addition, yard clippings and leaves can wash into storm drains and contribute nutrients and organic matter to streams.

- Don't overwater your lawn. Consider using a soaker hose instead of a sprinkler.
- Use pesticides and fertilizers sparingly. When use is necessary, use these chemicals in the recommended amounts. Use organic mulch or safer pest control methods whenever possible.
- Compost or mulch yard waste. Don't leave it in the street or sweep it into storm drains or streams.
- Cover piles of dirt or mulch being used in landscaping projects.

Septic systems



Leaking and poorly maintained septic systems release nutrients and pathogens (bacteria and viruses) that can be picked up by stormwater and discharged into nearby waterbodies. Pathogens can cause public health problems and environmental concerns.

- Inspect your system every 3 years and pump your tank as necessary (every 3 to 5 years).
- Don't dispose of household hazardous waste in sinks or toilets.

Auto care



Washing your car and degreasing auto parts at home can send detergents and other contaminants through the storm sewer system. Dumping automotive fluids into storm drains has the same result as dumping the materials directly into a waterbody.

- Use a commercial car wash that treats or recycles its wastewater, or wash your car on your yard so the water infiltrates into the ground.
- Repair leaks and dispose of used auto fluids and batteries at designated drop-off or recycling locations.

Pet waste



Pet waste can be a major source of bacteria and excess nutrients in local waters.

- When walking your pet, remember to pick up the waste and dispose of it properly. Flushing pet waste is the best disposal method. Leaving pet waste on the ground increases public health risks by allowing harmful bacteria and nutrients to wash into the storm drain and eventually into local waterbodies.



Education is essential to changing people's behavior. Signs and markers near storm drains warn residents that pollutants entering the drains will be carried untreated into a local waterbody.

Residential landscaping

Permeable Pavement—Traditional concrete and asphalt don't allow water to soak into the ground. Instead these surfaces rely on storm drains to divert unwanted water. Permeable pavement systems allow rain and snowmelt to soak through, decreasing stormwater runoff.



Rain Barrels—You can collect rainwater from rooftops in mosquito-proof containers. The water can be used later on lawn or garden areas.

Rain Gardens and Grassy Swales—Specially designed areas planted with native plants can provide natural places for rainwater to collect and soak into the ground. Rain from rooftop areas or paved areas can be diverted into these areas rather than into storm drains.



Vegetated Filter Strips—Filter strips are areas of native grass or plants created along roadways or streams. They trap the pollutants stormwater picks up as it flows across driveways and streets.



Commercial

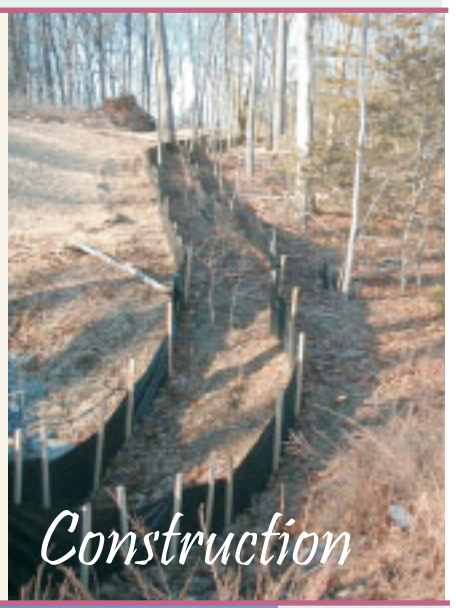
Dirt, oil, and debris that collect in parking lots and paved areas can be washed into the storm sewer system and eventually enter local waterbodies.

- Sweep up litter and debris from sidewalks, driveways and parking lots, especially around storm drains.
- Cover grease storage and dumpsters and keep them clean to avoid leaks.
- Report any chemical spill to the local hazardous waste cleanup team. They'll know the best way to keep spills from harming the environment.

Construction

Erosion controls that aren't maintained can cause excessive amounts of sediment and debris to be carried into the stormwater system. Construction vehicles can leak fuel, oil, and other harmful fluids that can be picked up by stormwater and deposited into local waterbodies.

- Divert stormwater away from disturbed or exposed areas of the construction site.
- Install silt fences, vehicle mud removal areas, vegetative cover, and other sediment and erosion controls and properly maintain them, especially after rainstorms.
- Prevent soil erosion by minimizing disturbed areas during construction projects, and seed and mulch bare areas as soon as possible.





Agriculture

Lack of vegetation on streambanks can lead to erosion. Overgrazed pastures can also contribute excessive amounts of sediment to local waterbodies. Excess fertilizers and pesticides can poison aquatic animals and lead to destructive algae blooms. Livestock in streams can contaminate waterways with bacteria, making them unsafe for human contact.



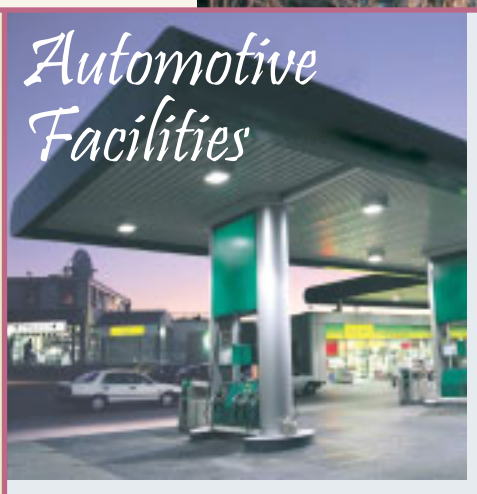
- Keep livestock away from streambanks and provide them a water source away from waterbodies.
- Store and apply manure away from waterbodies and in accordance with a nutrient management plan.
- Vegetate riparian areas along waterways.
- Rotate animal grazing to prevent soil erosion in fields.
- Apply fertilizers and pesticides according to label instructions to save money and minimize pollution.



Forestry

Improperly managed logging operations can result in erosion and sedimentation.

- Conduct preharvest planning to prevent erosion and lower costs.
- Use logging methods and equipment that minimize soil disturbance.
- Plan and design skid trails, yard areas, and truck access roads to minimize stream crossings and avoid disturbing the forest floor.
- Construct stream crossings so that they minimize erosion and physical changes to streams.
- Expedite revegetation of cleared areas.



Automotive Facilities

Uncovered fueling stations allow spills to be washed into storm drains. Cars waiting to be repaired can leak fuel, oil, and other harmful fluids that can be picked up by stormwater.

- Clean up spills immediately and properly dispose of cleanup materials.
- Provide cover over fueling stations and design or retrofit facilities for spill containment.
- Properly maintain fleet vehicles to prevent oil, gas, and other discharges from being washed into local waterbodies.
- Install and maintain oil/water separators.

The Ocean Begins at Your Front Door





For More Information

California Environmental Protection Agency
www.calepa.ca.gov

- **Air Resources Board**
  www.arb.ca.gov
- **Department of Pesticide Regulation**
  www.cdpr.ca.gov
- **Department of Toxic Substances Control**
  www.dtsc.ca.gov
- **Integrated Waste Management Board**
  www.ciwmb.ca.gov
- **Office of Environmental Health Hazard Assessment**
  www.oehha.ca.gov
- **State Water Resources Control Board**
  www.waterboards.ca.gov

Earth 911 – community-specific environmental information
1-800-cleanup or visit www.1800cleanup.org

Health Care Agency's Ocean and Bay Water Closure and Posting Hotline
714-433-6400 or visit www.ocbeachinfo.com

Integrated Waste Management Dept. of Orange County
information on household hazardous waste collection centers, recycling centers and solid waste collection
714-834-6752 or visit www.oclandfills.com

O.C. Agriculture Commissioner
714-447-7100 or visit www.ocagcomm.com

Stormwater Best Management Practice Handbook
visit www.cabmphandbooks.com

U.C. Master Gardener Hotline
714-708-1646 or visit www.ucdmg.ucdavis.edu

The Orange County Stormwater Program has created and implemented programs to eliminate pollutants entering our waterways. We encourage you to learn more about your watershed and how it affects stormwater and urban runoff and the implementation of programs designed to help clean our waters. Remember, it's up to you to keep our waterways clean.

Orange County Stormwater Program

Aliso Viejo	(949) 425-2535
Anaheim Public Works Operations	(714) 765-6860
Brea Engineering	(714) 990-7666
Buena Park Public Works	(714) 562-3655
Costa Mesa Public Services	(714) 754-5323
Cypress Public Works	(714) 229-6740
Dana Point Public Works	(949) 248-3584
Fountain Valley Public Works	(714) 593-4441
Fullerton Engineering Dept	(714) 738-6853
Garden Grove Public Works	(714) 741-5956
Huntington Beach Public Works	(714) 536-5431
Irvine Public Works	(949) 724-6315
La Habra Public Services	(562) 905-9792
La Palma Public Works	(714) 690-3310
Laguna Beach Water Quality	(949) 497-0378
Laguna Hills Public Service	(949) 707-2650
Laguna Niguel Public Works	(949) 362-4337
Laguna Woods Public Works	(949) 639-0500
Lake Forest Public Works	(949) 461-3480
Los Alamitos Community Dev	(562) 431-3538
Mission Viejo Public Works	(949) 470-3056
Newport Beach, Code & Water Quality Enforcement	(949) 644-3215
Orange Public Works	(714) 532-6480
Placentia Public Works	(714) 993-8245
Rancho Santa Margarita	(949) 635-1800
San Clemente Environmental Programs	(949) 361-6143
San Juan Capistrano Engineering	(949) 234-4413
Santa Ana Public Works	(714) 647-3380
Seal Beach Engineering	(562) 431-2527 x317
Stanton Public Works	(714) 379-9222 x204
Tustin Public Works Engineering	(714) 573-3150
Villa Park Engineering	(714) 998-1500
Westminster Public Works Engineering	(714) 898-3311 x446
Yorba Linda Engineering	(714) 961-7138
Orange County Stormwater Program	(714) 567-6363

Orange County 24-Hour
Water Pollution Problem Reporting Hotline
(714)-567-6363

On-line Water Pollution Problem Reporting form
www.ocwatersheds.com

Printed on Recycled Paper

Even if you live miles from the Pacific Ocean, you may be unknowingly polluting it.

Did You Know?

- Most people believe that the largest source of water pollution in urban areas comes from specific sources such as factories and sewage treatment plants. In fact the largest source of water pollution comes from city streets, neighborhoods, construction sites, and parking lots. This type of pollution is sometimes called "non-point source" pollution.
- There are two types of non-point source pollution: stormwater and urban runoff pollution.
- Stormwater runoff refers to runoff resulting from rainfall. It is very noticeable during heavy rainstorms when large volumes of water drain off the urban landscape.
- [illegible] pollutants that [illegible] runoff [illegible] from [illegible] and other [illegible]
- Sources [illegible] trash, lawn clippings and other urban pollutants [illegible] storm drains.

Where Does It Go?

- Anything we use outside homes, vehicles and businesses – like motor oil, paint, pesticides, fertilizers, and cleaners – can be blown or washed into the storm drains.
- A little water from a garden hose or rain can also send materials into the storm drains.
- Storm drains are separate from our sanitary sewer systems; unlike water in sanitary sewers (from sinks or toilets) water in the storm drains is not treated before entering our waterways.

Sources of Non-Point Source Pollution

- Automotive leaks and spills.
- Improper disposal of used oil and other engine fluids.
- Metals found in vehicle exhaust, weathered paint, rust, metal plating, and tires.
- Pesticides and fertilizers from lawns, gardens and farms.
- Improper disposal of cleaners, paint and paint removers.
- Soil erosion and construction debris from landscape and construction activities.
- Litter, lawn clippings, animal waste, and other organic matter.
- Oil stains on parking lots and paved surfaces.

The Effect on the Ocean

Non-point source pollution can have a serious impact on water quality in Orange County. Pollutants from the storm drain system can harm marine life as well as coastal and wetland habitats. They can also degrade recreation areas such as beaches, harbors and bays.

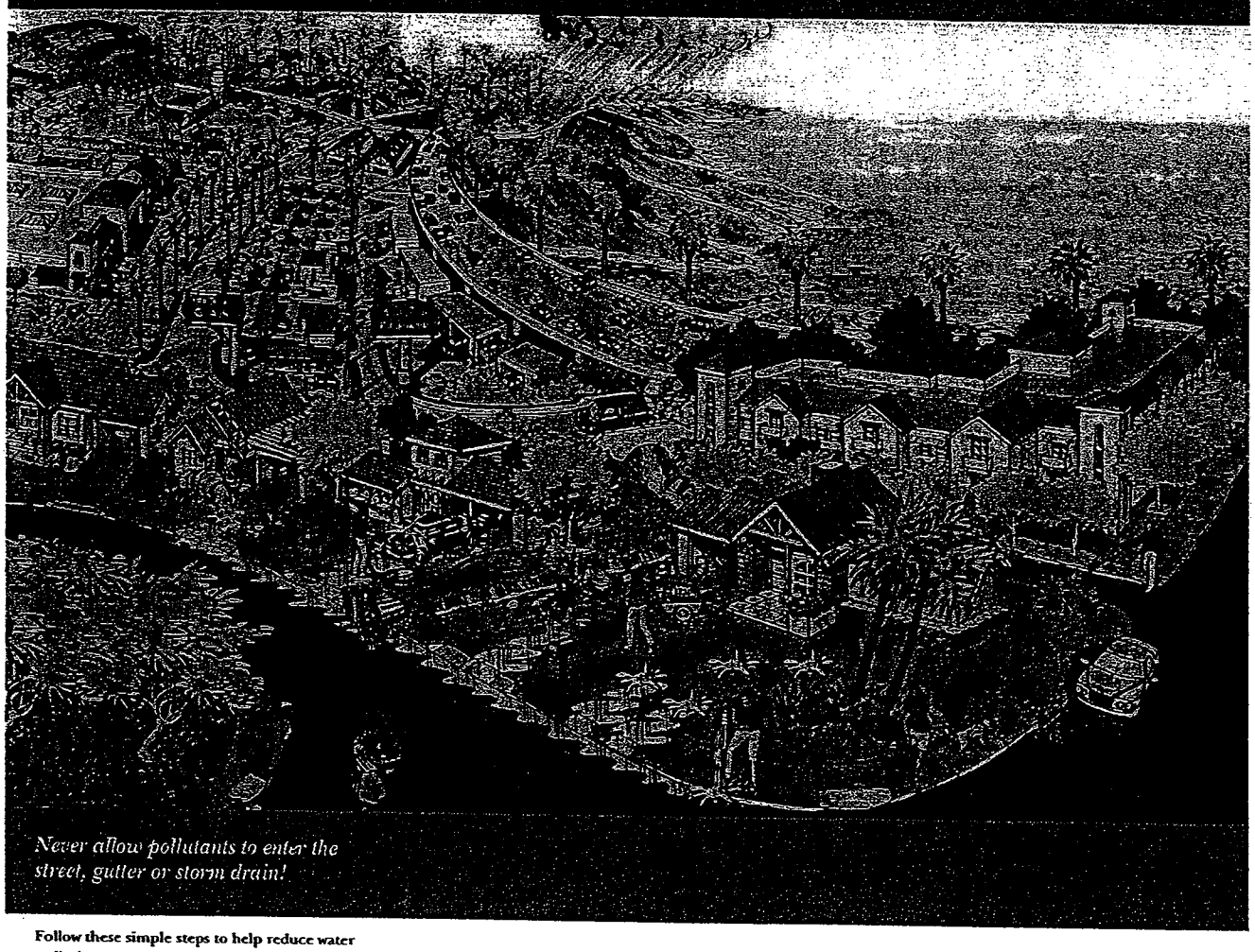
Stormwater quality management programs have been developed by the Orange County Stormwater Program under National Pollutant Discharge Elimination System (NPDES) permits. The program educates and encourages the public to protect water quality, monitor runoff in the storm drain system, manage NPDES permit process for municipalities, investigate illegal disposals, and maintain storm drains.

The support of Orange County residents, businesses and industries is needed to improve water quality and reduce the threat of stormwater and urban runoff pollution. Proper use and disposal of materials we use everyday will help stop this form of pollution before it reaches the storm drain and the ocean.



Dumping one quart of motor oil into a storm drain can contaminate 250,000 gallons of water.

The Ocean Begins at Your Front Door



Never allow pollutants to enter the street, gutter or storm drain!

Follow these simple steps to help reduce water pollution:

Household Activities

- Do not rinse spills with water. Use dry cleanup methods such as applying cat litter or another absorbent material, sweep and dispose of in trash. Take items such as used or excess batteries, oven cleaners, automotive fluids, painting products, and cathode ray tubes, like TVs and computer monitors, to a Household Hazardous Waste collection center.
- For a household hazardous waste collection center near you call (714) 834-6752 or visit www.oclandfills.com.
- Do not hose down your driveway, sidewalk or patio to the street, gutter or storm drain. Sweep up debris and dispose of in trash.

Automotive

- Take your vehicle to a commercial car wash whenever possible. If you wash your vehicle at home, choose soaps, cleaners, or detergents labeled non-toxic, phosphate free or biodegradable. Vegetable and citrus-based products are typically safest for the environment.
- Do not allow washwater from vehicle washing into the street, gutter or storm drain. Excess washwater should be disposed of in the sanitary sewer (through a sink or toilet) or onto an absorbent surface like your lawn.
- Monitor vehicle for leaks and place a pan under leaks. Keep your vehicles well maintained to stop and prevent leaks.
- Never pour oil or antifreeze in the street, gutter or storm drain. Recycle these substances at a service station, a waste oil collection center or used oil recycling center. For the nearest Used Oil Collection Center call 1-800-CLEANUP or visit www.1800cleanup.org.

Pool Maintenance

- Pool and spa water must be dechlorinated and be free of excess acid, alkali or color to be allowed in the street, gutter or storm drain.
- Whenever possible, drain dechlorinated pool and spa water directly into the sanitary sewer but only when it is not raining.
- Some cities may have ordinances that do not allow pool water to be disposed into the storm drain. Check with your city.

Landscape and Gardening

- Do not over-water. Water your lawn and garden by hand to control the amount of water you use or set irrigation systems to reflect seasonal water needs. If water flows off your yard onto your driveway or sidewalk, your system is over-watering. Periodically inspect and fix leaks and misdirected sprinklers.
- Do not rake or blow leaves, clippings or pruning waste into the street, gutter or storm drain. Instead dispose of waste by composting, hauling it to a permitted landfill, or as green waste through your city's recycling program.
- Follow directions on pesticides and fertilizer, (measure, do not estimate amounts) and do not use if rain is predicted with 48 hours.
- Take unwanted pesticides to a Household Hazardous Waste Collection Center to be recycled. For locations and hours of Household Hazardous Waste Collection Centers call 714-834-6752 or visit www.oclandfills.com.

Trash

- Place trash and litter that cannot be recycled in securely covered trash cans.
- Whenever possible, buy recycled products.
- Remember: Reduce, Reuse, Recycle

Pet Care

- Always pick up after your pet. Flush waste down the toilet or dispose in the trash. Pet waste, if left outdoors, can wash into the street, gutter or storm drain.
- If possible, bathe your pets indoors. If you must bathe your pet outside, wash it on your lawn or another absorbent/permeable surface to keep the washwater from entering the street, gutter or storm drain.
- Follow directions for use of pet care products and dispose of any unused products at a Household Hazardous Waste Collection Center.

Common Pollutants

Home Maintenance
- Detergents, cleaners and solvents
- Oil and latex paint
- Swimming pool chemicals
- Outdoor trash and litter

Lawn and Garden
- Pet and animal waste
- Pesticides
- Clippings, leaves and soil
- Fertilizer

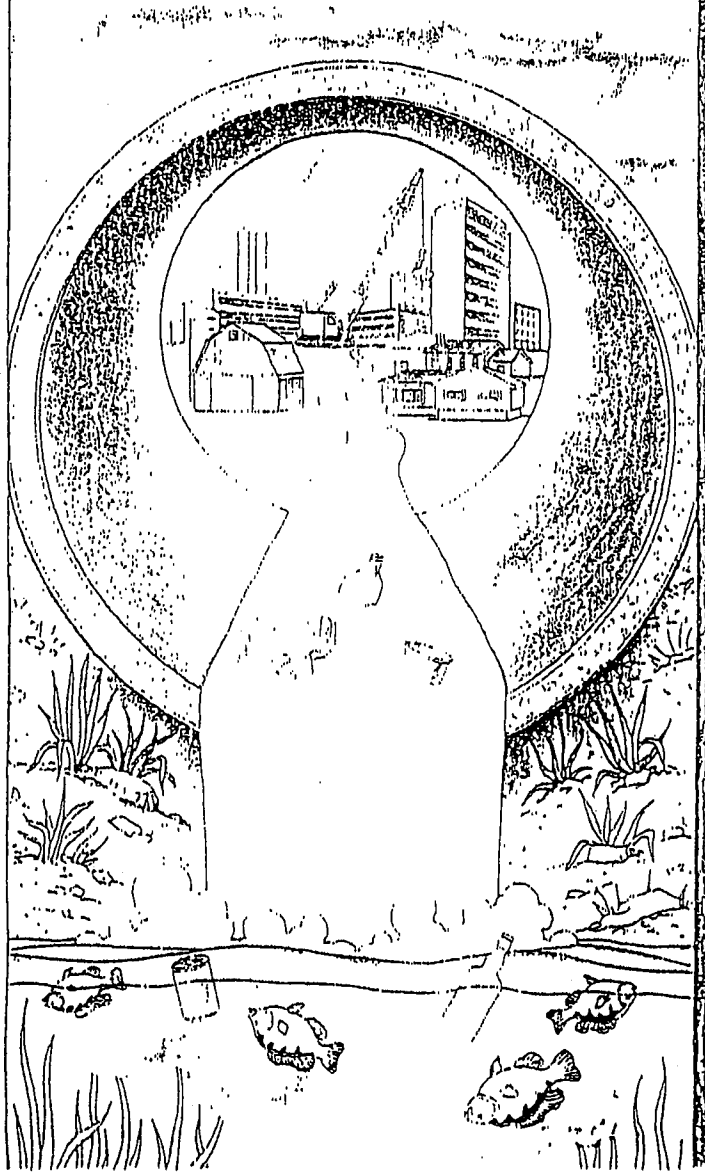
Automobile
- Oil and grease
- Radiator fluids and antifreeze
- Cleaning chemicals
- Brake pad dust

Environmental Protection Agency
August 1993
832-F-93-001
Office of Water
WH-547

EPA

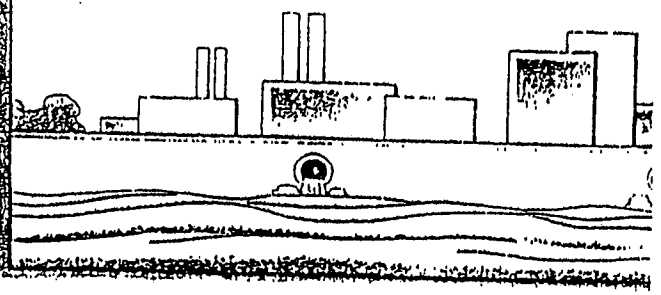
When It Rains, It Drains

What Everyone Should Know About Storm Water



WHAT IS STORM WATER?

Storm water is water from precipitation that flows across the ground and pavement when it rains or when snow and ice melt. The water seeps into the ground or drains into what we call storm sewers. These are the drains you see at street corners or at low points on the sides of your streets. Collectively, the draining water is called storm water runoff and is a concern to us in commercial and industrial sites as well as your neighborhood because of the pollutants it carries.





Debris along street picked up by storm water.

WHY IS STORM WATER A PROBLEM?

Storm water is a problem when it picks up debris, chemicals, and other pollutants as it flows or when it causes flooding and erosion of stream banks. The pollutants are deposited untreated into our waterways. The result can be the closing of our beaches; no swimming, fishing or boating; and injury to the plants and animals that live in or use the water.

WHAT ARE THESE POLLUTANTS? WHERE DO THEY COME FROM ? WHAT ARE SOME OF THEIR EFFECTS ON PLANTS, ANIMALS, AND HUMANS ?

The following information will answer these questions and let you know what you and your community can do to help recognize where there could be a problem and what to do to help solve it !

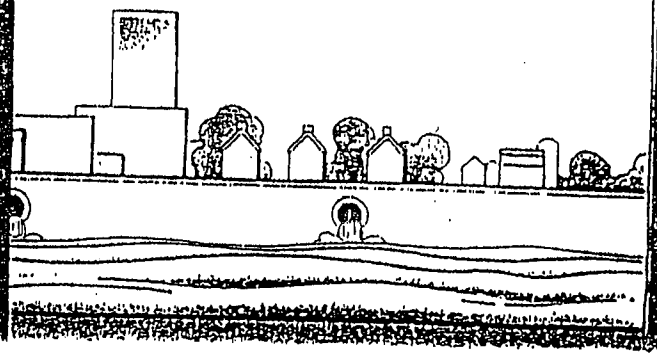
EPA has a storm water program that, with your help, can keep our rivers, lakes, streams, and oceans open to use and enjoyment, and healthy for plants and animals to live in.



Debris washed up on the beach by storm water.

WHERE DOES THE STORM WATER GO AFTER IT DRAINS INTO STORM SEWERS?

Storm water that does not seep into the ground, drains into systems of underground pipes or roadside ditches and may travel for many miles before being released into a lake, river, stream, wetland area, or coastal waters.



WHERE CAN I FIND OUT MORE INFORMATION?

Your EPA Regional Office
(Water Management Division)

1. EPA Region I (CT, ME, MA, NH, RI, VT)
   JFK Federal Bldg.; Boston, MA 02203
   617-565-3478
2. EPA Region II (NJ, NY, PR, VI)
   26 Federal Plaza; New York, NY 10278
   212-264-2513
3. EPA Region III (DE, MD, PA, VA, WV, DC)
   841 Chestnut Street; Philadelphia, PA 19107
   215-597-9410
4. EPA Region IV (AL, GA, FL, MS, NC, SC, TN, KY) 345 Courtland St., NE; Atlanta, GA 30365
   404-347-4450
5. EPA Region V (IL, IN, OH, MI, MN, WI)
   77 W. Jackson Blvd.; Chicago, IL 60604
   312 353-2145
6. EPA Region VI (AR, LA, OK, TX, NM)
   1445 Ross Ave., Suite 1200
   Dallas, TX 75202-27.33
   214-655-7100
7. EPA Region VII (IA, KS, MO, NE)
   726 Minnesota Ave.; Kansas City, KS 66101
   913-551-7030
8. EPA Region VIII (CO, UT, WY, MT, ND, SD)
   999 18th St., Suite 500; Denver, CO 80202
   303-293-1542
9. EPA Region IX (AZ, CA, GM, HI, NV)
   75 Hawthorne Street; San Francisco, CA 94105
   415-744-2125
10. EPA Region X (AK, ID, OR, WA)
    1200 Sixth Ave.; Seattle, WA 98101
    206-553-1793

Other sources include:

- Storm Water Hotline (703) 821-4823
- State and Local Agencies

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The Ocean is closer than you think

The picture shows how materials improperly used and disposed can *go down the storm drain* and flow into the Ocean!

STORM WATER & URBAN RUNOFF POLLUTION

Here are ways to reduce SWURP!

Home Maintenance



Buy household products such as cleaners and furniture polish labled "non toxic". Use small quantities and purchase only the amount you need.



Properly use and store all toxic products, including cleaners, solvents and paints. Use up paint cleaners and other products or share leftovers with a neighbor.



Take household hazardous materials and containers to a hazardous material collection center.★



Use kitty litter or other absorbent materials to clean spills. Depending on the substance, dispose absorbents in the trash can or at a hazardous materials collection center. ★

★ For more information, see Telephone Numbers on the back of this brochure.

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Rinse water based paint brushes in the sink. Filter and reuse paint thinner or brush cleaners. Dispose of used thinner, oil and latex paint at a hazardous materials collection center. ★



Recycle reusable materials. Throw litter into trash cans and keep cans tightly covered to prevent foraging by animals.



Control erosion at construction and landscape sites to prevent dirt and debris from entering storm drains.

Lawn and Garden



Use pesticides, herbicides and fertilizers in accordance with label instructions. Do not apply before rain and dispose leftovers at a hazardous materials collection center. ★



Use a broom rather than a hose to clean up garden clippings. Put leaves and clippings in a trash can or a compost pile.



Divert rain spouts and garden hoses from paved surfaces onto grass to allow water to filter through the soil. Water only your lawn and garden. Caution! do not use this suggested action in areas with steep slopes or landslide potential.



Pick up animal waste and dispose in the trash can.

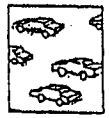
Automotive



Take used motor oil and antifreeze to gas stations that accept recyclable automotive fluids, or to a hazardous materials collection center. ★



Have your car maintained regularly to prevent oil, antifreeze and other fluid leaks.



Reduce automotive emissions through routine auto maintenance, ride sharing and public transportation.



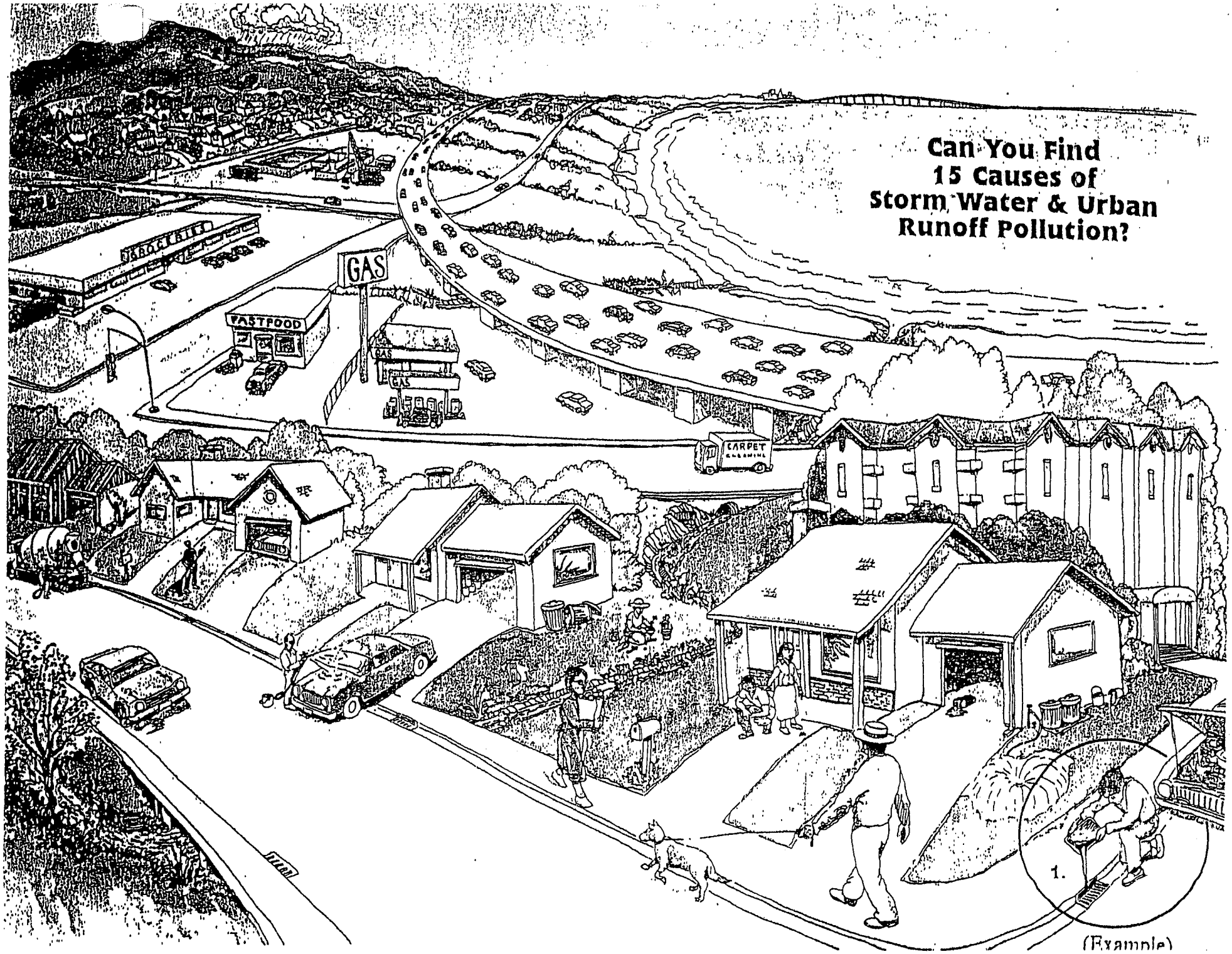
Conserve water when washing your car and use biodegradable soap. Clean engines at a "Do It Yourself Car Wash" where the drainage is not connected to the storm drain.

You can control SWURP by supporting city and county activities to keep your streets clean. You can help by participating in recycling, beach clean-ups, and the proper disposal of hazardous materials.

Since many businesses and residents are unaware of the storm water & urban runoff problem, encourage neighbors and co-workers to be careful in not polluting the storm drain system.

Together, you, your neighbors and city can make a difference in keeping the ocean and beaches clean for ourselves and wildlife. Contact the Storm Water Participant in your area to share ideas or ask questions on keeping storm drains clean.

A Cooperative Project between the County of Orange, its Cities and the Orange County Environmental Management Agency.


Can You Find
15 Causes of
Storm Water & Urban
Runoff Pollution?
GAS
FASTFOOD
CARPET
1.
(Example)

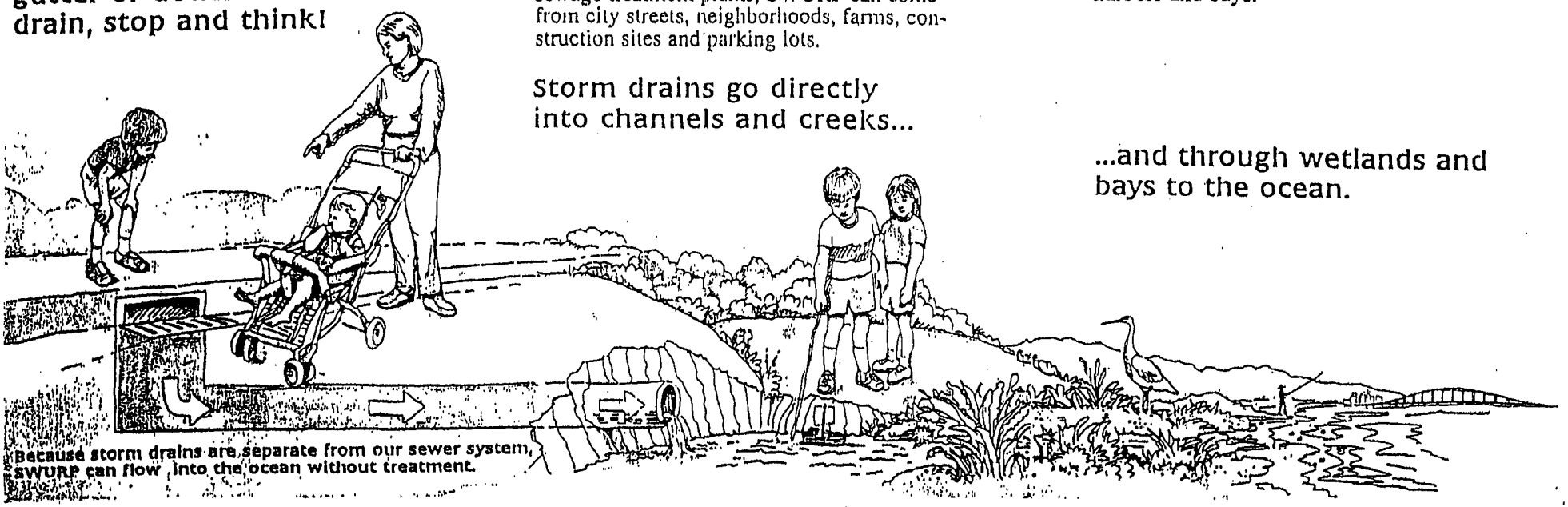
he Pacifi[illegible]an, you may be polluting it without knowing it.

Did You Know...

Anything we use in our home, car and business like motor oil, paint, pesticides, fertilizers and cleaners can wind up in the street.

A little water from rain or a garden hose can carry automotive and household materials through the storm drain polluting bays, wetlands and the ocean. Storm drains are there to drain water off the street - not for disposal of hazardous materials.

Before you pour anything into the gutter or down the drain, stop and think!



Because storm drains are separate from our sewer system, SWURP can flow into the ocean without treatment.

These pollutants flow toge[illegible] journey from the storm drai[illegible]e flood control channel where it can eventually empty into the ocean. This type of pollution is called Storm Water & Urban Runoff Pollution (SWURP) and is a serious threat to the beaches and ocean of Southern California.

What Is Storm Water & Urban Runoff Pollution (SWURP)?

Storm water runoff refers to seasonal rainfall flows. It is very noticeable during a heavy rain storm when large volumes of water drain off paved areas. Urban runoff can happen anytime of the year when excessive water use from irrigation, car washing and other sources carries litter, lawn clippings and other urban pollutants into storm drains. Even an automobile leaking motor oil 20 miles inland can still pollute the ocean.

How Is It Different From Other Forms of Water Pollution?

SWURP can include anything that washes into the storm drain from the community. Unlike water pollution linked to factories or sewage treatment plants, SWURP can come from city streets, neighborhoods, farms, construction sites and parking lots.

Storm drains go directly into channels and creeks...

[illegible] Water & Urban R[illegible] Pollution Comes From:

- ☐ Automotive leaks and spills.
- ☐ Improper disposal of used oil and other engine fluids down the storm drain.
- ☐ Metals found in vehicle exhaust, weathered paint, rust, metal plating and tires.
- ☐ Pesticides, herbicides and fertilizers from lawns, gardens and farms.
- ☐ Improper disposal of cleaners, paint and paint removers.
- ☐ Soil erosion and dust debris from landscape and construction activities.
- ☐ Litter, lawn clippings, animal waste and other organic matter.
- ☐ Oil stains on parking lots and paved surfaces.

Storm Water & Urban Runoff Pollution And The Ocean

SWURP may have a serious impact on water quality in Orange County. Pollutants from the storm drain system can harm marine life as well as coastal and wetland habitats. It can also degrade recreation areas such as beaches, harbors and bays.

...and through wetlands and bays to the ocean.

Exhibit 1
Common Pollutants and Non-Industrial Pollutant Sources Associated with Urban Runoff

Pollutant	Source (Category: Components)
Lead	Vehicles: exhaust, tire wear (filler material, lubricating oil and grease Structures and roads: paint
Zinc	Vehicles: tire wear (filler material), oil and grease (stabilizing additive), metal corrosion Paved surfaces: deicing salts Structures: paint, metal corrosion, wood preservatives
Copper	Vehicles: parts wear (brakes, metal plating, bearing and bushings), diesel fuel Structures: paint, metal corrosion, wood preservatives Others: pesticides
Cadmium	Vehicles: tire wear (filler material), Pesticides
Chromium	Vehicles: parts wear (brakes, metal plating, engine parts)
Nickel	Vehicles: diesel fuel, lubricating oil, parts wear (brakes, metal plating, and bushings) Paved surfaces: asphalt
Manganese	Vehicles: parts wear (engine parts)
Bromide	Vehicles: exhaust
Mercury	Coal Combustion Vehicles: fuel combustion Structures: paint
Iron	Vehicles: body rust, engine wear Structures: rust
Cyanide	Paved surfaces: deicing salts Structures: wood preservatives
PAHs	Vehicles: exhaust Other: incomplete information
Chloride	Paved surfaces: deicing salts
Sulphates	Other: combustion product Vehicles: exhaust Paved surfaces: road beds, deicing salts

Sources: EPA, 1992, 1990, 1983; Kobriger et al., 1984.

Exhibit 1 (cont.): Common Pollutants and Non-Industrial Pollutant Sources Associated with Urban Runoff

Pollutant	Source (Category: Components)
Nitrogen, Phosphorous	Vehicles: exhaust Other: combustion product Landscape maintenance: fertilizer Soil erosion: land disturbance, exposed soils Sewage: leaking sanitary systems, septic systems
Sediments, Particulates	Soil erosion, land disturbance, exposed soils Streambank erosion: high flows Vehicles: Body rust, tire wear, other wear
Pesticides	General outdoor application Structures: wood preservatives, paint
Flotables	Litter: residential, commercial, industrial, recreation Waste disposal: residential, commercial, industrial recreation Vegetation: leaves, branches, trunks
Bacteria	Sewage: leaking sanitary systems,septic systems Other: animal droppings Soil erosion: exposed soils
Oil and grease	Vehicles: drippings, leaks Paved surfaces: asphalt Equipment maintenance: exposed surfaces Other: wood preservatives, wood/coal combustion
PCBs	Vehicles: catalyst in synthetic tires Other: electrical, insulation
Benzene	Vehicles: fuel Other: solvent use
Toluene	Vehicles: fuel and asphalt Other: solvent use
Chloroform	Vehicles: form by mixing salt, gasoline and asphalt
Oxygen Demand	Vehicles: leaves Litter: various sources Soil erosion: land disturbances, exposed soils
Phthalate, bis (2-eth.)	Structures: plasticizer Other: plasticizer

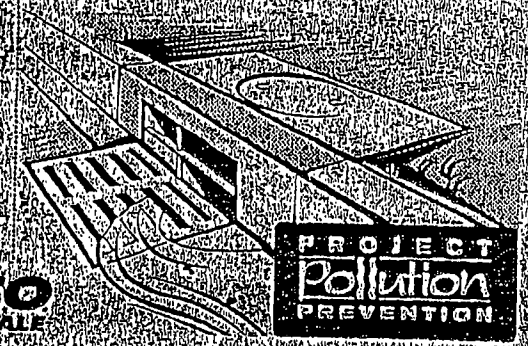
Sources: EPA, 1992, 1990, 1983; Kobriger et al., 1984.

Storm Drains are for Rain...

More than 20,000 times each year, [illegible] residents [illegible] and more than 20,000 tires each year, radiator fluids [illegible] from vehicles by residents [illegible] is not allowed.

Never dispose of automotive fluids, recyclable products or household hazardous wastes into the street or gutter. Take them to your local auto repair station, recycling center or a household hazardous waste roundup.

...they're not recycling centers



COSTCO WHOLESALE

PROJECT Pollution PREVENTION

Recycling Tips:

COSTCO WHOLESALE

You can help keep your community clean, protect our area waterways and make the beaches safer for all by following these tips. Put non-recyclable materials where they belong — at recycling centers or household hazardous waste roundups. Never dump anything into the storm drains.

- When changing vehicle fluids, [illegible] transmission fluid and [illegible] never dispose of these fluids [illegible] drain or the ground. [illegible] recycling centers.
- Recycle [illegible] containers, newspapers, [illegible] aluminum cans, [illegible] and motor oil.



PROJECT Pollution PREVENTION

QUICK REFERENCE TABLE OF DISPOSAL ALTERNATIVES

(Adopted from Santa Clara County Nonpoint Source Solution Control Program — December 1992)

All of the waste products on this chart are prohibited from discharge to the storm drain system. Use this matrix to decide which alternative disposal strategies to use. **ALTERNATIVES ARE LISTED IN PRIORITY ORDER.**

Key: HHW Household hazardous waste (Government-sponsored drop-off events)
POTW Publicly Owned Treatment Plant
Reg. Bd. Regional Water Quality Control Board (Oakland)
"Dispose to sanitary sewer" means dispose into sink, toilet, or sanitary sewer clean-out connection.
"Dispose as trash" means dispose in dumpsters or trash containers for pickup and/or eventual disposal in landfill.
"Dispose as hazardous waste" for business/commercial means contract with a hazardous waste hauler to remove and dispose.

DISCHARGE/ACTIVITY	BUSINESS/COMMERCIAL Disposal Priorities	Approval	RESIDENTIAL Disposal Priorities
General Construction and Paint; Street and Utility Maintenance			
Excess paint (oil-based)	1. Recycle/reuse. 2. Dispose as hazardous waste.		1. Recycle/reuse. 2. Take to HHW drop-off.
Excess paint (water-based)	1. Recycle/reuse. 2. Dry residue in cans, dispose as trash. 3. If volume is too much to dry, dispose as hazardous waste.		1. Recycle/reuse. 2. Dry residue in cans, dispose as trash. 3. If volume is too much to dry, take to HHW drop-off
Paint cleanup (oil-based)	Wipe paint out of brushes, then: 1. Filter & reuse thinners, solvents. 2. Dispose as hazardous waste.		Wipe paint out of brushes, then: 1. Filter & reuse thinners, solvents. 2. Take to HHW drop-off.
Paint cleanup (water-based)	Wipe paint out of brushes, then: 1. Rinse to sanitary sewer.		Wipe paint out of brushes, then: 1. Rinse to sanitary sewer.
Empty paint cans (dry)	1. Remove lids, dispose as trash.		1. Remove lids, dispose as trash.
Paint stripping (with solvent)	1. Dispose as hazardous waste.		1. Take to HHW drop-off.
Building exterior cleaning (high-pressure water)	1. Prevent entry into storm drain and remove offsite 2. Wash onto dirt area, spade in 3. Collect (e.g., mop up) and discharge to sanitary sewer	POTW	
Cleaning of building exteriors which have HAZARDOUS MATERIALS (e.g., mercury, lead) in paints	1. Use dry cleaning methods 2. Contain and dispose washwater as hazardous waste (Suggestion: dry material first to reduce volume)		

MODIFIED AND TAILORED

DISCHARGE/ACTIVITY	BUSINESS/COMMERCIAL Disposal Priorities	Approval	RESIDENTIAL Disposal Priorities
General Construction and Paint; Street and Utility Maintenance (cont'd)			
Non-hazardous paint scraping/sand blasting	1. Dry sweep, dispose as trash		1. Dry sweep, dispose as trash
HAZARDOUS paint scraping/sand blasting (e.g., marine paints or paints containing lead or tributyl tin)	1. Dry sweep, dispose as hazardous waste		1. Dry sweep, take to HHW drop-off
Soil from excavations during periods when storms are forecast	1. Should not be placed in street or on paved areas 2. Remove from site or backfill by end of day 3. Cover with tarpaulin or surround with hay bales, or use other runoff controls (e.g., sandbags) 4. Place filter mat over storm drain Note: Thoroughly sweep following removal of dirt in all four alternatives.		
Soil from excavations placed on paved surfaces during period when storms are not forecast	1. Keep material out of storm conveyance systems and thoroughly remove via sweeping following removal of dirt 2. Surround with sandbags		
Cleaning streets in construction areas	1. Dry sweep and minimize tracking of mud 2. Use silt ponds and/or similar pollutant reduction techniques when flushing pavement		
Soil erosion, sediments	1. Cover disturbed soils, use erosion controls, block entry to storm drain. 2. Seed or plant immediately.		
Fresh cement, grout, mortar	1. Use/reuse excess 2. Dispose to trash		1. Use/reuse excess 2. Dispose to trash
Washwater from concrete/mortar (etc.) cleanup	1. Wash onto dirt area, spade in 2. Pump and remove to appropriate disposal facility 3. Settle, pump water to sanitary sewer	POTW	1. Wash onto dirt area, spade in 2. Pump and remove to appropriate disposal facility 3. Settle, pump water to sanitary sewer
Aggregate wash from driveway/patio construction	1. Wash onto dirt area, spade in 2. Pump and remove to appropriate disposal facility 3. Settle, pump water to sanitary sewer	POTW	1. Wash onto dirt area, spade in 2. Pump and remove to appropriate disposal facility 3. Settle, pump water to sanitary sewer

MODIFIED AND TAILORED

DISCHARGE/ACTIVITY	BUSINESS/COMMERCIAL Disposal Priorities	Approval	RESIDENTIAL Disposal Priorities
General Construction and Paint; Street and Utility Maintenance (cont'd)			
Rinsewater from concrete mixing trucks	1. Return truck to yard for rinsing into pond or dirt area 2. At construction site, wash into pond or dirt area lined with plastic and bermed, or surrounded with sandbags		
Non-hazardous construction and demolition debris	1. Recycle/reuse (concrete, wood, etc.) 2. Dispose as trash		1. Recycle/reuse (concrete, wood, etc.) 2. Dispose as trash
Hazardous demolition and construction debris (e.g., asbestos)	1. Dispose as hazardous waste		1. Do not attempt to remove yourself. Contact asbestos removal service for safe removal and disposal 2. Very small amounts (less than 5 lbs.) may be double-wrapped in plastic and take to HHW drop-off
Saw-cut slurry	1. Use dry cutting technique and sweep up residue 2. Vacuum slurry and dispose off-site. 3. Block storm drain or berm with low weir as necessary to allow most solids to settle. Shovel out gutters; dispose residue to dirt area, construction yard or landfill.		
Construction dewatering (Nonturbid, uncontaminated groundwater)	1. Recycle/Reuse 2. Discharge to storm drain		
Construction dewatering (other than nonturbid, uncontaminated groundwater)	1. Recycle/Reuse 2. Discharge to sanitary sewer 3. As appropriate, treat prior to discharge to storm drain	POTW Reg. Bd.	
Portable toilet waste	1. Leasing company shall dispose to sanitary sewer at POTW	POTW	
Leaks from garbage dumpsters	1. Collect, contain leaking material. Eliminate leak, keep covered, return to leasing company for immediate repair 2. If dumpster is used for liquid waste, use plastic liner		

MODIFIED AND TAILORED

DISCHARGE/ACTIVITY	BUSINESS/COMMERCIAL Disposal Priorities	Approval	RESIDENTIAL Disposal Priorities
General Construction and Paint; Street and Utility Maintenance (cont'd)			
Leaks from construction debris bins	1. Insure that bins are used for dry nonhazardous materials only (Suggestion: Fencing, covering helps prevent misuse)		
Dumpster cleaning water	1. Clean at dumpster owner's facility and discharge waste through grease interceptor to sanitary sewer 2. Clean on site and discharge through grease interceptor to sanitary sewer	POTW POTW	
Cleaning driveways, paved areas * (Special Focus = Restaurant alleys, Grocery dumpster areas) * Note: Local drought ordinances may contain additional restrictions	1. Sweep and dispose as trash (Dry cleaning only). 2. For vehicle leaks, restaurant/grocery alleys, follow this 3-step process: a. Clean up leaks with rags or absorbents. b. Sweep, using granular absorbent material (cat litter). c. Mop and dispose of mopwater to sanitary sewer (or collect rinse-water and pump to the sanitary sewer). 3. Same as 2 above, but with rinsewater (2c) (no soap) discharged to storm drain.		1. Sweep and dispose as trash (Dry cleaning only). 2. For vehicle leaks, restaurant/grocery alleys, follow this 3-step process: a. Clean up leaks with rags or absorbents; dispose as hazardous waste. b. Sweep, using granular absorbent material (cat litter). c. Mop and dispose of mopwater to sanitary sewer.
Steam cleaning of sidewalks, plazas * * Note: Local drought ordinances may contain additional restrictions	1. Collect all water and pump to sanitary sewer. 2. Follow this 3-step process: a. Clean oil leaks with rags or absorbents. b. Sweep (Use dry absorbent as needed). c. Use no soap, discharge to storm drain		
Potable water/line flushing Hydrant testing	1. Deactivate chlorine by maximizing time water will travel before reaching creeks		
Super-chlorinated (above 1 ppm) water from line flushing	1. Discharge to sanitary sewer 2. Complete dechlorination required before discharge to storm drain		

MODIFIED AND TAILORED

DISCHARGE/ACTIVITY	BUSINESS/COMMERCIAL Disposal Priorities	Approval	RESIDENTIAL Disposal Priorities
Landscape/Garden Maintenance			
Pesticides	1. Use up. Rinse containers. Use rinsewater as product. Dispose rinsed containers as trash. 2. Dispose unused pesticide as hazardous waste.		1. Use up. Rinse containers. Use rinsewater as pesticide. Dispose rinsed containers as trash. 2. Take unused pesticide to HHW drop-off.
Garden clippings	1. Compost 2. Take to Landfill		1. Compost 2. Dispose as trash
Tree trimming	1. Chip if necessary, before composting as recycling		1. Chip if necessary, before composting as recycling
Swimming pool, spa, fountain water (emptying)	1. Do not use metal-based algicides (i.e., Copper Sulfate) 2. Recycle/reuse (e.g., irrigation) 3. Determine chlorine residue = 0, wait 24 hours and then discharge to storm drain.	POTW	1. Do not use metal-based algicides (i.e., Copper Sulfate) 2. Recycle/reuse (e.g., irrigation) 3. Determine chlorine residue = 0, wait 24 hours and then discharge to storm drain.
Acid or other pool/spa/fountain cleaning	1. Neutralize and discharge to sanitary sewer	POTW	
Swimming pool, spa filter backwash	1. Reuse for irrigation 2. Dispose on dirt area 3. Settle, dispose to sanitary sewer		1. Use for landscape irrigation 2. Dispose on dirt area 3. Settle, dispose to sanitary sewer
Vehicle Wastes			
Used motor oil	1. Use secondary containment while storing, send to recycler.		1. Put out for curbside recycling pickup where available 2. Take to Recycling Facility or auto service facility with recycling program 3. Take to HHW events accepting motor oil
Antifreeze	1. Use secondary containment while storing, send to recycler.		1. Take to Recycling Facility
Other vehicle fluids and solvents	1. Dispose as hazardous waste		1. Take to HHW event
Automobile batteries	1. Send to auto battery recycler 2. Take to Recycling Center		1. Exchange at retail outlet 2. Take to Recycling Facility or HHW event where batteries are accepted
Motor home/construction trailer waste	1. Use holding tank. Dispose to sanitary sewer.		1. Use holding tank, dispose to sanitary sewer.

MODIFIED AND TAILORED

DISCHARGE/ACTIVITY	BUSINESS/COMMERCIAL Disposal Priorities	Approval	RESIDENTIAL Disposal Priorities
Vehicle Wastes (cont'd)			
Vehicle Washing	1. Recycle 2. Discharge to sanitary sewer, never to storm drain	POTW	1. Take to Commercial Car Wash. 2. Wash over lawn or dirt area. 3. If soap is used, use a bucket for soapy water and discharge remaining soapy water to sanitary sewer.
Mobile Vehicle Washing	1. Collect washwater and discharge to sanitary sewer	POTW	
Vehicle leaks	Follow this 3-step process: 1. Clean up leaks with rags or absorbents 2. Sweep, using granular absorbent material (cat litter) 3. Mop and dispose of mopwater to sanitary sewer.		
Other Wastes			
Carpet cleaning solutions & other mobile washing services	1. Dispose to sanitary sewer	POTW	1. Dispose to sanitary sewer
Roof drains	1. If roof is contaminated with industrial waste products, discharge to sanitary sewer 2. If no contamination is present, discharge to storm drain		
Cooling water Air conditioning condensate	1. Recycle/reuse 2. Discharge to sanitary sewer	POTW	
Pumped groundwater, infiltration/ foundation drainage (contaminated)	1. Recycle/reuse (landscaping, etc.) 2. Treat if necessary; discharge to sanitary sewer 3. Treat and discharge to storm drain	Reg. Bd. POTW Reg. Bd.	
Fire fighting flows	If contamination is present, Fire Dept. will attempt to prevent flow to stream or storm drain		

MODIFIED AND TAILORED

DISCHARGE/ACTIVITY	BUSINESS/COMMERCIAL Disposal Priorities	Approval	RESIDENTIAL Disposal Priorities
Other Wastes (cont'd)			
Kitchen Grease	1. Provide secondary containment, collect, send to recycler. 2. Provide secondary containment, collect, send to POTW via hauler.	POTW	1. Collect, solidify, dispose as trash
Restaurant cleaning of floor mats, exhaust filters, etc.	1. Clean inside building with discharge through grease trap to sanitary sewer. 2. Clean outside in container or bermed area with discharge to sanitary sewer.		
Clean-up wastewater from sewer back-up	1. Follow this procedure: a. Block storm drain, contain, collect, and return spilled material to the sanitary sewer. b. Block storm drain, rinse remaining material to collection point and pump to sanitary sewer (no rinse-water may flow to storm drain)		

MODIFIED AND TAILORED

2.0 RECYCLING

Precyclin Rx for Living
The Solution is to Recycle

Precyclin®

℞ for living

- ✓ Reduce
- ✓ Reuse
- ✓ Recycle

California Integrated Waste Management Board

Precyclin®

℞ for living

Precyclin® isn't a product. It's not a thing.

You can't buy it. It's not for sale.

It's good medicine and we want you to use it.

But you can't take it.

So what is it exactly?

- Precycling means considering the waste implications of your purchases. In other words: Reduce waste before you buy.
- Every product we consume in our daily routine creates waste. That's bad.
- We can recycle some of the waste. That's good.
- But what if we made a conscious effort to create less waste? That would be good medicine for living and even better medicine for the environment.

Read on for some helpful tips about preserving resources and minimizing waste.

You can probably think of some tips of your own. If you practice these tips you will truly be a precycler, and make a difference!

For More Information

For details on source reduction, recycling and composting, contact the California Integrated Waste Management Board at 916-322-3330. Helpful fact sheets and other information are available.

Call our Recycling Hotline toll-free:
1-800-553-2962

Monday through Friday,
7:30 a.m. — 5:30 p.m.

We can also provide details on convenient recycling centers and local household hazardous waste activities.

California Integrated Waste Management Board
1020 Ninth Street, Suite 100
Sacramento, CA 95814

Here's How You Can Precycle

- Be a "Waste-Aware" consumer (see below).
- Use products which can be reused and repaired, rather than "disposable" products used for the sake of convenience.
- Practice source reduction in the work place. For example, use recycled paper products, make double-sided copies, and reuse scrap paper and manila envelopes.
- Be an example for others. Good ideas catch on!
- Continue to recycle paper, glass, plastic, aluminum and other recyclables.

The "Waste-Aware" Consumer

Here are some pointers for the "waste-aware" shopper to consider:

- Purchase products made from recycled and recyclable materials.
- Buy items such as flour, pasta, rice or cereal in bulk and store them in durable containers. Buying products in larger sizes is more economical and reduces packaging.
- Use durable products such as reusable cups and utensils, instead of paper, plastic or foam containers.
- Look for multiple-use products such as refillable pens, beverage containers and durable food storage containers.
- Repair things instead of discarding them.
- Landscape with shrubs and plants that require less water and less pruning.

By minimizing waste you:

- Reduce costs for waste collection, transportation, and disposal.
- Enjoy lower product costs.
- Save natural resources.
- Extend the life of our landfills.

Smart Shopper's List

This list provides shopping ideas for the environmentally smart consumer. Remember these important shopping tips:

- bring your cloth shopping bags
- reuse old plastic bags for produce
- don't go to the store hungry
- purchase only what you need

Purchase	Instead of
bulk products	pre-packaged items
concentrated juice	bottled or small packages
sponges, kitchen towels, cloth napkins	paper towels and convenience wipes
"giant economy size"	small packages
recycled paper products	paper made from virgin stock
concentrated cleaners	cleaners pre-mixed and ready to use
brewers yeast, flea comb	flea powder or sprays
reusable or "cartridge" razors	disposable razors
rechargeable batteries	disposable batteries
coffee mugs	polystyrene or paper cups
cloth diapers	disposable diapers
beeswax and linseed oil	furniture polish
baking soda, lemon, vinegar, club soda	caustic cleaners
cedar chips	moth balls
products in recyclable containers	non-recyclable packaging

Printed on Recycled Paper

The Solution Is To Recycle

Marine Debris — A Preventable Sickness

The next time you are out on your boat or casually stroll down a dock, take a look around. Is the water clean, is the shoreline free of debris, is animal life abundant? The answer is probably no. The ocean is threatened. Threatened by a sickness that you can prevent—the dumping of your debris into the water.

The U.S. Coast Guard estimates that over 800 tons of garbage are dumped annually into U.S. waters. California marinas alone, generate 5 to 3,000 tons of garbage per marina each year.

Every time you toss your trash into the ocean you become part of the problem. Your trash could be responsible for the death of an animal, a boating accident, or a polluted beach.

There is a solution — something you can do — stow your trash and recycle it.

Four Easy Steps to Recycling

Successful marine debris recycling requires that you...

1. Stop dumping trash into the ocean. Whether you are on a boat or enjoying the ocean from shore, don't carelessly toss your debris. Every can, cigarette butt, and plastic bag hurts!

2. On shore or at sea, stow your trash and separate recyclable items. You can recycle newspaper, glass jars and bottles, some plastics, paper, aluminum and steel cans, cardboard, scrap metal, wood, oil, batteries, and more. Recent studies indicate that over 60% of a marina's garbage can be recycled. Dispose of your non-recyclable trash in an appropriate receptacle.

3. Take your recyclable items to a recycling center. Centers are available in most communities and many marinas have their own recycling program.

4. Purchase wisely. When you buy new products look for items packaged in recyclable materials, or better yet, purchase reusable items. The less you need to throw away or recycle, the better for the ocean, the environment, and your pocket book.

There are obvious reasons to recycle:

- *saves natural resources*
- *eliminates trash in the ocean*
- *provides an alternative to the use of landfills*

There are also some not so obvious reasons to recycle:

- *provides a cost-effective way to eliminate trash*
- *helps maintain a marina's waste management costs (which eventually come back to you, the consumer)*
- *provides positive PR for you, your vessel, and your marina*



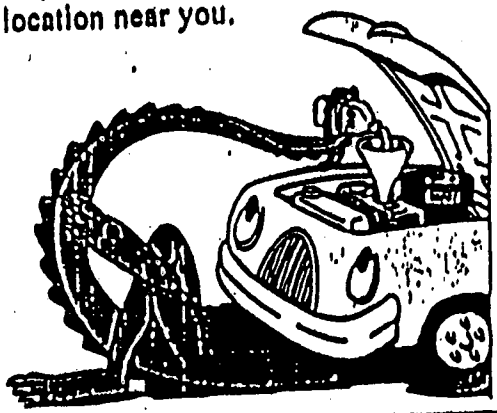


Drain your used oil into a reusable plastic container that has a screw top. Unless the container was previously used to hold motor oil, make sure it is CLEAN before placing your used oil in it.

Do not mix your oil with anything (paint, gasoline, solvents, etc.). In order to be recycled, your used oil must be free of contaminants.

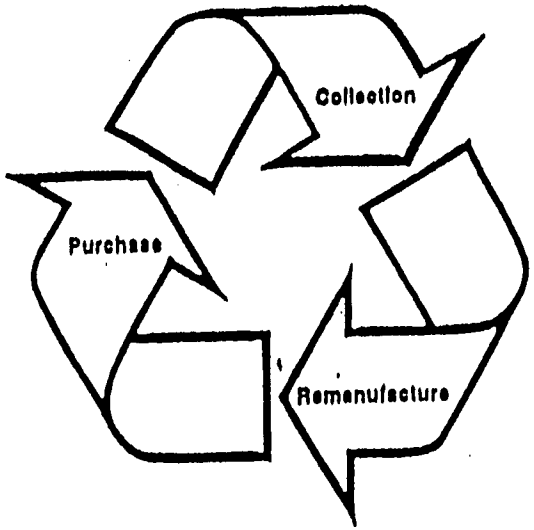
If you're changing your oil filter, drain it completely, seal it in a plastic zip-lock bag, and bring it to a collection center that accepts oil filters for recycling. Not all centers do. Check first!

Bring your used oil to a collection center that recycles it. Call 1-800-RECY OIL for a location near you.



Recycling used oil could reduce petroleum imports by [illegible] million barrels of oil per year, saving 1.3 [illegible] barrels of oil per day.

...AND KEEP A GOOD THING GOING



The three arrows in the recycling logo represent three steps necessary in closing the recycling loop: collecting the material; re-manufacturing it into a "new" product; and purchasing the product. With used oil, this loop is closed as the oil goes from the collection program, to the manufacturer, to the consumer, and back to the collection program where the process begins again. This is possible because

OIL NEVER WEARS OUT; IT JUST GETS DIRTY!

Dirty oil can be recycled many times. Re-refined oil can be used for hydraulic and crankcase oil. Ask for re-refined or recycled oil where you shop. Help close the recycling loop and save our natural resources.

It takes only 1 gallon of used oil to produce the same amount of motor oil as 42 gallons of crude oil - while requiring [illegible] bout 1/3 of the energy!

- Used oil is considered a hazardous waste Californin.
- It's against the law to use used motor oil weed abatement activities or dust control Used oil can carry heavy metals and toxi into nearby waterways.
- It's illegal to bury used oil in the ground, b it, or dump it in the trash or down a storm drain or sewer.

Illegal disposal should be reported to the St at 1-800-69 TOXIC

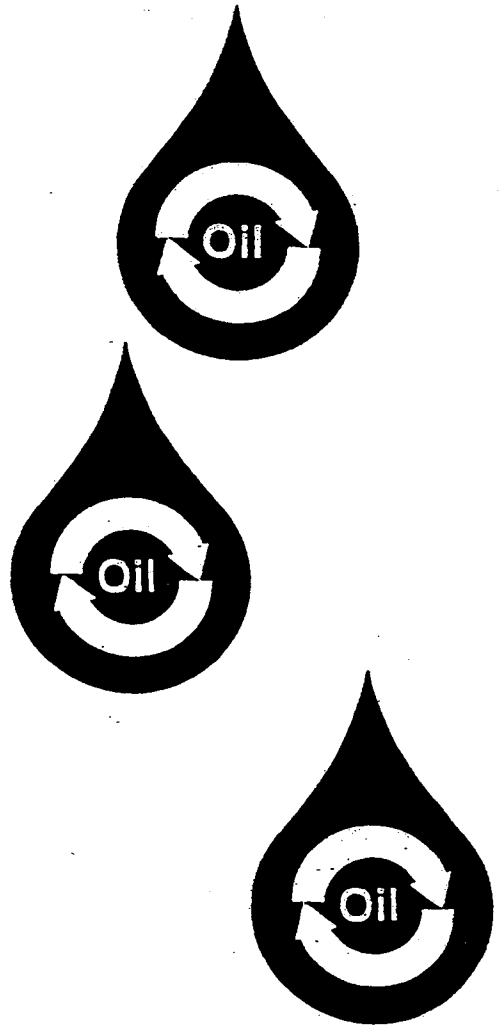


42% of all used oil available for recycling in California never reaches a recycling facility. Do you know where YOUR used

United States Environmental Protection Agency
EPA/530-SW-89-039B
June 1989
Solid Waste And Emergency Response (OS-305)

EPA Recycling Used Oil

What Can You Do?



The more waste we generate, the more we have to treat, store, and dispose of. So recycling makes more sense today than ever.

Improper waste management costs money—your money! You pay in higher consumer prices, taxes for environmental cleanups, and increased health care costs, when wastes are improperly managed.

Recycling saves money *and* protects the environment. So help be part of the solution, not part of the problem. Recycle used oil and other household materials, such as newspaper, glass, metals, and plastic.

If your community has an oil recycling program, join it. If it doesn't, start one. Write for EPA's manual entitled "How to Set Up A Local Program To Recycle Used Oil" at the address below or call EPA's RCRA/Superfund Hotline at 1-800-424-9346 (in Washington, DC, 382-3000).

Remember:

Environmental quality is everybody's business, and everybody can do a lot to help.

U.S. Environmental Protection Agency
Office of Solid Waste
401 M Street, SW
Washington, DC 20460

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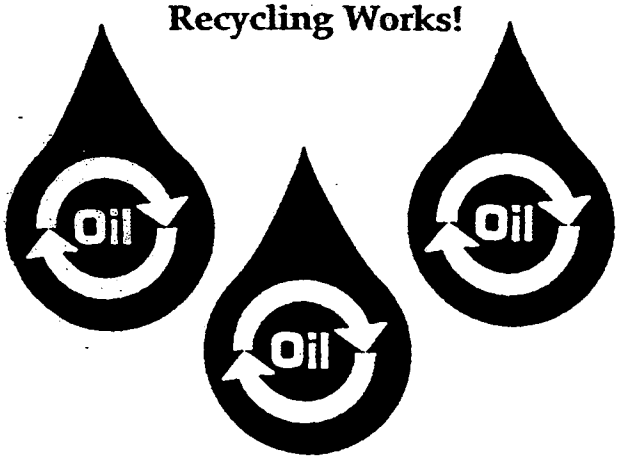
Why Recycling Your Oil Helps The Environment And Saves Energy

o Used oil from a single oil change can ruin a million gallons of fresh water--a year's supply for 50 people. Used oil is insoluble, persistent, and can contain toxic chemicals and heavy metals. It's slow to degrade. It sticks to everything from beach sand to bird feathers. Used oil is a major source of oil pollution in our nation's waterways.

o "Do-it-yourselfers"--consumers who change their own oil--generate at least 200 million gallons of used oil every year. Americans who change their own oil throw away 120 million gallons of recoverable motor oil by dumping it on the ground, by pouring it down stormdrains, or by putting it in trash cans.

o Recycling this oil would save the United States 1.3 million barrels of oil per day. One gallon of used oil provides the same 2.5 quarts of lubricating oil as 42 gallons of crude oil.

Recycling Works!



What Can You Do?

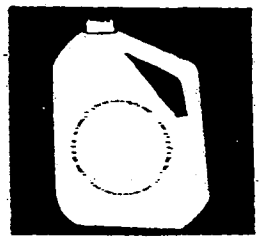
RECYCLE !

Today, almost 60 percent of the nation's automotive oil is changed by consumers themselves.

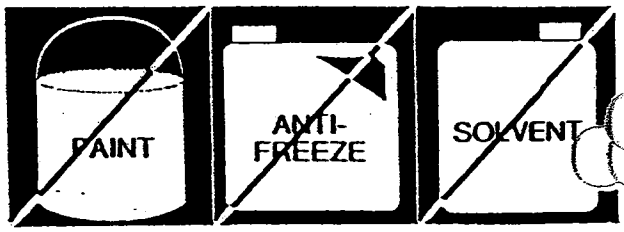
Recycle used oil from cars, trucks, boats, motorcycles, recreational vehicles, and lawnmowers.

It's easy to recycle used oil . . .

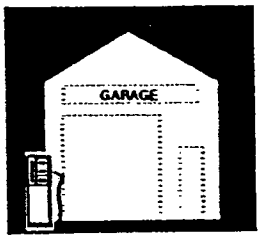
Put your used oil in a clean plastic container with a tight lid.



Don't mix it with anything else (paint, gasoline, solvents, antifreeze, etc.).



Take it to a service station or other location that collects used oil for recycling.



Call your local or state government to find out where.

3.0 PROCEDURES & MAINTENANCE

Copart's Spill Cleanup Policy
Drain System Maintenance (SC-74, CASQA BMP Handbook)
Inlet Cleaning
Spot Cleaning
Catch Basin Cleaning
Housekeeping Practices (SC10, CASQA BMP Handbook)
Building and Grounds Maintenance (SC11, CASQA BMP Handbook)
Spill Prevention (SC-11, CASQA BMP Handbook)
Maintenance Bays & Docks (SD-31, CASQA BMP Handbook)

CASQA: California Stormwater Quality Association

SMALL SPILL CLEAN UP PROTOCOL

A small spill is a spill that is easily contained and does not require use of sock booms. Always follow your company's procedures carefully.

1.0 ALWAYS UTILIZE PERSONAL PROTECTIVE EQUIPMENT (PPE)

1.1 Safety Vest Goggles Gloves
FM 186-2 Sprayer Pads Broom

A - Assess the spill and cone off the area.
B - Be safe – personal and public safety.
C - Clean up properly – follow your company guidelines carefully.
D - Determine waste and dispose of it correctly.

2.0 SPILL CLEAN UP

2.1 Spray the FM 186-2 completely around the spill

2.2 Cover the entire the spill area with the FM 186-2. Use a 1 to 1 ratio (one part FM 186-2 to one part spilled fuel).

2.3 Working from the outside edges first, mix the chemistries by pushing and pulling the solution within the impacted area towards the center of the spill.

2.4 As you mix the FM 186-2 with the spill, you will notice there is a bubbling action that starts to take place. In warmer weather this action may happen relatively quickly and in cooler weather it may be somewhat delayed.

2.5 As you start to mix the chemistries, the first reaction will turn the solution a milky white. Shortly thereafter the "bubbling" becomes quite pronounced.

2.6 Continue mixing until bubbling stops. If there is still bubbling going on, your mixture is incomplete. Remember, the larger the spill, the longer it will take to properly mix in the FM 186-2 chemistry.

2.7 When the bubbling action has stopped, you have successfully completed the reaction. Wait a couple of minutes to assure that the reaction is complete. It is now ready to be sorbed up.

2.8 Lay the sorbent pads in such a manner as to cover the ENTIRE SURFACE of the spilled fuel and allow the pads to sorb up the mixture.

2.9 After a couple of seconds use the brush to move the pads around to assist in this process.

2.10 Leave cones in place until all moisture has evaporated.

2.11 Remember to replace any products used from your spill kit immediately.

Petroleum waste is a presumptive hazardous waste and the users/generators are responsible for proper waste characterization and disposal. Federal and state regulations require generators to determine their waste classification(s). Regulations also allow for prior knowledge of the waste and treatment procedures in determining the waste's classification. The FM 186 program is a treatment procedure that can be applied as part of the prior knowledge package. Nothing herein is to be taken as approvals that <u>all</u> spill materials would be rendered non-hazardous. Ultimately it is up to the generator to determine the resulting clean up material and to dispose of it correctly.

CLEANING UP SMALL SPILLS
ALWAYS WEAR PPE



A small spill is one that is easy to contain. Remember to always wear your personal protective equipment (PPE). **Place one of your vests in the red bag containing your PPE so it will be there when you need to respond to a large spill**.
(See Protocol 1.0 and 1.1)



Circle the spill with FM 186-2 solution. Then spray over the entire spill area. Use a 1:1 ratio or, as much FM 186-2 solution as spilled fuel.
(See Protocol 2.1 and 2.2)



Begin brushing the spill and FM 186-2 solution into the center of the spill area
(See Protocol 2.3)

Hot Tip: Improve your curb appeal by frequently responding to the small drips that occur on a daily basis. Use the methods described.

SMALL SPILLS – Continued

As you mix the FM 186-2 into a spill, you will notice a bubbling action taking place. Continue mixing until the bubbling stops. In warmer weather, this action happens rapidly. In cooler weather, it will happen more slowly. If bubbling action is still happening, the mixing is incomplete - so continue to mix vigorously. REMEMBER: The larger the spill, the longer it will take to properly combine the spilled fuel and the FM 186-2. (See Protocol 2.4 - 2.7)





Lay sorbent pads over the entire spill area and let the pads soak up the mixture. Move the pads around with the broom to assist in this process. (See Protocol 2.8 and 2.9)

Use enough sorbent pads so that none of them are soaked through and dripping. Dispose of the used pads properly. (See Protocol 2.10 – 2.11)

Petroleum waste is a presumptive hazardous waste and the users/generators are responsible for proper waste characterization and disposal. Federal and state regulations require generators to determine their waste classification(s). Regulations also allow for prior knowledge of the waste and treatment procedures in determining the waste's classification. The FM 186 program is a treatment procedure that can be applied as part of the prior knowledge package. Nothing herein is to be taken as approvals that all spill materials would be rendered non-hazardous. Ultimately it is up to the generator to determine the resulting clean up material and to dispose of it correctly.

Emergency Spill Response – Rock and Dirt

The addition of FM 186-2 enhances remediation of the contamination. As with spill procedures, the mixing of the FM 186-2 with the hydrocarbon is important. In addition, turning of the surface by mechanical action increases the oxygen level within the substrate. This enhances natural bacterial growth which is the key to the biodegradation of the contamination. The following procedure should be followed for maximum results.

Assess the extent of the contamination.

This involves assessing both the amount of hydrocarbon and the total area that the hydrocarbon reached.









1. Scar up the area to increase effectiveness.

2. Apply FM 186-2 solution to cover the entire stain in the soil. Apply this evenly over the contaminated area.

3. Mix well with steel rake and reapply FM 186-2 if necessary.

4. Apply a small amount of fertilizer with a number that has a higher nitrogen count than the phosphorous and potassium (NPK). The number should be a 10-5-5 or 20-10-10. Sprinkle over the treated area. Do not add too much fertilizer. You do not want to grow weeds. (**Note:** Be sure that the fertilizer does not contain any additional component that inhibits bacterial growth or contains a weed killer).

5. Keep the soil moist but do not over water. Too much water will slow the remediation process. Add water once a week if it does not rain.

MARK and MONITOR

6. After 30 days, sample the area and evaluate progress. This can be accomplished by noting the absence or presence of hydrocarbon odor. Some discoloration is natural.

Petroleum waste is a presumptive hazardous waste and the users/generators are responsible for proper waste characterization and disposal. Federal and state regulations require generators to determine their waste classification(s). Regulations also allow for prior knowledge of the waste and treatment procedures in determining the waste's classification. The FM 186 program is a treatment procedure that can be applied as part of the prior knowledge package. Nothing herein is to be taken as approvals that all spill materials would be rendered non-hazardous. Ultimately it is up to the generator to determine the resulting clean up material and to dispose of it correctly.

FM 186-2 SHOULD ONLY BE USED IN COMPLIANCE
WITH ALL STATE AND LOCAL RULES AND REGULATIONS

Emergency Spill Response - Asphalt and Concrete
Large Spills Over One Gallon

A large spill requires a phone call to your Area Equipment and Safety Manager

1. Locate the source and stop the spill. The contaminated area should be cordoned off and customers and others kept out. If volatile fuel is spilled, to reduce the danger of fire, suppress the vapors by spraying FM 186-2 solution over entire spill area. **Containment of spills is a critical first step, for safety and in order to protect the environment.**

2. Health and safety are primary concerns as a large spill is handled. The use of FM 186-2 to reduce the level of volatile hydrocarbon is also an important step. Even though a complete reaction may not take place, the volatile levels will be significantly reduced during an event.

3. Sock booms have been provided to protect storm drains and stop the forward migration of the spill. It is imperative that the storm water system be protected from any spilled hydrocarbon. If the spill looks like it may enter the storm drain, surround storm drains with the white oleophilic sock booms.

4. After protection has been provided for the storm drain system, assess the extent of the spill. If necessary, absorb raw hydrocarbon in white oleophilic pads. These will be placed in orange plastic waste bags.

5. After the spilled material has been removed, spray the FM 186-2 solution on the residual oils left on the ground and brush it in thoroughly.

6. Pick up solution with provided pads (gray or white)

7. Place all material into the orange bag, seal and label it as: **Hydrocarbon Hazardous Waste**. Pick up and disposal should proceed according to company guidelines.

Petroleum waste is a presumptive hazardous waste and the users/generators are responsible for proper waste characterization and disposal. Federal and state regulations require generators to determine their waste classification(s). Regulations also allow for prior knowledge of the waste and treatment procedures in determining the waste's classification. The FM 186 program is a treatment procedure that can be applied as part of the prior knowledge package. Nothing herein is to be taken as approvals that all spill materials would be rendered non-hazardous. Ultimately it is up to the generator to determine the resulting clean up material and to dispose of it correctly.

HOW TO HANDLE LARGE SPILLS SAFELY
ALWAYS WEAR PPE



When a large spill occurs – Press the **system shutoff switch** (if necessary) to shut down the station and begin to contain the spill.



Collect the ECS spill kit, proceed to the spill area and begin to contain the spill.



Place sock booms to protect the storm drain or edge of the property.



Large Spills – Continued



After the spill has been contained, overspray the spill area with the FM 186-2 solution. This overspray greatly reduces the danger of fire and explosion.

Clean up the used sorbent pads and sock booms by collecting them in the orange disposal bags provided in the ECS spill kit. Seal the bags and label them: HYDROCARBON – HAZARDOUS WASTE. **Pick up and disposal should proceed according to your company guidelines.** Following the cleanup of a large spill, remember to replenish your supply of FM 186-2 and sorbents.



Hot Tip: **Hold training spill drills** on a regular basis using <u>water</u>. This is a good way to prepare for a large spill.

Petroleum waste is a presumptive hazardous waste and the users/generators are responsible for proper waste characterization and disposal. Federal and state regulations require generators to determine their waste classification(s). Regulations also allow for prior knowledge of the waste and treatment procedures in determining the waste's classification. The FM 186 program is a treatment procedure that can be applied as part of the prior knowledge package. Nothing herein is to be taken as approvals that <u>all</u> spill materials would be rendered non-hazardous. Ultimately it is up to the generator to determine the resulting clean up material and to dispose of it correctly.

Drainage System Maintenance SC-74



Photo Credit: Geoff Brosseau

Objectives

- Contain
- Educate
- Reduce/Minimize

Description

As a consequence of its function, the stormwater conveyance system collects and transports urban runoff that may contain certain pollutants. Maintaining catch basins, stormwater inlets, and other stormwater conveyance structures on a regular basis will remove pollutants, prevent clogging of the downstream conveyance system, restore catch basins' sediment trapping capacity, and ensure the system functions properly hydraulically to avoid flooding.

Targeted Constituents

Sediment	☑
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	☑
Oil and Grease	☑
Organics	☑
Oxygen Demanding	☑

Approach

Suggested Protocols

Catch Basins/Inlet Structures

- Municipal staff should regularly inspect facilities to ensure the following:
  - Immediate repair of any deterioration threatening structural integrity.
  - Cleaning before the sump is 40% full. Catch basins should be cleaned as frequently as needed to meet this standard.
  - Stenciling of catch basins and inlets (see SC-75 Waste Handling and Disposal).
- Clean catch basins, storm drain inlets, and other conveyance structures in high pollutant load areas just before the wet season to remove sediments and debris accumulated during the summer.

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- Conduct inspections more frequently during the wet season for problem areas where sediment or trash accumulates more often. Clean and repair as needed.
- Keep accurate logs of the number of catch basins cleaned.
- Record the amount of waste collected.
- Store wastes collected from cleaning activities of the drainage system in appropriate containers or temporary storage sites in a manner that prevents discharge to the storm drain.
- Dewater the wastes with outflow into the sanitary sewer if permitted. Water should be treated with an appropriate filtering device prior to discharge to the sanitary sewer. If discharge to the sanitary sewer is not allowed, water should be pumped or vacuumed to a tank and properly disposed of. Do not dewater near a storm drain or stream.
- Except for small communities with relatively few catch basins that may be cleaned manually, most municipalities will require mechanical cleaners such as eductors, vacuums, or bucket loaders.

Storm Drain Conveyance System

- Locate reaches of storm drain with deposit problems and develop a flushing schedule that keeps the pipe clear of excessive buildup.
- Collect flushed effluent and pump to the sanitary sewer for treatment.

Pump Stations

- Clean all storm drain pump stations prior to the wet season to remove silt and trash.
- Do not allow discharge from cleaning a storm drain pump station or other facility to reach the storm drain system.
- Conduct quarterly routine maintenance at each pump station.
- Inspect, clean, and repair as necessary all outlet structures prior to the wet season.
- Sample collected sediments to determine if landfill disposal is possible, or illegal discharges in the watershed are occurring.

Open Channel

- Consider modification of storm channel characteristics to improve channel hydraulics, to increase pollutant removals, and to enhance channel/creek aesthetic and habitat value.
- Conduct channel modification/improvement in accordance with existing laws. Any person, government agency, or public utility proposing an activity that will change the natural (emphasis added) state of any river, stream, or lake in California, must enter into a steam or Lake Alteration Agreement with the Department of Fish and Game. The developer-applicant should also contact local governments (city, county, special districts), other state agencies

(SWRCB, RWQCB, Department of Forestry, Department of Water Resources), and Federal Corps of Engineers and USFWS

Illicit Connections and Discharges

- During routine maintenance of conveyance system and drainage structures field staff should look for evidence of illegal discharges or illicit connections:
  - Is there evidence of spills such as paints, discoloring, etc.
  - Are there any odors associated with the drainage system
  - Record locations of apparent illegal discharges/illicit connections
  - Track flows back to potential dischargers and conduct aboveground inspections. This can be done through visual inspection of up gradient manholes or alternate techniques including zinc chloride smoke testing, fluorometric dye testing, physical inspection testing, or television camera inspection.
  - Once the origin of flow is established, require illicit discharger to eliminate the discharge.
- Stencil storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as "Dump No Waste Drains to Stream" stenciled next to them to warn against ignorant or intentional dumping of pollutants into the storm drainage system.
- Refer to fact sheet SC-10 Non-Stormwater Discharges.

Illegal Dumping

- Regularly inspect and clean up hot spots and other storm drainage areas where illegal dumping and disposal occurs.
- Establish a system for tracking incidents. The system should be designed to identify the following:
  - Illegal dumping hot spots
  - Types and quantities (in some cases) of wastes
  - Patterns in time of occurrence (time of day/night, month, or year)
  - Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills)
  - Responsible parties
- Post "No Dumping" signs in problem areas with a phone number for reporting dumping and disposal. Signs should also indicate fines and penalties for illegal dumping.
- Refer to fact sheet SC-10 Non-Stormwater Discharges.

- The State Department of Fish and Game has a hotline for reporting violations called Cal TIP (1-800-952-5400). The phone number may be used to report any violation of a Fish and Game code (illegal dumping, poaching, etc.).
- The California Department of Toxic Substances Control's Waste Alert Hotline, 1-800-69TOXIC, can be used to report hazardous waste violations.

Training

- Train crews in proper maintenance activities, including record keeping and disposal.
- Only properly trained individuals are allowed to handle hazardous materials/wastes.
- Train municipal employees from all departments (public works, utilities, street cleaning, parks and recreation, industrial waste inspection, hazardous waste inspection, sewer maintenance) to recognize and report illegal dumping.
- Train municipal employees and educate businesses, contractors, and the general public in proper and consistent methods for disposal.
- Train municipal staff regarding non-stormwater discharges (See SC-10 Non-Stormwater Discharges).

Spill Response and Prevention

- Refer to SC-11, Prevention, Control & Cleanup
- Have spill cleanup materials readily available and in a known location.
- Cleanup spills immediately and use dry methods if possible.
- Properly dispose of spill cleanup material.

Other Considerations

- Cleanup activities may create a slight disturbance for local aquatic species. Access to items and material on private property may be limited. Trade-offs may exist between channel hydraulics and water quality/riparian habitat. If storm channels or basins are recognized as wetlands, many activities, including maintenance, may be subject to regulation and permitting.
- Storm drain flushing is most effective in small diameter pipes (36-inch diameter pipe or less, depending on water supply and sediment collection capacity). Other considerations associated with storm drain flushing may include the availability of a water source, finding a downstream area to collect sediments, liquid/sediment disposal, and disposal of flushed effluent to sanitary sewer may be prohibited in some areas.
- Regulations may include adoption of substantial penalties for illegal dumping and disposal.
- Municipal codes should include sections prohibiting the discharge of soil, debris, refuse, hazardous wastes, and other pollutants into the storm drain system.
- Private property access rights may be needed to track illegal discharges up gradient.

- Requirements of municipal ordinance authority for suspected source verification testing for illicit connections necessary for guaranteed rights of entry.

Requirements

Costs

- An aggressive catch basin cleaning program could require a significant capital and O&M budget. A careful study of cleaning effectiveness should be undertaken before increased cleaning is implemented. Catch basin cleaning costs are less expensive if vacuum street sweepers are available; cleaning catch basins manually can cost approximately twice as much as cleaning the basins with a vacuum attached to a sweeper.

- Methods used for illicit connection detection (smoke testing, dye testing, visual inspection, and flow monitoring) can be costly and time-consuming. Site-specific factors, such as the level of impervious area, the density and ages of buildings, and type of land use will determine the level of investigation necessary. Encouraging reporting of illicit discharges by employees can offset costs by saving expense on inspectors and directing resources more efficiently. Some programs have used funds available from "environmental fees" or special assessment districts to fund their illicit connection elimination programs.

Maintenance

- Two-person teams may be required to clean catch basins with vactor trucks.

- Identifying illicit discharges requires teams of at least two people (volunteers can be used), plus administrative personnel, depending on the complexity of the storm sewer system.

- Arrangements must be made for proper disposal of collected wastes.

- Requires technical staff to detect and investigate illegal dumping violations, and to coordinate public education.

Supplemental Information

Further Detail of the BMP

Storm Drain flushing

Sanitary sewer flushing is a common maintenance activity used to improve pipe hydraulics and to remove pollutants in sanitary sewer systems. The same principles that make sanitary sewer flushing effective can be used to flush storm drains. Flushing may be designed to hydraulically convey accumulated material to strategic locations, such as to an open channel, to another point where flushing will be initiated, or over to the sanitary sewer and on to the treatment facilities, thus preventing re-suspension and overflow of a portion of the solids during storm events. Flushing prevents "plug flow" discharges of concentrated pollutant loadings and sediments. The deposits can hinder the designed conveyance capacity of the storm drain system and potentially cause backwater conditions in severe cases of clogging.

Storm drain flushing usually takes place along segments of pipe with grades that are too flat to maintain adequate velocity to keep particles in suspension. An upstream manhole is selected to place an inflatable device that temporarily plugs the pipe. Further upstream, water is pumped into the line to create a flushing wave. When the upstream reach of pipe is sufficiently full to

cause a flushing wave, the inflated device is rapidly deflated with the assistance of a vacuum pump, releasing the backed up water and resulting in the cleaning of the storm drain segment.

To further reduce the impacts of stormwater pollution, a second inflatable device, placed well downstream, may be used to re-collect the water after the force of the flushing wave has dissipated. A pump may then be used to transfer the water and accumulated material to the sanitary sewer for treatment. In some cases, an interceptor structure may be more practical or required to re-collect the flushed waters.

It has been found that cleansing efficiency of periodic flush waves is dependent upon flush volume, flush discharge rate, sewer slope, sewer length, sewer flow rate, sewer diameter, and population density. As a rule of thumb, the length of line to be flushed should not exceed 700 feet. At this maximum recommended length, the percent removal efficiency ranges between 65-75 percent for organics and 55-65 percent for dry weather grit/inorganic material. The percent removal efficiency drops rapidly beyond that. Water is commonly supplied by a water truck, but fire hydrants can also supply water. To make the best use of water, it is recommended that reclaimed water be used or that fire hydrant line flushing coincide with storm drain flushing.

Flow Management

Flow management has been one of the principal motivations for designing urban stream corridors in the past. Such needs may or may not be compatible with the stormwater quality goals in the stream corridor.

Downstream flood peaks can be suppressed by reducing through flow velocity. This can be accomplished by reducing gradient with grade control structures or increasing roughness with boulders, dense vegetation, or complex banks forms. Reducing velocity correspondingly increases flood height, so all such measures have a natural association with floodplain open space. Flood elevations laterally adjacent to the stream can be lowered by increasing through flow velocity.

However, increasing velocity increases flooding downstream and inherently conflicts with channel stability and human safety. Where topography permits, another way to lower flood elevation is to lower the level of the floodway with drop structures into a large but subtly excavated bowl where flood flows we allowed to spread out.

Stream Corridor Planning

Urban streams receive and convey stormwater flows from developed or developing watersheds. Planning of stream corridors thus interacts with urban stormwater management programs. If local programs are intended to control or protect downstream environments by managing flows delivered to the channels, then it is logical that such programs should be supplemented by management of the materials, forms, and uses of the downstream riparian corridor. Any proposal for steam alteration or management should be investigated for its potential flow and stability effects on upstream, downstream, and laterally adjacent areas. The timing and rate of flow from various tributaries can combine in complex ways to alter flood hazards. Each section of channel is unique, influenced by its own distribution of roughness elements, management activities, and stream responses.

Flexibility to adapt to stream features and behaviors as they evolve must be included in stream reclamation planning. The amenity and ecology of streams may be enhanced through the landscape design options of 1) corridor reservation, 2) bank treatment, 3) geomorphic restoration, and 4) grade control.

Corridor reservation - Reserving stream corridors and valleys to accommodate natural stream meandering, aggradation, degradation, and over bank flows allows streams to find their own form and generate less ongoing erosion. In California, open stream corridors in recent urban developments have produced recreational open space, irrigation of streamside plantings, and the aesthetic amenity of flowing water.

Bank treatment - The use of armoring, vegetative cover, and flow deflection may be used to influence a channel's form, stability, and biotic habitat. To prevent bank erosion, armoring can be done with rigid construction materials, such as concrete, masonry, wood planks and logs, riprap, and gabions. Concrete linings have been criticized because of their lack of provision of biotic habitat. In contrast, riprap and gabions make relatively porous and flexible linings. Boulders, placed in the bed reduce velocity and erosive power.

Riparian vegetation can stabilize the banks of streams that are at or near a condition of equilibrium. Binding networks of roots increase bank shear strength. During flood flows, resilient vegetation is forced into erosion-inhibiting mats. The roughness of vegetation leads to lower velocity, further reducing erosive effects. Structural flow deflection can protect banks from erosion or alter fish habitat. By concentrating flow, a deflector causes a pool to be scoured in the bed.

Geomorphic restoration – Restoration refers to alteration of disturbed streams so their form and behavior emulate those of undisturbed streams. Natural meanders are retained, with grading to gentle slopes on the inside of curves to allow point bars and riffle-pool sequences to develop. Trees are retained to provide scenic quality, biotic productivity, and roots for bank stabilization, supplemented by plantings where necessary.

A restorative approach can be successful where the stream is already approaching equilibrium. However, if upstream urbanization continues new flow regimes will be generated that could disrupt the equilibrium of the treated system.

Grade Control - A grade control structure is a level shelf of a permanent material, such as stone, masonry, or concrete, over which stream water flows. A grade control structure is called a sill, weir, or drop structure, depending on the relation of its invert elevation to upstream and downstream channels.

A sill is installed at the preexisting channel bed elevation to prevent upstream migration of nick points. It establishes a firm base level below which the upstream channel can not erode.

A weir or check dam is installed with invert above the preexisting bed elevation. A weir raises the local base level of the stream and causes aggradation upstream. The gradient, velocity, and erosive potential of the stream channel are reduced. A drop structure lowers the downstream invert below its preexisting elevation, reducing downstream gradient and velocity. Weirs and drop structure control erosion by dissipating energy and reducing slope velocity.

When carefully applied, grade control structures can be highly versatile in establishing human and environmental benefits in stabilized channels. To be successful, application of grade control structures should be guided by analysis of the stream system both upstream and downstream from the area to he reclaimed.

Examples

The California Department of Water Resources began the Urban Stream Restoration Program in 1985. The program provides grant funds to municipalities and community groups to implement stream restoration projects. The projects reduce damages from streambank aid watershed instability arid floods while restoring streams' aesthetic, recreational, and fish and wildlife values.

In Buena Vista Park, upper floodway slopes are gentle and grassed to achieve continuity of usable park land across the channel of small boulders at the base of the slopes.

The San Diego River is a large, vegetative lined channel, which was planted in a variety of species to support riparian wildlife while stabilizing the steep banks of the floodway.

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Building & Grounds Maintenance SC-41



Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Description

Stormwater runoff from building and grounds maintenance activities can be contaminated with toxic hydrocarbons in solvents, fertilizers and pesticides, suspended solids, heavy metals, and abnormal pH. Utilizing the following protocols will prevent or reduce the discharge of pollutants to stormwater from building and grounds maintenance activities by washing and cleaning up with as little water as possible, following good landscape management practices, preventing and cleaning up spills immediately, keeping debris from entering the storm drains, and maintaining the stormwater collection system.

Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	✓
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓
Oxygen Demanding	✓

Approach

Pollution Prevention

- Switch to non-toxic chemicals for maintenance when possible.
- Choose cleaning agents that can be recycled.
- Encourage proper lawn management and landscaping, including use of native vegetation.
- Encourage use of Integrated Pest Management techniques for pest control.
- Encourage proper onsite recycling of yard trimmings.
- Recycle residual paints, solvents, lumber, and other material as much as possible.

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Suggested Protocols

Pressure Washing of Buildings, Rooftops, and Other Large Objects

- In situations where soaps or detergents are used and the surrounding area is paved, pressure washers must use a waste water collection device that enables collection of wash water and associated solids. A sump pump, wet vacuum or similarly effective device must be used to collect the runoff and loose materials. The collected runoff and solids must be disposed of properly.
- If soaps or detergents are not used, and the surrounding area is paved, wash water runoff does not have to be collected but must be screened. Pressure washers must use filter fabric or some other type of screen on the ground and/or in he catch basin to trap the particles in wash water runoff.
- If you are pressure washing on a grassed area (with or without soap), runoff must be dispersed as sheet flow as much as possible, rather than as a concentrated stream. The wash runoff must remain on the grass and not drain to pavement. Ensure that this practice does not kill grass.

Landscaping Activities

- Do not apply any chemicals (insecticide, herbicide, or fertilizer) directly to surface waters, unless the application is approved and permitted by the state.
- Dispose of grass clippings, leaves, sticks, or other collected vegetation as garbage, or by composting. Do not dispose of collected vegetation into waterways or storm drainage systems.
- Use mulch or other erosion control measures on exposed soils.
- Check irrigation schedules so pesticides will not be washed away and to minimize non-stormwater discharge.

Building Repair, Remodeling, and Construction

- Do not dump any toxic substance or liquid waste on the pavement, the ground, or toward a storm drain.
- Use ground or drop cloths underneath outdoor painting, scraping, and sandblasting work, and properly dispose of collected material daily.
- Use a ground cloth or oversized tub for activities such as paint mixing and tool cleaning.
- Clean paint brushes and tools covered with water-based paints in sinks connected to sanitary sewers or in portable containers that can be dumped into a sanitary sewer drain. Brushes and tools covered with non-water-based paints, finishes, or other materials must be cleaned in a manner that enables collection of used solvents (e.g., paint thinner, turpentine, etc.) for recycling or proper disposal.

- Use a storm drain cover, filter fabric, or similarly effective runoff control mechanism if dust, grit, wash water, or other pollutants may escape the work area and enter a catch basin. The containment device(s) must be in place at the beginning of the work day, and accumulated dirty runoff and solids must be collected and disposed of before removing the containment device(s) at the end of the work day.
- If you need to de-water an excavation site, you may need to filter the water before discharging to a catch basin or off-site. In which case you should direct the water through hay bales and filter fabric or use other sediment filters or traps.
- Store toxic material under cover with secondary containment during precipitation events and when not in use. A cover would include tarps or other temporary cover material.

Mowing, Trimming, and Planting

- Dispose of leaves, sticks, or other collected vegetation as garbage, by composting or at a permitted landfill. Do not dispose of collected vegetation into waterways or storm drainage systems.
- Use mulch or other erosion control measures when soils are exposed.
- Place temporarily stockpiled material away from watercourses and drain inlets, and berm or cover stockpiles to prevent material releases to the storm drain system.
- Consider an alternative approach when bailing out muddy water; do not put it in the storm drain, pour over landscaped areas.
- Use hand or mechanical weeding where practical.

Fertilizer and Pesticide Management

- Follow all federal, state, and local laws and regulations governing the use, storage, and disposal of fertilizers and pesticides and training of applicators and pest control advisors.
- Follow manufacturers' recommendations and label directions. Pesticides must never be applied if precipitation is occuring or predicted. Do not apply insecticides within 100 feet of surface waters such as lakes, ponds, wetlands, and streams.
- Use less toxic pesticides that will do the job, whenever possible. Avoid use of copper-based pesticides if possible.
- Do not use pesticides if rain is expected.
- Do not mix or prepare pesticides for application near storm drains.
- Use the minimum amount needed for the job.
- Calibrate fertilizer distributors to avoid excessive application.
- Employ techniques to minimize off-target application (e.g. spray drift) of pesticides, including consideration of alternative application techniques.

- Apply pesticides only when wind speeds are low.
- Work fertilizers into the soil rather than dumping or broadcasting them onto the surface.
- Irrigate slowly to prevent runoff and then only as much as is needed.
- Clean pavement and sidewalk if fertilizer is spilled on these surfaces before applying irrigation water.
- Dispose of empty pesticide containers according to the instructions on the container label.
- Use up the pesticides. Rinse containers, and use rinse water as product. Dispose of unused pesticide as hazardous waste.
- Implement storage requirements for pesticide products with guidance from the local fire department and County Agricultural Commissioner. Provide secondary containment for pesticides.

Inspection

- Inspect irrigation system periodically to ensure that the right amount of water is being applied and that excessive runoff is not occurring. Minimize excess watering, and repair leaks in the irrigation system as soon as they are observed.

Training

- Educate and train employees on use of pesticides and in pesticide application techniques to prevent pollution.
- Train employees and contractors in proper techniques for spill containment and cleanup.
- Be sure the frequency of training takes into account the complexity of the operations and the nature of the staff.

Spill Response and Prevention

- Refer to SC-11, Spill Prevention, Control & Cleanup
- Keep your Spill Prevention Control and countermeasure (SPCC) plan up-to-date, and implement accordingly.
- Have spill cleanup materials readily available and in a known location.
- Cleanup spills immediately and use dry methods if possible.
- Properly dispose of spill cleanup material.

Other Considerations

- Alternative pest/weed controls may not be available, suitable, or effective in many cases.

Requirements

Costs

- Overall costs should be low in comparison to other BMPs.

Maintenance

- Sweep paved areas regularly to collect loose particles, and wipe up spills with rags and other absorbent material immediately, do not hose down the area to a storm drain.

Supplemental Information

Further Detail of the BMP

Fire Sprinkler Line Flushing

Building fire sprinkler line flushing may be a source of non-stormwater runoff pollution. The water entering the system is usually potable water though in some areas it may be non-potable reclaimed wastewater. There are subsequent factors that may drastically reduce the quality of the water in such systems. Black iron pipe is usually used since it is cheaper than potable piping but it is subject to rusting and results in lower quality water. Initially the black iron pipe has an oil coating to protect it from rusting between manufacture and installation; this will contaminate the water from the first flush but not from subsequent flushes. Nitrates, poly-phosphates and other corrosion inhibitors, as well as fire suppressants and antifreeze may be added to the sprinkler water system. Water generally remains in the sprinkler system a long time, typically a year, between flushes and may accumulate iron, manganese, lead, copper, nickel and zinc. The water generally becomes anoxic and contains living and dead bacteria and breakdown products from chlorination. This may result in a significant BOD problem and the water often smells. Consequently dispose fire sprinkler line flush water into the sanitary sewer. Do not allow discharge to storm drain or infiltration due to potential high levels of pollutants in fire sprinkler line water.

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Parking/Storage Area Maintenance SC-43



Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	✓
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓
Oxygen Demanding	✓

Description

Parking lots and storage areas can contribute a number of substances, such as trash, suspended solids, hydrocarbons, oil and grease, and heavy metals that can enter receiving waters through stormwater runoff or non-stormwater discharges. The following protocols are intended to prevent or reduce the discharge of pollutants from parking/storage areas and include using good housekeeping practices, following appropriate cleaning BMPs, and training employees.

Approach

Pollution Prevention

- Encourage alternative designs and maintenance strategies for impervious parking lots. (See New Development and Redevelopment BMP Handbook).
- Keep accurate maintenance logs to evaluate BMP implementation.

Suggested Protocols

General

- Keep the parking and storage areas clean and orderly. Remove debris in a timely fashion.
- Allow sheet runoff to flow into biofilters (vegetated strip and swale) and/or infiltration devices.
- Utilize sand filters or oleophilic collectors for oily waste in low concentrations.

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- Arrange rooftop drains to prevent drainage directly onto paved surfaces.
- Design lot to include semi-permeable hardscape.

Controlling Litter

- Post "No Littering" signs and enforce anti-litter laws.
- Provide an adequate number of litter receptacles.
- Clean out and cover litter receptacles frequently to prevent spillage.
- Provide trash receptacles in parking lots to discourage litter.
- Routinely sweep, shovel and dispose of litter in the trash.

Surface cleaning

- Use dry cleaning methods (e.g. sweeping or vacuuming) to prevent the discharge of pollutants into the stormwater conveyance system.
- Establish frequency of public parking lot sweeping based on usage and field observations of waste accumulation.
- Sweep all parking lots at least once before the onset of the wet season.
- If water is used follow the procedures below:
  - Block the storm drain or contain runoff.
  - Wash water should be collected and pumped to the sanitary sewer or discharged to a pervious surface, do not allow wash water to enter storm drains.
  - Dispose of parking lot sweeping debris and dirt at a landfill.
- When cleaning heavy oily deposits:
  - Use absorbent materials on oily spots prior to sweeping or washing.
  - Dispose of used absorbents appropriately.

Surface Repair

- Pre-heat, transfer or load hot bituminous material away from storm drain inlets.
- Apply concrete, asphalt, and seal coat during dry weather to prevent contamination form contacting stormwater runoff.
- Cover and seal nearby storm drain inlets (with waterproof material or mesh) and manholes before applying seal coat, slurry seal, etc., where applicable. Leave covers in place until job is complete and until all water from emulsified oil sealants has drained or evaporated. Clean any debris from these covered manholes and drains for proper disposal.

- Use only as much water as necessary for dust control, to avoid runoff.
- Catch drips from paving equipment that is not in use with pans or absorbent material placed under the machines. Dispose of collected material and absorbents properly.

Inspection

- Have designated personnel conduct inspections of the parking facilities and stormwater conveyance systems associated with them on a regular basis.
- Inspect cleaning equipment/sweepers for leaks on a regular basis.

Training

- Provide regular training to field employees and/or contractors regarding cleaning of paved areas and proper operation of equipment.
- Train employees and contractors in proper techniques for spill containment and cleanup.

Spill Response and Prevention

- Refer to SC-11, Spill Prevention, Control & Cleanup.
- Keep your Spill Prevention Control and countermeasure (SPCC) plan up-to-date, nad implement accordingly.
- Have spill cleanup materials readily available and in a known location.
- Cleanup spills immediately and use dry methods if possible.
- Properly dispose of spill cleanup material.

Other Considerations

- Limitations related to sweeping activities at large parking facilities may include high equipment costs, the need for sweeper operator training, and the inability of current sweeper technology to remove oil and grease.

Requirements

Costs

Cleaning/sweeping costs can be quite large, construction and maintenance of stormwater structural controls can be quite expensive as well.

Maintenance

- Sweep parking lot to minimize cleaning with water.
- Clean out oil/water/sand separators regularly, especially after heavy storms.
- Clean parking facilities on a regular basis to prevent accumulated wastes and pollutants from being discharged into conveyance systems during rainy conditions.

SC-43 Parking/Storage Area Maintenance

Supplemental Information

Further Detail of the BMP

Surface Repair

Apply concrete, asphalt, and seal coat during dry weather to prevent contamination form contacting stormwater runoff. Where applicable, cover and seal nearby storm drain inlets (with waterproof material or mesh) and manholes before applying seal coat, slurry seal, etc. Leave covers in place until job is complete and until all water from emulsified oil sealants has drained or evaporated. Clean any debris from these covered manholes and drains for proper disposal. Use only as much water as necessary for dust control, to avoid runoff.

References and Resources

http://www.stormwatercenter.net/

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality control Board. July 1998 (Revised February 2002 by the California Coastal Commission).

Orange County Stormwater Program
http://www.ocwatersheds.com/StormWater/swp_introduction.asp

Oregon Association of Clean Water Agencies. Oregon Municipal Stormwater Toolbox for Maintenance Practices. June 1998.

Pollution from Surface Cleaning Folder. 1996. Bay Area Stormwater Management Agencies Association (BASMAA) http://www.basma.org

San Diego Stormwater Co-permittees Jurisdictional Urban Runoff Management Program (URMP)
http://www.projectcleanwater.org/pdf/Model%20Program%20Municipal%20Facilities.pdf

Site Design & Landscape Planning SD-10



Design Objectives

- ☑ Maximize Infiltration
- ☑ Provide Retention
- ☑ Slow Runoff
- ☑ Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Each project site possesses unique topographic, hydrologic, and vegetative features, some of which are more suitable for development than others. Integrating and incorporating appropriate landscape planning methodologies into the project design is the most effective action that can be done to minimize surface and groundwater contamination from stormwater.

Approach

Landscape planning should couple consideration of land suitability for urban uses with consideration of community goals and projected growth. Project plan designs should conserve natural areas to the extent possible, maximize natural water storage and infiltration opportunities, and protect slopes and channels.

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment.

Design Considerations

Design requirements for site design and landscapes planning should conform to applicable standards and specifications of agencies with jurisdiction and be consistent with applicable General Plan and Local Area Plan policies.

Designing New Installations

Begin the development of a plan for the landscape unit with attention to the following general principles:

- Formulate the plan on the basis of clearly articulated community goals. Carefully identify conflicts and choices between retaining and protecting desired resources and community growth.
- Map and assess land suitability for urban uses. Include the following landscape features in the assessment: wooded land, open unwooded land, steep slopes, erosion-prone soils, foundation suitability, soil suitability for waste disposal, aquifers, aquifer recharge areas, wetlands, floodplains, surface waters, agricultural lands, and various categories of urban land use. When appropriate, the assessment can highlight outstanding local or regional resources that the community determines should be protected (e.g., a scenic area, recreational area, threatened species habitat, farmland, fish run). Mapping and assessment should recognize not only these resources but also additional areas needed for their sustenance.

Project plan designs should conserve natural areas to the extent possible, maximize natural water storage and infiltration opportunities, and protect slopes and channels.

Conserve Natural Areas during Landscape Planning

If applicable, the following items are required and must be implemented in the site layout during the subdivision design and approval process, consistent with applicable General Plan and Local Area Plan policies:

- Cluster development on least-sensitive portions of a site while leaving the remaining land in a natural undisturbed condition.
- Limit clearing and grading of native vegetation at a site to the minimum amount needed to build lots, allow access, and provide fire protection.
- Maximize trees and other vegetation at each site by planting additional vegetation, clustering tree areas, and promoting the use of native and/or drought tolerant plants.
- Promote natural vegetation by using parking lot islands and other landscaped areas.
- Preserve riparian areas and wetlands.

Maximize Natural Water Storage and Infiltration Opportunities Within the Landscape Unit

- Promote the conservation of forest cover. Building on land that is already deforested affects basin hydrology to a lesser extent than converting forested land. Loss of forest cover reduces interception storage, detention in the organic forest floor layer, and water losses by evapotranspiration, resulting in large peak runoff increases and either their negative effects or the expense of countering them with structural solutions.
- Maintain natural storage reservoirs and drainage corridors, including depressions, areas of permeable soils, swales, and intermittent streams. Develop and implement policies and

regulations to discourage the clearing, filling, and channelization of these features. Utilize them in drainage networks in preference to pipes, culverts, and engineered ditches.

- Evaluating infiltration opportunities by referring to the stormwater management manual for the jurisdiction and pay particular attention to the selection criteria for avoiding groundwater contamination, poor soils, and hydrogeological conditions that cause these facilities to fail. If necessary, locate developments with large amounts of impervious surfaces or a potential to produce relatively contaminated runoff away from groundwater recharge areas.

Protection of Slopes and Channels during Landscape Design

- Convey runoff safely from the tops of slopes.
- Avoid disturbing steep or unstable slopes.
- Avoid disturbing natural channels.
- Stabilize disturbed slopes as quickly as possible.
- Vegetate slopes with native or drought tolerant vegetation.
- Control and treat flows in landscaping and/or other controls prior to reaching existing natural drainage systems.
- Stabilize temporary and permanent channel crossings as quickly as possible, and ensure that increases in run-off velocity and frequency caused by the project do not erode the channel.
- Install energy dissipaters, such as riprap, at the outlets of new storm drains, culverts, conduits, or channels that enter unlined channels in accordance with applicable specifications to minimize erosion. Energy dissipaters shall be installed in such a way as to minimize impacts to receiving waters.
- Line on-site conveyance channels where appropriate, to reduce erosion caused by increased flow velocity due to increases in tributary impervious area. The first choice for linings should be grass or some other vegetative surface, since these materials not only reduce runoff velocities, but also provide water quality benefits from filtration and infiltration. If velocities in the channel are high enough to erode grass or other vegetative linings, riprap, concrete, soil cement, or geo-grid stabilization are other alternatives.
- Consider other design principles that are comparable and equally effective.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Redevelopment may present significant opportunity to add features which had not previously been implemented. Examples include incorporation of depressions, areas of permeable soils, and swales in newly redeveloped areas. While some site constraints may exist due to the status of already existing infrastructure, opportunities should not be missed to maximize infiltration, slow runoff, reduce impervious areas, disconnect directly connected impervious areas.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Stormwater Management Manual for Western Washington, Washington State Department of Ecology, August 2001.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Roof Runoff Controls SD-11



Rain Garden

Design Objectives

- ☑ Maximize Infiltration
- ☑ Provide Retention
- ☑ Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- ☑ Contain Pollutants
- Collect and Convey

Description

Various roof runoff controls are available to address stormwater that drains off rooftops. The objective is to reduce the total volume and rate of runoff from individual lots, and retain the pollutants on site that may be picked up from roofing materials and atmospheric deposition. Roof runoff controls consist of directing the roof runoff away from paved areas and mitigating flow to the storm drain system through one of several general approaches: cisterns or rain barrels; dry wells or infiltration trenches; pop-up emitters, and foundation planting. The first three approaches require the roof runoff to be contained in a gutter and downspout system. Foundation planting provides a vegetated strip under the drip line of the roof.

Approach

Design of individual lots for single-family homes as well as lots for higher density residential and commercial structures should consider site design provisions for containing and infiltrating roof runoff or directing roof runoff to vegetative swales or buffer areas. Retained water can be reused for watering gardens, lawns, and trees. Benefits to the environment include reduced demand for potable water used for irrigation, improved stormwater quality, increased groundwater recharge, decreased runoff volume and peak flows, and decreased flooding potential.

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment.

Design Considerations

Designing New Installations

Cisterns or Rain Barrels

One method of addressing roof runoff is to direct roof downspouts to cisterns or rain barrels. A cistern is an above ground storage vessel with either a manually operated valve or a permanently open outlet. Roof runoff is temporarily stored and then released for irrigation or infiltration between storms. The number of rain

barrels needed is a function of the rooftop area. Some low impact developers recommend that every house have at least 2 rain barrels, with a minimum storage capacity of 1000 liters. Roof barrels serve several purposes including mitigating the first flush from the roof which has a high volume, amount of contaminants, and thermal load. Several types of rain barrels are commercially available. Consideration must be given to selecting rain barrels that are vector proof and childproof. In addition, some barrels are designed with a bypass valve that filters out grit and other contaminants and routes overflow to a soak-away pit or rain garden.

If the cistern has an operable valve, the valve can be closed to store stormwater for irrigation or infiltration between storms. This system requires continual monitoring by the resident or grounds crews, but provides greater flexibility in water storage and metering. If a cistern is provided with an operable valve and water is stored inside for long periods, the cistern must be covered to prevent mosquitoes from breeding.

A cistern system with a permanently open outlet can also provide for metering stormwater runoff. If the cistern outlet is significantly smaller than the size of the downspout inlet (say ¼ to ½ inch diameter), runoff will build up inside the cistern during storms, and will empty out slowly after peak intensities subside. This is a feasible way to mitigate the peak flow increases caused by rooftop impervious land coverage, especially for the frequent, small storms.

Dry wells and Infiltration Trenches

Roof downspouts can be directed to dry wells or infiltration trenches. A dry well is constructed by excavating a hole in the ground and filling it with an open graded aggregate, and allowing the water to fill the dry well and infiltrate after the storm event. An underground connection from the downspout conveys water into the dry well, allowing it to be stored in the voids. To minimize sedimentation from lateral soil movement, the sides and top of the stone storage matrix can be wrapped in a permeable filter fabric, though the bottom may remain open. A perforated observation pipe can be inserted vertically into the dry well to allow for inspection and maintenance.

In practice, dry wells receiving runoff from single roof downspouts have been successful over long periods because they contain very little sediment. They must be sized according to the amount of rooftop runoff received, but are typically 4 to 5 feet square, and 2 to 3 feet deep, with a minimum of 1-foot soil cover over the top (maximum depth of 10 feet).

To protect the foundation, dry wells must be set away from the building at least 10 feet. They must be installed in solids that accommodate infiltration. In poorly drained soils, dry wells have very limited feasibility.

Infiltration trenches function in a similar manner and would be particularly effective for larger roof areas. An infiltration trench is a long, narrow, rock-filled trench with no outlet that receives stormwater runoff. These are described under Treatment Controls.

Pop-up Drainage Emitter

Roof downspouts can be directed to an underground pipe that daylights some distance from the building foundation, releasing the roof runoff through a pop-up emitter. Similar to a pop-up irrigation head, the emitter only opens when there is flow from the roof. The emitter remains flush to the ground during dry periods, for ease of lawn or landscape maintenance.

Foundation Planting

Landscape planting can be provided around the base to allow increased opportunities for stormwater infiltration and protect the soil from erosion caused by concentrated sheet flow coming off the roof. Foundation plantings can reduce the physical impact of water on the soil and provide a subsurface matrix of roots that encourage infiltration. These plantings must be sturdy enough to tolerate the heavy runoff sheet flows, and periodic soil saturation.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Supplemental Information

Examples

- City of Ottawa's Water Links Surface –Water Quality Protection Program
- City of Toronto Downspout Disconnection Program
- City of Boston, MA, Rain Barrel Demonstration Program

Other Resources

Hager, Marty Catherine, Stormwater, "Low-Impact Development", January/February 2003. www.stormh2o.com

Low Impact Urban Design Tools, Low Impact Development Design Center, Beltsville, MD. www.lid-stormwater.net

Start at the Source, Bay Area Stormwater Management Agencies Association, 1999 Edition

Efficient Irrigation SD-12



Design Objectives

- ☑ Maximize Infiltration
- ☑ Provide Retention
- ☑ Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Irrigation water provided to landscaped areas may result in excess irrigation water being conveyed into stormwater drainage systems.

Approach

Project plan designs for development and redevelopment should include application methods of irrigation water that minimize runoff of excess irrigation water into the stormwater conveyance system.

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment. (Detached residential single-family homes are typically excluded from this requirement.)

Design Considerations

Designing New Installations

The following methods to reduce excessive irrigation runoff should be considered, and incorporated and implemented where determined applicable and feasible by the Permittee:

- Employ rain-triggered shutoff devices to prevent irrigation after precipitation.
- Design irrigation systems to each landscape area's specific water requirements.
- Include design featuring flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines.
- Implement landscape plans consistent with County or City water conservation resolutions, which may include provision of water sensors, programmable irrigation times (for short cycles), etc.

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- Design timing and application methods of irrigation water to minimize the runoff of excess irrigation water into the storm water drainage system.
- Group plants with similar water requirements in order to reduce excess irrigation runoff and promote surface filtration. Choose plants with low irrigation requirements (for example, native or drought tolerant species). Consider design features such as:
  - Using mulches (such as wood chips or bar) in planter areas without ground cover to minimize sediment in runoff
  - Installing appropriate plant materials for the location, in accordance with amount of sunlight and climate, and use native plant materials where possible and/or as recommended by the landscape architect
  - Leaving a vegetative barrier along the property boundary and interior watercourses, to act as a pollutant filter, where appropriate and feasible
  - Choosing plants that minimize or eliminate the use of fertilizer or pesticides to sustain growth
- Employ other comparable, equally effective methods to reduce irrigation water runoff.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Storm Drain Signage SD-13



Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- ☑ Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Waste materials dumped into storm drain inlets can have severe impacts on receiving and ground waters. Posting notices regarding discharge prohibitions at storm drain inlets can prevent waste dumping. Storm drain signs and stencils are highly visible source controls that are typically placed directly adjacent to storm drain inlets.

Approach

The stencil or affixed sign contains a brief statement that prohibits dumping of improper materials into the urban runoff conveyance system. Storm drain messages have become a popular method of alerting the public about the effects of and the prohibitions against waste disposal.

Suitable Applications

Stencils and signs alert the public to the destination of pollutants discharged to the storm drain. Signs are appropriate in residential, commercial, and industrial areas, as well as any other area where contributions or dumping to storm drains is likely.

Design Considerations

Storm drain message markers or placards are recommended at all storm drain inlets within the boundary of a development project. The marker should be placed in clear sight facing toward anyone approaching the inlet from either side. All storm drain inlet locations should be identified on the development site map.

Designing New Installations

The following methods should be considered for inclusion in the project design and show on project plans:

- Provide stenciling or labeling of all storm drain inlets and catch basins, constructed or modified, within the project area with prohibitive language. Examples include "NO DUMPING

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– DRAINS TO OCEAN" and/or other graphical icons to discourage illegal dumping.

- Post signs with prohibitive language and/or graphical icons, which prohibit illegal dumping at public access points along channels and creeks within the project area.

Note - Some local agencies have approved specific signage and/or storm drain message placards for use. Consult local agency stormwater staff to determine specific requirements for placard types and methods of application.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. If the project meets the definition of "redevelopment", then the requirements stated under " designing new installations" above should be included in all project design plans.

Additional Information

Maintenance Considerations

- Legibility of markers and signs should be maintained. If required by the agency with jurisdiction over the project, the owner/operator or homeowner's association should enter into a maintenance agreement with the agency or record a deed restriction upon the property title to maintain the legibility of placards or signs.

Placement

- Signage on top of curbs tends to weather and fade.

- Signage on face of curbs tends to be worn by contact with vehicle tires and sweeper brooms.

Supplemental Information

Examples

- Most MS4 programs have storm drain signage programs. Some MS4 programs will provide stencils, or arrange for volunteers to stencil storm drains as part of their outreach program.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Maintenance Bays & Docks SD-31



Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- ☑ Prohibit Dumping of Improper Materials
- ☑ Contain Pollutants
- Collect and Convey

Description

Several measures can be taken to prevent operations at maintenance bays and loading docks from contributing a variety of toxic compounds, oil and grease, heavy metals, nutrients, suspended solids, and other pollutants to the stormwater conveyance system.

Approach

In designs for maintenance bays and loading docks, containment is encouraged. Preventative measures include overflow containment structures and dead-end sumps. However, in the case of loading docks from grocery stores and warehouse/distribution centers, engineered infiltration systems may be considered.

Suitable Applications

Appropriate applications include commercial and industrial areas planned for development or redevelopment.

Design Considerations

Design requirements for vehicle maintenance and repair are governed by Building and Fire Codes, and by current local agency ordinances, and zoning requirements. The design criteria described in this fact sheet are meant to enhance and be consistent with these code requirements.

Designing New Installations

Designs of maintenance bays should consider the following:

- Repair/maintenance bays and vehicle parts with fluids should be indoors; or designed to preclude urban run-on and runoff.
- Repair/maintenance floor areas should be paved with Portland cement concrete (or equivalent smooth impervious surface).

- Repair/maintenance bays should be designed to capture all wash water leaks and spills. Provide impermeable berms, drop inlets, trench catch basins, or overflow containment structures around repair bays to prevent spilled materials and wash-down waters form entering the storm drain system. Connect drains to a sump for collection and disposal. Direct connection of the repair/maintenance bays to the storm drain system is prohibited. If required by local jurisdiction, obtain an Industrial Waste Discharge Permit.
- Other features may be comparable and equally effective.

The following designs of loading/unloading dock areas should be considered:

- Loading dock areas should be covered, or drainage should be designed to preclude urban run-on and runoff.
- Direct connections into storm drains from depressed loading docks (truck wells) are prohibited.
- Below-grade loading docks from grocery stores and warehouse/distribution centers of fresh food items should drain through water quality inlets, or to an engineered infiltration system, or an equally effective alternative. Pre-treatment may also be required.
- Other features may be comparable and equally effective.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Additional Information

Stormwater and non-stormwater will accumulate in containment areas and sumps with impervious surfaces. Contaminated accumulated water must be disposed of in accordance with applicable laws and cannot be discharged directly to the storm drain or sanitary sewer system without the appropriate permit.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Drain Inserts MP-52

Description

Drain inserts are manufactured filters or fabric placed in a drop inlet to remove sediment and debris. There are a multitude of inserts of various shapes and configurations, typically falling into one of three different groups: socks, boxes, and trays. The sock consists of a fabric, usually constructed of polypropylene. The fabric may be attached to a frame or the grate of the inlet holds the sock. Socks are meant for vertical (drop) inlets. Boxes are constructed of plastic or wire mesh. Typically a polypropylene "bag" is placed in the wire mesh box. The bag takes the form of the box. Most box products are one box; that is, the setting area and filtration through media occur in the same box. Some products consist of one or more trays or mesh grates. The trays may hold different types of media. Filtration media vary by manufacturer. Types include polypropylene, porous polymer, treated cellulose, and activated carbon.

California Experience

The number of installations is unknown but likely exceeds a thousand. Some users have reported that these systems require considerable maintenance to prevent plugging and bypass.

Advantages

- Does not require additional space as inserts as the drain inlets are already a component of the standard drainage systems.
- Easy access for inspection and maintenance.
- As there is no standing water, there is little concern for mosquito breeding.
- A relatively inexpensive retrofit option.

Limitations

Performance is likely significantly less than treatment systems that are located at the end of the drainage system such as ponds and vaults. Usually not suitable for large areas or areas with trash or leaves than can plug the insert.

Design and Sizing Guidelines

Refer to manufacturer's guidelines. Drain inserts come any many configurations but can be placed into three general groups: socks, boxes, and trays. The sock consists of a fabric, usually constructed of polypropylene. The fabric may be attached to a frame or the grate of the inlet holds the sock. Socks are meant for vertical (drop) inlets. Boxes are constructed of plastic or wire mesh. Typically a polypropylene "bag" is placed in the wire mesh box. The bag takes the form of the box. Most box products are

Design Considerations

- Use with other BMPs
- Fit and Seal Capacity within Inlet

Targeted Constituents

- ✓ Sediment
- ✓ Nutrients
- ✓ Trash
- ✓ Metals
- Bacteria
- ✓ Oil and Grease
- ✓ Organics

Removal Effectiveness

See New Development and Redevelopment Handbook-Section 5.

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one box; that is, the setting area and filtration through media occurs in the same box. One manufacturer has a double-box. Stormwater enters the first box where setting occurs. The stormwater flows into the second box where the filter media is located. Some products consist of one or more trays or mesh grates. The trays can hold different types of media. Filtration media vary with the manufacturer: types include polypropylene, porous polymer, treated cellulose, and activated carbon.

Construction/Inspection Considerations

Be certain that installation is done in a manner that makes certain that the stormwater enters the unit and does not leak around the perimeter. Leakage between the frame of the insert and the frame of the drain inlet can easily occur with vertical (drop) inlets.

Performance

Few products have performance data collected under field conditions.

Siting Criteria

It is recommended that inserts be used only for retrofit situations or as pretreatment where other treatment BMPs presented in this section area used.

Additional Design Guidelines

Follow guidelines provided by individual manufacturers.

Maintenance

Likely require frequent maintenance, on the order of several times per year.

Cost

- The initial cost of individual inserts ranges from less than $100 to about $2,000. The cost of using multiple units in curb inlet drains varies with the size of the inlet.
- The low cost of inserts may tend to favor the use of these systems over other, more effective treatment BMPs. However, the low cost of each unit may be offset by the number of units that are required, more frequent maintenance, and the shorter structural life (and therefore replacement).

References and Sources of Additional Information

Hrachovec, R., and G. Minton, 2001, Field testing of a sock-type catch basin insert, Planet CPR, Seattle, Washington

Interagency Catch Basin Insert Committee, Evaluation of Commercially-Available Catch Basin Inserts for the Treatment of Stormwater Runoff from Developed Sites, 1995

Larry Walker Associates, June 1998, NDMP Inlet/In-Line Control Measure Study Report

Manufacturers literature

Santa Monica (City), Santa Monica Bay Municipal Stormwater/Urban Runoff Project - Evaluation of Potential Catch basin Retrofits, Woodward Clyde, September 24, 1998

Woodward Clyde, June 11, 1996, Parking Lot Monitoring Report, Santa Clara Valley Nonpoint Source Pollution Control Program.

Bioretention TC-32

General Description

The bioretention best management practice (BMP) functions as a soil and plant-based filtration device that removes pollutants through a variety of physical, biological, and chemical treatment processes. These facilities normally consist of a grass buffer strip, sand bed, ponding area, organic layer or mulch layer, planting soil, and plants. The runoff's velocity is reduced by passing over or through a sand bed and is subsequently distributed evenly along a ponding area. Exfiltration of the stored water in the bioretention area planting soil into the underlying soils occurs over a period of days.

Inspection/Maintenance Considerations

Bioretention requires monthly landscaping maintenance, including measures to ensure that the area is functioning properly and irrigation during dry periods. In many cases, bioretention areas initially require intense maintenance, but less maintenance is needed over time. Maintenance tasks may be conducted by a landscaping contractor, who may already be hired at the site.

Sediment may enter the bioretention cell and form a crust on the soil surface, limiting the porosity of the soil. Raking of the mulch and soil surface may be needed to maintain high infiltration rates. In cold climates the soil may freeze, preventing runoff from infiltrating into the planting soil.

Bioretention systems can become a nuisance due to mosquito and midge breeding. Maintaining soil porosity and basic housekeeping practices such as removal of debris accumulations and vegetation management are necessary to ensure that the system dewaters completely (recommended 72 hour residence time or less) to prevent creating mosquito and other vector habitats.

Advanced BMPs Covered



Maintenance Concerns

- *Clogged Soil or Outlet Structures*
- *Sediment Accumulation*
- *Invasive Species Management*
- *Vegetation/Landscape Maintenance*
- *Erosion*
- *Channelization of Flow*
- *Vector Control*
- *Aesthetics*

Targeted Constituents

Sediment	■
Nutrients	▲
Trash	■
Metals	■
Bacteria	■
Oil and Grease	■
Organics	■

Legend (Removal Effectiveness)

● Low ■ High ▲ Medium

✱ Requires Pretreatment

Note: The removal effectiveness ratings shown in the table are for properly designed, sited, and maintained BMPs; some configurations will have variations in pollutant effectiveness.

CASQA
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Inspection Activities	Suggested Frequency
☐ Inspect soil and repair eroded areas.	Monthly
☐ Inspect for erosion or damage to vegetation, preferably at the end of the wet season to schedule summer maintenance and before major fall runoff to be sure the strips are ready for winter. However, additional inspection after periods of heavy runoff is desirable.	Semi-annual inspection
☐ Inspect to ensure vegetation is well established. If not, either prepare soil and reseed or replace with alternative species. Install erosion control blanket. ☐ Check for debris and litter, and areas of sediment accumulation. ☐ Inspect health of trees and shrubs.	
Maintenance Activities	**Suggested Frequency**
☐ Water plants daily for 2 weeks.	At project completion
☐ Remove litter and debris.	Monthly
☐ Remove sediment. ☐ Remulch void areas. ☐ Irrigate during dry periods. ☐ Treat diseased trees and shrubs. ☐ Mow turf areas. ☐ Repair erosion at inflow points. ☐ Repair outflow structures. ☐ Unclog underdrain. ☐ Regulate soil pH. ☐ Make structural changes or repairs as needed to eliminate pools of water that stand longer than 96 hrs to prevent mosquito production, particularly during the warmer months of the year. Identify and eliminate sources of non-stormwater runoff that feed standing water pools. Coordinate with the local mosquito and vector control agency to control mosquitoes, if necessary.	As needed
☐ Remove and replace dead and diseased vegetation.	Semi-annual
☐ Add mulch. ☐ Replace tree stakes and wires.	Annual
☐ Mulch should be replaced every 2 to 3 years or when bare spots appear or infiltration rates are reduced. Remulch prior to the wet season.	Every 2-3 years, or as needed

Additional Information

Landscaping is critical to the function and aesthetic value of bioretention areas. It is preferable to plant the area with native vegetation, or plants that provide habitat value, where possible. Another important design feature is to select species that can withstand the hydrologic regime they will experience. At the bottom of the bioretention facility, plants that tolerate both wet and dry conditions are preferable. At the edges, which will remain primarily dry, upland species will be the most resilient. It is best to select a combination of trees, shrubs, and herbaceous materials.

For areas with low permeability native soils or steep slopes, bioretention areas can be designed with an underdrain system that routes the treated runoff to the storm drain system rather than depending entirely on infiltration.

Special considerations are required for bioretention to be effective in cold climates – see the Stormwater Managers Resource Center for more information.

References

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Ventura Countywide Stormwater Quality Management Program. *Technical Guidance Manual for Stormwater Quality Control Measures*, 2010. Available online at: http://www.vcstormwater.org/documents/workproducts/technicalguidancemanual/201orevisions/Ventura%20Technical%20Guidance%20Document_5-6-10.pdf.

Watershed Management Institute, Inc. *Operation, Maintenance, and Management of Stormwater Management Systems* 1997. Available online at: http://www.stormwater.ucf.edu/research/stormwaterOMM/stormwateromm.pdf.

Water Quality Inlet TC-50

General Description

Water quality inlets (WQIs), also typically called trapping catch basins, oil/grit separators or oil/water separators, consist of one or more chambers that promote sedimentation of coarse materials and separation of free oil (as opposed to emulsified or dissolved oil) from stormwater. Some WQIs also contain screens to help retain larger or floating debris, and many of the newer designs also include a coalescing unit that helps promote oil/water separation.

These devices are appropriate for capturing hydrocarbon spills, but provide very marginal sediment removal and are not very effective for treatment of stormwater runoff. WQIs typically capture only the first portion of runoff for treatment and are generally used for pretreatment before discharging to other best management practices (BMPs).

Inspection/Maintenance Considerations

High sediment loads can interfere with the ability of the WQI to effectively separate oil and grease from the runoff. During periods of high flow, sediment can be re-suspended and released from the WQI into surface waters if this in the only BMP on site prior to discharge. Maintenance of WQIs can be easily neglected because they are underground. Establishment of a maintenance schedule is helpful for ensuring proper maintenance occurs. The required maintenance effort will be site-specific due to variations in sediment and hydrocarbon loading. Since WQI residuals contain hydrocarbon by-products, they may require disposal as hazardous waste. Many WQI owners coordinate with waste haulers to collect and dispose of these residuals.

Advanced BMPs Covered



Maintenance Concerns

- *High Sediment Loads*
- *Hazardous Waste*
- *Vector Control*
- *Pollutant Release*

Targeted Constituents

Sediment	●
Nutrients	●
Trash	▲
Metals	●
Bacteria	●
Oil and Grease	▲
Organics	●

Legend (Removal Effectiveness)

● Low ▲ Medium ■ High

✱ Requires Pretreatment

Note: The removal effectiveness ratings shown in the table are for properly designed, sited, and maintained BMPs; some configurations will have variations in pollutant effectiveness.

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Inspection Activities	Suggested Frequency
☐ Inspect regularly to determine if maintenance is required.	Monthly during the wet season, or after significant rain events
☐ Contact the local mosquito and vector control agency if mosquito breeding is observed or suspected.	As needed

Maintenance Activities	Suggested Frequency
☐ Clean out and dispose of accumulated oil, grease, and sediments. Remove accumulated trash and debris. The clean out and disposal techniques should be environmentally acceptable and in accordance with local regulations.	Annual, before the wet season, or more frequent as needed

Additional Information

Water quality inlets are most effective for drainage areas of 1 acre or less. They are often used in industrial applications such as airport runways, equipment washdown areas, and gas station parking lots. WQIs can be situated at the ground surface or underground, and they are available as pre-manufactured or cast-in-place units, typically constructed with reinforced concrete. They should be water-tight to prevent possible groundwater contamination, and should be sited such that vactor trucks can easily access and remove sediment and pollutants.

Since WQIs can be relatively deep, they may be designated as confined spaces. Caution should be exercised to comply with confined space entry safety regulations if it is required.

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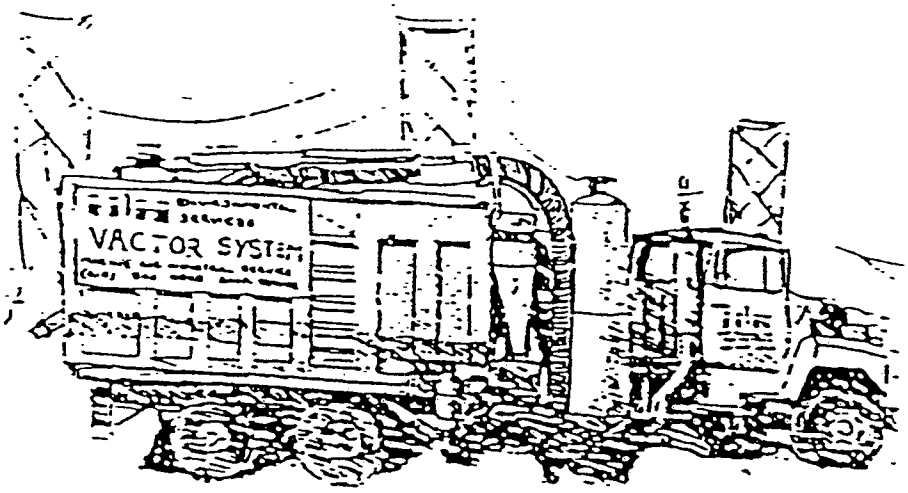
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BMP: Inlet Cleaning



Description

Inlet cleaning is the removal of sediment and debris from storm drain inlets. Storm water inlets can only operate efficiently if they are maintained on a regular basis. Parking lot maintenance should include regular cleaning to remove pollutants and to prevent clogging of inlets. Clogged inlets are not only useless, but may act as a source of increased sediment and pollutant levels in storm water runoff.

Inlet cleaning is usually conducted using one of two methods, manual cleaning or by vacuum truck. Manual cleaning is the removal of debris and sediment using shovels, trowels, buckets, etc. Manual cleaning is recommeded for a few (5 or less) small sized inlets (approximately 3' x 3' x 3').

For greater than 5 small inlets or large sized inlets, the vaccum truck method should be used. The vacuum truck method includes manual removal of debris (trash, branches, etc.) followed by removal of sediment and/or water with a vacuum truck. A vacuum truck company in your area can be found in the Yellow Pages under Sewer Contractors or Pumping Contractors. Wastes need to be wet or moist for vacuum truck to work.

It should be noted that sediment (less the debris) removed from the catch basin should be analyzed for disposal. At a minimum, sediment should be analyzed for lead, oil & grease, and hydrocarbons.

Conditions Where BMP Applies

Inlet cleaning should be implemented in any parking lot that has a storm water inlet.

Costs

Costs are dependent upon the level of cleaning required for the inlet and the number of inlets requiring cleaning. Manual cleaning of a small inlet requires approximately 1 hour of labor. The vaccum truck method requires approximately 1/2 hour per inlet at a cost of $70 per hour. Additional costs are expected for analyses of the sediment, approximately $50 per constiuent (lead, oil & grease, etc.) and for disposal of the sediment.

Applicability

Small Parking Lots

Existing	New	
●	●	Small, high turnover rate, no landscaping
●	●	Small, low turnover rate, no landscaping

Large Parking Lots

Existing	New	
●	●	Large, high turnover rate, no landscaping
●	●	Large, high turnover rate, landscaping available
●	●	Large, low turnover rate, no landscaping
●	●	Large, low turnover rate, landscaping available

Availability

- O Commercially
- O Requires fabrication (off-site)
- O On-site fabrication
- O Excavation

Costs/Yr

- ● < $1000
- O 1K-5K
- O 5K-20K
- O > 20K

Inspection Frequency

- O Storm Event
- O Monthly during wet season
- ● Before wet season
- O 2-3 years

Equipment

Small storm water inlets can be cleaned manually by using shovels, trowels, etc. Larger inlets, however, usually require mechanical cleaning equipment such as vacuum trucks or bucket loaders.

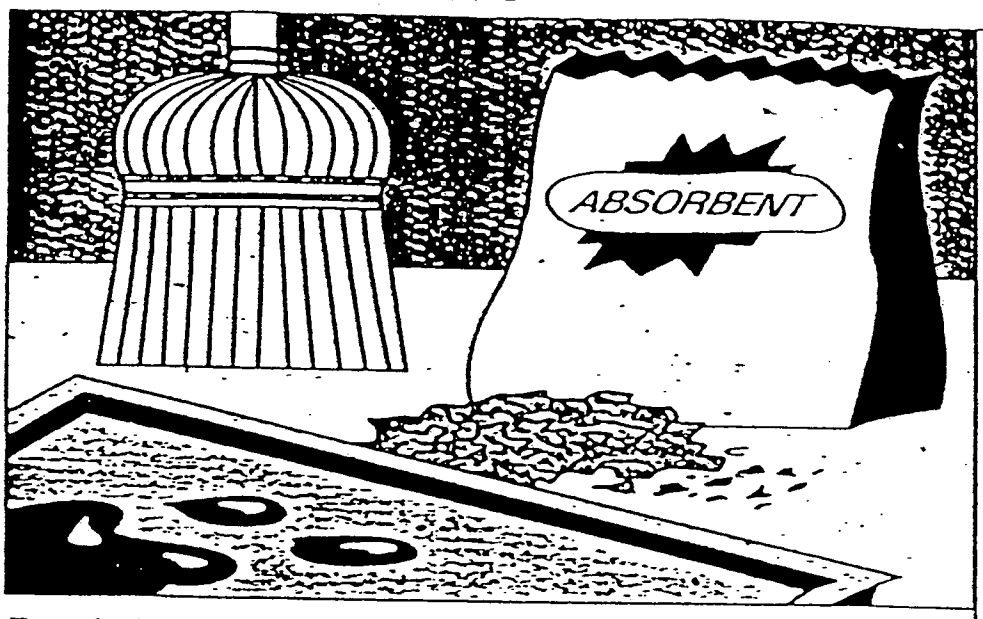
Inspection and Maintenance

Activity	Frequency	Level of Effort
Remove debris and sediment from inlet	Before wet season	Manual cleaning method: one person, 1 hour/inlet or Vacuum Truck Method: One vacuum truck crew (Operator & Truck) 1/2 hour /inlet at $70/hr.

Other

Periodic cleaning of inlets maintains the inlet's capabilities for treating storm water. Lack of cleaning has been established as one of the major causes for storm water inlet failures (e.g. flooding).

BMP: Spot Cleaning



Description

Spot cleaning is the application of absorbent materials to spilled or leaked automotive or similar fluids (i.e. gasoline, oil, antifreeze). Spot cleaning is conducted by placing an absorbent material over a spill, allowing the spilled material to be soaked up then sweeping up the absorbent and placing it into a container for reuse or disposal. Examples of absorbent materials include rice hull ash, kitty litter or sawdust.

Conditions Where BMP Applies

Absorbents can be used in any parking lot where leaks are observed, on wet areas or in frequently used stalls. Absorbents are capable of absorbing any spilled liquid material, but are mainly used to absorb automotive type fluids (i.e. gasoline, oil, antifreeze).

Costs

Absorbents are inexpensive. A 20-lb. bag of absorbent costs approximately $8. Spot cleaning involves low labor cost.. Application requires one person approximately 15 min. per spot (assuming a spill or spot size of 2 - 3 feet in diameter or less). Additional costs are associated with disposal of the spent absorbent.

Other

Absorbent materials can be reused until the material becomes saturated with the spilled product. Saturation is evident when the material becomes dark w/product (i.e. black from motoroil). If some of the original color of the absorbent can be seen, the material still has absorbing capabilities.

Saturated absorbent material should be collected in approved disposal containers, and disposed of properly. In some jurisdictions, oil-soaked absorbent is considered a hazardous waste. Check with your local administering agency (usually Department of Health).

Applicability

Small Parking Lots

Existing	New	
●	●	Small, high turnover rate, no landscaping
●	●	Small, low turnover rate, no landscaping

Large Parking Lots

Existing	New	
●	●	Large, high turnover rate, no landscaping
●	●	Large, high turnover rate, landscaping available
●	●	Large, low turnover rate, no landscaping
●	●	Large, low turnover rate, landscaping available

Availability

- ● Commercially
- ○ Requires fabrication (off-site)
- ○ On-site fabrication
- ○ Excavation

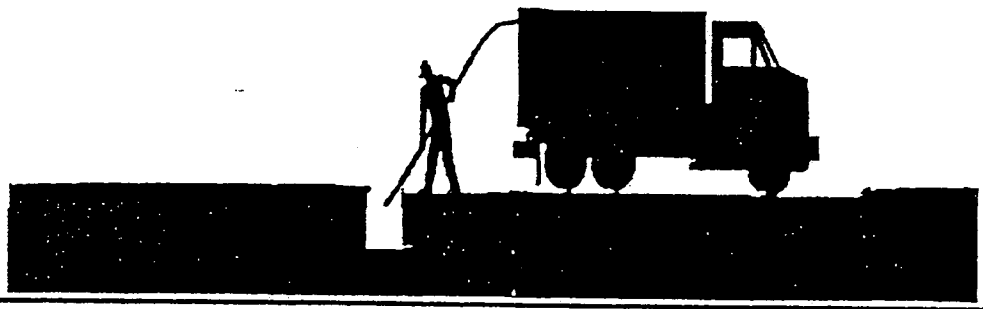
Costs/Yr

- ● < $1000
- ○ 1K-5K
- ○ 5K-20K
- ○ > 20K

Inspection Frequency

- ○ Storm Event
- ● Monthly during wet season
- ○ Before wet season
- ○ 2-3 years

BMP: CATCH BASIN CLEANING



Program Elements

- *New Development*
- *Residential*
- *Commercial Activities*
- *Industrial Activities*
- *Municipal Facilities* (●)
- *Illegal Discharges* (●)

DESCRIPTION

Maintain catch basins and storm water inlets on a regular basis to remove pollutants, reduce high pollutant concentrations during the first flush of storms, prevent clogging of the downstream conveyance system, and restore the catch basins' sediment trapping capacity. A catch basin is distinguished from a storm water inlet by having at its base a sediment sump designed to catch and retain sediments below the overflow point. This fact sheet focuses on the cleaning of accumulated sediments from catch basins.

APPROACH

- Aggressively enforce anti-littering and illegal dumping ordinances.
- Catch basins should be cleaned regularly to reduce the possibility of sediment and pollutant loading from the flushing effect of storm water inflow.
- Prioritize maintenance to clean catch basins and inlets in areas with the highest pollutant loading.
- Keep accurate operation logs to track program.

REQUIREMENTS

- Cost Considerations
  - An aggressive catch basin cleaning program could require a significant capital and O&M budget. A careful study of cleaning effectiveness should be undertaken before increased cleaning is implemented.
- Regulations
  - There are no regulatory requirements for this BMP. Municipal codes should include sections prohibiting the disposal of soil, debris, refuse, hazardous waste, and other pollutants into the storm drain system, and prohibiting littering.
- Administrative / Staffing
  - Two-person teams may be required to clean catch basins with vactor trucks.
  - Arrangements must be made for proper disposal of collected wastes.
- Equipment
  - Except for small communities with relatively few catch basins that may be cleaned manually, most municipalities will require mechanical cleaners such as eductors, vacuums, or bucket loaders.
- Training
  - Crews must be trained in proper maintenance, including record keeping and disposal.

PUBLIC EDUCATION / PARTICIPATION

- Educate contractors (cement, masonry, painting) and utility employees (telephone, cable, gas and electric) about proper waste (solid and liquid) disposal.

LIMITATIONS

- There are no major limitations to this best management practice.

Targeted Constituents

- ● *Sediment*
- ○ *Nutrients*
- ● *Heavy Metals*
- ○ *Toxic Materials*
- ● *Floatable Materials*
- ● *Oxygen Demanding Substances*
- ● *Oil & Grease*
- ○ *Bacteria & Viruses*

- ● *Likely to Have Significant Impact*
- ○ *Probable Low or Unknown Impact*

Implementation Requirements

- ● *Capital Costs*
- ● *O&M Costs*
- ○ *Regulatory*
- ● *Staffing*
- ◒ *Training*
- ◒ *Administrative*

● *High* ○ *Low*

SC71

Best Management Practices

Additional Information — Catch Basin Cleaning

Regular maintenance of public and private catch basins and inlets is necessary to ensure their proper functioning. Clogged catch basins are not only useless but may act as a source of sediments and pollutants. In general, the keys to effective catch basins are:

- At least annual inspections. Municipal staff should inspect public and private facilities to ensure compliance with the following:
  - Immediate repair of any deterioration threatening structural integrity.
  - Cleaning before the sump is 40% full. Catch basins should be cleaned as frequently as needed to meet this standard.
  - Stenciling of catch basins and inlets (see SC30, Storm Drain System Signs).
- Clean catch basins in high pollutant load areas just before the wet season to remove sediments and debris accumulated during the summer.
- Keep accurate logs of the number of catch basins cleaned.
- Record the amount of waste collected.
- Consider implementing employee deputization and spill tracking measures in SC50, Illegal Dumping Control, in conjunction with this BMP to facilitate control of illegal dumping.

Public education should be implemented in conjunction with the public education effort in SC50, Illegal Dumping Control, to raise awareness of the problem. Information in the Construction Handbook regarding waste management (BMPs CA20-CA24) may be used to develop a program for contractors.

REFERENCES

Best Management Practices for Storm Drainage Facilities (Draft), Maintenance Subcommittee, Alameda County Urban Runoff Clean Water Program, 1992.

Protecting Water Quality in Urban Areas: Best Management Practices for Minnesota, Minnesota Pollution Control Agency, 1989.

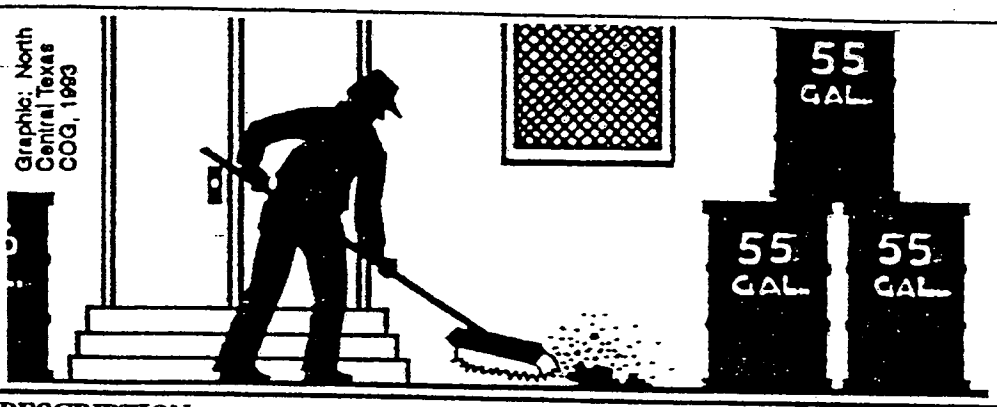
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Street Cleaning Practice, American Public Works Association, 1978.

SC71



BMP: HOUSEKEEPING PRACTICES



Program Elements

- New Development
- (Residential)
- Commercial Activities
- Industrial Activities
- (Municipal Facilities)
- Illegal Discharges

DESCRIPTION

Promote efficient and safe housekeeping practices (storage, use, and cleanup) when handling potentially harmful materials such as fertilizers, pesticides, cleaning solutions, paint products, automotive products, and swimming pool chemicals. Related information is provided in BMPs SC11, Safer Alternative Products; SC31, Household Hazardous Waste Collection; SC32, Used Oil Recycling; and the Spill Prevention and Cleanup BMPs (SC40/SC41). For information on specific activities at municipal facilities, see Chapter 4, Industrial Handbook.

APPROACH

- Pattern a new program after the many established programs from municipalities around the state and country. Integrate this best management practice as much as possible with existing programs at your municipality.
- This BMP has two key audiences, municipal employees and the general public.
- Implement this BMP in conjunction with SC11, Safer Alternative Products.
- For a quick reference on disposal alternatives for specific wastes, see Table 4.1, SC50, Illegal Dumping Control.

REQUIREMENTS

- Cost Considerations
  - The primary cost is for staff time as noted below.
- Regulations
  - There are no regulatory requirements to this BMP. Existing regulations already require municipalities to properly store, use, and dispose of hazardous materials.
- Administrative / Staffing
  - Staff to train municipal employees and to coordinate public education efforts.
- Equipment
  - There are no major equipment requirements to this BMP.
- Training
  - Municipal employees who handle potentially harmful materials should be trained in good housekeeping practices. Personnel who use pesticides must be trained in their use. The California Department of Pesticide Regulation license pesticide dealers, certify pesticide applicators and conduct on-site inspections.

PUBLIC EDUCATION / PARTICIPATION

- Public awareness is a key to this BMP.

LIMITATIONS

- There are no major limitations to this best management practice.

Targeted Constituents

- ● Sediment
- ● Nutrients
- ○ Heavy Metals
- ● Toxic Materials
- ○ Floatable Materials
- ● Oxygen Demanding Substances
- ● Oil & Grease
- ○ Bacteria & Viruses

● Likely to Have Significant Impact
○ Probable Low or Unknown Impact

Implementation Requirements

- ○ Capital Costs
- ◒ O&M Costs
- ○ Regulatory
- ◒ Staffing
- ● Training
- ○ Administrative

● High ○ Low

SC10

Best Management Practices

Additional Information — Housekeeping Practices

Municipal facilities should follow the best management practices outlined in Chapter 4 of the Industrial Handbook, most of which include good housekeeping measures. Municipalities should develop controls on the application of pesticides, herbicides, and fertilizers in public right-of-ways and at municipal facilities. Controls may include:

- List of approved pesticides and selected uses;
- Product and application information for users;
- Equipment use and maintenance procedures; and
- Record keeping and public notice procedures.

For the general public, municipalities should establish a public education program that provides information on such items as storm water pollution and the beneficial effects of proper disposal on water quality; reading product labels; safer alternative products; safe storage, handling, and disposal of hazardous products; list of local agencies; and emergency phone numbers. The programs listed below have provided this information through brochures or booklets that are available at a variety of places including municipal offices, household hazardous waste collection events or facilities, and public information fairs.

The following discussion provides some general information on good housekeeping that may be provided to the general public. More specific information on particular chemicals may be found in the references listed below.

- Always use caution when handling any hazardous household product. Many products contain toxic chemicals that can cause severe injury or death.
- Store household hazardous products securely and away from children, pets, and sources of heat, sparks, and flames.
- Store products in their original containers and keep them well labeled. Do not store chemicals in food containers.
- Read and follow use instructions.
- Avoid contact with eyes and skin. Wear gloves and eye protection when using hazardous substances. Do not wear contact lenses which can absorb hazardous vapors.
- Work in only well ventilated areas.
- Use up all of the product before disposing or give extra to friends, neighbors or community groups.
- Do not dispose of household hazardous waste:
  - in trash,
  - down storm drains or into creeks,
  - down sink or toilet,
  - onto the ground, or
  - by burning.
- Do dispose of hazardous wastes at household hazardous waste collection events or facilities.

The California Integrated Waste Management Board's Recycling Hotline, 1-800-553-2962, provides information on household hazardous waste collection programs and facilities.

Examples of Effective Programs

There are a number of communities with effective programs. The most pro-active include Santa Clara County and the City of Palo Alto, the City and County of San Francisco, and the Municipality of Metropolitan Seattle (Metro).

REFERENCES

The Bay Begins at Your Door (Brochure), Santa Clara Valley Nonpoint Source Pollution Control Program, (No date).

Guide to Hazardous Products Around the Home (Booklet), Household Hazardous Waste Project, 1989.

SC10



Additional Information — Housekeeping Practices

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Solvents, Chemical Hazards in the Home (Brochure), Golden Empire Health Planning Center. (No date).

Take Me Shopping: A Consumer Guide to Safe Alternatives for Household Hazardous Products (Booklet), Santa Clara County and City of Palo Alto, 1992.

Your Guide to Less Toxic Shopping: Safer Alternatives for Your Home and Life! (Booklet), San Francisco Household Hazardous Waste Program, 1992.

SC10

ACTIVITY: BUILDING AND GROUNDS MAINTENANCE

Graphic: North Central Texas COG, 1993



DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from buildings and grounds maintenance by washing and cleaning up with as little water as possible, preventing and cleaning up spills immediately, keeping debris from entering the storm drains, and maintaining the storm water collection system.

APPROACH

- Leaving or planting native vegetation to reduce water, fertilizer, and pesticide needs.
- Careful use of pesticides and fertilizers in landscaping.
- Integrated pest management where appropriate.
- Sweeping of paved surfaces.
- Cleaning of the storm drainage system at appropriate intervals.
- Proper disposal of wash water, sweepings, and sediments.
- For a quick reference on disposal alternatives for specific wastes see Table 4.1, SC1.

REQUIRMENTS

- Costs (Capital, O&M)
  - Cost will vary depending on the type and size of facility.
  - Overall costs should be low in comparison to other BMPs.
- Maintenance
  - The BMPs themselves relate to maintenance and do not require maintenance as they do not involve structures.

LIMITATIONS

- Alternative pest/weed controls may not be available, suitable, or effective in every case.

Applications

- Manufacturing
- Material Handling
- Vehicle Maintenance
- Construction
- **Commercial Activities**
- **Roadways**
- Waste Containment
- **Housekeeping Practices**

Targeted Constituents

- ● Sediment
- ● Nutrients
- ● Heavy Metals
- ● Toxic Materials
- ● Floatable Materials
- ● Oxygen Demanding Substances
- ● Oil & Grease
- ○ Bacteria & Viruses

● Likely to Have Significant Impact
○ Probable Low or Unknown Impact

Implementation Requirements

- ○ Capital Costs
- ◒ O&M Costs
- ◒ Maintenance
- ◒ Training

● High ○ Low

SC11

Best Management Practices

Additional Information — Building and Grounds Maintenance

Buildings and grounds maintenance includes taking care of landscaped areas around the facility, cleaning of parking lots and pavement other than in the area of industrial activity, and the cleaning of the storm drainage system. Painting and other minor or major repairs of buildings is covered in SC12 (Building Repair, Remodeling, and Construction). Certain normal maintenance activities can generate materials that must be properly disposed. Other maintenance activities can enhance water quality if they are carried out more frequently and/or in a more deliberate fashion.

Pesticide/Fertilizer Management

Landscape maintenance involves the use of pesticides and fertilizers. Proper use of these materials will reduce the risk of loss to storm water. In particular, do not apply these materials during the wet season as they may be carried from the site by the next storm. When irrigating the landscaped areas, avoid over-watering not only to conserve water but to avoid the discharge of water which may have become contaminated with nutrients and pesticides.

It is important to properly store pesticides and application equipment, and to dispose the used containers in a responsible manner, consistent with state regulations. Personnel who use pesticides should be trained in their use. The California Department of Pesticide Regulation and county agricultural commissioners license pesticide dealers, certify pesticide applicators, and conduct on-site inspections.

Written procedures for the use of pesticides and fertilizers relevant to your facility would help maintenance staff understand the "do's" and "don'ts". If you have large vegetated areas, consider the use of integrated pest management (IPM) techniques to reduce the use of pesticides.

Parking/Storm Sewer Maintenance

A parking area that drains to the same storm drainage system as the industrial activity that is to be permitted must also be evaluated for suitable BMPs. Storm water from parking lots may contain undesirable concentrations of oil, grease, suspended particulates, and metals such as copper, lead, cadmium, and zinc, as well as the petroleum byproducts of engine combustion. Deposition of air particulates, generated by the facility or by adjacent industries, may contribute significant amounts of pollutants.

The two most appropriate maintenance BMPs are periodic sweeping and cleaning catch basins if they are part of the drainage system. A vacuum sweeper is the best method of sweeping, rather than mechanical brush sweeping which is not as effective at removing the fine particulates.

Catch basins in parking lots generally need to be cleaned every 6 to 12 months, or whenever the sump is half full. A sump that is more than half full is not effective at removing additional particulate pollutants from the storm water. If the storm drain lines have a low gradient, less than about 0.5 feet in elevation drop per 100 feet of line, it is likely that material is settling in the lines during the small, frequent storms. If you have not cleaned the storm drain system for some time, check the lines as well. If they are not cleaned, the catch basins will likely be filled during the next significant storm by material that is washed from the lines. Also, install "turn-down" elbows or similar devices on the outlets of the catch basins; they serve to retain floatables, oil and grease.

Clearly mark the storm drain inlets, either with a color code (to distinguish from process water inlets if you have them) or with the painted stencil of "DO NOT DUMP WASTE". This will minimize inadvertent dumping of liquid wastes.

Sweepings and sediments from these maintenance activities are generally low in metals and other pollutants and therefore can be disposed on-site or to a construction debris landfill. Test the material if there is a reasonable doubt whether metals or other pollutants are present. If concentrations of contaminants are high, it indicates that other BMPs may be needed to eliminate or reduce emissions from the source. If a vactor truck is used to clean the storm drainage system,

Spill Prevention, Control & Cleanup SC-11



Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Description

Spills and leaks, if not properly controlled, can adversely impact the storm drain system and receiving waters. Due to the type of work or the materials involved, many activities that occur either at a municipal facility or as a part of municipal field programs have the potential for accidental spills and leaks. Proper spill response planning and preparation can enable municipal employees to effectively respond to problems when they occur and minimize the discharge of pollutants to the environment.

Targeted Constituents

Sediment	
Nutrients	☑
Trash	
Metals	☑
Bacteria	
Oil and Grease	☑
Organics	☑
Oxygen Demanding	☑

Approach

- An effective spill response and control plan should include:
  - Spill/leak prevention measures;
  - Spill response procedures;
  - Spill cleanup procedures;
  - Reporting; and
  - Training
- A well thought out and implemented plan can prevent pollutants from entering the storm drainage system and can be used as a tool for training personnel to prevent and control future spills as well.

Pollution Prevention

- Develop and implement a Spill Prevention Control and Response Plan. The plan should include:

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- A description of the facility, the address, activities and materials involved
- Identification of key spill response personnel
- Identification of the potential spill areas or operations prone to spills/leaks
- Identification of which areas should be or are bermed to contain spills/leaks
- Facility map identifying the key locations of areas, activities, materials, structural BMPs, etc.
- Material handling procedures
- Spill response procedures including:
  - Assessment of the site and potential impacts
  - Containment of the material
  - Notification of the proper personnel and evacuation procedures
  - Clean up of the site
  - Disposal of the waste material and
  - Proper record keeping

- Product substitution – use less toxic materials (i.e. use water based paints instead of oil based paints)
- Recycle, reclaim, or reuse materials whenever possible. This will reduce the amount of materials that are brought into the facility or into the field.

Suggested Protocols

Spill/Leak Prevention Measures

- If possible, move material handling indoors, under cover, or away from storm drains or sensitive water bodies.
- Properly label all containers so that the contents are easily identifiable.
- Berm storage areas so that if a spill or leak occurs, the material is contained.
- Cover outside storage areas either with a permanent structure or with a seasonal one such as a tarp so that rain can not come into contact with the materials.
- Check containers (and any containment sumps) often for leaks and spills. Replace containers that are leaking, corroded, or otherwise deteriorating with containers in good condition. Collect all spilled liquids and properly dispose of them.

- Store, contain and transfer liquid materials in such a manner that if the container is ruptured or the contents spilled, they will not discharge, flow or be washed into the storm drainage system, surface waters, or groundwater.
- Place drip pans or absorbent materials beneath all mounted taps and at all potential drip and spill locations during the filling and unloading of containers. Any collected liquids or soiled absorbent materials should be reused/recycled or properly disposed of.
- For field programs, only transport the minimum amount of material needed for the daily activities and transfer materials between containers at a municipal yard where leaks and spill are easier to control.
- If paved, sweep and clean storage areas monthly, do not use water to hose down the area unless all of the water will be collected and disposed of properly.
- Install a spill control device (such as a tee section) in any catch basins that collect runoff from any storage areas if the materials stored are oil, gas, or other materials that separate from and float on water. This will allow for easier cleanup if a spill occurs.
- If necessary, protect catch basins while conducting field activities so that if a spill occurs, the material will be contained.

Training

- Educate employees about spill prevention, spill response and cleanup on a routine basis.
- Well-trained employees can reduce human errors that lead to accidental releases or spills:
  - The employees should have the tools and knowledge to immediately begin cleaning up a spill if one should occur.
  - Employees should be familiar with the Spill Prevention Control and Countermeasure Plan if one is available.
- Training of staff from all municipal departments should focus on recognizing and reporting potential or current spills/leaks and who they should contact.
- Employees responsible for aboveground storage tanks and liquid transfers for large bulk containers should be thoroughly familiar with the Spill Prevention Control and Countermeasure Plan and the plan should be readily available.

Spill Response and Prevention

- Identify key spill response personnel and train employees on who they are.
- Store and maintain appropriate spill cleanup materials in a clearly marked location near storage areas; and train employees to ensure familiarity with the site's spill control plan and/or proper spill cleanup procedures.
- Locate spill cleanup materials, such as absorbents, where they will be readily accessible (e.g. near storage and maintenance areas, on field trucks).

SC-11 Spill Prevention, Control & Cleanup

- Follow the Spill Prevention Control and Countermeasure Plan if one is available.
- If a spill occurs, notify the key spill response personnel immediately. If the material is unknown or hazardous, the local fire department may also need to be contacted.
- If safe to do so, attempt to contain the material and block the nearby storm drains so that the area impacted is minimized. If the material is unknown or hazardous wait for properly trained personnel to contain the materials.
- Perform an assessment of the area where the spill occurred and the downstream area that it could impact. Relay this information to the key spill response and clean up personnel.

Spill Cleanup Procedures

- Small non-hazardous spills
  - Use a rag, damp cloth or absorbent materials for general clean up of liquids
  - Use brooms or shovels for the general clean up of dry materials
  - If water is used, it must be collected and properly disposed of. The wash water can not be allowed to enter the storm drain.
  - Dispose of any waste materials properly
  - Clean or dispose of any equipment used to clean up the spill properly
- Large non-hazardous spills
  - Use absorbent materials for general clean up of liquids
  - Use brooms, shovels or street sweepers for the general clean up of dry materials
  - If water is used, it must be collected and properly disposed of. The wash water can not be allowed to enter the storm drain.
  - Dispose of any waste materials properly
  - Clean or dispose of any equipment used to clean up the spill properly
- For hazardous or very large spills, a private cleanup company or Hazmat team may need to be contacted to assess the situation and conduct the cleanup and disposal of the materials.
- Chemical cleanups of material can be achieved with the use of absorbents, gels, and foams. Remove the adsorbent materials promptly and dispose of according to regulations.
- If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to a certified laundry (rags) or disposed of as hazardous waste.

Reporting

- Report any spills immediately to the identified key municipal spill response personnel.

- Report spills in accordance with applicable reporting laws. Spills that pose an immediate threat to human health or the environment must be reported immediately to the Office of Emergency Service (OES)
- Spills that pose an immediate threat to human health or the environment may also need to be reported within 24 hours to the Regional Water Quality Control Board.
- Federal regulations require that any oil spill into a water body or onto an adjoining shoreline be reported to the National Response Center (NRC) at 800-424-8802 (24 hour)
- After the spill has been contained and cleaned up, a detailed report about the incident should be generated and kept on file (see the section on Reporting below). The incident may also be used in briefing staff about proper procedures

Other Considerations

- State regulations exist for facilities with a storage capacity of 10,000 gallons or more of petroleum to prepare a Spill Prevention Control and Countermeasure Plan (SPCC) Plan (Health & Safety Code Chapter 6.67).
- State regulations also exist for storage of hazardous materials (Health & Safety Code Chapter 6.95), including the preparation of area and business plans for emergency response to the releases or threatened releases.
- Consider requiring smaller secondary containment areas (less than 200 sq. ft.) to be connected to the sanitary sewer, if permitted to do so, prohibiting any hard connections to the storm drain.

Requirements

Costs

- Will vary depending on the size of the facility and the necessary controls.
- Prevention of leaks and spills is inexpensive. Treatment and/or disposal of wastes, contaminated soil and water is very expensive

Maintenance

- This BMP has no major administrative or staffing requirements. However, extra time is needed to properly handle and dispose of spills, which results in increased labor costs

Supplemental Information

Further Detail of the BMP

Reporting

Record keeping and internal reporting represent good operating practices because they can increase the efficiency of the response and containment of a spill. A good record keeping system helps the municipality minimize incident recurrence, correctly respond with appropriate containment and cleanup activities, and comply with legal requirements.

A record keeping and reporting system should be set up for documenting spills, leaks, and other discharges, including discharges of hazardous substances in reportable quantities. Incident records describe the quality and quantity of non-stormwater discharges to the storm drain.

These records should contain the following information:

- Date and time of the incident
- Weather conditions
- Duration of the spill/leak/discharge
- Cause of the spill/leak/discharge
- Response procedures implemented
- Persons notified
- Environmental problems associated with the spill/leak/discharge

Separate record keeping systems should be established to document housekeeping and preventive maintenance inspections, and training activities. All housekeeping and preventive maintenance inspections should be documented. Inspection documentation should contain the following information:

- The date and time the inspection was performed
- Name of the inspector
- Items inspected
- Problems noted
- Corrective action required
- Date corrective action was taken

Other means to document and record inspection results are field notes, timed and dated photographs, videotapes, and drawings and maps.

Examples

The City of Palo Alto includes spill prevention and control as a major element of its highly effective program for municipal vehicle maintenance shops.

References and Resources

King County Stormwater Pollution Control Manual - http://dnr.metrokc.gov/wlr/dss/spcm.htm

Orange County Stormwater Program
http://www.ocwatersheds.com/stormwater/swp_introduction.asp

San Diego Stormwater Co-permittees Jurisdictional Urban Runoff Management Program (URMP)
http://www.projectcleanwater.org/pdf/Model%20Program%20Municipal%20Facilities.pdf

Outdoor Loading/Unloading SC-30

Description

The loading/unloading of materials usually takes place outside on docks or terminals; therefore, materials spilled, leaked, or lost during loading/unloading may collect in the soil or on other surfaces and have the potential to be carried away by wind, stormwater runoff or when the area is cleaned. Additionally, rainfall may wash pollutants from machinery used to unload or move materials. Implementation of the following protocols will prevent or reduce the discharge of pollutants to stormwater from outdoor loading/unloading of materials.

Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

General Pollution Prevention Protocols

- ☐ Park tank trucks or delivery vehicles in designated areas so that spills or leaks can be contained.
- ☐ Limit exposure of material to rainfall whenever possible.
- ☐ Prevent stormwater run-on.
- ☐ Check equipment regularly for leaks.

Good Housekeeping

- ☐ Develop an operations plan that describes procedures for loading and/or unloading.
- ☐ Conduct loading and unloading in dry weather if possible.

Objectives
■ *Cover*
■ *Contain*
■ *Educate*
■ *Reduce/Minimize*
■ *Product Substitution*

Targeted Constituents	
Sediment	✓
Nutrients	✓
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	✓
Preventative Maintenance	
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	✓
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	✓

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- Cover designated loading/unloading areas to reduce exposure of materials to rain.
- Consider placing a seal or door skirt between delivery vehicles and building to prevent exposure to rain.
- Design loading/unloading area to prevent stormwater run-on, which would include grading or berming the area, and position roof downspouts so they direct stormwater away from the loading/unloading areas.
- Have employees load and unload all materials and equipment in covered areas such as building overhangs at loading docks if feasible.
- Load/unload only at designated loading areas.
- Use drip pans underneath hose and pipe connections and other leak-prone spots during liquid transfer operations, and when making and breaking connections. Several drip pans should be stored in a covered location near the liquid transfer area so that they are always available, yet protected from precipitation when not in use. Drip pans can be made specifically for railroad tracks. Drip pans must be cleaned periodically, and drip collected materials must be disposed of properly.
- Pave loading areas with concrete instead of asphalt.
- Avoid placing storm drains inlets in the area.
- Grade and/or berm the loading/unloading area with drainage to sump; regularly remove materials accumulated in sump.



Spill Response and Prevention Procedures

- Keep your spill prevention and control plan up-to-date or have an emergency spill cleanup plan readily available, as applicable.
- Contain leaks during transfer.
- Store and maintain appropriate spill cleanup materials in a location that is readily accessible and known to all employees.
- Ensure that employees are familiar with the site's spill control plan and proper spill cleanup procedures.
- Use drip pans or comparable devices when transferring oils, solvents, and paints.



Material Handling and Waste Management

- Spot clean leaks and drips routinely to prevent runoff of spillage.
- Do not pour liquid wastes into floor drains, sinks, outdoor storm drain inlets, or other storm drains or sewer connections.

- Do not put used or leftover cleaning solutions, solvents, and automotive fluids in the storm drain or sanitary sewer.
- Collect leaking or dripping fluids in drip pans or containers. Fluids are easier to recycle if kept separate.
- Promptly transfer used fluids to the proper waste or recycling drums. Do not leave drip pans or other open containers lying around.
- Minimize the possibility of stormwater pollution from outside waste receptacles by doing at least one of the following:
  - ✓ Use only watertight waste receptacle(s) and keep the lid(s) closed.
  - ✓ Grade and pave the waste receptacle area to prevent run-on of stormwater.
  - ✓ Install a roof over the waste receptacle area.
  - ✓ Install a low containment berm around the waste receptacle area.
  - ✓ Use and maintain drip pans under waste receptacles.
- Post "no littering" signs.
- Perform work area clean-up and dry sweep after daily operations.



Employee Training Program

- Train employees (e.g., fork lift operators) and contractors on proper spill containment and cleanup.
- Have employees trained in spill containment and cleanup present during loading/unloading.
- Train employees in proper handling techniques during liquid transfers to avoid spills.
- Make sure forklift operators are properly trained on loading and unloading procedures.



Quality Assurance and Record Keeping

- Keep accurate maintenance logs that document activities performed, quantities of materials removed, and improvement actions.
- Keep accurate logs of spill response actions that document what was spilled, how it was cleaned up, and how the waste was disposed.
- Establish procedures to complete logs and file them in the central office.
- Keep accurate logs of daily clean-up operations.

Potential Limitations and Work-Arounds

Some facilities may have space constraints, limited staffing and time limitations that may preclude implementation of BMPs. Provided below are typical limitations and recommended "work-arounds."

- Space and time limitations may preclude all transfers from being performed indoors or under cover.
  - ✓ Designate specific areas for outdoor loading and unloading.
  - ✓ Require employees to understand and follow spill and leak prevention BMPs.
- It may not be possible to conduct transfers only during dry weather.
  - ✓ Limit materials and equipment rainfall exposure to all extents practicable.
  - ✓ Require employees to understand and follow spill and leak prevention BMPs.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

Many facilities will already have indoor or covered areas where loading/unloading takes place and will require no additional capital expenditures.

If outdoor activities are required, construction of berms or other means to retain spills and leaks may require appropriate constructed systems for containment. These containment areas may require significant new capital investment.

Capital investments will likely be required at some sites if adequate cover and containment facilities do not exist and can vary significantly depending upon site conditions.

Maintenance

Most of the operations and maintenance activities associated with implementing this BMP are integrally linked to routine operations as previously described. Therefore additional O&M is not required.

- Conduct regular inspections and make repairs and improvements as necessary.
- Check loading and unloading equipment regularly for leaks.
- Conduct regular broom dry-sweeping of area. Do not wash with water.

Supplemental Information

Loading and Unloading of Liquids

- Loading or unloading of liquids should occur in the manufacturing building so that any spills that are not completely retained can be discharged to the sanitary sewer,

treatment plant, or treated in a manner consistent with local sewer authorities and permit requirements.

- For loading and unloading tank trucks to above and below ground storage tanks, the following procedures should be used:
  - ✓ The area where the transfer takes place should be paved. If the liquid is reactive with the asphalt, Portland cement should be used to pave the area.
  - ✓ The transfer area should be designed to prevent run-on of stormwater from adjacent areas. Sloping the pad and using a curb, like a speed bump, around the uphill side of the transfer area should reduce run-on.
  - ✓ The transfer area should be designed to prevent runoff of spilled liquids from the area. Sloping the area to a drain should prevent runoff. The drain should be connected to a dead-end sump or to the sanitary sewer. A positive control valve should be installed on the drain.
- For transfer from rail cars to storage tanks that must occur outside, use the following procedures:
  - ✓ Drip pans should be placed at locations where spillage may occur, such as hose connections, hose reels, and filler nozzles. Use drip pans when making and breaking connections.
  - ✓ Drip pan systems should be installed between the rails to collect spillage from tank cars.

References and Resources

Minnesota Pollution Control Agency, *Industrial Stormwater Best Management Practices Guidebook BMP 26 Fueling and Liquid Loading/Unloading Operations.* Available online at: http://www.pca.state.mn.us/index.php/view-document.html?gid=10557.

New Jersey Department of Environmental Protection, 2013. *Basic Industrial Stormwater General Permit Guidance Document NJPDES General Permit No NJ0088315.* Available online at: http://www.nj.gov/dep/dwq/pdf/5G2_guidance_color.pdf.

Orange County Stormwater Program, Best Management Practices for Industrial/Commercial Business Activities. Available online at: http://ocwatersheds.com/documents/bmp/industrialcommercialbusinessesactivities.

Oregon Department of Environmental Quality, 2013. *Industrial Stormwater Best Management Practices Manual- BMP 26 Fueling and Liquid Loading/Unloading Operations.* Available online at: http://www.deq.state.or.us/wq/wqpermit/docs/IndBMP021413.pdf.

Sacramento Stormwater Management Program, *Best Management Practices for Industrial Storm Water Pollution Control*. Available online at: http://www.msa.saccounty.net/sactostormwater/documents/guides/industrial-BMP-manual.pdf.

Sacramento County Environmental Management Stormwater Program: *Best Management Practices*. Available online at: http://www.emd.saccounty.net/EnvHealth/Stormwater/Stormwater-BMPs.html.

Santa Clara Valley Urban Runoff Pollution Prevention Program. http://www.scvurppp-w2k.com/.

US EPA. National Pollutant Discharge Elimination System – Industrial Fact Sheet Series for Activities Covered by EPA's Multi Sector General Permit. Available online at: http://cfpub.epa.gov/npdes/stormwater/swsectors.cfm.

Stormwater Pollution Prevention

Best Management Practices for Homeowner's Associations, Property Managers and Property Owners

Your Guide To Maintaining Water Friendly Standards In Your Community

sbcountystormwater.org

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Redlands · Rialto · San Bernardino · San Bernardino County · San Bernardino County Flood Control District · Upland · Yucaipa

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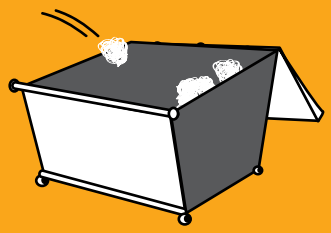
COMMERCIAL TRASH ENCLOSURES

FOLLOW THESE **REQUIREMENTS** TO **KEEP OUR WATERWAYS CLEAN**

Trash enclosures, such as those found in commercial and apartment complexes, typically contain materials that are intended to find their way to a landfill or a recycling facility. **These materials are NOT meant to go into our local lakes and rivers.**

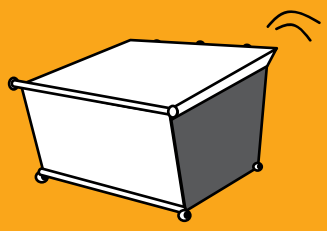
PROTECT WATER QUALITY BY FOLLOWING THESE SIMPLE STEPS

PUT TRASH INSIDE



Place trash inside the bin (preferably in sealed bags)

CLOSE THE LID



Prevent rain from entering the bin in order to avoid leakage of polluted water runoff

KEEP TOXICS OUT



- Paint
- Grease, fats and used oils
- Batteries, electronics and fluorescent lights

SOME ADDITIONAL GUIDELINES, INCLUDE

✓ SWEEP FREQUENTLY
Sweep trash enclosure areas frequently, instead of hosing them down, to prevent polluted water from flowing into the streets and storm drains.

✓ FIX LEAKS
Address trash bin leaks immediately by using dry clean up methods and report to your waste hauler to receive a replacement.

✓ CONSTRUCT ROOF
Construct a solid cover roof over the existing trash enclosure structure to prevent rainwater from coming into contact with trash and garbage. Check with your local City/County for Building Codes.

In San Bernardino County, stormwater pollution is caused by food waste, landscape waste, chemicals and other debris that are washed into storm drains and end up in our waterways - untreated! You can be part of the solution by maintaining a water-friendly trash enclosure.

THANK YOU FOR HELPING TO KEEP SAN BERNARDINO COUNTY CLEAN AND HEALTHY!

San Bernardino County STORMWATER PROGRAM

In the event of a spill or discharge to a storm drain or waterway, contact San Bernardino County Stormwater immediately: (877) WASTE18 | sbcountystormwater.org/report

sbcountystormwater.org

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Redlands • Rialto • San Bernardino • San Bernardino County • San Bernardino County Flood Control District • Upland • Yucaipa

CESQG PROGRAM

Conditionally Exempt Small Quantity Generator

WHAT IS A CESQG?

Businesses that generate 27 gallons or 220 lbs. of hazardous waste, or 2.2 lbs. of extremely hazardous waste per month are called "Conditionally Exempt Small Quantity Generators," or CESQGs. San Bernardino County Household Hazardous Program provides waste management services to CESQG businesses. The most common CESQGs in San Bernardino County are painters, print shops, auto shops, builders, agricultural operators and property managers, but there are many others. When you call, be ready to describe the types and amounts of waste your business generates in a typical month. If you generate hazardous waste on a regular basis, you must:

- Register with San Bernardino County Fire Department (909) 386-8400 as a hazardous waste generator.
- To obtain an EPA ID# and application form from the State visit www.dtsc.ca.gov.
- Manage hazardous waste in accordance with all applicable local, state and federal laws and regulations.

HOW DO I GET SERVICE?

To arrange an appointment for the CESQG Program, call 1-800-OILY CAT or 909-382-5401. Be ready to describe the type and amount of hazardous waste your business is ready to dispose of, and the types and size(s) of containers that the waste is in.

Waste Type and Cost

There is a small handling fee involved in the collection of hazardous waste from your business. Disposal costs depend on the type of waste.

Aerosols	$1.29/lb.
Automobile motor oil	$.73/gal.
Anti-freeze	$1.57/gal.
Contaminated oil	$4.48/gal.
Car batteries	$.62/ea.
Corrosive liquids, solids	$2.80/lb.
Flammable solids, liquids	$1.57/lb.
Latex Paint	$.73/lb.
Mercury	$10.08/lb.
NiCad/Alkaline Batteries	$2.13/lb.
Oil Base Paints	$1.00/lb.
Oil Filters	$.56/ea.
Oxidizers	$9.63/lb.
PCB Ballasts	$5.94/lb.
Pesticides (most)	$2.91/lb.
Photofixer, developer	$4.31/gal.
Television & Monitors	$11.20/ea.
Additional Handling	$138.00/hr.

Rates subject to change without notice

WE CANNOT ACCEPT

- Radioactives
- Water reactives
- Explosives
- Compressed gas cylinders
- Medical or biohazardous waste
- Asbestos
- Remediation wastes

HAZARDOUS WASTE

WHY IS THE FIRE DEPARTMENT COLLECTING HAZARDOUS WASTE?

Small Quantity Generators often have difficulty disposing of small quantities of hazardous waste. Hazardous waste companies usually have a minimum amount of waste that they will pick up, or charge a minimum fee for service. Typically, the minimum fee exceeds the cost of disposal for the hazardous waste. This leaves the small quantity generator in a difficult situation. Some respond by storing hazardous waste until it becomes economical for the hazardous waste transporter to pick it up, putting the business out of compliance by exceeding regulatory accumulation time limits. Other businesses simply store their hazardous wastes indefinitely, creating an unsafe work environment and exceeding accumulation time limits. Yet other businesses attempt to illegally dispose of their waste at household hazardous waste collection facilities. These facilities are not legally permitted to accept commercial wastes, nor are prepared to provide legal documentation for commercial hazardous waste disposal. In answer to the problems identified above, the San Bernardino County Fire Department Household Hazardous Program instituted the Conditionally Exempt Small Quantity Generator Program.

PAYMENT FOR SERVICES

The CESQG Program will prepare an invoice for your business at the time of service. You can pay at the time of service with cash or a check, or you can mail your payment to the Fire Department within 30 days. Please note that we do not accept credit card payments. The preferred method of payment is to handle payment at time of service. Additional charges may apply for accounts not paid within 30 days.

ARE THERE ANY OTHER WAYS THAT I CAN SAVE MONEY ON HAZARDOUS WASTE DISPOSAL?

Yes! First, start by reducing the amount of waste that you produce by changing processes or process chemicals, at your business. Next, examine if there is a way that you can recycle your waste back into your processes. Network with similar businesses or trade associations for waste minimization and pollution prevention solutions.

WHAT IF YOUR BUSINESS DOES NOT QUALIFY?

Call the San Bernardino County Fire Department Field Services Division for assistance with hazardous waste management at 909-386-8400.

If you reduce the amount of waste you generate each month to 27 gallons or less, you may qualify in the future.

WHAT HAPPENS TO YOUR HAZARDOUS WASTE?

Hazardous waste collected by the CESQG Program is transported to a state permitted processing facility in San Bernardino. The waste is further processed at this point and packaged for off-site recycling (oil filters, oil, latex paint, antifreeze, and batteries) or destructive incineration (pesticides, corrosives, flammables, oil based paint).

San Bernardino County Fire Department
CESQG Program
2824 East "W" Street
San Bernardino, CA 92415-0799
Phone: 909-382-5401
Fax: 909-382-5413
www.sbcfire.org/ofm/hhw/HouseholdHazardousWaste.aspx
Email: mvangese@sbcfire.org

WHEN WORKING OUTDOORS USE THE 3Cs

CUANDO TRABAJE AL AIRE LIBRE UTILICE LAS 3Cs

CONTROL | CONTROL



Locate the nearest storm drain and ensure nothing can enter or be discharged into it.
Ubique el desagüe de aguas pluviales más cercano y asegúrese de que nada pueda ingresar a éste ni descargarse en él.

CONTAIN | CONTENER



Isolate your area to prevent material from potentially flowing or being blown away.
Aísle su área para evitar que el material pueda discurrirse o ser llevado por el viento.

CAPTURE | CAPTURAR



Sweep up debris and place it in the trash. Clean up spills with an absorbent material (e.g. kitty litter) or vacuum with a Wet-Vac and dispose of properly.
Recoja los restos y colóquelos en la basura. Limpie los derrames con un material absorbente (como la arena para gatos) o aspírelos con una Wet-Vac (aspiradora de humedad) y deséchelos correctamente.

COMMERCIAL LANDSCAPE

DISCHARGE TO THE STORM DRAIN, **ACCIDENTAL OR NOT**, COULD LEAD TO ENFORCEMENT ACTIONS, WHICH COULD INCLUDE FINES.

Follow the best practices below to **prevent water pollution from landscaping activities.**

RECYCLE YARD WASTE



- Recycle leaves, grass clippings and other yard waste.
- Do not blow, sweep, rake or hose yard waste into the street or catch basin.
- **Try grasscycling:** the natural recycling of grass by leaving clippings on the lawn when mowing.

  For more information, please visit: **www.calrecycle.ca.gov/organics/grasscycling**

USE FERTILIZERS, HERBICIDES AND PESTICIDES SAFELY



- Fertilizers, herbicides and pesticides are often carried into the storm drain system by sprinkler runoff. Use natural and non-toxic alternatives as often as possible.
- If you must use chemical fertilizers, herbicides or pesticides:
  - Spot apply, rather than blanketing entire areas.
  - Avoid applying near curbs and driveways, and **never** before a rain.
  - Apply fertilizers as needed: when plants could best use it and when the potential runoff would be low.
  - Follow the manufacturer's instructions carefully—this will not only give the best results, but will save money.

USE WATER WISELY



- Control the amount of water and direction of sprinklers. Sprinklers should only be on long enough to allow water to soak into the ground, but not so long as to cause runoff.
- Periodically inspect, fix leaks and realign sprinkler heads.
- Plant native vegetation to reduce the need of water, fertilizers, herbicides and pesticides.

HOMEOWNERS

KEEP THESE TIPS IN MIND WHEN HIRING PROFESSIONAL LANDSCAPERS AND REMIND AS NECESSARY.



Leftover pesticides, fertilizers, and herbicides contaminate landfills and should be disposed of through a Hazardous Waste Facility.

For more information on proper disposal call,

(909) 382-5401 or 1-800-OILY CAT.

In the event of a spill or discharge to a storm drain or waterway, contact San Bernardino County Stormwater immediately: (877) WASTE18 | sbcountystormwater.org/report

sbcountystormwater.org

Big Bear • Chino • Chino Hills • Colton • Fontana • Grand Terrace • Highland • Loma Linda • Montclair • Ontario • Rancho Cucamonga
Redlands • Rialto • San Bernardino • San Bernardino County • San Bernardino County Flood Control District • Upland • Yucaipa

SIDEWALK, PLAZA, ENTRY MONUMENT & FOUNTAIN MAINTENANCE

Pollutants on sidewalks and other pedestrian traffic areas and plazas are typically due to littering and vehicle use. Fountain water containing chlorine and copperbased algaecides is toxic to aquatic life. Proper inspection, cleaning, and repair of pedestrian areas and HOA owned surfaces and structures can reduce pollutant runoff from these areas. Maintaining these areas may involve one or more of the following activities:

1. **Surface Cleaning**
2. **Graffiti Cleaning**
3. **Sidewalk Repair**
4. **Controlling Litter**
5. **Fountain Maintenance**

POLLUTION PREVENTION:

Pollution prevention measures have been considered and incorporated in the model procedures. Implementation of these measures may be more effective and reduce or eliminate the need to implement other more complicated or costly procedures. Possible pollution prevention measures for sidewalk, plaza, and fountain maintenance and cleaning include:

- Use dry cleaning methods whenever practical for surface cleaning activities.
- Use the least toxic materials available (e.g. water based paints, gels or sprays for graffiti removal).
- Once per year, educate HOA staff and tenants on pollution prevention measures.

MODEL PROCEDURES:

1. Surface Cleaning

Discharges of wash water to the storm water drainage system from cleaning or hosing of impervious surfaces is prohibited.

Sidewalks, Plazas

✓ Use dry methods (e.g. sweeping, backpack blowers, vacuuming) whenever practical to clean sidewalks and plazas rather than hosing, pressure washing, or steam cleaning. DO NOT sweep or blow material into curb; use devices that contain the materials.

✓ If water must be used, block storm drain inlets and contain runoff. Discharge wash water to landscaping or contain and dispose of properly.

SIDEWALK, PLAZA, ENTRY MONUMENT & FOUNTAIN MAINTENANCE

Parking Areas, Driveways, Drive-thru

✓ Parking facilities should be swept/vacuumed on a regular basis. Establish frequency of public parking lot sweeping based on usage and field observations of waste accumulation.

✓ If water must be used, block storm drain inlets and contain runoff. Discharge wash water to landscaping or contain and dispose of properly.

✓ Sweep all parking lots at least once before the onset of the wet season.

✓ Use absorbents to pick up oil; then dry sweep.

✓ Appropriately dispose of spilled materials and absorbents.

OPTIONAL:

- Consider increasing sweeping frequency based on factors such as traffic volume, land use, field observations of sediment and trash accumulation, proximity to water courses, etc.

Building Surfaces, Decks, etc., without loose paint

✓ Use high-pressure water, no soap.

✓ If water must be used, block storm drain inlets and contain runoff. Discharge wash water to landscaping or contain and dispose of properly.

Unpainted Building Surfaces, Wood Decks, etc.

✓ If water must be used, block storm drain inlets and contain runoff. Discharge wash water to landscaping or contain and dispose of properly.

✓ If using a biodegradable or other cleaning agent to remove deposits contain and dispose of properly.

2. Graffiti Cleaning

Graffiti Removal

✓ Avoid graffiti abatement activities during rain events.

✓ When graffiti is removed by painting over, implement the procedures under Painting and Paint Removal in the Roads, Streets, and Highway Operation and Maintenance procedure sheet.

✓ Protect nearby storm drain inlets prior to removing graffiti from walls, signs, sidewalks, or other structures needing graffiti abatement. Clean up afterwards by sweeping or vacuuming thoroughly, and/or by using absorbent and properly disposing of the absorbent.

SIDEWALK, PLAZA, ENTRY MONUMENT & FOUNTAIN MAINTENANCE

✓ Note that care should be taken when disposing of waste since it may need to be disposed of as hazardous waste.

OPTIONAL:

• Consider using a waterless and non-toxic chemical cleaning method for graffiti removal (e.g. gels or spray compounds).

3. Sidewalk Repair

Surface Removal and Repair

✓ Schedule surface removal activities for dry weather if possible.

✓ Avoid creating excess dust when breaking asphalt or concrete.

✓ Take measures to protect nearby storm drain inlets prior to breaking up asphalt or concrete (e.g. place hay bales or sand bags around inlets). Clean afterwards by sweeping up material.

✓ Designate an area for clean up and proper disposal of excess materials.

✓ Remove and recycle as much of the broken pavement as possible.

✓ When making saw cuts in pavement, use as little water as possible. Cover each storm drain inlet with filter fabric during the sawing operation and contain the slurry by placing straw bales, sandbags, or gravel dams around the inlets. After the liquid drains shovel or vacuum the slurry, remove from site and dispose of properly.

✓ Always dry sweep first to clean up tracked dirt. Use a street sweeper or vacuum truck. Do not dump vacuumed liquid in storm drains. Once dry sweeping is complete, the area may be hosed down if needed. Discharge wash water to landscaping, pump to the sanitary sewer if permitted to do so or contain and dispose of properly.

Concrete Installation and Repair

✓ Avoid mixing excess amounts of fresh concrete or cement mortar on-site. Only mix what is needed for the job.

✓ Wash concrete trucks off-site or in designated areas on-site, such that there is no discharge of concrete wash water into storm drain inlets, open ditches, streets, or other storm water conveyance structures. (See Concrete Waste Management BMP WM – 8)

SIDEWALK, PLAZA, ENTRY MONUMENT & FOUNTAIN MAINTENANCE

✓ Store dry and wet concrete materials under cover, protected from rainfall and runoff and away from drainage areas. After job is complete remove temporary stockpiles (asphalt materials, sand, etc.) and other materials as soon as possible.

✓ Return leftover materials to the transit mixer. Dispose of small amounts of excess concrete, grout, and mortar in the trash.

✓ When washing concrete to remove fine particles and expose the aggregate, contain the wash water for proper disposal.

✓ Do not wash sweepings from exposed aggregate concrete into the street or storm drain. Collect and return sweepings to aggregate base stock pile, or dispose in the trash.

✓ Protect applications of fresh concrete from rainfall and runoff until the material has hardened.

4. Litter Control

✓ Enforce anti-litter laws.

✓ Provide litter receptacles in busy, high pedestrian traffic areas of the community, at recreational facilities, and at community events.

✓ Cover litter receptacles and clean out frequently to prevent leaking/spillage or overflow.

OPTIONAL:

• Post "No Littering" signs.

5. Fountain Maintenance

✓ Do not use copper-based algaecides. Control algae with chlorine or other alternatives, such as sodium bromide.

✓ Allow chlorine to dissipate for a few days and then recycle/reuse water by draining it gradually onto a landscaped area. Water must be tested prior to discharge to ensure that chlorine is not present (concentration must be less than 0.1 ppm).

✓ Contact local agency for approval to drain into sewer or storm drain.

✓ Avoid mixing excess amounts of fresh concrete or cement mortar on-site. Only mix what is needed for the job.

EQUIPMENT MAINTENANCE & REPAIR

Vehicle or equipment maintenance has the potential to be a significant source of stormwater pollution. Engine repair and service (parts cleaning, spilled fuel, oil, etc.), replacement of fluids, and outdoor equipment storage and parking (dripping engines) can all contaminate stormwater. Conducting the following activities in a controlled manner will reduce the potential for stormwater contamination:

1. **General Maintenance and Repair**
2. **Vehicle and Machine Repair**
3. **Waste Handling/Disposal**

Related vehicle maintenance activities are covered under the following program headings in this manual: "Vehicle and Equipment Cleaning", "Vehicle and Equipment Storage", and "Vehicle Fueling".

POLLUTION PREVENTION:

Pollution prevention measures have been considered and incorporated in the model procedures. Implementation of these measures may be more effective and reduce or eliminate the need to implement other more complicated or costly procedures. Possible pollution prevention measures for equipment maintenance and repair include:

- Review maintenance activities to verify that they minimize the amount of pollutants discharged to receiving waters. Keep accurate maintenance logs to evaluate materials removed and improvements made.
- Switch to non-toxic chemicals for maintenance when possible.
- Choose cleaning agents that can be recycled.
- Minimize use of solvents. Clean parts without using solvents whenever possible. Recycle used motor oil, diesel oil, and other vehicle fluids and parts whenever possible.
- Once per year, educate HOA staff and tenants on pollution prevention measures.

EQUIPMENT MAINTENANCE & REPAIR

MODEL PROCEDURES:

1. General Maintenance and Repair

General Guidelines

➔ *Note: Permission must be obtained for any discharge of wash water to the sanitary sewer from the local sewering agency.*

- ✓ Review maintenance activities to verify that they minimize the amount of pollutants discharged to receiving waters. Keep accurate maintenance logs to evaluate materials removed and improvements made.
- ✓ Regularly inspect vehicles and equipment for leaks.
- ✓ Move activity indoors or cover repair area with a permanent roof if feasible.
- ✓ Minimize contact of stormwater with outside operations through berming the local sewering and drainage routing.
- ✓ Place curbs around the immediate boundaries of the process equipment.
- ✓ Clean yard storm drain inlets regularly and stencil them.

Good Housekeeping

- ✓ Avoid hosing down work areas. If work areas are washed and if discharge to the sanitary sewer is allowed, treat water with an appropriate treatment device (e.g. clarifier) before discharging. If discharge to the sanitary sewer is not permitted, pump water to a tank and dispose of properly.
- ✓ Collect leaking or dripping fluids in drip pans or container. Fluids are easier to recycle or dispose of properly if kept separate.
- ✓ Keep a drip pan under the vehicle while you unclip hoses, unscrew filters, any discharge of or remove other parts. Place a drip pan under any vehicle that might leak while you work on it to keep splatters or drips off the shop floor.
- ✓ Educate employees on proper handling and disposal of engine fluids.
- ✓ Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.
- ✓ Do not pour liquid waste to floor drains, sinks, outdoor storm drain inlets, or other storm drains or sewer connections.
- ✓ Post signs at sinks and stencil outdoor storm drain inlets.

2. Vehicle Repair

General Guidelines

- ✓ Perform vehicle fluid removal or changing inside of a building or in a contained covered area, where feasible, to prevent the run-on of stormwater and the runoff of spills.
- ✓ Regularly inspect vehicles and equipment for leaks, and repair as needed.

EQUIPMENT MAINTENANCE & REPAIR

- ✓ Use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- ✓ Immediately drain all fluids from wrecked vehicles. Ensure that the drain pan or drip pan is large enough to contain drained fluids (e.g. larger pans are needed to contain antifreeze, which may gush from some vehicles).
- ✓ Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.
- ✓ Recycle used motor oil, diesel oil, and other vehicle fluids and parts whenever possible.
- ✓ Oil filters disposed of in trash cans or dumpsters can leak oil. Place the oil filter in a funnel over a waste oil recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask your oil supplier or recycler about recycling oil filters.
- ✓ Store cracked batteries in a non-leaking secondary container and dispose of properly at recycling facilities or at County hazardous waste disposal site.

Vehicle Leak and Spill Control

- ✓ Use absorbent materials on small spills. Remove the absorbent materials promptly and dispose of properly.
- ✓ Place a stockpile of spill cleanup materials where it will be readily accessible.
- ✓ Sweep floor using dry absorbent material.

3. Machine Repair

- ✓ Keep equipment clean; don't allow excessive build-up of oil or grease.
- ✓ Minimize use of solvents.
- ✓ Use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- ✓ Perform major equipment repairs at the corporation yard, when practical.
- ✓ Following good housekeeping measures in Vehicle Repair section.

4. Waste Handling/Disposal

Waste Reduction

- ✓ Prevent spills and drips of solvents and cleansers to the shop floor.
- ✓ Do liquid cleaning at a centralized station so the solvents and residues stay in one area. Recycle liquid cleaners when feasible.

✓ Locate drip pans, drain boards, and drying racks to direct drips back into a solvent sink or fluid holding tank for reuse.

OPTIONAL:

- If possible, eliminate or reduce the amount of hazardous materials and waste by substituting non-hazardous or less hazardous material:

  -Use non-caustic detergents instead of caustic cleaning for parts cleaning.

  -Use a water-based cleaning service and have tank cleaned. Use detergent-based or water-based cleaning systems in place of organic solvent degreasers.

  -Replace chlorinated organic solvents with non-chlorinated solvents. Non-chlorinated solvents like kerosene or mineral spirits are less toxic and less expensive to dispose of properly. Check list of active ingredients to see whether it contains chlorinated solvents.

  -Choose cleaning agents that can be recycled.

Recycling

OPTIONAL:

- Separate wastes for easier recycling. Keep hazardous and non-hazardous wastes separate, do not mix used oil and solvents, and keep chlorinated solvents separate from non-chlorinated solvents.

- Label and track the recycling of waste material (e.g. used oil, spent solvents, batteries).

- Purchase recycled products to support the market for recycled materials.

LIMITATIONS:

Space and time limitations may preclude all work being conducted indoors. It may not be possible to contain and clean up spills from vehicles/equipment brought on-site after working hours. Dry floor cleaning methods may not be sufficient for some spills – see spill prevention and control procedures sheet. Identification of engine leaks may require some use of solvents.

POOL MAINTENANCE

Pool chemicals and filter solids, when discharged to the City streets, gutters or storm drans, DO NOT GET TREATED before reaching the Santa Ana River. Chlorine, acid cleaning chemicals and metal-based algaecides used in pools can kill beneficial organisms in the food chain and pollute our drinking water.

When emptying your swimming pool, spa or fountain, please use one of the following best management practices to prevent water pollution:

- Reuse the water as landscape irrigation
- Empty the water into the sewer between midnight and 6:00 am
- Remove solids and floating debris and dispose of in the trash, de-chlorinate the water to a chlorine residual = 0, wait 24 hours, then discharge the water to the street or storm drain
- Try not to use metal-based algaecides (i.e. copper sulfate) in your pool or spa. If you have, empty your pool or spa into the sewer. *Prior to discharging pool water into the sanitary sewer system, contact your local agency.*
- If the pool contains algae and mosquito larvae, discharge the water to the sewer

When acid cleaning or other chemical cleaning:

- Neutralize the pool water to pH of 6.5 to 8.5, then discharge to the sewer

For swimming pool and spa filter backwash:

- Dispose of solids into trash bag, then wash filter into a landscape area
- Settle, dispose of solids in trash and discharge water to the sewer, never to the storm drain

» For Residents

The following is a preview of the information we have available to residents. For more fact sheets, visit ***sbcountystormwater.org***

Household Hazardous Waste Center Locations

DO YOU HAVE THE FOLLOWING ITEMS IN YOUR HOME?



Automotive Fluids
Batteries
Cooking Oil
Fertilizers & Pesticides
Fluorescent Bulbs
Household Cleaners
Medicine
Motor Oil & Filters
Paint Products
Pool Chemicals

PROTECT YOUR COMMUNITY!
Take your toxic products to a local waste collection center:

Big Bear Lake
Chino
Fontana
Ontario
Rancho Cucamonga
Redlands
Rialto
San Bernardino
Upland

**No business waste accepted. Must be a San Bernardino County resident.*

Find locations and a full list of items, visit
tootoxictotrash.com

SAN BERNARDINO COUNTY STORMWATER PROGRAM
WHERE WATER MEETS COMMUNITY



WE DID IT OURSELVES AND WE DID IT RIGHT

When painting your home, protect your family and community.

- **PAINTS** that are water-based are less toxic and should be used whenever possible.
- **BRUSHES** with water-based paint should be washed in the sink. Those with oil-based paint should be cleaned with paint thinner.
- **SAFELY** dispose of unwanted paint and paint thinner.

The County of San Bernardino offers 9 HHW Centers that accept paint and other household hazardous waste from residents FREE of charge. For a list of acceptable materials, location information, and hours of operation visit TooToxicToTrash.com.

VEHICLE MAINTENANCE

Oil, grease, anti-freeze and other toxic automotive fluids often make their way into the San Bernardino County storm drain system, and do not get treated before reaching the Santa Ana River. This pollutes our drinking water and contaminates waterways, making them unsafe for people and wildlife. Follow these best management practices to prevent pollution and protect public health.

Cleaning Auto Parts
Scrape parts with a wire brush or use a bake oven rather than liquid cleaners. Arrange drip pans, drying racks and drain boards so that fluids are directed back into the parts washer or the fluid holding tank. Do not wash parts or equipment in a sink, parking lot, driveway or street.

Storing Hazardous Waste
Keep your liquid waste segregated. Many fluids can be recycled via hazardous waste disposal companies if they are not mixed. Store all materials under cover with spill containment or inside to prevent contamination of rainwater runoff.

Preventing Leaks and Spills
Conduct all vehicle maintenance inside of a garage. Place drip pans underneath vehicle to capture fluids. Use absorbent materials instead of water to clean work areas.

Cleaning Spills
Use dry methods for spill cleanup (sweeping, absorbent materials). To report accidental spills into the street or storm drain call (877) WASTE18 or 911.

Proper Disposal of Hazardous Waste
Dispose of household hazardous waste by taking it to your nearest household hazardous waste center. For more information, call 1-800-OILY CAT or check out TooToxicToTrash.com.

PET WASTE DISPOSAL





» Get In Touch With Us Online!

» Website
sbcountystormwater.org

» eUpdates
sbcountystormwater.org/newsletter

» Facebook
facebook.com/sbcountystormwater

» YouTube
youtube.com/sbcountystormwater



» Report Pollution Violations
sbcountystormwater.org/report

» Email
info@sbcountystormwater.org

4.0 GENERAL BUSINESS PROCEDURES/BMPS

Proper Maintenance Practices for Your Business
Your Business and the County Partners in Protecting the Ocean
Good Cleaning Practices
Spill Prevention and Control
Best Management Practices for Industrial Storm Water Pollution Control
Employee Training (SC14, CASQA BMP Handbook)
Water Quality Guidelines for Carpet Cleaning Activities



Preventing water pollution at your commercial/industrial site

A clean ocean and healthy creeks, rivers, bays and beaches are important to Orange County. However, many landscape and building maintenance activities can lead to water pollution if you're not careful. Paint, chemicals, plant clippings and other materials can be blown or washed into storm drains that flow to the ocean. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains and streets is not treated before entering our waterways.

You would never pour soap or fertilizers into the ocean, so why would you let them enter the storm drains? Follow the easy tips in this brochure to help prevent water pollution.

Some types of industrial facilities are required to obtain coverage under the State General Industrial Permit. For more information visit www.swrcb.ca.gov/stormwater/industrial.html.

For more information, please call the Orange County Stormwater Program at (714) 567-6363 or visit www.ocwatersheds.com.

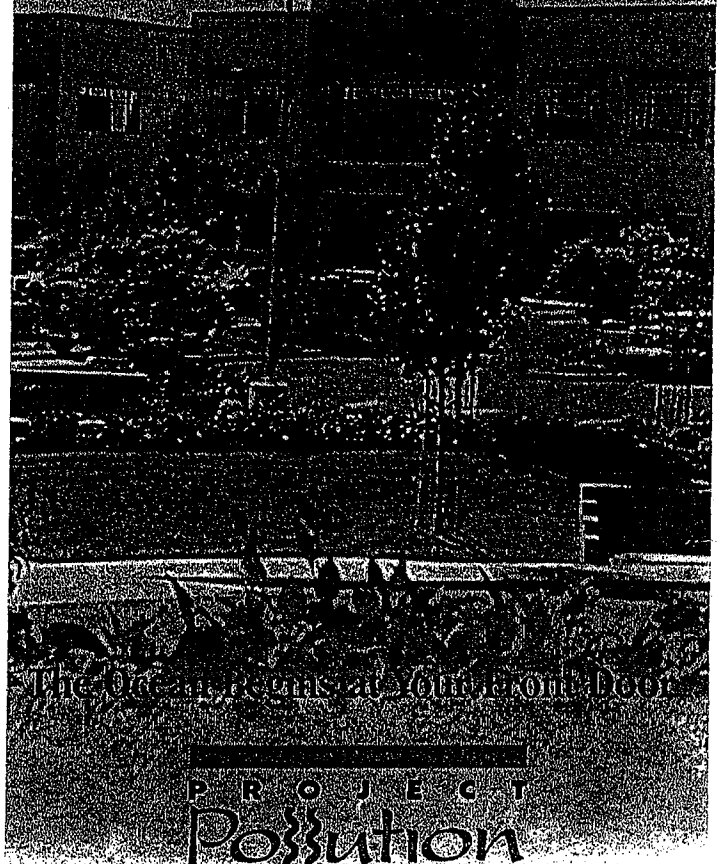
To report a spill, call the Orange County 24-Hour Water Pollution Reporting Hotline (714) 567-6363.

For emergencies dial 911.

RECYCLE USED OIL

Help Prevent Ocean Pollution

Proper Maintenance Practices for Your Business



The Ocean Begins at Your Doorstep

PROJECT Pollution PREVENTION

Storm Drain Awareness and Maintenance Practices

Landscape Maintenance

- Compost grass clippings, leaves, sticks and other vegetation, or dispose at a permitted landfill or in green waste containers. Do not dispose of these materials in streets, waterways or storm drains.
- Irrigate slowly and inspect the system for leaks, overspraying and runoff. Adjust automatic timers to avoid over-watering.
- Follow label directions for the use and disposal of fertilizers, herbicides and pesticides.
- Do not apply pesticides, herbicides or fertilizers if rain is expected within 48 hours or if wind speeds are above 5 mph.
- Do not spray pesticides within 100 feet of waterways.
- Fertilizers should be worked into the soil rather than dumped onto the surface.
- If fertilizer is spilled on the pavement or sidewalk, sweep it up immediately and place it back in the container.

Building Maintenance

- Never allow wash water, sweepings or sediment to enter the storm drain.
- Sweep up dry spills and use cat litter, towels or similar materials to absorb wet spills. Dispose in the trash.
- If you must wash your building, sidewalk or parking lot, you **must** contain the water. Collect the water with a shop vac, and contact your city or sanitation agency for proper disposal information. Do not let water enter the street or storm drains.
- Use drop cloths underneath outdoor painting, scraping, and sandblasting work, and properly dispose of materials in the trash.
- Use a ground cloth or oversized tub for mixing paint and cleaning tools.
- Use a damp mop or broom to clean floors.
- Cover dumpsters to block insects, animals, rainwater and sand. Keep the area around the dumpster clear of trash and debris. Do not overfill the dumpster.
- Call your trash hauler to replace leaking dumpsters.
- Do not dump any toxic substance or liquid waste on the pavement, the ground, or toward a storm drain. Even materials that seem harmless—like latex paint or biodegradable cleaners—can damage the environment.

NEVER DISPOSE OF ANYTHING IN THE STORM DRAIN.

- Recycle paints, solvents, lumber and other materials.
- Store materials indoors or under cover and away from storm drains.
- Use chemicals that can be recycled. For more information about recycling and collection centers, visit www.oclandfills.com.
- Properly label materials. Familiarize employees with Material Safety Data Sheets.

YOUR BUSINESS AND THE COUNTY
PARTNERS IN PROTECTING THE OCEAN

Steps You Can Take Now

COVER AREAS WHERE POTENTIAL POLLUTANTS ARE STORED.

Pollutants such as trash, grease, paints detergents and metals can come into contact with storm water or water from other sources and create polluted runoff. Keep these materials covered, labeled and stored in appropriate containers.

SEAL LEAKING STORAGE AND DUMPSTER CONTAINERS.

Prevent substances like grease, liquids and food products from coming into contact with rainfall and entering the storm drains.

PREVENT SPILLS AND LEAKS

Maintain a regular inspection and repair schedule for vehicles and equipment. Take appropriate precautions in loading and unloading materials. Look for and correct any potential leaks or spills.

DEVELOP PLANS TO MANAGE SPILLS SHOULD THEY OCCUR.

Propose a Spill Contingency Plan for hazardous spills, or an Accident Spill Plan for food or other spills. Clean any spills promptly, not allowing them to evaporate. Clean spills without water whenever possible. Rags, damp mops, and dry, absorbent materials are recommended for clean up. Dispose of any spill waste and clean-up materials promptly and legally.

KNOW YOUR WASTE HAULER'S PRACTICES.

Avoid waste haulers that accept your payment and dump your waste illegally. You are liable for illegal dumping of your waste. Your waste should be disposed of at a landfill if not hazardous or other appropriate facility.

SWEEP PARKING LOTS AND OUTDOOR STORAGE AREAS REGULARLY.

Sweep these areas at least once per week to maintain a debris-free facility. Dispose of debris, do not sweep it into the gutter. Never hose off paved surfaces.

LANDSCAPE MAINTENANCE.

Pick up and properly dispose of waste; don't allow waste to be blown into the street gutter. Avoid over-irrigation and over-application of herbicides and pesticides that could create run-off to the storm drains.

RECYCLE OR DISPOSE OF FLUIDS PROPERLY.

Many automotive fluids can be recycled, others must be disposed of as hazardous materials. For photo processors, treat spent chemicals on site, if possible, to remove silver.

WASH VEHICLES AND EQUIPMENT IN DESIGNATED AREAS ONLY.

Wash areas must be paved and fitted to drain only to sanitary sewers. A commercial car wash may be an alternative if your facility is not properly equipped.

LABEL STORM DRAIN INLETS.

Stenciling storm drains with "No Dumping! Drains to Ocean," alerts employees and customers that no dumping is allowed. Contact Marti, NPDES Coordinator, for information on stenciling of storm drains near your facility: (714) 834-3526.

INSPECT STORM DRAIN INLETS PERIODICALLY.

Prevent accumulated pollutants from washing down storm drains on your property and periodically inspect, remove and properly dispose of any debris.

CHECK FOR AND CORRECT ILLICIT CONNECTIONS TO STORM DRAINS.

Any discharged waste water must be carried by the sanitary sewer to a treatment plant, never by storm drains to the ocean.

EDUCATE CUSTOMERS AND TRAIN EMPLOYEES TO IMPLEMENT STORM WATER MANAGEMENT PRACTICES.

Post notices of appropriate practices, provide convenient labeled, covered, disposal containers and train employees to implement these management practices.

ADDITIONAL INFORMATION.

The California Integrated Waste Management Board Recycling Hotline offers information on local recycling services: (800) 553-2952.

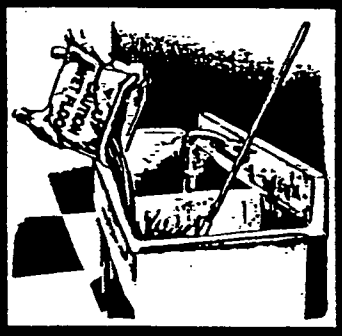
If you would like more information about the County of Orange Clean Storm Water Program and Best Management Practices (BMPs), please call Marti Guerra Serizawa, NPDES Coordinator, Subdivision and Grading, NPDES Section, at (714) 834-3526.

Good Cleaning Practices



Clean floormats, filters and garbage cans in a mop sink, floor drain or proper outside area. Don't wash them in a parking lot, alley, sidewalk or street.

Limpie los tapetes de piso, los filtros y los botes de basura en un fregadero para trapeadores, desagüe de piso o en algún sitio apropiado afuera.
No los lave en los estacionamientos, callejones, veredas o en la calle.



Pour washwater into a janitorial or mop sink. Don't pour it out onto a parking lot, alley, sidewalk or street.

Arroje el agua empleada en la limpieza al fregadero para trapeadores. No la arroje en los estacionamientos, callejones, veredas o en la calle.



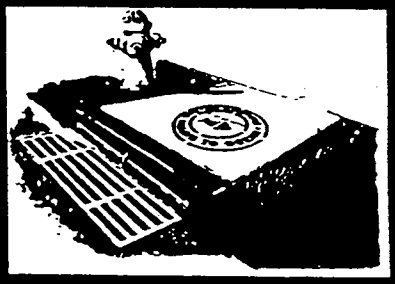
Recycle grease and oil. Don't pour it into sinks, floor drains, or onto a parking lot or street.

Recicle grasa y aceite. No los arroje en lavaderos o desagües de piso ni en estacionamientos o calles.



Keep dumpster area clean and
ld closed. Don't fill it with liquid
waste or hose it out.

Mantega el área alrededor del basurero limpia y
a tapa cerrada. No lo llene con desperdicios
líquidos ni utilice la manguera.



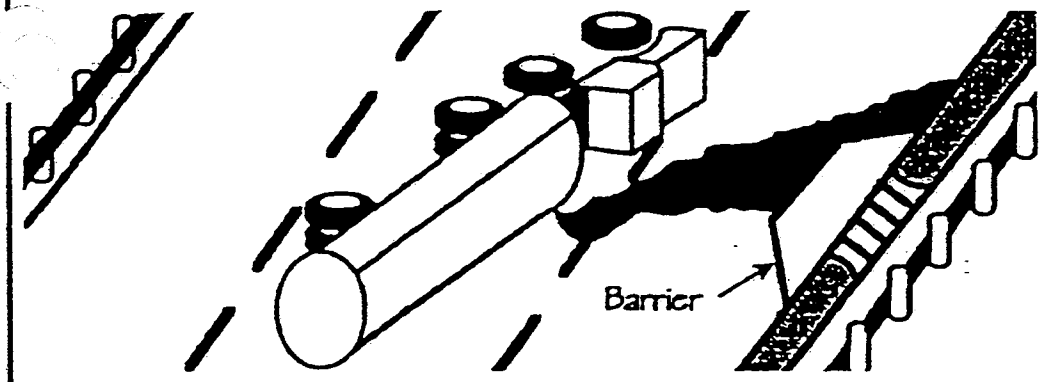


Use dry methods for spill
cleanup (sweeping, cat litter, e
Don't hose down spills.

Use métodos secos para limpiar los derrame
(escobas, aserrin de los gatos, etc.). No utili
mangueras para limpiar los derrames.

For A Cleaner Ocean

ACTIVITY: SPILL PREVENTION AND CONTROL



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

This best management practice covers only spill prevention and control. However, CA10 (Material Delivery and Storage) and CA11 (Material Use), also contain useful information, particularly on spill prevention. For information on wastes, see the waste management BMPs in this chapter.

APPROACH

The following steps will help reduce the storm water impacts of leaks and spills:

Define "Significant Spill"

Different materials pollute in different amounts. Make sure that each employee knows what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills.

General Measures

Hazardous materials and wastes should be stored in covered containers or with plastic sheeting and protected from vandalism.
Place a stockpile of spill cleanup materials where it will be readily accessible.
Train employees in spill prevention and cleanup.
Designate responsible individuals.

Cleanup

Clean up leaks and spills immediately.
On paved surfaces, clean up spills with as little water as possible. Use a rag for small spills, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to either a certified laundry (rags) or disposed of as hazardous waste.
Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly. See the waste management BMPs for specific information.

Reporting

Report significant spills to local agencies, including the Fire Department.
Federal regulations require that any significant oil spill into a water body or onto an adjoining shoreline be reported to the National Response Center (NRC) at 800-424-8802 (24 hour).

Targeted Pollutants

- ○ Sediment
- ○ Nutrients
- ◒ Toxic Materials
- ◒ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ○ Capital Costs
- ◒ O&M Costs
- ○ Maintenance
- ◒ Training
- ○ Suitability for Slopes >5%

● High ○ Low

CA12

Best Management Practices

ACTIVITY: SPILL PREVENTION AND CONTROL (Continue)

Use the following measures related to specific activities:

Vehicle and Equipment Maintenance

If maintenance must occur on-site, use a designated area and/or a secondary containment, located away from drainage courses, to prevent the runon of storm water and the runoff of spills.

Regularly inspect on-site vehicles and equipment for leaks, and repair immediately.

Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment on-site.

Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.

Place drip pans or absorbent materials under paving equipment when not in use.

Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the adsorbent materials promptly and dispose of properly.

Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.

Oil filters disposed of in trash cans or dumpsters can leak oil and pollute storm water. Place the oil filter in a funnel over a waste oil recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask your oil supplier or recycler about recycling oil filters.

Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries, even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Vehicle and Equipment Fueling

If fueling must occur on-site, use designated and secured (e.g., bermed or with sandbags) areas, located away from drainage courses, to prevent the runon of storm water and the runoff of spills.

Discourage "topping-off" of fuel tanks.

Always use secondary containment, such as a drain pan, when fueling to catch spills/leaks.

REQUIREMENTS

Costs (Capital, O&M)

- Prevention of leaks and spills is inexpensive. Treatment and/or disposal of contaminated soil or water can be quite expensive.

Maintenance

- Keep ample supplies of spill control and cleanup materials on-site, near storage, unloading, and maintenance areas.
- Update your spill prevention and control plan and stock cleanup materials as chances occur in the types of chemicals on-site.

LIMITATIONS

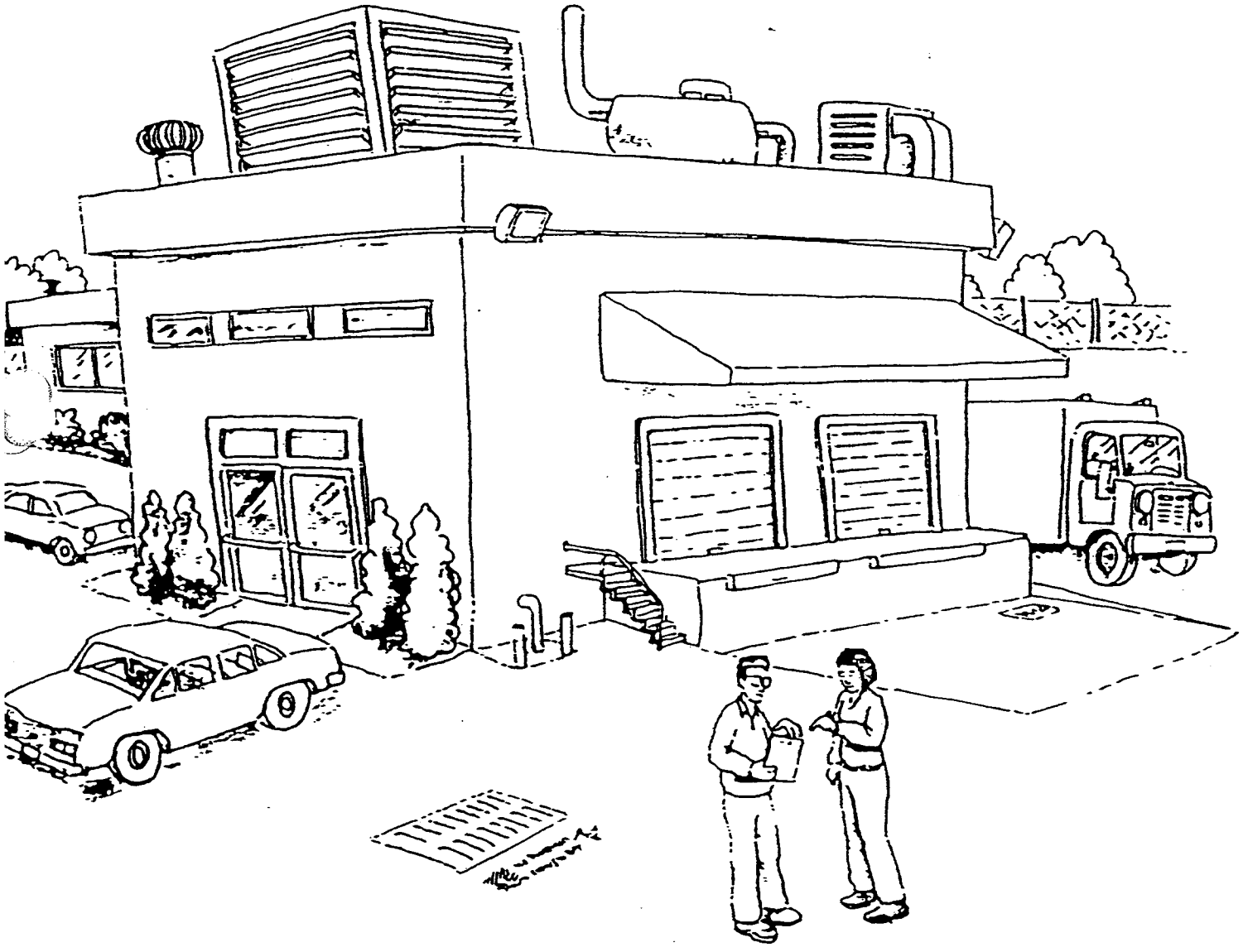
If necessary, use a private spill cleanup company.

REFERENCES

Blueprint for a Clean Bay-Construction-Related Industries: Best Management Practices for Storm Water Pollution Prevention; Santa Clara Valley Nonpoint Source Pollution Control Program, 1992; Santa Clara Valley Nonpoint Source Pollution Control Program, 1992.

Storm Water Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

Best Management Practices for Industrial Storm Water Pollution Control



Nonpoint Source
Pollution Control Program

. Training and Education for Employees and Customers

uccessful storm water pollution control relies in large art on proper training and education of employees. lany of the recommended BMPs in this part of the anual identify specific training needs for employees ho conduct the activities. Train your employees in est management practices for storm water pollution ontrol.

rain employees in these BMPs because a single mployee's mistake or misunderstanding at the wrong ime, in the wrong place, can lead to a costly pollution ncident. When you have selected the BMPs that apply o your facility, add training in the BMPs to your egular employee training procedures.

Train employees to routinely inspect industrial ctivities and equipment that may be exposed to storm vater. A once-a-week walk-through can help identify otential difficulties before they become major roblems. Inspect structural BMPs to be sure that hey continue to function properly.

Continue your training procedures in the future. Assign experienced workers to train new employees. Review procedures as a group at least once a year. You can coordinate this with worker safety training programs or "worker right-to-know" training for hazardous materials.

Periodically check employees' work practices to be sure the BMPs are implemented properly. Post informational and reminder signs, such as: proper equipment wash procedures at designated washing areas; "Close the cover" signs at dumpsters and other storage areas; and others. Stencil "No dumping! — flows to Bay" messages at storm drains. (Stencils are available from the NPS Program.)

Provide general information as well because employees often respond best if they understand *why* they are being asked to conduct a new procedure. Employees' suggestions in return can help identify cost-effective storm water controls for your facility. Provide positive feedback so employees understand the difference they each make in protecting the Bay.

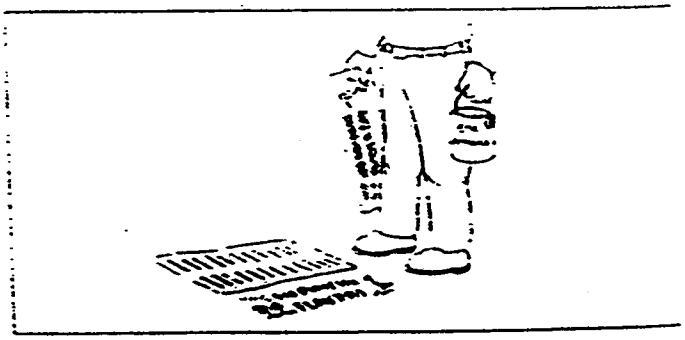
Emphasize the importance of keeping pollutants out of the storm drain, because the drains flow directly to streams and the Bay without benefit of the wastewater treatment that the sanitary sewers receive. Educate plant personnel about the harmful environmental effects of improper disposal of materials into the storm drain, so they understand the importance of preventing storm water pollution. Also, educate employees on what they can do at home to reduce storm water pollution in the Bay. Public information pamphlets are available from your municipality[redacted]

If you subcontract for small construction jobs or other work on your premises, write contracts with your BMPs as conditions. Provide contractors with proper disposal options for wastes. Monitor contractors to be sure they comply with your BMPs.

To keep abreast of new developments, participate in workshops, trade association meetings, and seminars. Trade association publications can be valuable sources of information. Modify your practices whenever you find a new idea that serves your shop better.

If you serve customers at your facility, be aware of customer activities onsite. If they dispose of materials improperly, *you* will be responsible for the violation. Ask your customers not to discard liquids into your trash cans or storm drains. If you have persistent problems, you may need to monitor your customers more carefully at trash cans, storm drains, and other potential disposal areas on your property.

Let your customers know how you are minimizing wastes and recycling fluids to show that you are a "good neighbor," and encourage your customers to be the same. Showing clients what you are doing to protect the Bay is good public relations. Some businesses make the customer aware of their environmental requirements by including a modest environmental compliance fee, itemized on customers' billing statements, to cover handling and disposal costs for hazardous materials.



Label storm drain inlets so employees do not dispose waste there.

2. Eliminating Improper Discharges to Storm Drains

The Industrial Storm Water General Permit generally prohibits discharges of *anything but storm water* to the storm drains. There are many ways in which non-storm water from industrial plants can enter the storm drainage system. In most cases, the discharges result from practices that are now illegal, even though they may be inadvertent or may have been permissible in the past. Industrial process water, building wastewater, and water from other sources are prohibited, with a few exceptions described in Table 1. Inspect your facility and yard to be sure no unauthorized discharges enter your storm drains.

Unauthorized discharges take two forms. **Illicit connections** are improper permanent connections that allow wastewaters to enter storm drains, including some that may have been allowed in the past. Connections that allow sanitary or process wastewater to enter the storm drain are prohibited, including all storm drain connections from indoor drains or sinks. More information on identifying and removing illicit connections is available in the Santa Clara Valley NPS Program's Guide to Compliance with the General Permit.

Illegal dumping is water that has been exposed to industrial activities, and then released to the properly-connected storm drainage system. Pollutants may be introduced to storm drains inadvertently, by routine practices that discharge water outdoors; or by routinely discharging wastes, wash water, and other materials to storm drains, catch basins, and other conveyance facilities either on your property or in the street. A large part of this improper discharge results from employees' lack of understanding, coupled with a lack of readily-available proper routes for the discharge.

You need to make a long-term ongoing effort to assure that no illegal discharges will occur. This requires continuing observation to identify potential sources of intentional or inadvertent improper discharges. Discontinue or re-route the water from those activities. Continuing employee training will be needed. Measures to help prevent illegal discharges include:

- Provide well-marked proper disposal or collection methods for waste water wherever you frequently use wash water, discharge cooling water, or produce a liquid waste that might otherwise reach the storm drain.
- Employee training should especially emphasize proper disposal of non-storm water (see Section 1). Educate employees to understand that storm drains connect directly to streams and the Bay without treatment.
- Label all storm drain inlets and catch basins "No dumping—flows to Bay" so employees will know which inlets are part of the storm drain system.
- Periodically inspect and maintain storm drain inlets. Clean out catch basins so that accumulated pollutants do not wash down the storm drains.

Table 1 is a summary of a 3-page table included in the Storm Water Industrial General Permit for the Santa Clara Valley. The table identifies some common sources of water in industrial plants that can enter storm drains. For each source, the table lists the preferred disposal option for facilities in the Santa Clara Valley. For water that is allowable for discharge to the storm drain, Table 1 lists conditions or restrictions on discharge.

A few discharge categories of special interest are:

- **Cooling tower condensate** for industrial process water must be discharged to the sanitary sewer, with the appropriate permits.
- **Internal coolant** for refrigeration or building air conditioning is prohibited from the storm drains.
- **Building air conditioner condensate** may be discharged to the storm drain *only* if it is not treated with algae inhibitors, corrosion control chemicals, or other additives. Do not allow it to run across parking lots or other paved surfaces that may be contact pollutants on its way to the storm drain; use a pipe or trough to direct the flow. In most Santa Clara Valley cities, the preferred course is to discharge to the sanitary sewer. (Some cities have made this a legal requirement.)

. Spill Prevention, Control, and Cleanup

nall spills can have cumulative effects that add up to ;ignificant source of potential pollutants in your ɔrm water discharge. The best approach by far is to event spills and leaks: maintain a regular inspection d repair schedule, and correct potential spill uations before a spill can occur. Some prevention chniques are described in Sections 4, 5, and 6.

hen a spill does occur, quick and effective response the best way to prevent pollutants from reaching ɔrm water. Prepare a set of well-defined procedures r responding to a spill of any liquids in an area that ight be exposed to storm water. The procedures n be specific for your facility, and should consider l circumstances from small, minor releases that can : easily handled to a large emergency spill — cluding who to call to respond to the situation :fore it gets out of hand. Train employees in the ·ocedures (Section 1).

ne basic procedures should emphasize that spills be eaned up promptly, not allowed to evaporate. therwise, pollutants remain on the pavement and ay be washed to the storm drains with the next in, or will remain in the soil to become a possible roundwater pollutant. If the spill is on an unpaved rface, determine whether you need to remove the ɔntaminated soil to prevent it from being a source of ture storm water pollutants.

lso, the standard procedures should specify leaning up leaks, drips, and other spills without ·ater whenever possible. Do not use a hose or wet ıop to clean up a spill area. Hosing may remove the pill from the immediate area, but does not keep the ollutant out of the environment. On the contrary, it dds to the volume of the spill and spreads the spilled naterial around a larger area.

f you handle hazardous materials, spill prevention ınd response procedures are described in your haz- ırdous materials management plan, filed with your ire department or other hazardous materials ("Haz-Mat") authority (see Section 6). If a spill occurs, ıotify the authorities as required in your emergency ·esponse plan. Contain and collect the spilled sub- ;tance, then dispose of the substances and any con- aminated soil in compliance with hazardous materials regulations.

Small spills are those which can be wiped up with a shop rag. Don't put wet rags in the dumpster with the shop trash: store them in a covered rag bin, of the kind used at auto service stations. Avoid paper towels. You can avoid making this a waste stream by sending used rags to a professional cleaning service. (You need to inform your cleaning service of what the shop rags have been used for.) Do not saturate rags with gasoline, solvents, or other volatile liquids.

Medium-sized spills are too large to wipe up with a rag and require more attention. Contain and soak up the liquid using dry absorbent material such as vermiculite, specially-prepared sawdust, or "cat litter." Absorbent "snakes" may be used as temporary booms to contain and soak up the liquid. Sweep up the used absorbent and snakes and dispose of them appropriately: with the shop trash if non-hazardous, with the hazardous wastes if necessary. Another convenient option is to use a wet/dry shop vacuum cleaner to collect spills, and dispose of the liquid with your liquid or hazardous wastes. *Do not* use vacuums for gasoline, solvents or other volatile fluids, because the enclosed vacuum may become an explosion hazard.

Larger spills must be contained, then cleaned up. For spills of food waste or other non-hazardous liquid, take steps to contain and clean up the liquid, and minimize the wash water used in cleanup. Shut off or plug storm drain inlets or sewer inlets where the spill may enter. If necessary, keep temporary plugs on hand to fit your inlets and train employees in when and how to use them. For hazardous materials spills, implement your emergency procedures and alert your HazMat authority.



Wipe up small spills immediately with shop rags.

4. Outdoor Process Equipment Operations and Maintenance

Storm water from your site can accumulate pollutants by exposure to numerous small leaks, spills, and other discharges of outdoor equipment. Large equipment may require specially-designed structural or advanced BMPs to reduce the potential for storm water to contact pollutants. Ordinary precautions, such as those below, may suffice for smaller equipment.

As a first step, identify all equipment at your site that may be exposed to storm water, or may discharge potential pollutants that may be exposed to storm water. Identify the kinds of pollutants each piece of equipment may generate — lubricants, coolants, and other possible sources of leaks or discharges.

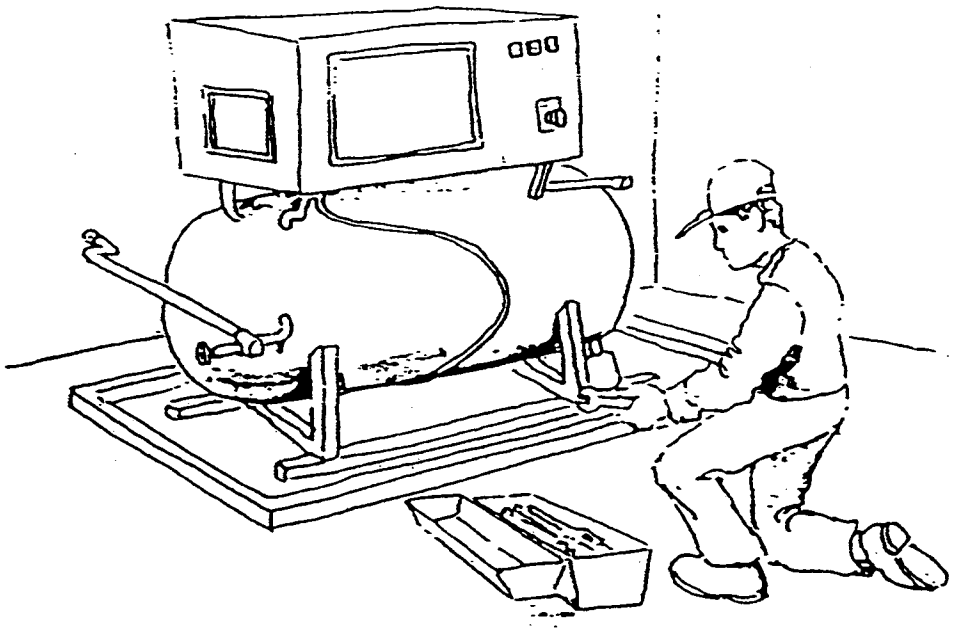
Be creative and thorough in developing your list. The inventory should include rooftop cooling towers or air conditioners; rooftop air vents for industrial equipment; outdoor air compressors and other service equipment; indoor wet processes where leaks or discharges may discharge to outdoor areas; and material transfer areas, such as loading areas where forklifts or trucks may carry pollutants outdoors on their tires.

Following the equipment inventory, assign an employee to inspect each piece of equipment on a regular basis to see that it is functioning properly. This could be the employee responsible for operating the equipment if it is used regularly, or may be a maintenance staff member for equipment on the roof or in seldom-seen places. Inspect for leaks, malfunctions, and staining on and around the equipment, and other evidence of leaks and discharges. Assign the inspecting person to be responsible for reporting a spill. Develop a routine for taking actions on the report: cleaning up the spill, and repairing the leak to prevent future spills.

Where possible, take the next step toward full pollution prevention and make modifications to prevent storm water from contacting the equipment or its discharges. Place equipment on an impermeable surface, or install a drip pan beneath potential leak points. To minimize the amount of rainwater that contacts the equipment, you may construct a simple roof and install a berm to prevent run-on and runoff. If the equipment requires a "wet" process — that is, operations inevitably releases wash water or process liquids — place it on a paved surface and install a connection to the sanitary sewer. Check with your municipality or wastewater authority to identify appropriate permits.

Air compressors and other equipment sometimes produce small quantities of automatic blowdown water, which commonly contains lubricating oil or other potential pollutants. This may not be discharged to the storm drain. Connect the blowdown to the sanitary sewer. Or, if the compressor has a frequent small bleed, place a drip pan or catchment to collect the water — do not let it soak into unpaved surfaces or run off paved surfaces.

Condensate on exterior surfaces of compressors, building cooling equipment, and other machinery need not be collected for discharge to the sanitary sewer, but may be directed to the storm drain. Prevent buildup of puddles or pools of condensate under the equipment; route it to a storm drain so it does not pick up pollutants while it flows across your site.



Keep drip pans under outdoor equipment to contain drips and leaks, especially during maintenance.

5. Outdoor Materials Storage and Handling

If you handle **bulk solid materials** outdoors, keep them covered, in appropriate containments, and protected from storm water. Apply this policy for raw materials, products, by-products, and construction materials or supplies. Materials of concern include gravel, sand, lumber, topsoil, compost, concrete, packing materials, metal products, and others.

Store the material in one of these ways:

- The preferred method is storage on a paved surface with a roof or covering so that no direct rainfall contacts them, and with appropriate berms or mounding to prevent run-on of storm water. Roofs are required by most municipalities for new facilities.
- Where a roof is not feasible, store on a specially constructed paved area with a drainage system. Pave the area with a slope of about 1.5% to minimize water pooling. Prevent runoff and run-on with berms or curbing along the perimeter. For many materials, the preferred alternative will be the installation of *no drain* and the testing and pumping of ponded water to the sanitary sewer, a treatment sytem, or offsite disposal as appropriate. Discharge to the storm drain is not allowed for many materials.
- Where a drain is allowed, install longitudinal drains that lead to treatment facilities or water quality catch basins along the lower edge of the pad. You may need a permit from your wastewater authority to discharge to the sanitary sewer, or may need the Regional Board to allow special provisions in your storm water NPDES permit (the General Permit).
- As a temporary arrangement, place the material on a paved surface and cover it with plastic sheeting, secured with weighted tires or sand bags. If possible, choose a mounded or bermed area that will prevent run-on of storm water through the material. Move the materials to a permanent storage place as soon as possible.

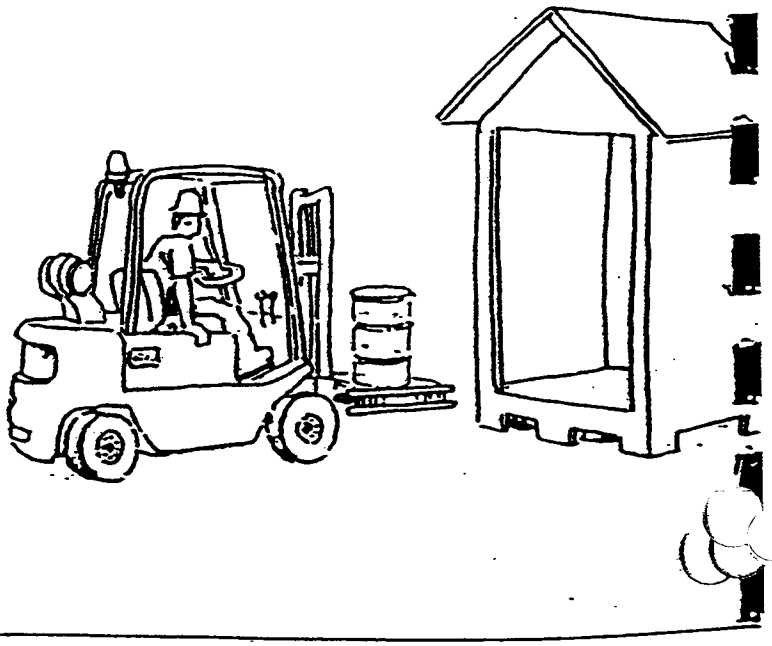
Parking lots or other surfaces near bulk materials storage facilities should be swept periodically to remove fines that may wash out of the materials, which will otherwise wash away with storm water. Larger bulk material storage facilities will need more extensive structural controls designed for the specific facility and material.

Hazardous materials need to be stored in accordance with federal, state, and local HazMat requirements. The requirements are generally more than adequate to prevent storm water pollution — for instance, HazMat secondary containment may have *no drain*.

If you store **liquid containers**, implement a plan and a design to control unexpected leaks and spills so the liquid does not reach storm drains or surfaces that will be exposed to storm water. If you store hazardous materials, the spill prevention plans required by your HazMat authority are adequate to ensure storm water protection. Non-hazardous materials storage should also incorporate spill control designs and procedures.

Select a storage method appropriate for the type of material. Keep liquid tanks in a designated area on a paved impermeable surface and within a berm or other secondary containment. Keep outdoor storage containers especially in good condition. Inspect containers regularly for damage or leaks, as described

"Doghouse" sheds are one way to keep storm water away from barrels and materials kept outdoors, and provide spill control at the same time.

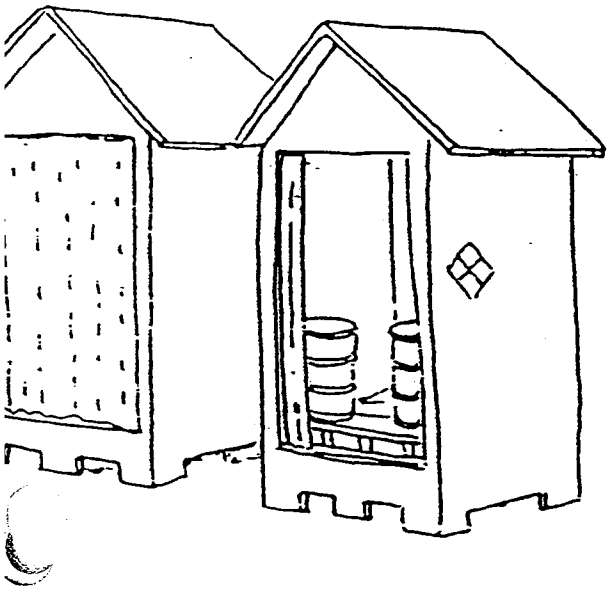


n Section 4. Clean up any leaks or spills immediately (using dry methods, described in Section 3), and fix the leaks promptly.

If the materials frequently leak during transfer, or the materials generally cause a wet environment when using or storing them, the area may need to be connected to the sanitary sewer (permitted by your wastewater authority), and should be covered and bermed to minimize contact with storm water.

Some localities *require* that secondary containments be connected to sanitary sewers, and prohibit any hard-plumbed storm drain connections within the secondary containment. On the other hand, large storage facilities and tank farms that have high-capacity bermed areas may receive rainfall over a wide area, and much of it may not contact the tanks or equipment: these might be better-served by a storm drain. As a rule, large facilities like this need site-specific storm water pollution prevention designs.

For smaller storage tanks, storage in roofed areas can prevent all contact with storm water (in combination with well-designed spill control procedures). Store liquids in a shed where one is available. New sheds, even if temporary, can be costly because of building permits and fire-code requirements. A possible solution is the "doghouse" design used by some firms (illustrated). The roof and flooring prevent contact with direct rain or run-on storm water. Since it has only two walls, most fire departments do not require sprinklers. The flooring is wire mesh above secondary containment, so most HazMat authorities accept the structure for storing hazardous materials. (A permit may be required by local building or planning departments.)



Storm water in secondary containments often accumulates from direct rainfall into open containments. Water that has contacted storage vessels, or the pumping and transfer equipment associated with storage and handling, is considered to have contacted industrial activities and may not be discharged to the storm drains.

You may wish to roof the containment to avoid this problem. If that is not possible, or you wish to avoid the cost, you need to identify an acceptable disposal for water from the containment. One common solution is a portable pumping system that can be moved to accommodate separate containment structures on your site. The equipment can pump water into a truck or portable temporary holding tank. The water then can be tested and disposed according to whether any pollutants are present. Some disposal options are:

- If it meets criteria to be defined as hazardous waste, employ a certified hazardous waste hauler for disposal at a permitted hazardous waste facility.
- If it contains constituents similar to process wastewater for which your onsite wastewater pretreatment facilities are designed, pretreat the water and discharge to the sanitary sewer.
- If it meets standards for your industrial discharge permit, discharge it to the sanitary sewer without pretreatment (if your wastewater authority permits).
- Reuse it on your site in an appropriate manner: industrial process water, equipment wash water, steam cleaning makeup, or another use where the water will eventually be discharged as industrial or sanitary wastewater. You may need to invest in a truck or plumbing to convey the water to its reuse location.
- If it is free of hazardous constituents, use it on your facility grounds for landscape watering. Don't apply the water to landscaping if hazardous pollutants are present — even if not concentrated enough to be hazardous waste — because the pollutants may accumulate in the soil or vegetation, and create a health hazard over the long term.

6. Waste Handling and Disposal

Table 2 summarizes the preferred storage and disposal practices for some common industrial facility wastes. For many wastes, reusing or recycling is the most cost-effective means to prevent potential pollution. Fluids that you hold for recycling are special categories of hazardous waste. You may store them on your site only for short periods, in accordance with hazardous waste requirements, but they can be transported under somewhat less stringent requirements than other hazardous wastes. Many recycling services have special variances or permits that reduce your paperwork requirements and allow shipping at reduced cost.

Keep general shop trash in a dumpster with the lid closed. Put the dumpster in a paved area, not on unpaved soil or your lawn. Keep the area clean by picking up dropped trash and sweeping the area regularly (perhaps once a week), but don't use a hose to clean up — keep water off the area. Nearly all dumpsters and trash compactors leak: keep liquid wastes out of them, and keep them closed to keep storm water out.

If you can't prevent leakage from trash containers, install a roof or lean-to that keeps direct rainfall off, and place asphalt curbing or berms around the dumpster to contain the leaks. (Check with your local agencies and comply with fire codes and building permits.)

If you store scrap metal or other materials outdoors, keep them under a roof, cover, or tarpaulin. Keep scrap parts or other used metals indoors. Oils and other potential pollutants can wash off long after you think the parts have been washed clean. Collect waste metal such as used parts and metal lathe filings, for delivery to a scrap metal dealer.

If you store **empty drums** outdoors, do not hold them longer than necessary. Ship them to a drum reconditioner or another facility.

- Drain them completely to avoid spills.
- Seal them properly watertight, to keep storm water from entering; otherwise, the water would become a process wastewater, and can't be dumped to the storm drain.

Store and handle **hazardous wastes** properly. Hazardous materials or wastes are not a storm water problem if they are handled in accord with state and federal regulations, and the requirements of your local HazMat control authority.

Keep hazardous waste and materials indoors or under cover in a locked area, to keep nighttime trespassers away. Store them before disposal in special hazardous waste containers, or closed drums within a secondary containment that is approved by your HazMat authority.

Table 2. Preferred waste handling & disposal methods

		Recommended storage	Preferred disposal	Hazardous waste?
General plant wastes	Used parts: clean metal scrap	Bin (covered or indoors)	Scrap collector	No
	Used oily parts, contaminated	Drum	Hazardous waste hauler	Yes
	Metal shavings	Bin (covered or indoors)	Scrap collector	No
	Used rags	Rag bin with lid	Rag laundry	Possibly
	Soiled cleanup absorbent	Drum	Hazardous waste hauler	Yes
	Coolant from air conditioner or refrigeration equipment	Recycling machine	Reuse in-house (HVAC service company)	No
Liquid wastes	Paints*	Original container, with lid	Hazardous waste hauler	Yes
	Waste lubricating oil	Drum (segregate)	Oil recycler	Special**
	Solvents, thinners, and miscellaneous fluids*	Tank ("hot" waste) (Segregate different fluids to make recycling possible)	Solvent recycler (where possible) or waste hauler	Possibly
Liquid containers	Empty drums	Indoors or under cover	Drum reconditioner	
	Empty cans, bottles, aerosol cans, etc.	Drum	Municipal trash or hazardous waste hauler	Possibly
Vehicle wastes	Waste motor oil	Drum (segregate)	Oil recycler	Special**
	Brake fluid, gear oil, hydraulic fluids, etc.*	Bottle or tank ("hot" waste)	Hazardous waste hauler	Yes
	Antifreeze	Tank (segregate)	Recycler	Special**
	Batteries	Open rack	Battery supplier	Special**
	Tires	Covered or indoors	Tire hauler	No
	Oil filters	Drum (drain first)	Oil recycler	Special*

* *Unused pure product may sometimes be returned to the vendor rather than disposed as waste.* ** *Recyclable under special hazardous materials restrictions.*

most cities of Santa Clara County, the municipal fire partment is the HazMat authority that controls zardous materials storage, handling, and response. cales contract with the Central Fire District or ity Health Department. For information about ning solid wastes that might be controlled under zardous waste regulations, contact the County's vironmental Health Department or Cal-EPA's Toxic bstances Control Division. (See the rear cover for a of regulatory agencies.)

npty containers such as storage barrels, oil cans, int buckets, aerosol cans, and similar containers hazardous wastes if they once held hazardous terials. You may not discard these with the regular sh. They must be stored properly so they do not k outdoors. Some drum suppliers accept empty ums for reuse, under less-stringent hazardous terial recycling regulations.

hicle maintenance waste materials often deserve ecial attention. Waste oil, antifreeze, spent solvents, d some other liquids can be recycled. Spent batter- s may not be discarded with trash, but must either be sposed as hazardous waste, or returned to the dealer om whom you purchased them, for reclamation and use. Guidance on handling vehicle wastes may be n the Automotive Industries BMP manual, avail- m the NPS rogram and listed on the rear

7. Equipment Washing and Steam Cleaning

Wash water for industrial equipment in most cases must be discharged as process wastewater to the sanitary sewer, and is not allowed in storm drains. To clean dirty, greasy field equipment or trucks you must install equipment to capture, pretreat, and discharge the wash water to the sanitary sewer as industrial process waste. It may be less costly in the long run to locate a commercial car wash which has all the appropriate equipment and municipal permits, and to contract with them for washing services offsite.

If you wash vehicles or equipment on your site, you may do so only in a designated area, designed and equipped as follows:

- Pave the area.
- Mark the area clearly as a wash area, and be sure all employees know they must wash in this area only. Post instructional signs that prohibit changing vehicle oil, washing with solvents, and other activities.
- Install sumps or drain lines to collect wash water for treatment and discharge to the sanitary sewer; reuse (for repeated washings); or recycle (used elsewhere onsite).
- If the equipment is a continuing source of grease or heavy dirt, cover the area to prevent contact with rain water when not in use.
- Grade or berm the area to prevent storm water from running on.
- If possible, wash inside a building designed for maintenance or equipment storage. Ensure that all drains connect to the sanitary sewers.

Steam cleaning should be done on your site *only* if you are equipped to capture all the water and other wastes. All the washing requirements above apply to steam cleaning as well. Steam cleaning wash water is prohibited from storm drains; requires a permit from your wastewater authority — including pretreatment requirements, such as an oil/water separator; and may require you to determine whether it is a hazardous waste treatment unit. If you steam clean, do it indoors or in a specially-prepared outdoor working area where you collect the wash water and treat it for discharge.

3. Trucking and Shipping/Receiving

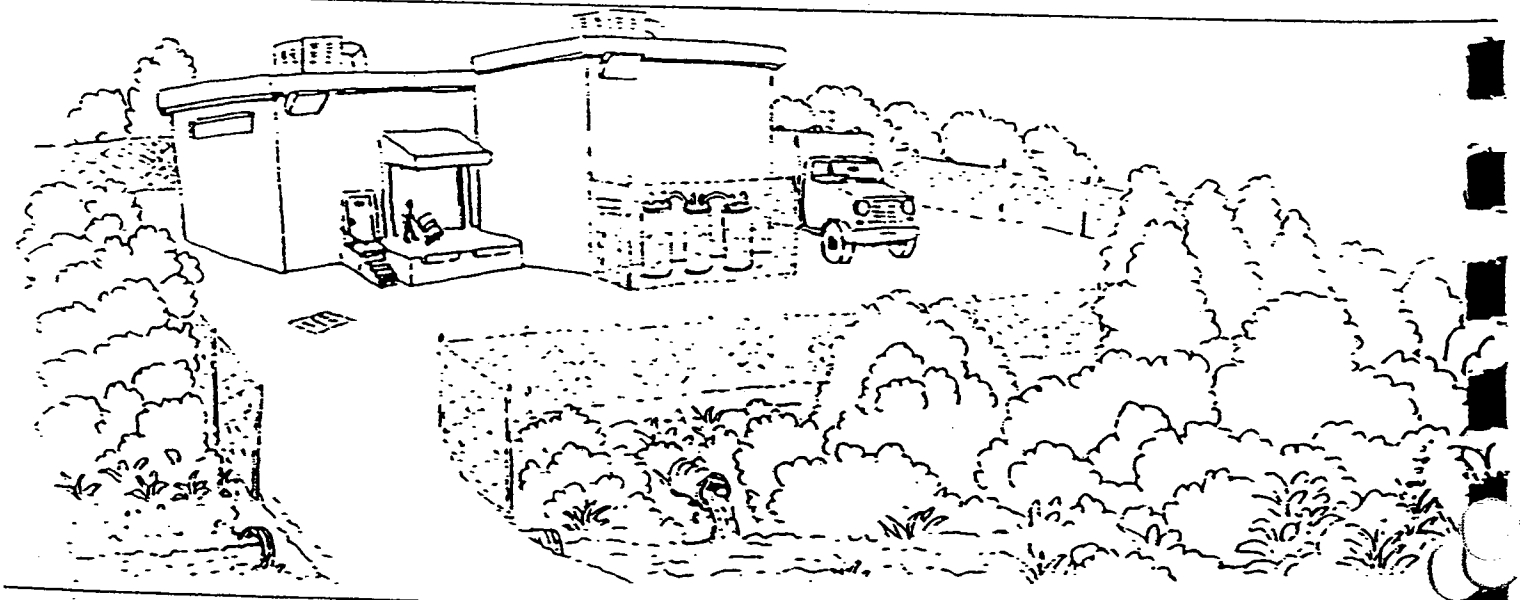
Truck loading and unloading are potential sources of pollutants when rainfall and run-on contact spilled raw materials, dust, and motor fluids that accumulate in this heavy-traffic area.

Load and unload raw materials, products, and other materials only at designated loading areas. In that way, you can isolate the potential source to areas that you can control, rather than unspecified areas throughout your site. The best areas from a storm water point of view are indoor bays. For facilities that must use an outdoor loading dock, some operational BMPs and simple design features can control storm water pollution.

- Cover the loading dock area with a roof overhang, or use a door skirt that fits snugly to both the building door and the truck door.
- Install curbs or berms around the loading area to prevent storm water from running on and any spilled material from running off. Accumulated liquids should be pumped out with a portable pump to the sanitary sewer unless concentrations exceed allowable limits. In those cases the material must be treated or shipped offsite.
- Designate the person who accepts the shipment, the truck driver, or someone else to check under the truck for leaked motor fluids, spilled materials, debris, and other foreign materials.
- If you own and operate the truck, make the driver responsible for identifying and reporting the spill — large or small.
- If you receive shipments from trucks operated by others (a trucking company or suppliers' trucks), i.e., the drivers are not your employees, have the person who signs for delivery responsible for inspecting for spills, leaks, and debris before the trucks leave.
- Detail a procedure so that a maintenance crew cleans up spilled materials promptly.
- If you have a small company that cannot spare a crew, make the driver responsible for cleaning up after unloading or before departing with a full load.
- If you identify the loading dock as a significant source of potential pollutants in your SWPP Plan, implement further control measures such as those described in Section 13.

If you load or unload liquids, you need further operational precautions and the loading dock needs further design features. If you handle hazardous materials, all the features you need are probably in place as part of a spill control and response plan. If they are not, you should select structural BMPs such as those described in Section 13.

Parking lots and access roads are sources of potential pollutants from the trucks themselves and from possible spills or leaks of the materials being transported. If you are re-grading roads and parking lots, or if you transport materials that you expect to be signifi-



Storm water runoff from industrial roofs, trucks, parking lots, and yards flows into storm drains and directly into streams and the Bay. It never receives treatment that would remove pollutants.

int sources of potential storm water pollutants, follow ıctural BMPs recommended in Section 16. For g facilities, especially smaller parking lots and ıort driveways where no hazardous materials are ansported, you can effectively prevent storm water ollution by implementing routine maintenance ctivities, such as:

- Visually inspect your access roads and parking lots regularly to identify and clean up spills.
- Remove solid debris as soon as operations permit.
- Clean up liquid spills promptly, as if they were on your shop floor.

Conduct street sweeping-style cleanups periodically to emove loose debris, small amounts of spilled raw naterials, road dust, and other potential pollutants.

- Smaller spaces can easily be swept by hand.
- Do not hose off paved surfaces.
- For larger spaces, use a vacuum truck or mechanical sweeper (that collects solids, not just brushes them aside). Whenever possible, do not use a wet-washing street sweeper unless you can collect the polluted wash water.
- Private corporations or your municipality might perform the work on a contract basis so you need not purchase the truck.

During the dry weather season, the appropriate frequency of sweeping for your facility depends on how heavily the road is used and the kinds of materials you transport. Some signs that you need to sweep more frequently:

- If your trucks commonly spill or drip bulk materials.
- If you notice debris or other materials accumulating on the access roads. The correct frequency is the one that prevents unwanted materials from accumulating.

During the wet weather season, emphasize sweeping at times that will best prevent storm water from contacting potential pollutants:

- Clean the area once thoroughly in the fall, before the wet weather season begins.
- After that, you may stay close to your dry-season needs for debris removal, but add an additional thorough cleaning before a major rainfall (half an inch or more of rainfall forecast).

Dispose of the cleaned-up material with your regular facility trash if there are no hazardous materials. If you suspect it may be hazardous — if you handle hazardous materials, or if you know of a significant motor oil leak, for example — you should test the material or dispose of it with your facility's hazardous waste. You could face substantial penalties if you improperly dispose of hazardous waste.

If you park trucks or heavy equipment onsite, inspect the parking area for leaks of oil and motor fluids and design a procedure to report them, clean them up, and repair the leaking vehicle. Some practical techniques include:

- Designate consistent parking spots for each vehicle so that if a leak is indicated on the ground, the truck can be identified and repaired.
- Designate a responsible person to check under a vehicle for leaks or spills. If you employ drivers, the driver could be responsible as part of a vehicle check before driving.
- Clean up spills promptly, using dry cleanup procedures described in Section 3. Conduct the preferred cleanup procedures for unpaved as well as paved areas.
- Develop a reasonable procedure for identifying, reporting, repairing, and cleaning up leaking motor fluids and spilled materials. Make sure employees are fully trained in the procedures: who is responsible for checking each truck, who should be notified, and who should respond.



. Fleet Vehicle Maintenance

ıe Automotive BMP manual prepared by the Santa ara Valley NPS Program addresses automotive and hicle repair facilities. You should implement the MPs in that manual if vehicle maintenance is a ıtentially significant source of pollutants on your site. ctions 9 and 10 of this manual merely summarize me of the appropriate BMPs for fleet maintenance at ı industrial facility.

henever possible, perform vehicle maintenance in an door garage, not in outdoor parking areas. If you ıange oil and do other routine engine work outdoors. ou need to create a designated area for vehicle aintenance. Keep the area clean as if it were part of ur shop floor and use dry cleanup practices. The ea should incorporate some specific design features. ; described in Sections 14 and 15. Some operational ethods also can be successful at preventing storm ater pollution at vehicle maintenance areas. A few ggestions:

- Keep equipment clean: don't allow buildup of grease and oil, which will wash away when the equipment is exposed to rain.
- If you work on vehicles outdoors, keep drip pans or containers under the vehicles at all times while you work on them — leaks and spills occur unexpectedly. Place drip pans under vehicles as soon as you detect a leak.
- Drain fluids from any retired vehicles kept onsite for scrap or parts. Out-of-service vehicles you intend to restore and vehicles being held for resale should be checked periodically for leakage.
- Don't change motor oil or perform vehicle or equipment maintenance in the parking lot or storage yard; use the vehicle maintenance area. Don't allow customers or employees to change their personal vehicles' oil in your vehicle service areas.

ehicle parking or storage yards need to be perated with some similar precautions:

- Inspect equipment in the yard for fluid leaks regularly — perhaps with a walk-by inspection for ground staining every day, and a closer visual inspection once a week.
- Keep the equipment yard clean and clear of debris, using dry sweeping methods as in Section 8. Do not hose off the area or wash with water, because any runoff becomes an illegal discharge to the storm drain.
- Maintain the yard's storm drain inlet(s) with special care. Clean them on a regular schedule and also after large storms. Pay attention to the kinds of potential pollutants that accumulate, so you can identify the sources and take measures to control the sources.

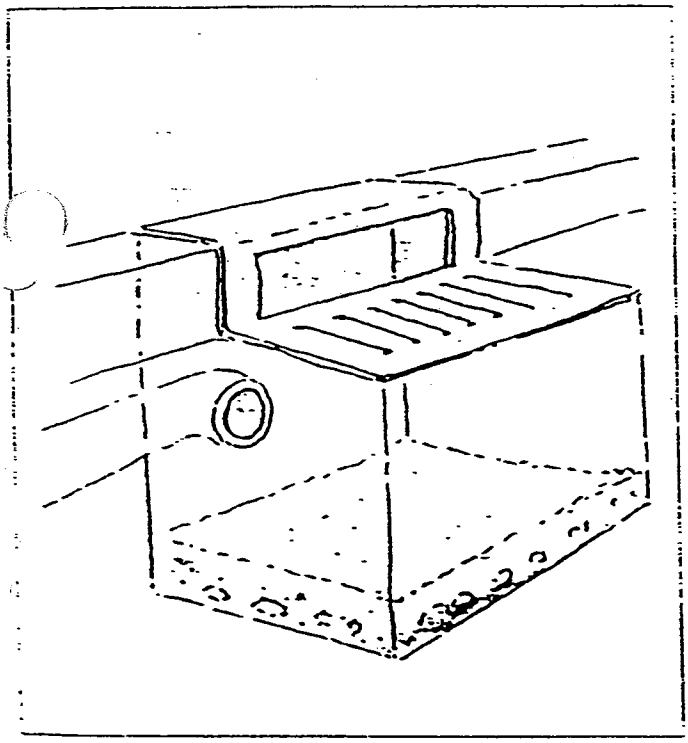
10. Fleet Vehicle and Equipment Fueling

If you have a vehicle fueling area it should be designed and operated to minimize spilled fuel and leaked fluids coming into contact with rain water. This section describes general principles, but simple operational controls may not be adequate for an industrial fueling facility. You may need to re-design your fueling area or install structural controls. Section 14 describes some general design approaches that may be useful in your eventual complete Storm Water Pollution Prevention Plan. In the near term, steps you can take for proper operation of a fueling area include:

- Use a paved area or provide a concrete slab for the fueling area — never place it on open ground. Concrete is preferred because fuel and oils cause asphalt to deteriorate.
- Clean up gasoline overflows and spills using dry methods as in Section 3. Do not allow spills to run off or evaporate, and do not flush the spill away with a hose. Spread absorbent material, sweep it up with a broom, and dispose of it as a hazardous waste.
- Post signs that instruct pump operators not to "top off" or overfill gas tanks. Keep dry cleanup materials in the fueling area, and instruct employees in the dry clean up methods described in Section 3. Assign someone responsibility to check the area every day for gasoline, motor oil, or other fluids that may have leaked.
- When you do routine cleaning, use a damp cloth on the pumps and a damp mop on the pavement rather than spraying with a hose to minimize clean water to the sump.

The main concept is to respond properly to fluid leaks is spill-prone area. Even very small spills, when happen every day, add up to a lot of fuel in the drainage system. This is an improper discharge that is illegal under the General Permit. Small spills do not present a problem if the fueling area is designed to handle spills — that is, if no storm water contacts it, and if it drains to a sump. But if the area drains to a valved-off storm drain or sewer connection, it must be pumped out before the valve may be opened during a rainfall.

Fuel tanks, including temporary tanks, need to be permitted by your HazMat authority. They will specify design features such as size of containments. Keep temporary fuel tanks in a bermed area that has an impervious lining, such as concrete or a heavy-gauge plastic liner.



A catch basin helps keep debris and sediments out of the storm drain, but needs to be cleaned out periodically.

11. Building Maintenance and Grounds Upkeep

Building maintenance and general outdoor cleanup should use the same principles as parking lot cleanup and spill prevention: clean up without water whenever possible, by sweeping or wiping; wash with as little water as possible; prevent and clean up spills; and clean up debris and solids so they do not reach the storm drains.

Arrange **rooftop** drains or downspouts so they don't drain directly onto paved surfaces. Connect them directly to a storm drain instead. Alternately, allow water to flow onto a grassy surface, if the grassy area is large enough that it can accept the roof's entire runoff from a medium-sized storm — that is, no water runs across the grassy area into a paved area except in the largest of storms.

Maintain the **storm water conveyance system** on your property. The "conveyance system" may be as simple as roof downspouts and a gutter in your driveway, or may be an extensive system of inlets, ditches, drainage channels, and underground lines. Keep all parts of the system clear of debris to avoid blockage that may cause storm water to back up. Remove from the system any spilled or leaked materials that can be transported by storm water.

Clean the storm drain inlets to remove sediment and debris at least twice a year — late in the dry weather season before the first storm, and after the first major storm of the wet weather season. After each large storm, inspect the inlet; remove debris; and determine whether you need to remove sediments or do other maintenance.

The storm drain inlet may have a **catch basin**: a below-grade chamber where the storm drain pipe connects. Catch basins are intended to collect debris and sediments to prevent clogging the lines. Therefore, the catch basins themselves must be cleaned out periodically to prevent flooding. If you clean catch basins annually, shortly before the wet weather season, you can keep them flowing freely and remove leaves, sediments, and other materials that would otherwise be washed down the storm drain. Don't flush the catch basin with water; use a shovel or vacuum device to remove the materials.

Other useful design features, such as vegetated ditches and water quality improvement inlets, are described in Sections 19, 20, and 21 as advanced BMPs.

12. Building Repair, Remodeling, and Construction

This section describes some relatively simple BMPs that apply to minor building repairs, remodelling, and minor construction projects at an industrial facility that involve "industrial activity exposed to storm water."

Larger-scale projects, such as construction of new facilities, are covered under a separate General Permit for construction. These require more extensive storm water pollution prevention measures than described here. A separate BMP manual for construction activities is available from the Santa Clara Valley NPS Program. (See rear cover.)

The same practices are *recommended* for construction activities on industrial sites. Before you begin a construction or repair project, review the Construction BMP Manual to identify and implement the appropriate practices. If those BMPs do not apply, or are unduly elaborate for a simple construction activity that will be completed in a short time, consider the BMPs described in this section.

Store building materials under cover or in contained areas, using BMPs discussed above, in Section 5. For outdoor storage at a construction site, select a pollution prevention method such as:

- Put an impermeable tarp over piles of wood, gravel, or other materials. Don't wait for forecasts of rain — do this every day, to avoid being caught unaware. Also, it will keep materials from blowing off the pile and contributing pollutants to runoff later.
- Keep the working area clean every day for the same reason. Sweep up wood splinters, paint chips, and other residues every day, as well as a thorough cleanup at the end of the project.

Painting requires some basic procedures.

- Before painting, while you scrape to remove old paint, spread a ground cloth or tarpaulin to collect dust and paint chips. If the paint contains lead or tributyl tin, dispose of the paint chips as hazardous waste.
- Mix paints indoors before starting work.
- Use impermeable ground cloths, such as plastic sheeting, while you paint. Place in-use paint buckets in a pan or on plastic sheeting.
- At the end of the work day, store paint buckets and barrels of materials away from contact with storm water.
- Use a tarp or portable, inflatable berm to prevent spills.
- Treat a paint spill as a chemical spill: capture it before it flows to the storm drain, and clean it up promptly using dry methods.

During **painting cleanup**, proper procedures are:

- If you use water-based paint, clean brushes and equipment in a sink connected to the sanitary sewer.
- Clean up oil-based paint where you can collect the waste paint and solvents to be handled as small quantity hazardous waste — do not pour it to the sink or to a storm drain.
- Keep leftover paint, solvents, and other supplies for a later use, or deliver them to a solvent recycler with other plant wastes when you ship a batch.
- Handle empty paint cans and other containers as described in Section 6. Containers may be small-quantity hazardous waste. Latex paint cans are not hazardous waste if the paint is dry.

Do not fall back on old cleanup practices from days when storm water pollution was not known as a problem. Do not pour leftover paint down the storm drain or onto the ground. Do not clean brushes into the storm drain or pour buckets of cleaning water to the drain, or wash spilled paint down the storm drain with a hose. These practices are now categorized as "illegal dumping." Do not wipe brushes onto old newspapers, or pour leftover paint supplies into newspapers and discard the paper in the trash.

Spray painting requires a few extra precautions.

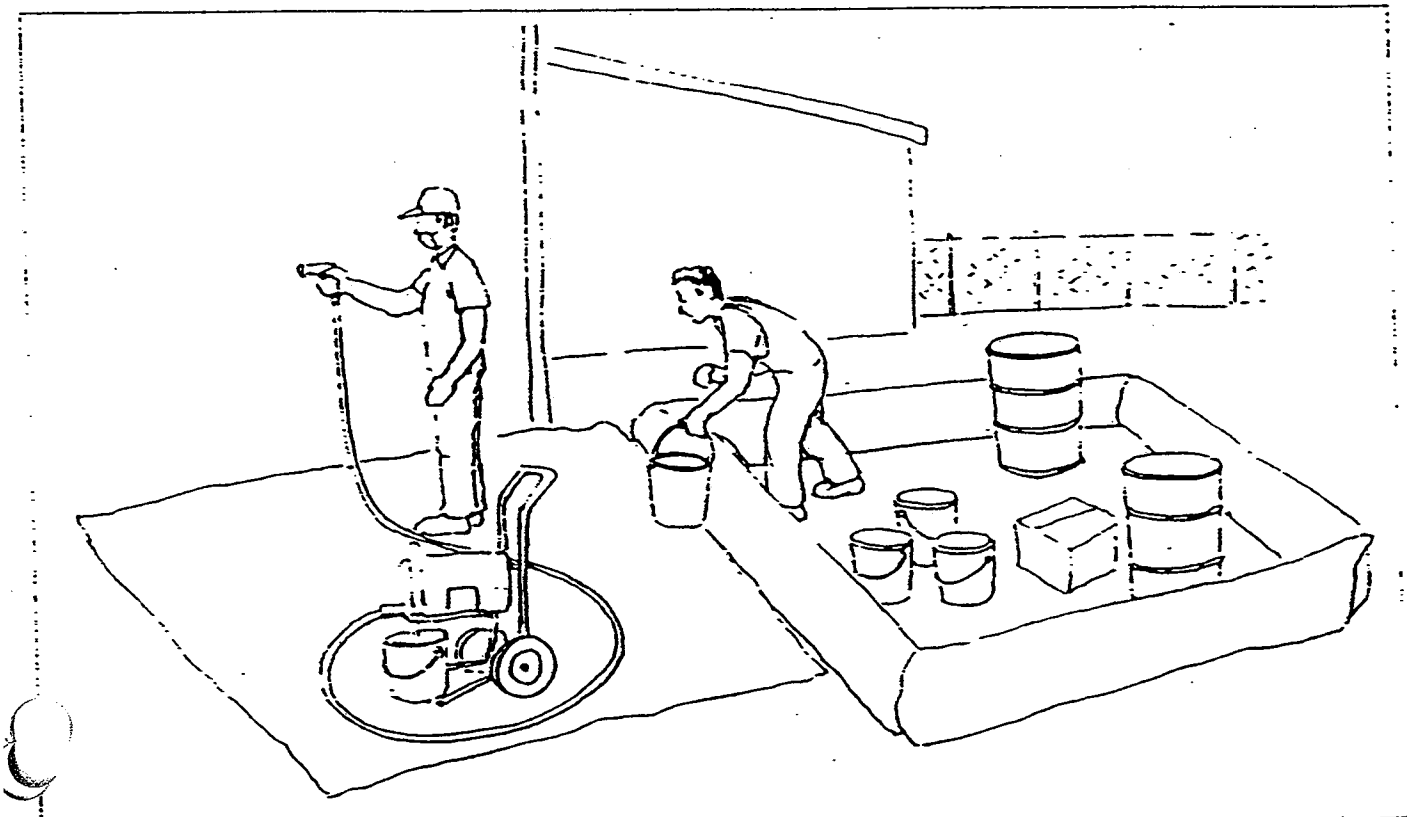
- Use temporary scaffolding to hang drop cloths or draperies to shield you from the wind and to collect overspray.
- Arrange the draperies to minimize the spreading of windblown materials.
- Be aware of air quality restrictions on spray paints that use volatile chemicals. Consider a water-based spray paint for better air quality compliance.

Sand blasting can be controlled to keep particles off ved surfaces and out of storm drains. Ask your cipality whether building and construction codes ce requirements on the size and type of blasting medium that is allowed. More complete instructions are available in the Construction BMP manual for full-sized jobs, but some basics should be applied for smaller projects, as well:

- Place a tarpaulin or ground cloth beneath your work to capture the blasting medium and particles from the surface being cleaned.
- Hang tarps or drop cloths to enclose the area, using temporary scaffolding if necessary. Arrange the drop cloths to protect the work area from wind, and to capture airborne particles.
- Curtail operations on a windy day.
- Clean up frequently: collect dust and particles from the drop cloths before you produce too large a pile to handle easily.

Wood preservatives, pavement seal coating, and other outdoor surface treatments commonly contain als, pesticides, solvents, or polymers that are rdous materials. Handle and dispose of them perly, as follows:

- Apply only as much of the chemical as the wood can absorb or as needed to cover the paved area.
- Soak up excess chemicals with absorbent material or rags rather than allowing them to flow to the storm drains or soak into the soil.
- If the chemicals spill, clean up promptly using dry techniques; see Section 3.
- When sealing a sidewalk, prevent the sealant from reaching the gutters or drains. Use absorbent booms, or stuff rags into storm drain openings.
- When treating a roof with wood preservative or sealant, line the gutters with rags. Dispose of the rags properly: with your hazardous waste if the substances you are using are hazardous.
- If you clean a roof or sidewalk before applying preservative, sweep thoroughly to remove loose particles first, then wash with water if necessary.
- Collect wash water from downspouts or drains where possible and remove particles.
- Avoid applying surface treatment chemicals during the wet weather season.



Outdoor painting requires practices to prevent paint and dust from becoming storm water pollutants.

Advanced BMPs and Structural Controls

Some industrial operations and plant situations require more extensive measures to control storm water pollution. All but the smallest and least complex industrial facilities are likely to require some structural modifications. Depending on your facility, and your success at eliminating potential sources of storm water pollution, your long-term implementation plan may need to include more or fewer of these advanced BMPs.

The BMPs in this section are more extensive and, in general, more costly than the recommended BMPs in Part 1. These BMPs include structural controls — storm water management measures that require constructing new facilities or installing new equipment. Not all of the advanced practices are necessary for every facility, and some will not be of use in some facilities.

You will need to evaluate your own plant to determine which BMPs are applicable to your operations, and which combination will best succeed at controlling the storm water pollutants that may run off from your site. You may find you have a choice in selecting structural BMPs, unlike in implementing basic recommended practices. Evaluate and select controls that are adequate and most cost-effective for your site.

The BMP descriptions in Part 2 are not complete design standards, but describe the central principles you need to consider in identifying and controlling storm water pollution from various sources in your plant. Design standards, performance specifications, and detailed discussion of the design and application of structural and treatment BMPs are available in a BMP manual from the state of California, scheduled for publication in late 1992.

Advanced pollution control practices take a number of forms, and may include a wide range of solutions that are not listed here. You may develop other approaches that are more effective for your facility.

Or, you may need to develop and implement further BMPs than the ones described in this manual. If you conduct more complex activities, especially activities that are unavoidably exposed to storm water, you will need to develop more intensive source control and storm water management BMPs.

If you are renovating your shop or building a new facility, you should evaluate installing some of these structural controls even if the shop does not currently have a pollution problem with that specific area. Some of the structural measures in this section are much less costly to install during new construction than to retrofit afterwards.

For example, if you re-grade an equipment parking area, you should consider storm water design criteria even if the yard has not been in violation of standards in the past. If you put off implementing the measures, future more-stringent requirements may require these same measures to be retrofitted, which can be much more costly than if you do it while constructing a new facility or renovating for other reasons.

If your principal sources of pollutants do not originate with industrial activities, you may need to control sources that are not specifically named in the General Permit, such as: pesticides and fertilizers from landscape maintenance; oil and antifreeze from autos in large employee parking lots; and cooling water or equipment lubricants from large building ventilation and cooling equipment. Your municipality and the NPS Program hold their own permit that requires they reduce pollutants in storm water from *all* sources, and they may request your cooperation in developing controls for your pollutant sources that go beyond the BMPs in this manual.

13. Loading Dock Design Features

Loading docks may require more intensive pollution controls than the operational BMPs described in Section 8. This is especially true of areas where you load or unload liquids in containers. Bulk liquid transfers are a more intensive industrial operation that requires specific control designs, and are not addressed in this manual.

Additional features of a properly-designed loading dock include:

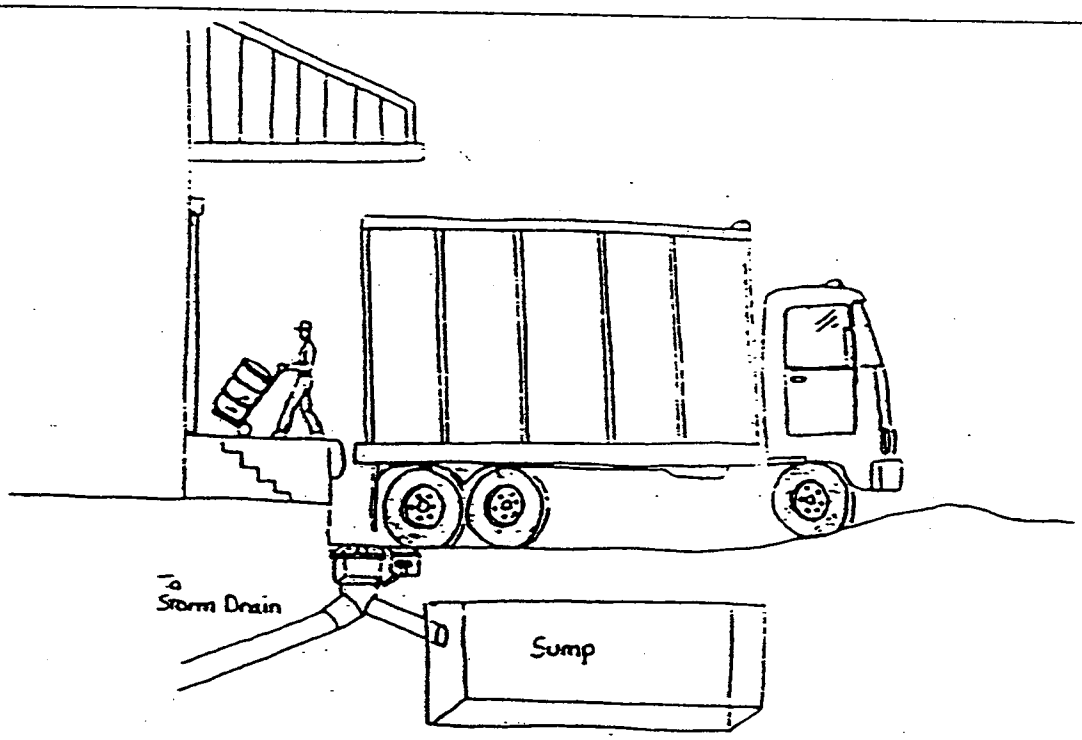
- Grade the loading area to be sloped or recessed to direct flow toward an inlet with a shutoff valve, or toward a dead-end sump.
- Make sure the inlet includes a sump with enough capacity to hold a spill while the valve is closed.
- Keep the valve closed at all times except when you need to release storm water or other liquids that are acceptable for discharge.
- Preferably, this inlet should connect to a sanitary sewer rather than a storm drain. Check with your wastewater treatment authority for permitting requirements.
- Consider completely preventing contact with storm water using a roof and berms, as described in Section 8. This will both avoid washing potential pollutants into the drain and avoid discharging clean storm water to the sanitary sewer.

If the inlet connects to a *storm drain*:

- Accumulated liquid must be tested and found to contain *no pollutants* before opening the valve for discharge.
- If the liquid does contain pollutants, you need to pump it from the sump and discharge to your sanitary sewer if the wastewater treatment authority agrees to accept it. (See the recommendation below.)

If the inlet connects to a *sanitary sewer*:

- Accumulated liquid must be tested and found to be within the parameters specified in your wastewater discharge permit before opening the valve for discharge.
- If you cannot discharge to the sanitary sewer, you need to convey the liquid to a hazardous waste disposal facility.



A dead-end sump provides secure spill control, but any accumulated liquids need to be pumped out, tested, and properly disposed. Use berms or slopes to prevent run-on so storm water is not added to waste in the sump.

14. Equipment Yard Design Features

'arking and storage yards for large vehicles and heavy quipment generally require site-specific structural nd operational controls. Follow the operational BMPs or vehicles recommended in Sections 7, 8, 9, and 10. lso assess your equipment yard to determine ossible sources of pollutants, and install appropriate ontrols to keep potential pollutants out of the storm ater. Design approaches may include:

- Grade the area to slope to a longitudinal drain, or install curbs to direct all storm water to a storm drain in the yard. If your yard is not too large and is properly designed, it should drain to a single storm drain. Even a small yard should include a storm drain on your property, and not rely on a city-operated drain in the street.
- If you determine that the equipment yard is a large source of oily materials in your storm water, consider fitting the inlet(s) with a sand filter (see Section 20) or removing oily pollutants (see Section 21).

egregate the area where you service vehicles, and nstall special structural controls.

- If possible, perform all work indoors, or construct a roof over the specified area. This will require a building permit and compliance with appropriate fire codes.
- Pave the surface with concrete, not asphalt. Vehicle fluids may dissolve asphalt, or may be absorbed into the blacktop and released later.
- Drain the surface to a single drain, preferably connected to a sanitary sewer. The drain may require an oil/water separator or oil/grease trap, and must be approved by your wastewater treatment authority.
- Grade the working area to be higher than the parking lot, or surround it with a berm, to prevent storm water run-on.
- Construct a special area in which to segregate your "dirtiest" equipment (roof tar equipment, asphalt paving equipment, etc.) Handle its discharges, leaks, and runoff separately. This approach could save you from the need to treat *all* the runoff from the equipment yard.

15. Fleet or Equipment Fueling Area Design Features

If your facility's vehicle fueling area is one of the significant sources you identify in your SWPP Plan, you may need more intensive BMPs than the operational efforts described in Section 10. Some design features to consider are:

- Cover the fueling area to prevent rain from falling directly on the area. Install a roof over the fueling island, the area where vehicles park while fueling, and as much of the approach area as practical. Leaked engine fluids and spilled fuel inevitably accumulate on the pavement in these heavily-trafficked areas.
- Storm drain and sewer inlets that drain the fueling area must be equipped with a shutoff valve to keep fuel out of the drain in the event of a spill from the pumps. The valve should be kept closed at all times except during a rainfall.
- Curtail fueling activities when the valve must be open, or use extra precautions to capture any spilled fuel, such as a large drip pan under the vehicle.

A number of different approaches may serve as effective drainage design. The fueling area needs to be separated from the rest of the yard, both to contain any fuel spill and to prevent storm water from running on. Select or adapt a scheme such as one of these:

- Grade the fueling area to be "mounded" or elevated. The Automotive Industries BMP manual includes a suggested mounded grading scheme.
- Install berms around the area that are high enough to redirect water from a large storm.
- Grade the entire fueling area to drain to a single inlet. You can accomplish this with longitudinal drains at the perimeter along the "downhill" side of the fueling area, or with a depression in the middle of the fueling area. Either way, be sure to design the grading to avoid run-on.
- At the inlet, either install a sump, from which you will pump any accumulated liquids; or connect to a sanitary sewer, after checking to get all the permits the wastewater authority may require. The sump or connection should be operated as suggested for a loading dock area in Section 13.

16. Access Roads and Rail Corridors

Access roads and rail corridors can be significant sources of pollutants for some industrial facilities. In the General Permit, access roads and rail corridors are defined as "industrial activities exposed to storm water" that you must include in identifying potential sources and selecting BMPs for your SWPP Plan.

Maintenance and operational BMPs for access roads are the same as those described for vehicle access and parking areas under Section 9. Some structural BMPs are described below.

Proper drainage design is a good place to start. Generally, this means the roads should be crowned and sloped outward; and that storm water should not be allowed to drain across the road, but be carried in ditches or culverts alongside the road. Grass-lining the roadside ditches can be an effective way to remove storm water pollutants — see Section 20. Maintain the ditch to be sure it does not clog or fill with sediments, allowing storm water to overflow. Plant vegetation by roadside to control erosion and to promote water infiltration.

If your site includes railroad access, an important source of pollutants is the preservatives on wooden railroad ties. Use a less-toxic preservative; avoid organic toxics such as creosote and pentachlorophenol. Or use concrete ties or other non-wooden ties.

Control spills and dust from railroad unloading. If your rail line delivers or picks up liquids, in bulk or in containers, you may need to add spill-control loading docks with shutoff valves. (See Section 3 for spill controls, and Section 13 for loading dock design features). If parked railroad cars drip, install a drip pan at the loading dock between the rails.

17. Onsite Storm Water Management

Some industrial facilities may still find potential pollutants exposed to storm water even after implementing source control measures like the operational BMPs in the first part of the manual and the structural source controls above. Further structural controls can be used to manage the storm water itself, either to control the flow of the runoff (described in Section 19), to remove some of the pollutants in passive devices (Section 20), or to remove pollutants using specially-designed equipment (Section 21).

The best way to avoid the need for storm water management or treatment is to use source controls, most likely in combination. The right combination for your facility will probably include conscientious implementation of BMPs such as those recommended in Sections 1 through 12 of this manual, attention to the sources of waste at your facility, and careful reduction of process wastes.

If you need to manage storm water onsite, the most important consideration is to minimize the quantity of storm water that contacts potential pollutants. For example, keep the area of industrial activities as small as possible; separate the area from parking lots, to prevent run-on; and roof or enclose the area if possible.

Design your storm water conveyance system to *isolate* the areas where storm water contacts potential pollutants, and convey water from those areas separately from water that runs off of "clean" and non-industrial parts of the site. This will allow you to control storm water with smaller and less-costly hydraulic or water quality controls. Or, if you plan to discharge to your wastewater treatment authority (Section 18), reducing the volume will reduce the discharge cost and increase the willingness of your wastewater authority to accept the discharge.

18. Redirect Storm Water Discharge from Storm Drain to Sanitary Sewer

If source control BMPs are not adequate to prevent discharging pollutants in storm water from your facility, you may need to cease discharging storm water that contacts those pollutants. One way to avoid discharging potential pollutants with storm water is to isolate runoff from that part of your facility where the pollutants are contacted and discharge the storm water to the sanitary sewer rather than a storm drain.

Installing new connections and new piping can be quite costly, and the required permits may be a barrier, so this could be a costly BMP. Also, it will require a permit from your local wastewater authority. The permit will specify the volume of water you may discharge, the kind of pretreatment equipment you may need to install and operate, and requirements for monitoring your discharge.

Redirecting discharge to the sanitary sewer may not be allowable in all localities — some wastewater authorities have sections in their local ordinances that prohibit the discharge of storm water to the sanitary sewer. Requirements might differ from one municipality to another, so contact the authority that serves your area for information. (See the list on the rear cover.)

Your wastewater treatment authority, as a rule, would prefer to minimize the volume of storm water that passes through the treatment system. You should reduce the quantity of storm water you redirect, using techniques like those described in Section 17.

The wastewater authority may require temporary storage of your storm water onsite, to avoid overloading their facilities during a storm. Your authority is more likely to accept discharge of storm water that has contacted pollutants if you can store it temporarily and deliver it *after* the high flows from a storm event.

19. Storm Water Management: Hydraulic Controls

Hydraulic controls are intended to control *quantity* of storm water discharge, but can be useful for water *quality* as well by removing potential pollutants from storm water. BMPs of this type are widely used to control erosion of hillsides and to remove sediments from storm water runoff. Also, hydraulic-control BMPs can help to remove oils and heavy metals that adsorb to sediment particles in storm water.

Design standards and operating information for hydraulic controls are available in a number of references. The NPS Program is preparing a manual of "new development" BMPs recommended for newly-constructed buildings, which includes discussion of hydraulic BMPs for storm water pollution control and conditions under which hydrauiic BMPs should be implemented. Design specifications for hydraulic controls will also be addressed in detail in a BMP manual being prepared by the state of California for storm water pollution control. Many local and regional regulations that target erosion control give specifications for hydraulic BMPs.

Hydraulic controls are designed for one of two purposes. One category serves to control the rate of peak flow , slowing the flow of water at the height of the storm to reduce its potential to carry away soils and other contaminants. The other type reduces volume of runoff, generally by causing some storm water to *infiltrate* (or soak into the soil) rather than running off into storm drains, streets, or streams. Some approaches control both peak rate and volume.

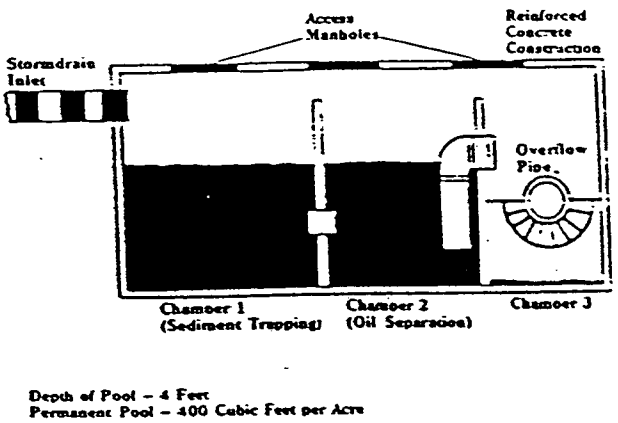
Hydraulic controls for a site are most effective if the overall site design is considered. The first step generally is to modify the site layout to increase the water-permeable surface, to increase infiltration and reduce runoff volume. If greater flow control is needed, the second step may be to strategically place *infiltration trenches* to intercept runoff and promote infiltration. (Infiltration may not be permitted in some areas — see Section 20.) For large quantities of flow, onsite ponds can be designed either to slow the peak flow of storm water or to hold water onsite until it infiltrates or evaporates. These are known as *detention ponds* or *retention ponds*. A variation is the *storm water wetland*, which similarly controls flow while wetland vegetation helps remove pollutants.

20. Storm Water Management: Water Quality Controls

A number of specific storm water management controls are better suited to water quality control than hydraulic control. These features may be added to various parts of the storm water conveyance system on an industrial site to help control potential pollutants in the storm water before it leaves the site. They are for the most part passive design features rather than treatment devices in the usual sense. Information in existing references gives design parameters for these water quality controls, so this section merely summarizes a few types of controls.

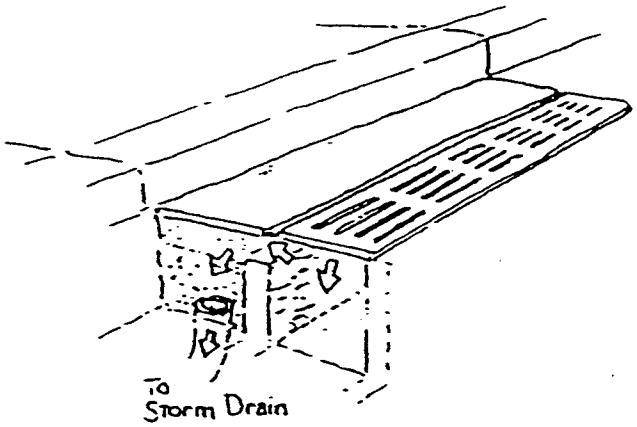
A simple technique is a **vegetated swale or channel**, a ditch that carries storm water in which plants are permitted to grow. The plants provide some peak flow control by slowing the water. They also remove some pollutants by encouraging the deposition of sediments and minor oily wastes. This control can be retrofitted to some existing storm water conveyance ditches simply by allowing grasses to grow, if it does not interfere with storm water drainage and cause water to back up on the site.

WATER QUALITY INLET



An API separator is only partly effective at removing oily wastes, but is more effective at removing sediments than an ordinary catch basin.

A **water quality inlet** is a simple multi-purpose device, shown in the diagram above. A storm drain inlet is lined with an enlarged catch basin or grit chamber where solids and sediments settle out of the water. A baffle restricts the flow of surface-floating oil, which can be removed by hand later. Floatable debris also collects at the baffle. This type of inlet has in the past been used to help remove oily wastes, but is of limited effectiveness. Section 21 describes the inlet further, including its maintenance requirements.



A sand filter inlet can remove some pollutants before they enter the storm drain.

A **sand filter inlet** is a storm drain inlet that contains sand or another filter medium. The sand removes particulates and oily wastes from storm water as it enters the storm drain. An extension of the same concept is a **sand filter**, where storm water quality can be improved before discharge. Sand filters appear to be particularly effective if used in combination with detention or retention ponds, by diverting the first-flush of runoff (often carrying the most pollutants) to the filter and routing the remainder of the water to the pond.

Many of these water quality controls can be designed either of two ways: to control potential pollutants before discharging water to a storm drain; or to remove unwanted constituents and then direct the storm water into the ground as an *infiltration* device. Any of these controls that use infiltration techniques, or others designed specifically to promote infiltration, (porous pavement, infiltration trenches, and others), may be restricted or prohibited in some municipalities [redacted] as potential sources of ground water contamination. Dry wells for disposal of storm water are illegal under State and Federal Law. The Regional Board's newly-amended Basin Plan for the San Francisco Bay Region adopts some new policies that address infiltration devices. The NPS Program does not recommend them in areas where shallow ground water may be impacted. Check with your municipality before installing an infiltration device.

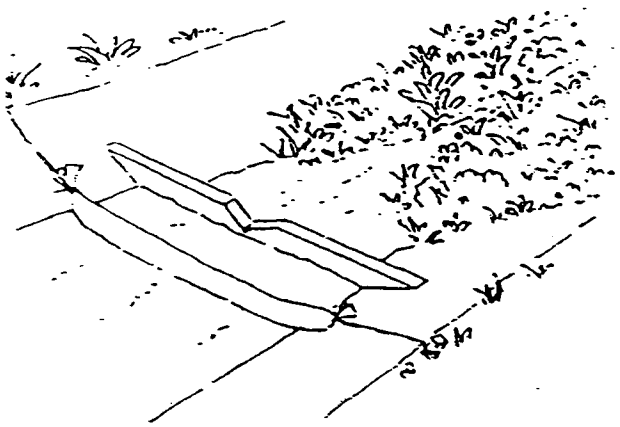
Storm Water Management: Removing Oily Pollutants

ıple technique to remove oils and grease from
ı water uses **oil-absorbent materials** (or
hilic materials), such as the booms used to
in oil spills. The absorbent material preferentially
ibs oil, and does not fill with water, so it can be
on storm water with small concentrations of oily
rials.

: facilities that have a storm water conveyance
where water flows season-long have found it
enient to install a permanent floating boom to
ol an occasional light surface sheen. When the
ı is spent, it is full of oil and is visibly heavier,
ng lower in the water. The booms are inexpensive
gh that they may easily be replaced whenever the
rbent is saturated. Disposal is more costly, since
may be hazardous waste unless an oil recycler
ıccept the material.

water separators are a broad category of devices
are intended to remove oily constituents. There
nany varieties of oil/water separators, and the
ı is not used in the same way by all equipment
lors or design specifications.

most applications, oil/water separators are *not
mmended* as a storm water management strategy.
rce control BMPs are strongly preferred.
water separators are fairly costly, and most



l-absorbent berms can remove oily sheen from storm
ıter. Vegetation in an open ditch can slow the flow,
lping sediments settle.

designs do not operate best at the low concentrations commonly present in storm water. A sand filter inlet is typically more effective, and less costly, for the small quantities and low concentrations of oils in routine storm water runoff — that is, runoff that has not directly contacted oily industrial activities.

Separators may be useful in limited applications. They are sometimes useful as a retrofit measure, to temporarily help a facility comply while it installs more effective source control BMPs. Another use is in spill control sumps, upstream of a treatment process. The advanced designs are sometimes used as a treatment device (that will discharge to a sanitary sewer) for storm water that contacts industrial activities in isolated areas where contact cannot be avoided.

The **API oil/water separator** is a simple design, named for the American Petroleum Institute. The API separator is sometimes called an "oil and grease trap," to distinguish it from a true oil/water separator used for industrial wastewater. An API separator usually is a long basin with multiple chambers or vaults, typically installed below grade. It can be fitted to storm drains or storm water inlets in a variety of configurations — the water quality inlet described in Section 20 is one form. The intent is to slow water and stratify the flow so that oil rises. The floating oil is then retained by one or more baffles in the chambers.

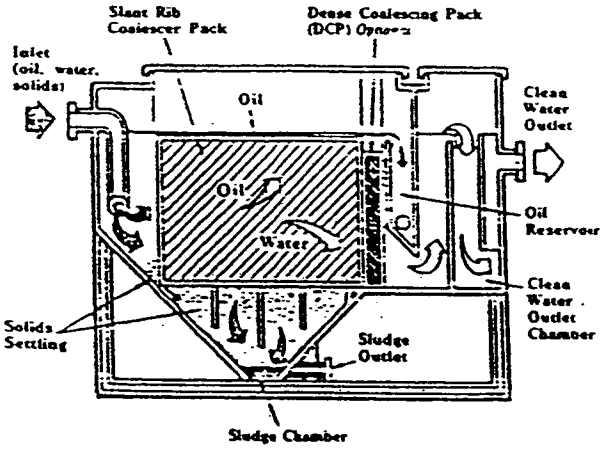
An API separator removes the bulk of floating oily wastes, especially if the oil is not well-mixed but floats on top of the water. However, it is not highly efficient, so storm water can still be polluted unacceptably even after it flows through the inlet. The separator works by concentrating oily wastes within the chamber, so inevitably some of the collected wastes are carried away during heavier storms. It can be made somewhat more effective at oil removal if it includes pads or pillows of oleophilic material at the water surface level.

If you install an API separator, it *must be maintained* regularly. It requires a standing pool of water, which should be pumped out periodically and replaced with clean water. To clean, remove oil floating on the standing pool and greasy matter collected at the baffle. Some commercial oil recyclers accept this material for recycling; otherwise, it must be handled as hazardous waste. If you install oil-absorbent pillows, the pillows must be closely monitored and replaced when they are saturated, also disposed either as hazardous waste or to a recycler. If the inlet includes a sediment trap, as in the water quality inlet shown in Section 20, remove solids with a shovel between storms.

elop a regular cleaning schedule appropriate for facility. For inlets that don't carry much flow, ce cleanings per year are sufficient: once before the rainy season (mid-September) to remove materials that have accumulated; once after the first major storm; and once at the end of the rainy season to prevent slow loss or evaporation of the collected oily wastes. If storm water flow is greater, the API separator may need to be cleaned monthly, or periodically between storms. As another guideline, clean the separator before three inches of oil accumulate in the entry chamber.

The CPI, or coalescing plate interceptor oil/water separator, is a more advanced design. These are common for treatment of oil-bearing industrial wastewater, but are less often cost-effective for storm water. The CPI separator generally achieves greater removal efficiency than an API type, but is more costly to purchase and operate. A CPI separator can attain a high removal efficiency, and accommodate a fairly high flow rate, but at ever-increasing capital costs for the equipment (by adding more separator plates). The best economics generally apply for relatively high entrations of oil at low and constant flow rates.

SLANT RIB COALESCING SEPARATOR



A CPI separator can be very effective at removing oil but requires upstream sediment control and can be costly to maintain.

w design features can improve the effectiveness of il-water separator. Pollution removal effectiveness highest if the concentration is high when the storm water enters the unit. Avoid diluting the water to be treated with water from other parts of the site, where it does not contact the potential pollutants, both to save on the capital investment and to increase treatment effectiveness. For industrial process applications, an evaporator can be used reduce the volume of water treated.

An oil-water separator works best if sediment is not present in the water — limit your water to be treated to isolated areas, free of mud and soils if possible. Efficiency is highest with a fairly steady flow, so you may require upstream detention. Also, don't site the separator downstream of a pump, because the pump mixes the oil and water and partially emulsifies the oil, so separators are less effective.

Storm water treatment generally is *not recommended* as a BMP. Some of the devices described in Section 21 may be considered to be treatment by the state or by your local wastewater treatment authority, which can open the door to some burdensome regulatory restrictions and permitting requirements.

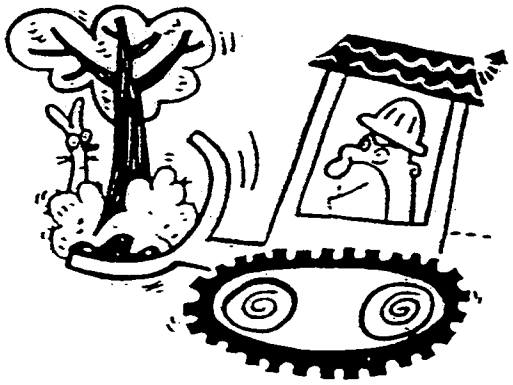
For most industrial facilities, the best advice about onsite storm water treatment is to avoid it, for a number of reasons. Most of the available treatment equipment is costly to purchase and to receive permitting approval for. Operational costs can also be significant — you must monitor the equipment to assure continued effectiveness, and may need to prepare and submit chemical analyses to demonstrate continued compliance.

Further, in most places in the Santa Clara Valley, treatment of storm water means you must discharge it to the sanitary sewer rather than the storm drain (as described in Section 17). In effect, water on which you perform treatment is no longer considered to be storm water, but industrial wastewater instead. You will need to obtain or modify a discharge permit from your local wastewater authority or your municipality.

The most troublesome permitting procedures are for hazardous materials. Before installing any treatment equipment, determine whether your waste water is a hazardous waste. Cal-EPA/Toxics or the County Environmental Health Department can describe the necessary testing and approval procedures. If the wastewater that would enter the pretreatment equipment is considered to be hazardous you must obtain a permit from Cal-EPA/Toxics to operate a hazardous waste treatment facility. At present this may be true even for a simple water quality inlet. If you determine that the waste stream is not hazardous, and do not apply for a hazardous waste treatment permit, keep your testing documentation on hand to show regulators.

At Your Construction Site

Whether you're building a home, office or large scale development, construction creates special problems for Estuary water quality. Once the bulldozer's cleared your property of rocks and vegetation, not to mention reshaped the landscape, there may be little left to protect the soil from severe erosion and few barriers to stop site runoff. While the primary pollutant is sediment, construction can also contribute pollution from the miscellaneous chemicals and fuels lying around the work site. And poor construction quality, both in buildings and sanitary systems, can mean more pollution in the years to come.



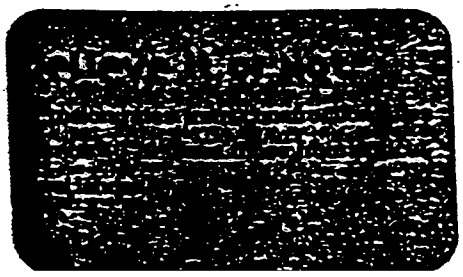
Construction the clean way . . .

☛ Avoid bulldozing
and outdoor construction in the rainy season.

☛ Schedule construction
to minimize soil exposure.

☛ Limit soil disturbance,
keeping as much of the original vegetation as possible, and planting temporary cover as necessary.

☛ Check your soil type
and build accordingly. Get a soil survey, and share it with your engineer, architect and builder. Make sure to survey all pertinent factors, including permeability, the level of the water table, the soil's texture, and the steepness of slopes.



☛ Pick your building site
carefully. Avoid level areas at the base of hills (which tend to be wet); streambanks, soggy spots, and depressions.

☛ Locate septic systems
at a sufficient distance from streams, lakes, drainage ditches, flood plains, wetlands and the Estuary shore in accordance with government regulations.

☛ Divert runoff around
excavations using check dams and ditches, and filter structures made out of stone, gravel or sandbags.

☛ Install gravel trenches
along driveways or patios to collect water and allow it to filter into the soil.

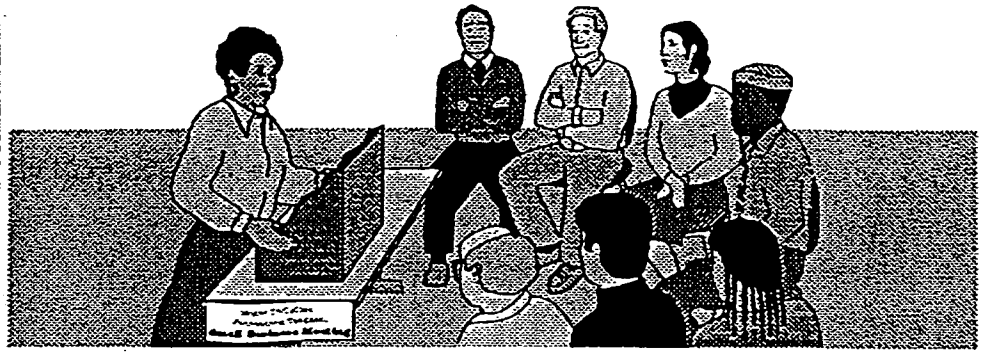
☛ Keep sites clean
of loose dirt, litter, toxic chemicals and other debris.

☛ Conduct all vehicle
and equipment maintenance and refueling at one location with pollution prevention controls. Perform major repairs off-site at appropriate facilities.

☛ Cover stockpiles
and landscaping materials with tarps.

☛ Look up the law.
Federal law now requires construction sites over five acres in size to apply for a stormwater discharge permit and develop a stormwater management plan.

CTIVITY: EMPLOYEE TRAINING



Applications

- Manufacturing
- Material Handling
- Vehicle Maintenance
- Construction
- Commercial Activities
- Roadways
- Waste Containment
- Housekeeping Practices

DESCRIPTION

Employee training, like equipment maintenance, is not so much a best management practice as it is a method by which to implement BMPs. This fact sheet highlights the importance of training and of integrating the elements of employee training from the individual source controls into a comprehensive training program as part of a facility's Storm Water Pollution Prevention Plan (SWPPP).

The specific employee training aspects of each of the source controls are highlighted in the individual fact sheets. The focus of this fact sheet is more general, and includes the overall objectives and approach for assuring employee training in storm water pollution prevention. Accordingly, the organization of this fact sheet differs somewhat from the other fact sheets in this chapter.

OBJECTIVES

loyee training should be based on four objectives:
Promote a clear identification and understanding of the problem, including activities with the potential to pollute storm water;

- Identify solutions (BMPs);
- Promote employee ownership of the problems and the solutions; and
- Integrate employee feedback into training and BMP implementation.

APPROACH

- Integrate training regarding storm water quality management with existing training programs that may be required for your business by other regulations such as: the Illness and Injury Prevention Program (IIPP) (SB 198) (California Code of Regulations Title 8, Section 3203), the Hazardous Waste Operations and Emergency Response (HAZWOPER) standard (29 CFR 1910.120), the Spill Prevention Control and Countermeasure (SPCC) Plan (40 CFR 112), and the Hazardous Materials Management Plan (Business Plan) (California Health and Safety Code, Section 6.95).
- Businesses, particularly smaller ones that are not regulated by Federal, State, or local regulations, may use the information in this Handbook to develop a training program to reduce their potential to pollute storm water.

LISTING OF INDUSTRIAL ACTIVITIES

Employee training is a vital component of many of the individual source control BMPs included in this chapter. Following is a compilation of the training aspects of the source control fact sheets.

SC14

Best Management Practices

ACTIVITY — EMPLOYEE TRAINING (Continue)

SC1 Non-Storm Water Discharges to Drains

- Use the quick reference on disposal alternatives (Table 4.1) to train employees in proper and consistent methods for disposal.
- Consider posting the quick reference table near storm drains to reinforce training.

SC2 Vehicle and Equipment Fueling

- Train employees in proper fueling and cleanup procedures.
- The SPCC Plan may be an effective program to reduce the number of accidental spills from fueling.

SC3 Vehicle and Equipment Washing and Steam Cleaning

- Train employees in standard operating procedures and spill cleanup techniques described in the fact sheet.

SC4 Vehicle and Equipment Maintenance and Repair

- Train employees in standard operating procedures and spill cleanup techniques described in the fact sheet.
- Paint stencils to remind employees not to pour waste down storm drains.

SC5 Outdoor Loading/Unloading of Materials

- Use a written operations plan that describes procedures for loading and/or unloading.
- Have an emergency spill cleanup plan readily available.
- Employees trained in spill containment and cleanup should be present during loading/unloading.
- Make sure fork lift operators are also properly trained.

SC6 Outdoor Container Storage of Liquids

- Registered and specifically trained professional engineers can identify and correct potential problems such as loose fittings, poor welding, and improper or poorly fitted gaskets for newly installed tank systems.
- Employees trained in emergency spill cleanup procedures should be present when dangerous waste, liquid chemicals, or other wastes are handled.

SC7 Outdoor Process Equipment Operations and Maintenance

- The preferred and possibly most economical action to reduce storm water pollution is to alter the activity. This may mean training employees to perform the activity during dry periods only or substituting benign materials for more toxic ones.

SC8 Outdoor Storage of Raw Materials, Products, and By-Products

- Train employees in standard operating procedures and spill cleanup techniques described in the fact sheet.

SC9 Waste Handling and Disposal

- Train employees in standard operating procedures and spill cleanup techniques described in the fact sheet.
- Paint stencils to remind employees not to pour waste down storm drains.

SC10 Contaminated or Erodible Surface Areas

- Training is not a significant element of this best management practice.

5.0 LANDSCAPE RELATED BMPS

Tips for Landscape & Gardening
Storm Drain are for Rain – Not Pesticides
Storm Drains are for Rain – Not Fertilizer
Preventing Pollution through Efficient Water Use
Management Guidelines for use of Fertilizers and Pesticide
Twenty Ways to Protect Your Water
Healthy Lawn, Healthy Environment
Citizen's Guide to Pest Control and Pesticide Safety
Model Water Efficient Landscape Ordinance

Clean beaches and healthy creeks, rivers, bays, and ocean are important to Orange County. However, many common activities can lead to water pollution if you're not careful. Fertilizers, pesticides and other chemicals that are left on yards or driveways can be blown or washed into the storm drains that flow to the ocean. Overwatering lawns can also send materials into the storm drains. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering our waterways.

You would never pour gardening products into the ocean, so don't let them enter the storm drains. Follow these easy tips to help prevent water pollution.

For more information, please call the Orange County Stormwater Program at (714) 567-6363 or visit www.ocwatersheds.com.

To report a spill, call the Orange County 24-Hour Water Pollution Reporting Hotline at (714) 567-6363.

For emergencies, dial 911.

The tips contained in this brochure provide useful information to help prevent water pollution while landscaping or gardening. If you have other suggestions, please contact your city's stormwater representatives or call the Orange County Stormwater Program.

Help Prevent Ocean Pollution:

Tips for Landscape & Gardening

The Ocean Begins at Your Front Door

PROJECT Pollution PREVENTION

Tips for Landscape and Gardening

Never allow gardening products or polluted water to enter the street or storm drain.

General Landscaping Tips

- Protect stockpiles and materials from wind and rain by storing them under tarps or secured plastic sheeting.
- Prevent erosion of slopes by planting fast-growing, dense ground covering plants. These will shield and bind the soil.
- Plant native vegetation to reduce the amount of water, fertilizer, herbicides, and pesticides needed.



- Never apply pesticides or fertilizers when rain is predicted within the next 48 hours.

Garden & Lawn Maintenance

- Do not over-water. Use irrigation practices such as drip irrigation, soaker hoses or micro spray systems. Periodically inspect and fix leaks and misdirected sprinklers.
- Do not rake or blow leaves, clippings or pruning waste into the street, gutter or storm drains. Instead dispose of waste by composting, hauling it to a permitted landfill, or as green waste through your city's recycling program.



- Use slow-release fertilizers to minimize leaching and use organic fertilizers.
- Read labels and use only as directed. Do not over-apply pesticides or fertilizers. Apply to spots as needed, rather than blanketing an entire area.
- Store pesticides, fertilizers and other chemicals in a dry covered area to prevent exposure that may result in the deterioration of containers and packaging.



- Rinse empty pesticide containers and re-use rinse water as you would use the product. Do not dump rinse water down storm drains. Dispose of empty containers in the trash.
- When available, use non-toxic alternatives to traditional pesticides and use pesticides specifically designed to control the pest you are targeting. For more information, check www.ipm.ucdavis.edu.
- If fertilizer is spilled, sweep up the spill before applying irrigation water. If the spill is liquid, apply an absorbent material like cat litter and then sweep and dispose in the trash.
- Take unwanted pesticides to a Household Hazardous Waste Collection Center to be recycled. Locations are provided below.

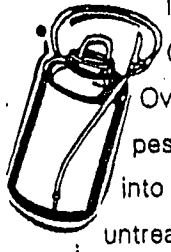
Household Hazardous Waste Collection Centers

Anaheim: 1071 N. Blue Gum St.
Huntington Beach: 17121 Nichols St.
Irvine: 6411 Oak Canyon
San Juan Capistrano: 32250 La Pata Ave.

For more information, call (714) 834-6752 or visit www.ocwatersheds.com

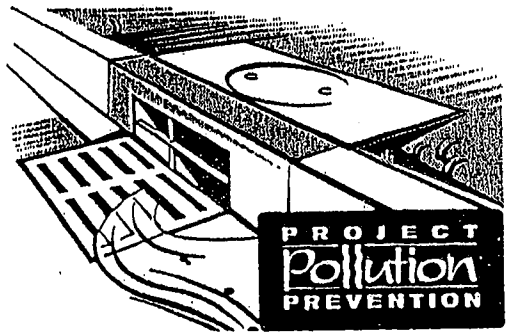
Storm Drains are for Rain...

More than 150,000 times each month, lawns and gardens throughout LA County are sprayed with pesticides. Overwatering or rain causes pesticides on leaves and grass to flow into the storm drain and to the ocean — untreated.



Please use pesticides wisely, not before a rain, and water carefully.

...not pesticides.



LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

Pesticide Tips:

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

You can keep your lawn and garden green and at the same time solve the pollution problem by taking these easy steps...

- Never dispose of lawn or garden chemicals in storm drains. This is called illegal dumping. Take them to a household hazardous waste roundup. Call 1-888-CLEAN-LA to locate a roundup or collection facility near you.
- More is not better. Use pesticides sparingly. "Spot" apply, rather than "blanket" apply.
- Read labels! Use only as directed.
- Use non-toxic products for your garden and lawn whenever possible.
- If you must store pesticides, make sure they are in a sealed, water-proof container that cannot leak.
- When watering your lawn, use the least amount of water possible so it doesn't run into the street and carry pesticide chemicals with it. Don't use pesticides before a rain storm. You will not only lose the pesticide, but also will be harming the environment.

PROJECT Pollution PREVENTION

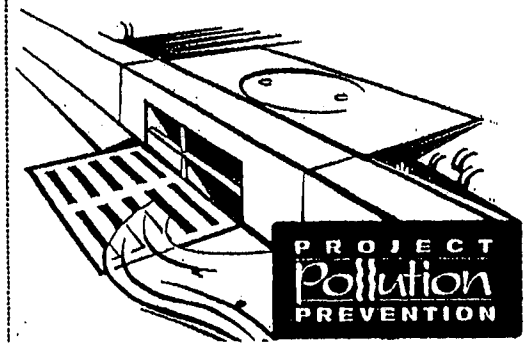
Storm Drains are for Rain...

More than 150,000 times each month, lawns and gardens throughout LA County are overwatered. This can cause fertilizers and pesticides on grass and plants to flow into storm drains and to the ocean, untreated — harming the environment.



Please use fertilizers and pesticides wisely, not before a rain, and water carefully.

...not fertilizer.



Fertilizing Tips:

Fertilizers contain toxic chemicals that are harmful to people and the environment. You can keep your lawn and garden green and, at the same time, solve the pollution problem by taking these easy steps.

- Do not over-fertilize and do not fertilize near ditches, gutters or storm drains.
- Follow the directions on the label carefully.
- Do not overwater after fertilizing. Overflow water and your fertilizer will run into the street, down the storm drain and into the ocean. Do not fertilize before a rain.
- Store fertilizers and chemicals in a covered area and in sealed containers to prevent runoff.
- Do not blow, sweep, hose or rake leaves or other yard trimmings into the street, gutter or storm drain.



PROJECT Pollution PREVENTION

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United States Environmental Protection Agency
20W-0002
July 1990

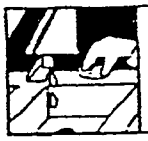
OW (WH-556)
OPPE (PM-222)

EPA

Preventing Pollution Through Efficient Water Use



How Efficient Water Use Helps Prevent Pollution



Other Reasons to Use Water Wisely



What Individuals Can Do



What Communities Can Do



How Efficient Water Use Helps Prevent Pollution

Using water more efficiently can help prevent pollution as well as protect and conserve our finite water resources. More efficient water use by you and your community has many other benefits.

Fewer Pollutants

- Using less water reduces the amount of wastewater discharged into our lakes, streams, rivers, and marine waters.
- The amount of pollutants wastewater carries can also be reduced, as treatment efficiency improves.
- Recycled process water can reduce pollutants from industry.
- More efficient irrigation can minimize runoff of agricultural pollutants and reduce the use of fertilizers and pesticides.

Protection of Aquatic Habitats

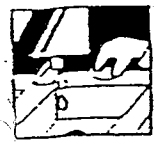
- Building fewer and smaller new water projects can help preserve wetlands, which naturally treat pollutants.
- Diverting less water preserves more streamflow to maintain a healthy aquatic environment.

Protection of Drinking Water Sources

- Less pumping of groundwater lowers the chance that pollutants will be drawn into a water supply well.
- With less water use, septic system performance can improve, reducing the risk of groundwater contamination.
- Highest quality water sources are preserved for drinking water by using treated wastewater for other uses.

Energy Conservation

- Efficient water use means less power needed to pump and treat water and wastewater.
- Less water use reduces the amount of energy required for heating hot water.
- Less energy demand results in fewer harmful by products from power plants.



Other Reasons to Use Water Wisely

Preventing pollution is only one reason why using water efficiently makes sense. Here are a few more:

Money Saved

- Less water use results in fewer pumping and treatment costs.
- Saving money on water and wastewater operations frees money for meeting water quality, public health and water treatment goals.
- Water saved is also energy, and money, saved for you and your community.

Improved Reliability

- Water conservation provides a hedge against drought impacts.

  Improving water efficiency may be quicker and cheaper than developing a new supply.
- Reduced water use may extend the life of your water or wastewater facility.
- Reduced water use may increase the efficiency of wastewater treatment, and reduce overflows during storms.
- Communities which use water efficiently are better prepared to cope with effects of possible future climate change.



What Individuals Can Do

More efficient water use begins with individuals, in the home and place of work. Taking these and othe steps, and encouraging others to do so, makes goo economic as well as environmental sense.

In The Home

- Install a toilet dam or plastic bottle in your toilet tank.
- Install a water-efficient showerhead (2.5 gallons or less per minute).
- When you buy a new toilet, purchase a low flow model (1.6 gallons or less per flush).

Outdoors

- Water in the morning or evening, to minimize evaporation.
- Install a drip-irrigation watering system for valuable plants.
- Use drought-tolerant plants and grasses for land scaping, and reduce grass-covered areas.

At Work or School

- Adopt the same water-saving habits that are effective at home.
- Ask about installing water-efficient equipment and reducing outdoor water use.
- Encourage employers to explore the use of recycled "gray-water" or reclaimed wastewater.



What Communities Can Do

A water supplier or wastewater system operator (public or private) has cost-effective options to process & deliver water more efficiently. A community can do the same, and can foster ways to use water wisely.

Not all of these steps are expensive. The best choices vary by region and by community: start by asking if these are appropriate where you live and work.

A Water Supplier or Wastewater Processor Can:

- ☞ Identify who uses water, and reduce unaccounted-for water use.
- ☞ Find and repair leaking pipes.
- ☞ Consider a new pricing scheme which encourages conservation.
- ☞ Reduce excess pressure in water lines.
- ☞ Explore the reuse of treated wastewater for uses other than drinking water.
- ☞ Charge hookup fees which encourage more efficient water use in new buildings.
- ☞ Build water efficiency into future demand projections, facility planning, and drought planning.

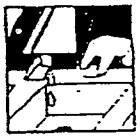
A Community Can:

- ☞ Adopt plumbing and building codes that require water-efficient equipment and practices.
- ☞ Adopt a water-efficient landscaping ordinance to reduce the water used for golf courses and commercial landscapes.
- ☞ Retrofit older buildings with water-efficient equipment, starting with public buildings.
- ☞ Reduce municipal water use for landscaping and other uses.
- ☞ Conduct a public education campaign.
- ☞ Require developers to build in water efficiency measures.

EPA

For more information on what you and your community can do to use water more efficiently, contact:

U.S. Environmental Protection Agency
Office of Water
401 M Street, S.W.
Washington, D.C. 20460



For more information on pollution prevention programs at U.S. EPA, contact:

U.S. Environmental Protection Agency
Office of Pollution Prevention
401 M Street, S.W.
Washington, D.C. 20460

COUNTY OF ORANGE

ENVIRONMENTAL MANAGEMENT AGENCY

SANTA ANA, CALIFORNIA

REGULATION FUNCTION
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Prepared by
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MANAGEMENT GUIDELINES FOR USE OF FERTILIZERS AND PESTICIDES

March 12, 1993

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Director

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Annual Progress Report
For Fertilizer and Pesticide Management

EXECUTIVE SUMMARY

This document was prepared to fulfill the commitment in the Orange County Drainage Area Management Plan (DAMP), Sections 5.2.9 and 5.2.10, which requires that co-permittees establish guidelines for the management of fertilizers and pesticides.

The main objective of these guidelines is to safeguard to "the maximum extent practicable" against unnecessary discharges of fertilizers and pesticides into surface and groundwater systems and to establish safe and reasonable standards for handling those materials. The guidelines are based on state and federal laws, environmental policies and "best management practices" established by various public and private agencies.

The County and many of the cities have already been following many of these guidelines. However, through this document, it is envisaged that these practices will be adopted by the County and all of the co-permittees to establish a set of uniform standards and procedures.

In addition to management guidelines, this document also includes a summary of the findings of the June 2 fertilizer and pesticide survey, specifically outlining and comparing different aspects of the policies and procedures of the co-permittees.

1.0 INTRODUCTION

1.1 Status of Fertilizer and Pesticide Use

Fertilizers and pesticides are primary tools of vegetation management. Used properly, fertilizers provide important nutrient supplies for vegetation and agriculture, and pesticides help to protect those resources from potential harm.

Used improperly, fertilizers and pesticides can become an impairment to surface and groundwater supplies. Careless application, mixing, transportation, storage and disposal allow chemicals to enter surface and groundwater through runoff and infiltration; the same handling problems endanger human health through exposure to toxic chemicals; soil degradation often results from overuse and misuse of pesticides and fertilizers. Even under ideal conditions, there is still a high level of risk, and consequently, there is a need for considerable professional planning and management.

1.2 Management Options

Because of the risk involved in using fertilizers and pesticides, the development of management guidelines for use of fertilizers and pesticides is an essential element of the Drainage Area Management Plan (DAMP). These guidelines are designed not only to comply with National Pollutant Discharge Elimination System (NPDES) permitting, but also to minimize any threat to human health and environmental resources from improper use of fertilizers and pesticides. It is envisaged that consideration of these guidelines by the co-permittees will cause public agencies to re-evaluate their approach to using fertilizers and pesticides and move toward reducing dependence on them.

The guidelines that follow are intended for the use of the co-permittees, although they may ultimately be used on a broaderscale. They are based on the laws, management guidelines and "best management practices" established by other federal, state and local agencies. They recognize that the safe management of fertilizers and pesticides is a shared responsibility between the field worker and management. These guidelines address the concern for fertilizer and pesticide use at a basic level, and if followed, they should reasonably prevent environmental damage to the highest degree possible.

1.3 Definitions

For the purpose of these guidelines, fertilizers may be referred to as "nutrients" or "soil nutrients," and the term "pesticides" will encompass all herbicides, insecticides, fungicides and rodenticides. The California Food and Agricultural Code and the California Code of Regulations Title 3 (3 CCR) constitute the laws and regulations referenced in this plan. They are referenced often and usually referred to as the "State Code." Also, co-permittees in the NPDES permits shared by the County and its incorporated cities will be referred to as "public agencies," and employees working for these public agencies who handle fertilizers and pesticides will be referred to as "workers" or "public employees."

2.0 FERTILIZER MANAGEMENT

2.1 Definition and Scope of Guidelines

Fertilizers are nutrients applied to soil to provide a better growing environment for plants. The fertilizers most commonly in use in Southern California today are nitrogen- and phosphorus-based. Both leach into soils easily in the presence of water and have become a water quality concern, causing algal blooms and eutrophication and, in some cases, causing levels to exceed federal drinking water standards.

However, fertilizers also play the important role of promoting vegetation growth that protects soil from erosion and enhances landscape aesthetics. Because there is a necessity for soil nutrients and because there is a potential for adverse effects on local waterways due to the loss of these nutrients through runoff and infiltration, management guidelines are necessary as a means of reducing the loss of fertilizers into water supplies.

2.2 General Considerations

2.2.1 State and Federal Law

Because most fertilizers are not as toxic as pesticides, state and federal lawmakers have not developed regulations for their use. Fertilizers are not usually considered an immediate danger to public health or safety. However, the California Fertilizer Association, a Sacramento-based organization, has developed complete management guidelines for fertilizer use and the State Department of Food and Agriculture has recommendations for use of nitrate-based fertilizers, both of which are available for consultation.

2.2.2 General Recommendations

1. Public agencies should periodically test soils before applying fertilizers to be certain that application is appropriate for and compatible with soil conditions. The samples should be analyzed by a qualified specialist, and workers should follow the recommendations for application.

2. Public agencies should choose to use organic fertilizers such as compost, peat and mulch wherever possible to increase soil porosity and water retention.

3. Workers should apply only the minimum amount of fertilizer needed and incorporate it directly into the soil around the plant where possible to minimize potential surface runoff.

4. Workers should not apply fertilizers in the rain or on the same day that rain is expected.

5. Workers should immediately cleanup any spill of fertilizers.

6. Storage facilities should be covered and have impermeable foundations so that potential spills don't have the opportunity to runoff into surface water or leach into groundwater systems.

7. Fertilizers that may be carried by the wind should be stored in areas away from open loading spaces and entrances of storage warehouses.

8. Fertilizers should be securely covered in the vehicle before being taken to application sites so that none can spill or fly out during transport.

9. Use slow release fertilizers – such as water soluble nitrogen fertilizers, coated fertilizers and fertilizers of limited solubility – wherever possible to reduce the chances of leaching.

2.3 Planning for Use of Fertilizers

2.3.1 Soil Testing

Most fertilizers travel quickly through water. Therefore, fertilizers will leach through soil and potentially contaminate groundwater more quickly after excess watering or irrigation, after heavy rains and where the water table is high. For this reason, soil testing is an important management technique to determine the safest fertilizer application rate.

The California Landscape Contractors Association (CLCA) has a complete list of organizations in Southern California that offer soil testing and analyzing for fertilizer use. To get a copy of that list, CLCA can be contacted at (916) 448-2522. If a reliable soil analyst is not already known, it is advisable for public agencies to consult CLCA and research a specialist who can make recommendations for fertilizer use.

2.3.2 Application Rates

The amount of fertilizer needed for different applications depends on a number of factors. For specific recommendations, a qualified specialist should be consulted. However, some factors to be considered include:

- the vegetation's ability to use fertilizer;

- the amount of nutrients already in the soil, including fertilizer that may still be present from a previous application;

- the amount of soil nutrients that will or can be obtained from natural processes;

- expected loss of nutrients from the soil, and

- temperature at the time of application.

2.3.3 Timing

For vegetation with different growth patterns, fertilizers should be applied at different times and in different quantities. The vegetation being managed should be researched and fertilizers applied only according to the recommended amounts and at the recommended time intervals so that waste of fertilizer and risk of water contamination are minimized. This research should be incorporated in a recommendation from a qualified specialist for fertilizer applications.

2.4 Application Methods of Fertilizers

This section details the most common methods for application of fertilizers. These are not the only acceptable methods of fertilizer application. Every application has its own unique circumstances and variables to consider. A qualified fertilizer specialist should be consulted to recommend the most appropriate application method.

2.4.1 Banding of Fertilizer

Probably the most common and safest application method, this involves physically working small amounts of fertilizer into the soil in a band beneath and around the sides of a seed. It allows new roots to efficiently use the nutrients and minimizes potential nutrient loss to surface runoff. However, given the labor involved, banding may not be practical for most public agency fertilizer applications.

2.4.2 Foliar Fertilization

This is fertilizer applied in solution form that is absorbed through leaves and stems. The method can reduce nutrient leaching into the soil when applied correctly and can be performed at the same time as pesticide applications to avoid spraying twice. In the latter case, the guidelines for pesticide use must also apply.

2.4.3 Broadcast Application

By this method, dry or liquid fertilizer is uniformly spread over the soil surface. This is often done mechanically, an example being the "drop spreader," which is usually an inverted triangle hopper. The simplest of mechanical applicators, the drop spreader is commonly mounted on wheels and pushed by hand or pulled by vehicle to drop fertilizer out the bottom of the triangle.

Other types of broadcast applicators include spray booms for liquid fertilizer or "spinning disks" mounted on a moving vehicle that throw dry fertilizer into the air. It should be noted that these latter methods do not offer much control over fertilizer drift in adverse weather conditions.

2.4.4 Fertigation

Although not likely to be used by public agencies for fertilizer applications, this method is common among Californian farmers who incorporate fertilizers into irrigation water. The potential for nutrient leaching using this method, though, appears to be high.

2.5 Storage and Handling of Ferilizers

2.5.1 General Description

When stored and handled properly, fertilizers present no hazard to the users' health. Public employees responsible for storage and handling of fertilizers should be aware that some fertilizers have properties that can result in dangerous chemical reactions if mixed with other substances or under unusual conditions. For example, ammonium nitrate may become explosive if it becomes mixed in diesel fuel; a dehumidifier may be necessary for storage areas where sensitive fertilizers are stored. Also, because most fertilizers tend to be corrosive, concrete structures are preferred for fertilizer storage facilities.

2.5.2 Dry Fertilizer

In most cases, dry fertilizers are safe to store, transport and handle. However, because some fertilizers have unique, potentially dangerous properties, it is advisable for public agencies to consult a qualified fertilizer specialist for the safest storage and handling procedures for specific fertilizers.

2.5.3 Liquid Fertilizer

Fertilizers in liquid form are potentially more hazardous than dry fertilizer. Public employees responsible for storage and handling need to be aware of the specific properties of each liquid fertilizer in use, including corrosivity and tolerable temperature and pressure ranges. Protective equipment may be necessary for workers handling fertilizers such as sulfuric or phosphoric acid. A qualified fertilizer specialist should be consulted for recommending the safest handling and storage procedures for specific liquid fertilizers.

3.0 PESTICIDE MANAGEMENT

3.1 Definition and Scope of Guidelines

Pesticides are designed to kill or restrict the growth of plants and organisms, and thus, are potentially dangerous chemicals. Increasing scientific concern for their safe use and heightened public awareness of health concerns has led to more and more regulations in the United States at both the state and federal level. Pesticide use by public agencies often involves applications to keep flood control channels and roadways clear or to minimize health and safety hazards of disease-bearing rodents and insects -- any of these applications can drain into stormwater basins if not controlled properly. Although safety concerns and the cost of complying with new regulations have encouraged some public agencies to cut back on the use of pesticides, use is still common, and their management is therefore essential.

3.2 General Considerations

3.2.1 State and Federal Law

The California Department of Food and Agriculture and the federal Toxic Substances Control Act (TSCA) have set forth extensive rules and regulations that must be met by all public agencies. At an absolute minimum, public agencies must comply with these laws or be subject to the penalties described in the statutes.

3.2.2 Chemical Labels and Materials Safety Data Sheets (MSDS)

1. Without exception, chemical labels provided by the manufacturer of each pesticide are the first source of recommendations and instructions for chemical use. Whenever a chemical is to be used by a worker or a contractor of a public agency, the user needs to be intimately familiar with the label instructions and requirements.

As described in the State Code (3 CCR, Ch. 2, Subch. 1, Art. 10), the label must appear on the immediate container of the chemical and include, in prominent, bold type, the appropriate warning or caution statement according to its toxicity classification. If a chemical is transferred to another container, a copy of the label should be transferred with it.

Workers should never handle a container that doesn't have a warning label attached, and the supervisor in charge should be immediately advised of the situation. If a label is badly damaged, it shall be replaced by the supervisor.

2. Workers using pesticides shall have readily available the Materials Safety Data Sheets (MSDS) for each chemical they are using. Although the MSDS is a form that may vary in appearance for different chemicals, the information is the same, as required by law. Similar to the chemical labels, these sheets contain information necessary to handle each chemical safely, and all workers shall be familiar with the information.

MSDS sheets include chemical identifications, hazardous ingredients, physical data, fire and explosion data, health hazards, reactivity data, spill or leak cleanup procedures, special protection and special precautions.

3.2.3 General Recommendations

1. Public agencies should maintain a complete list of all chemicals and their uses.

2. Public agencies should thoroughly investigate and consider all alternatives to pesticide use.

3. Workers shall use pesticides only according to label instructions.

4. Work crews should bring to the work site only the amount of chemical to be used during the application and use only the minimum amount of the chemical that is necessary.

5. Workers should consider weather conditions that could affect application (for example, they shouldn't spray when winds are exceeding 5 mph, when raining or when rain is likely).

6. Workers should consider area drainage patterns (for example, they shouldn't apply near wetlands, streams and lakes or ponds unless it is for an approved maintenance activity).

7. Workers should consider soil conditions before applying pesticides (for example, they shouldn't apply to bare or eroded ground).

8. Workers shall triple-rinse empty pesticide containers before disposal and use the leftover wash as spray.

9. Workers should never clean or rinse pesticide equipment and containers in the vicinity of storm drains.

10. Pesticides should only be stored in areas with cement floors and in areas insulated from temperature extremes.

11. Workers shall secure chemicals and equipment during transportation to prevent tipping or excess jarring in a part of the vehicle completely isolated from people, food and clothing.

12. Workers or their supervisors should inspect pesticide equipment, storage containers and transportation vehicles daily.

13. Public agencies should adopt a plan for dealing with potential accidents before they happen.

14. Workers should immediately clean up any chemical spill according to label instructions and notify the appropriate supervisors and agencies.

3.3 Planning for the Use of Pesticides

3.3.1 Selection of Appropriate Pesticides

1. Pesticides are to be used only after recommendation from a state-licensed pest control advisor.

2. Public agencies should seek advice for appropriate pesticide use from the Orange County Agricultural Commission, from other professional pesticide handlers and/or through professional publications. The County Agricultural Commission can be contacted at (714) 447-7100.

3. A special effort should be made to limit use of restricted pesticides and all other Category One pesticides.

3.3.2 Certification, Licensing and Permitting

1. Pesticides are only to be applied by or under the direct supervision of a state-licensed or certified pesticide applicator or by workers with equivalent training.

2. Chemicals listed as "restricted" in the State of California may be used only under a restricted materials permit (3 CCR Ch. 2, Subch. 4) to be issued by the Orange County Agricultural Commission. The permit must be renewed annually for continued use. For more information, contact the Commission at (714) 447-7100.

3. Other guidelines concerning permits, licensing and certification that need to be followed before pesticide application are detailed in the State Code (3 CCR, Ch. 3, Subch. 1).

3.3.3 Employee Training

1. Public agency employees must know the information on the chemical label and its MSDS before using pesticides in any capacity. In addition, they shall (a) know the immediate and long-term health hazards posed by chemicals to be used, the common symptoms of chemical poisoning and the ways poisoning could occur, and (b) know the safe work practices to be followed, including the appropriate protective clothing, equipment, mixing, transportation, storage, disposal and spill cleanup procedures that apply to the specific chemicals being used.

2. In addition to the training and annual continuing education required by State Law for licensing and certification (3 CCR, Ch. 3, Subch. 3, Art.2), public employees are

encouraged to participate in continuing pesticide education programs whenever programs are available.

3.3.4 Accident Mitigation

Public agencies using pesticides should have plans for dealing with potential accidents before they happen. These plans should consider:

1. Labels and MSDS Sheets -- All workers handling pesticides must be familiar with these instructions. The steps for accident mitigation are spelled out on chemical labels and MSDS sheets.

2. Spill Cleanup Kits -- Any time pesticides are being handled, there should be a cleanup kit on hand in case of an accident. This means there should **always** be a cleanup kit located in pesticide storage areas, on vehicles used to transport pesticides and on location where the chemicals are being applied. Although these kits may vary in what they contain depending on the chemical type and the situation, at a minimum they should include:

* spill-control procedures;
* a five gallon drum with sealable lid;
* a dust pan and broom;
* a squeegee;
* a shovel;
* protective goggles, gloves, boots, coveralls;
* a tarp (for covering dry spills);
* detergent and water (check label or MSDS for proper use);
* barricade tape, florescent traffic safety cones or string to cordon off an area, and
* large sponges, containment booms or some other absorbent material.

3. Cleanup Procedures -- Spilled pesticides must be prevented from entering the local surface and/or groundwater supplies. Specific recommendations for spill cleanup should be available on each chemical label or MSDS. Specific recommendations for the sequence of procedures may also vary depending on the situation. However, generally, in case of a spill, the responsible worker(s) should:

EVALUATE the accident and quickly determine the most immediate concerns (medical and/or environmental).

CONTAIN OR CONTROL the spill.

NOTIFY the supervisor in charge who should, in turn, notify the proper authorities. If contact cannot be made, dial 911.

ISOLATE the area with fluorescent traffic safety cones, ropes or some other cordoning device to be sure that no one walks, wanders or drives through the spill area.

CLEAN UP the spill as best as possible following label instructions and using the appropriate spill cleanup kit.

EVALUATE any damage that may have occurred resulting from the spill (property damage, health damage, equipment damage, etc.) and make notes on all relevant details and circumstances before leaving the scene.

PREPARE A COMPLETE REPORT detailing the incident immediately after leaving the scene upon returning to the work place and submit it to the immediate supervisor.

3.3.5 Emergency Medical Care

Accident situations requiring emergency medical care are likely to involve acute exposure to potentially toxic chemicals. Instructions for handling these exposures appear on the chemical label. Workers should:

1. Be aware of the symptoms of acute exposures for each chemical being used.

2. Have a predetermined strategy for dealing with exposure scenarios, including knowing (a) the label recommendations for dealing with acute exposures and (b) the nearest medical facility where emergency care is available.

3.3.6 Equipment and Equipment Maintenance

All equipment for the handling of pesticides should be inspected and cleaned by workers before each use to ensure that there are no problems that could lead to chemical leaks, spills or accidents during the day's work (3 CCR, Ch. 3, Subch. 3, Art. 2).

3.3.7 Groundwater and Surface Water Protection

Similar to the discussion of leaching in fertilizer management, the main factors determining the rate at which pesticides enter groundwater and surface water systems are chemical mobility, solubility and persistence and the soil type. For example, potentially dangerous chemicals are likely to have a high solubility and an extremely long half-life, and they are not likely to be easily absorbed into the soil. Therefore, chemicals that decompose rapidly may be preferred. However, note that to choose a chemical that may need to be applied two or three times as often may not make sense from a transportation and application risk standpoint.

Because of these factors, regardless of the category of chemicals being used, pesticide advisors should periodically test the soil for compatibility with specific chemicals before recommending pesticides for a specific area.

Furthermore, because the effect of these uses is not always immediately apparent, public agencies should periodically test areas that could be particularly vulnerable to contamination or deterioration. The results of these tests should be kept on public record.

3.4 Application of Pesticides

3.4.1 Supervision

1. In cases where supervision of pesticide applications is required by the State Code, supervision must be handled by a state-licensed or certified pesticide applicator. For all other pesticides applications, supervision may be handled by workers with equivalent training.

2. Public agencies that contract for pesticide applications should periodically inspect contracted work crews to be certain that contractors are following proper management guidelines. Public agencies handling their own applications should likewise inspect their own work crews on a regular basis to ensure that safety standards are being met.

3.4.2 Proper Techniques

1. Read the label carefully and follow application instructions. Be absolutely certain that the right chemical is being used for the right job before applying.

2. To prevent potentially harmful runoff, only the absolute minimum amount of pesticides should be used to ensure vegetation safety.

3. Recommendations for best weather conditions to prevent pesticide spray drift are outlined in the State Code, Chapter 2, Subchapter 4, Article 2.

3.4.3 User Safety and Protection

1. Public agencies shall have on hand equipment for application of pesticides including eye protection, gloves, respiratory gear and impervious full-body, chemical resistant clothing when called for by the chemical label.

2. Even when wearing respiratory gear or masks, when dealing with spray applications of pesticides, workers should avoid directly inhaling in the spray mist.

3. Workers should avoid working alone, especially at night.

4. Workers should clean equipment, clothing and self thoroughly after each application.

5. State laws regarding re-entry into fields that have recently been treated with pesticides shall be followed (3 CCR, Ch.3, Subch. 3, Art. 3).

6. Public agencies are responsible for knowing and informing workers about the specific pesticides being used including how they are properly handled, the dangers involved and the proper training and safety procedures.

7. Public agencies are responsible for keeping updated records and a complete list of the pesticides being used in their jurisdiction. This should include the chemicals, amount in storage, amount of applications, dates and location of applications and pests controlled with each application.

8. Public agencies shall keep all relevant label and MSDS information for each chemical updated and readily available at all times to workers handling the materials.

3.5 Storage, Disposal and Transportation

3.5.1 Proper Storage

1. Storage areas should be away from living areas and in a covered area that is well-insulated from temperature extremes; they should have a cement floor and good ventilation. Also, storage areas should be clearly marked according to state standards and be securely locked at all times when not in use.

2. Public agencies shall ensure that chemical labels on pesticides being stored or used are kept in good condition and attached to all containers holding pesticides (3 CCR, Ch. 3, Subch. 2, Art. 4).

3. Workers should ensure that storage equipment and containers are inspected daily for leaks or defects before being taken on the job. Containers should also be inspected and before storing at the end of the day.

3.5.2 Proper Disposal

1. Workers shall make certain that chemical containers are triple-rinsed before disposal (3 CCR, Ch. 3, Subch. 2, Art.

2. It is recommended that cleaned containers be sent back to the manufacturer for recycling whenever possible. However, once triple-rinsed, most haulers will take them to most landfills.

3. Workers should use left over rinse water as spray.

4. Public agencies should ensure that surplus or out-of-date chemicals are given to a licensed hazardous waste hauler for disposal.

3.5.3 Safe Transportation Methods

1. Before transporting pesticides, workers shall ensure that all pesticide containers are tightly sealed and secured from tipping or excess jarring (3 CCR, Ch. 3, Subch. 2, Art. 4).

2. Transportation compartments on vehicles shall be isolated from the compartment carrying people; food and clothing and should be securely locked (3 CCR, Ch. 3, Subch. 2, Art. 4).

3. Workers should transport only the amount of pesticide needed for the day to the site.

4. Workers should be certain that the appropriate chemical labels and MSDS sheets, a spill cleanup kit, the location of emergency medical care and a first aid kit are always brought along when transporting pesticides.

5. Public agencies should encourage all vehicles used for pesticide transportation to include radio communications for contacting help in case of a spill or some other emergency.

4.0 INTEGRATED PEST MANAGEMENT (IPM)

4.1 Background on Pesticide Use

For most of the last 50 years, the trend in vegetation management has been toward a greater reliance on pesticides. The result has been not only an enormous increase in the use of many dangerous chemicals, but also an enormous increase in the number of pests that are resistant to the pesticides being produced -- in essence, as more pesticides have been produced, more resistent strains of pests have evolved. Worse, recent studies have shown that the end result of this global trend has been no net gain in vegetation survival rates.

With these realizations becoming well-known, vegetation managers are now moving away from their reliance on pesticides and toward an integrated approach that combines limited pesticides use with more environmentally-friendly pest control techniches.

4.2 Scope of Guidelines

For public agencies in Orange County, IPM practices should be preferred to the sole use of pesticides as the primary means of vegetation management. These techniques are designed to prevent overuse and to reduce reliance on them. IPM should be considered by all public agencies or their contractors before intensive use of pesticides.

The goal of IPM is not to eliminate all pests, but to keep their populations at a manageable number. Pesticides are part of IPM techniques, but they are used in small quantities and only after all other alternatives have been reviewed.

4.3 Alternatives to Pesticides

Some of the alternatives to pesticides that may be considered as part of an IPM program include:

1. Introduction of natural predators such as ladybugs, lacewings, garter snakes and toads. Also, some bacteria, viruses and insect parasites may be preferable to pesticides.
2. Selected removal or rotation of vegetation habitat to eliminate the breeding places of specific pests.
3. Weeding, hoeing and trapping manually. Pruning and thinning of trees is also an effective means of preventing epidemic tree insects and diseases.

Also, at certain times of the year and under certain environmental conditions, certain pests can be expected. Therefore, timely planting or well-timed use of small quantities of pesticides may avoid the need for some chemical use.

GLOSSARY

TERMS, ABBREVIATIONS, ACRONYMS

RELATED TO THE MANAGEMENT GUIDELINES FOR USE OF FERTILIZERS AND PESTICIDES

Best Management Practices (BMPs)
Schedules of activity, prohibitions of practices, maintenance procedures and other management practices to prevent or reduce the pollution of "waters of the United States." BMPs also include treatment requirements, operating procedures and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

California Code of Regulations Title 3, Division 6 (3 CCR)
The State of California code regulating pesticides and pest control operations.

California Fertilizer Association (CFA)
An organization promoting progress in the fertilizer industry in the interest of an efficient and profitable agricultural community. Activities of CFA include developing and disseminating new information to its members and others; supporting production-oriented research programs to identify maximum yield systems for farmers; promoting agronomic topics at our schools, colleges and universities; and maintaining open communications among the industry, universities and other state and federal agencies.

Chemical Labels
As required by federal law, manufacturers of pesticides must provide chemical labels on the containers of all pesticides distributed. These labels include all necessary information on the chemical constituents of the pesticide, including recommendations and instructions for use, toxicity classification and the appropriate warning statements and emergency procedures in case of acute exposures. As required by state law, labels must be kept in good, readable condition and be attached to all pesticide containers at all times.

Co-permittee
A permittee to an NPDES permit that is responsible for permit conditions relating to the discharge for which it is operator. As used in the Stormwater Permit Implementation Agreement, co-permittees are the County of Orange, its incorporated cities and the Orange County Flood Control District.

Drainage Area Management Plan (DAMP)
A document required under the municipal NPDES stormwater permits granted to the co-permittees by the Santa Ana and San Diego Regional Water Quality Control Boards.

Equivalent Training
A term referring to public agency employees dealing with the application of pesticides who have not received a qualified applicator's license (QAL) from the State of California but who has completed a training course in pesticide application offered by the County of Orange.

Eutrofication
A decrease of dissolved oxygen in a body of water to such an extreme extent that plant life is favored over animal life. For example, a lake that has been overgrown in algae on the surface is likely in a state of eutrofication.

Integrated Pest Management (IPM)
The trend in vegetation management which supports moving away from reliance on pesticides and toward an integrated approach of limited pesticide use with more environmentally-friendly pest control techniques.

Materials Safety Data Sheet (MSDS)
Similar to chemical labels and also required by federal law, these sheets contain all information necessary for the safe handling of pesticides. They include chemical identifications, hazardous ingredients, physical data, fire and explosion data, health hazards, reactivity data, spill or leak cleanup procedures, special protection and special precautions.

Maximum Extent Practicable (MEP)
MEP means taking into account equitable considerations of competing factors including, but not limited to, the gravity of the problem, fiscal feasibility, public health risks, societal concern and social benefits.

National Pollutant Discharge Elimination System (NPDES)
The national program under the Clean Water Act for controlling discharges from point source discharges directly into the waters of the U.S.

Pest Control Advisor (PCA)
Certification obtained from the State of California after demonstrating an adequate knowledge of pests, pesticides and the implications of pesticide use. A recommendation for pesticide use must be obtained from a PCA before public agencies may approve any pesticide applications.

Qualified Applicators License (QAL)
A license obtained from the State of California after demonstrating adequate knowledge of the proper techniques for handling, storing, transporting and applying pesticides. Workers must obtain a QAL before being permitted to apply or supervise application of Category One pesticides.

Qualified Fertilizer Specialist
A person designated by the governing public agency who is knowledgeable of the proper techniques for handling, storing, transporting and applying fertilizers as defined in the Management Guidelines for Use of Fertilizers and Pesticides. This person shall be able to sample, inspect, test and make analyses of fertilizers that are in use or being considered for use in the agency's jurisdiction to such an extent that may be necessary to comply with the management guidelines.

Restricted Materials Permit
A permit that must be acquired by any public agency before application of any one of the pesticides listed as restricted by the State of California in the State Code of Regulations Title 3, Division 6. In Orange County, this permit must be obtained from the County Agricultural Commissioner.

State Code
In this report, referring to the State of California Code of Regulations Title 3, Division 6 and referenced as "3 CCR."

Storm Drain
Pipe or channel structure designed to convey only stormwater runoff for purposes of flood protection. Federal regulations use the term "storm sewer." Use of the word "sewer" for a stormwater conveyance structure should be discouraged, since the word "sewer" also includes sanitary sewers and combined sewers which carry human waste.

Toxicity Classification
Pesticides are grouped into three categories by the California Department of Food and Agriculture according to their toxicity or potential for causing injury to people. Category One pesticides are the most hazardous and their use is normally restricted, while Category Three pesticides are least toxic to people and are generally less hazardous.

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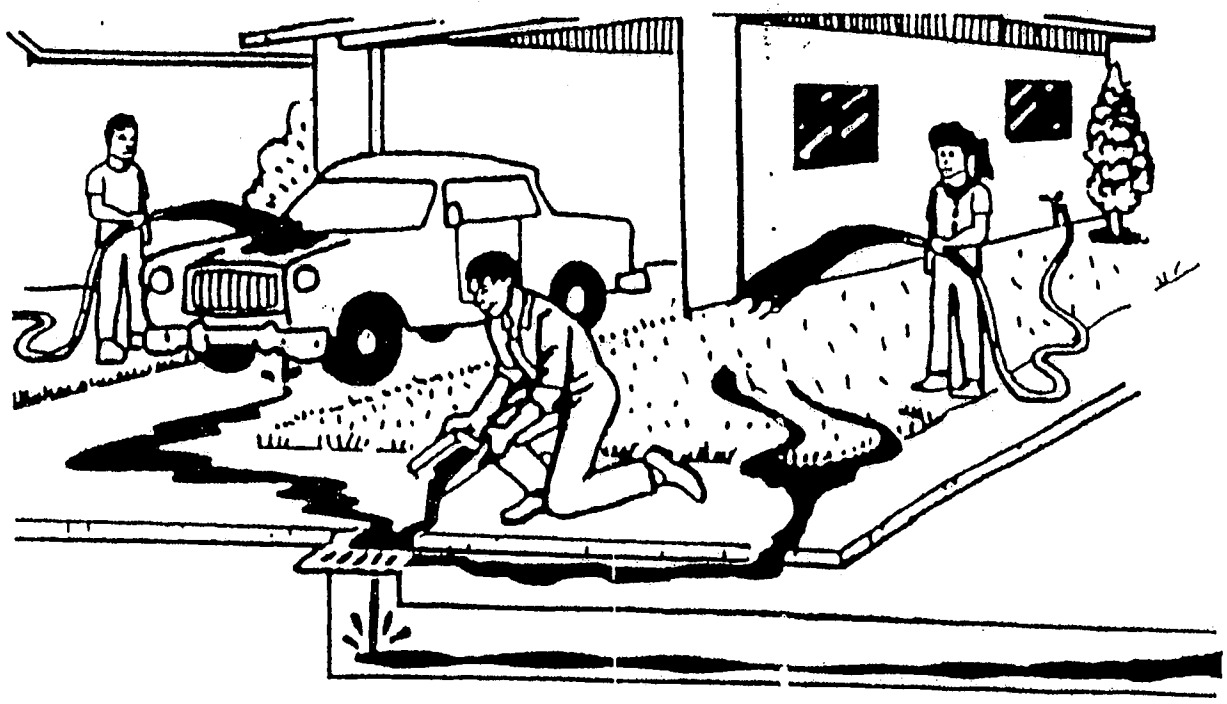
Twenty Ways to Protect Your Water

You Can Make A Difference!

Stormwater pollution . . . is fouling our water!

Every day, water from garden hoses, sprinklers and rainfall washes pollutants off roads and yards . . . right into neighborhood storm drains. Storm drains carry untreated water and pollutants **directly** *to our water resources.*

Some pollutants, such as grease and dirt from streets, reach the storm drains unintentionally. But, many pollutants like used motor oil, detergents, paints, and solvents, are carelessly dumped into the storm drains.

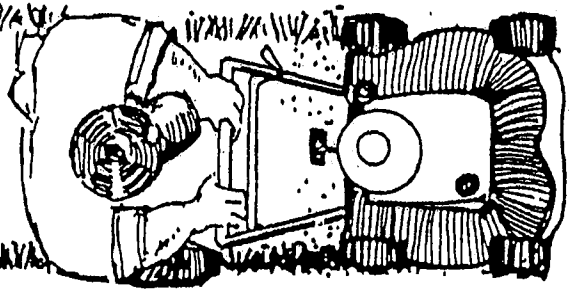


Polluted stormwater harms wildlife, jeopardizes the use of our rivers and lakes for recreation . . . and may eventually contaminate the water we drink!

Prevention, Pesticides And Toxic Substances (7506C)

700-K-92-006
June 1992

Healthy Lawn



Healthy Environment

Caring for Your Lawn in an Environmentally Friendly Way



Washington DC 20460

HEALTHY LAWN, HEALTHY

Caring for Your Lawn in an Environmentally Friendly Way

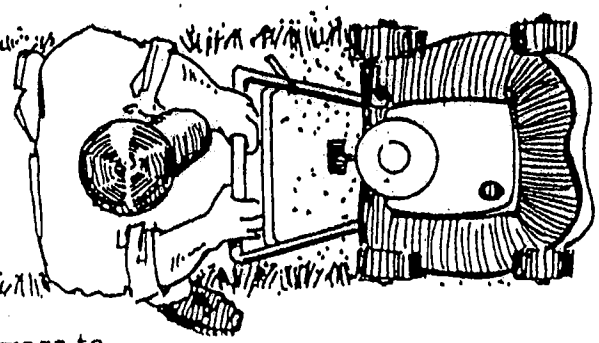


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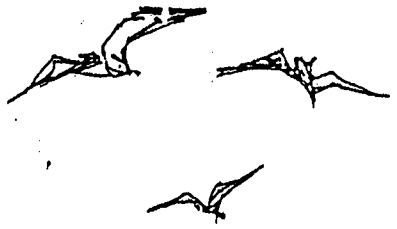
Picture a healthy green lawn: perfect for lounging, great for ball games and cookouts, a real asset to your home. But did you know that your lawn—and how you take care of it—can also help the environment? Healthy grass provides feeding ground for birds, who find it a rich source of insects, worms, and other food. Thick grass prevents soil erosion, filters contaminants from rainwater, and absorbs many types of airborne pollutants, like dust and soot. Grass is also highly efficient at converting carbon dioxide to oxygen, a process that helps clean the air. Caring for your lawn properly can both enhance its appearance and contribute to its environmental benefits. You don't have to be an expert to grow a healthy lawn. Just keep in mind that the secret

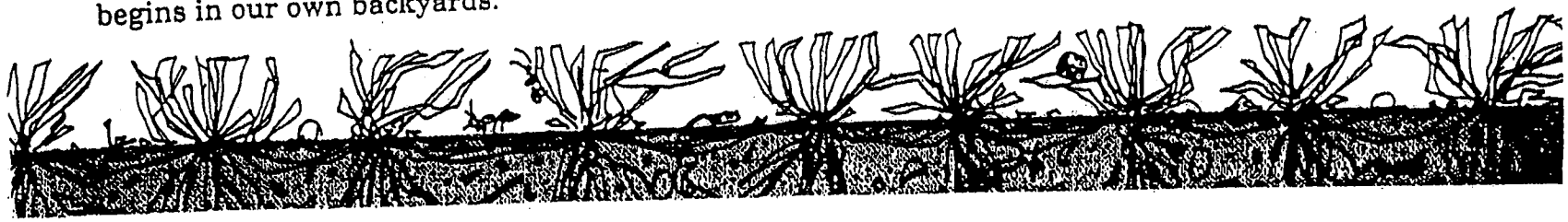


ENVIRONMENT



is to work with nature. This means creating conditions for grass to thrive and resist damage from weeds, disease, and insect pests. It means setting realistic goals for your lawn, whether you or a professional lawn care service will be doing the work. And if you choose to use pesticides, it means using them with care so as to get the most benefit and reduce any risks. Caring for your lawn in an environmentally sensible way can have a bigger impact than you might think. Your lawn is only a small piece of land, but all the lawns across the country cover a lot of ground. That means you and your lawn care activities, along with everyone else's, can make a difference to the environment. And that's why taking care of the environment begins in our own backyards.





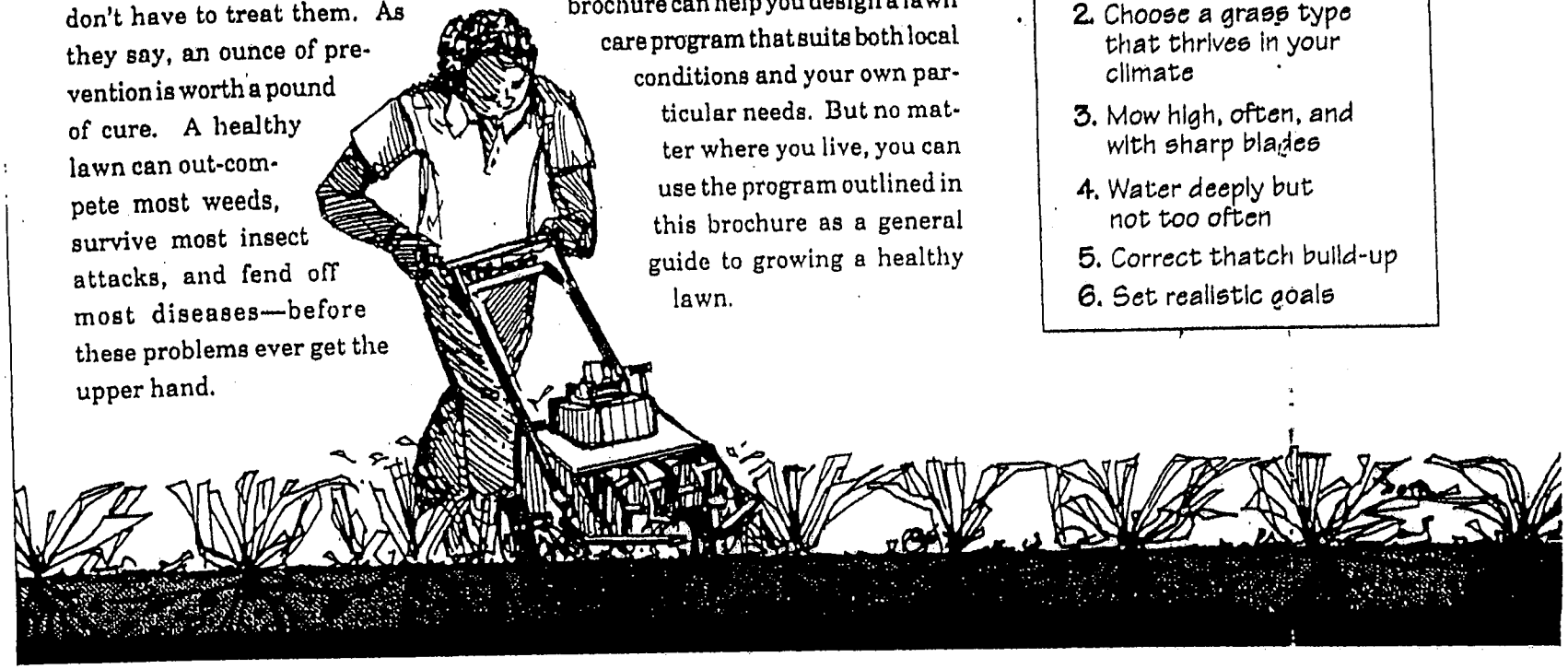
Working With Nature: A Preventive Health Care Program For Your Lawn

To start, think about lawn care as a ***preventive*** health care program, like one you would use to keep up your own health. The idea is to prevent problems from occurring so you don't have to treat them. As they say, an ounce of prevention is worth a pound of cure. A healthy lawn can out-compete most weeds, survive most insect attacks, and fend off most diseases—before these problems ever get the upper hand.

Your lawn care program should be tailored to local conditions—the amount of rainfall you get, for example, and the type of soil you have. The sources listed at the back of this brochure can help you design a lawn care program that suits both local conditions and your own particular needs. But no matter where you live, you can use the program outlined in this brochure as a general guide to growing a healthy lawn.

A preventive health care program for your lawn should have the following steps:

1. Develop healthy soil
2. Choose a grass type that thrives in your climate
3. Mow high, often, and with sharp blades
4. Water deeply but not too often
5. Correct thatch build-up
6. Set realistic goals



1. Develop Healthy Soil

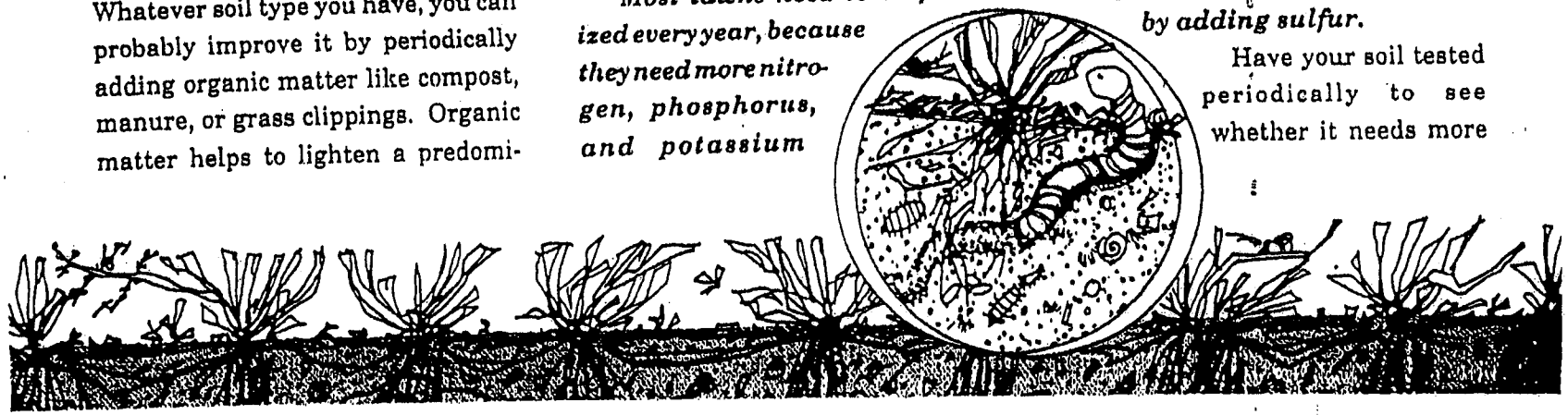
Good soil is the foundation of a healthy lawn. ***To grow well, your lawn needs soil with good texture, some key nutrients, and the right pH, or acidity/alkalinity balance.***

Start by checking the texture of your soil to see whether it's heavy with clay, light and sandy, or somewhere in between. Lawns grow best in soil with intermediate or "loamy" soils that have a mix of clay, silt, and sand. Whatever soil type you have, you can probably improve it by periodically adding organic matter like compost, manure, or grass clippings. Organic matter helps to lighten a predominantly clay soil and it helps sandy soil retain water and nutrients.

Also check to see if your soil is packed down from lots of use or heavy clay content. This makes it harder for air and water to penetrate, and for grass roots to grow. To loosen compacted soil, some lawns may need to be aerated several times a year. This process involves pulling out plugs of soil to create air spaces, so water and nutrients can again penetrate to the grass roots.

Most lawns need to be fertilized every year, because they need more nitrogen, phosphorus, and potassium than soils usually contain. These three elements are the primary ingredients found in most lawn fertilizers. It's important not to over-fertilize—you could do more harm to your lawn than good—and it's best to use a slow-release fertilizer that feeds the lawn slowly. It's also important to check the soil's pH. Grass is best able to absorb nutrients in a slightly acidic soil, with a pH of 6.5 to 7.0. ***Soil that is too acidic can be "sweetened" with lime; soil that's not acid enough can be made more "sour" by adding sulfur.***

Have your soil tested periodically to see whether it needs more



organic matter or the pH needs adjusting. Your county extension agent (listed in your phone book under county government) or local nursery should be able to tell you how to do this. These experts can also help you choose the right fertilizer, compost, and other "soil amendments," and they can advise you about aerating if your soil is compacted. If a professional service takes care of your lawn, make sure it takes these same steps to develop good soil. There's no getting around it: your lawn's health is only as good as the soil it grows in.

2. Choose A Grass Type That Thrives In Your Climate

The right type of grass—one that suits your needs and likes the local weather—will always give better results. Grasses vary in the type of climate they prefer, the amount of water and nutrients they need, their resistance to pests, their tolerance for shade, and the degree of wear they can withstand.

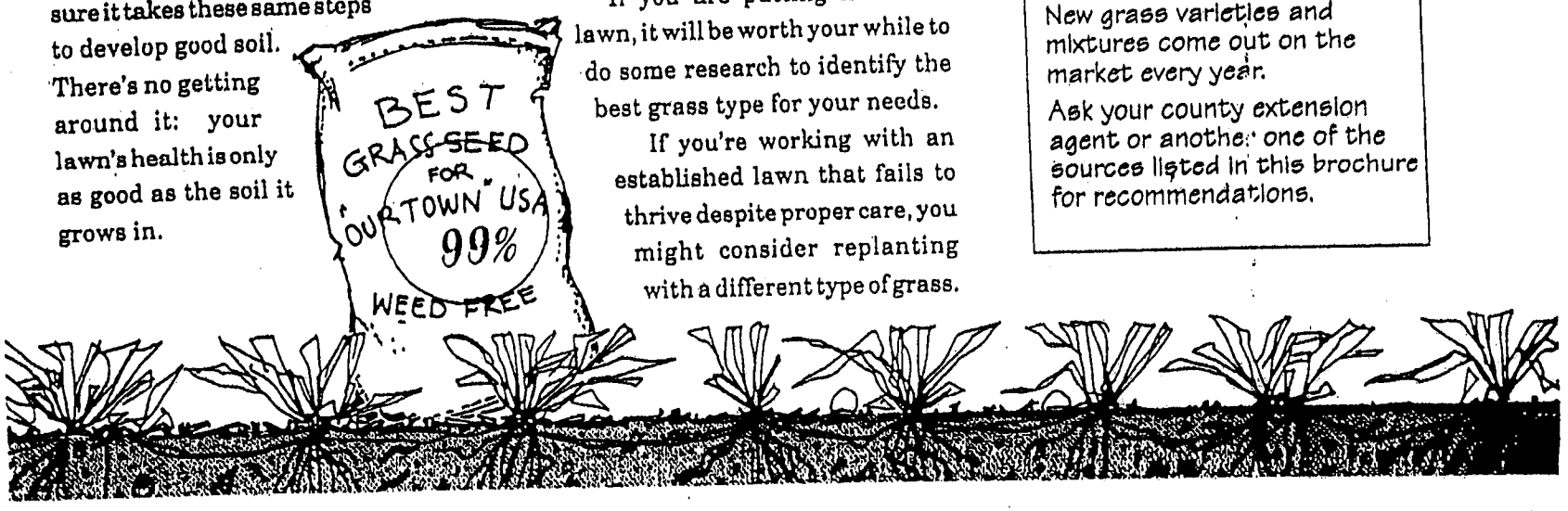
If you are putting in a new lawn, it will be worth your while to do some research to identify the best grass type for your needs.

If you're working with an established lawn that fails to thrive despite proper care, you might consider replanting with a different type of grass.

Why struggle to grow grass that's susceptible to fungal disease if you live in a humid climate? Or a water-loving species if you live in an area with water shortages? Grass that is well-adapted to your area will grow better and resist local pests and diseases better.

New grass varieties and mixtures come out on the market every year.

Ask your county extension agent or another one of the sources listed in this brochure for recommendations.



3. Mow High, Often and With Sharp Blades

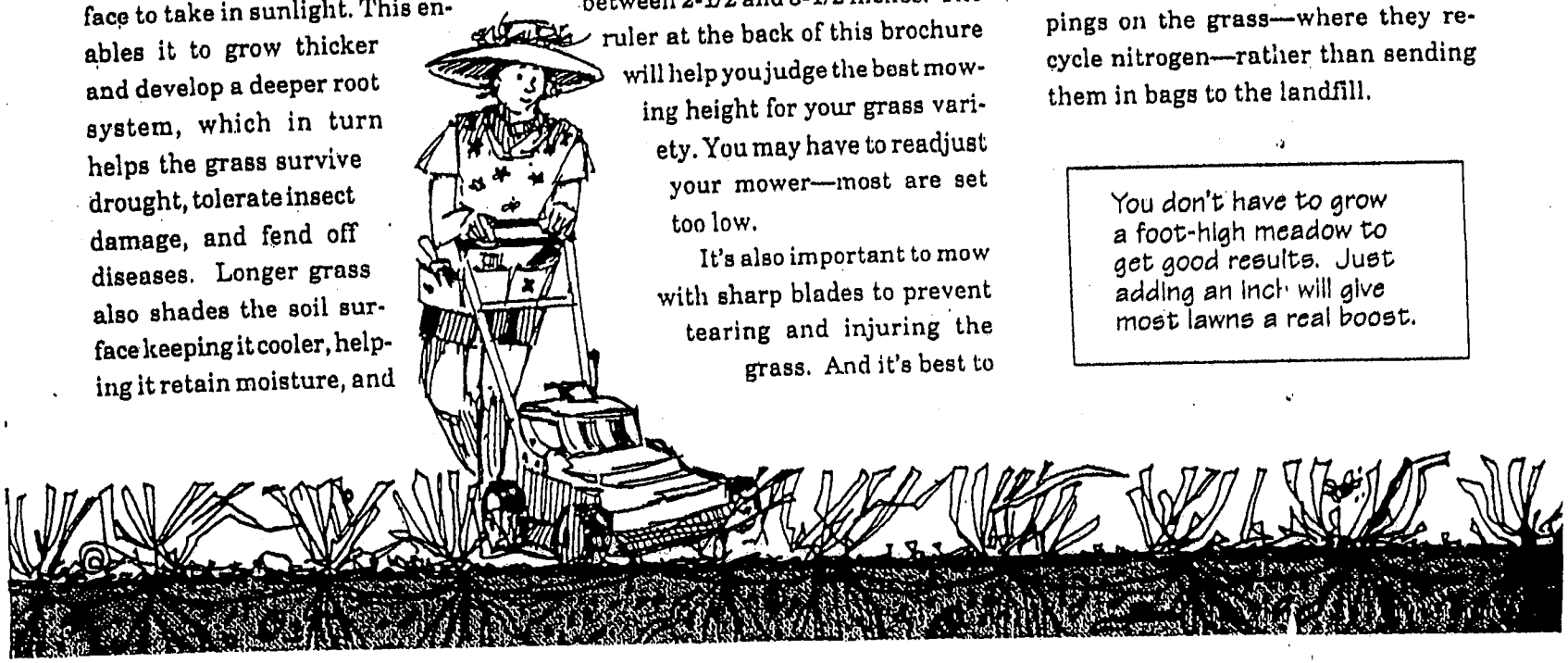
Mowing high—that is, keeping your lawn a bit long—will produce stronger, healthier grass with fewer pest problems.

Longer grass has more leaf surface to take in sunlight. This enables it to grow thicker and develop a deeper root system, which in turn helps the grass survive drought, tolerate insect damage, and fend off diseases. Longer grass also shades the soil surface keeping it cooler, helping it retain moisture, and making it difficult for weeds to germinate and grow.

A lawn's ideal length will vary with the type of grass, but many turf grass species are healthiest when kept between 2-1/2 and 3-1/2 inches. The ruler at the back of this brochure will help you judge the best mowing height for your grass variety. You may have to readjust your mower—most are set too low.

It's also important to mow with sharp blades to prevent tearing and injuring the grass. And it's best to mow often, because grass adjusts better to frequent than infrequent mowing. ***The rule of thumb is to mow often enough that you never cut more than one-third of the height of the grass blades.*** Save some time *and* help your lawn and the environment by leaving short clippings on the grass—where they recycle nitrogen—rather than sending them in bags to the landfill.

> You don't have to grow a foot-high meadow to get good results. Just adding an inch will give most lawns a real boost.



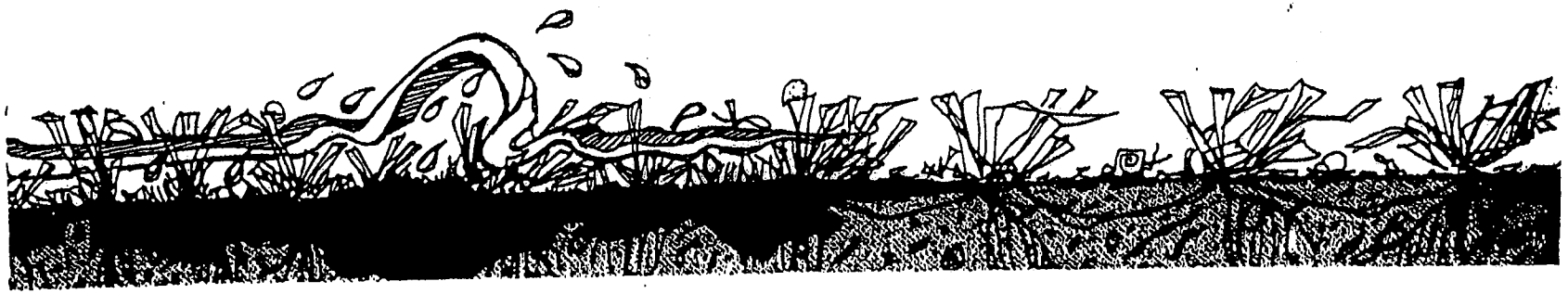
4. Water Deeply But Not Too Often

Watering properly will help your lawn grow deep roots that make it stronger and less vulnerable to drought. Most lawns are watered too often but with too little water. ***It's best to water only when the lawn really needs it, and then to water slowly and deeply.*** This trains the grass roots down. Frequent shallow watering trains the roots to stay near the surface, making the lawn less able to find moisture during dry periods.

Every lawn's watering needs are unique: they depend on local rainfall, the grass and soil type, and the general health of the lawn. But even in very dry areas, no established home lawn should require daily watering.

Try to water your lawn in a way that imitates a slow, soaking rain, by using trickle irrigation, soaker hoses, or other water-conserving methods. It's also best to water in the early morning, especially during hot summer months, to reduce evaporation. Apply about an inch of water—enough that it soaks 6–8 inches into the soil. Then let the lawn dry out thoroughly before watering it again.

> The best rule is to water only when the lawn begins to wilt from dryness--when the color dulls and footprints stay compressed for more than a few seconds.

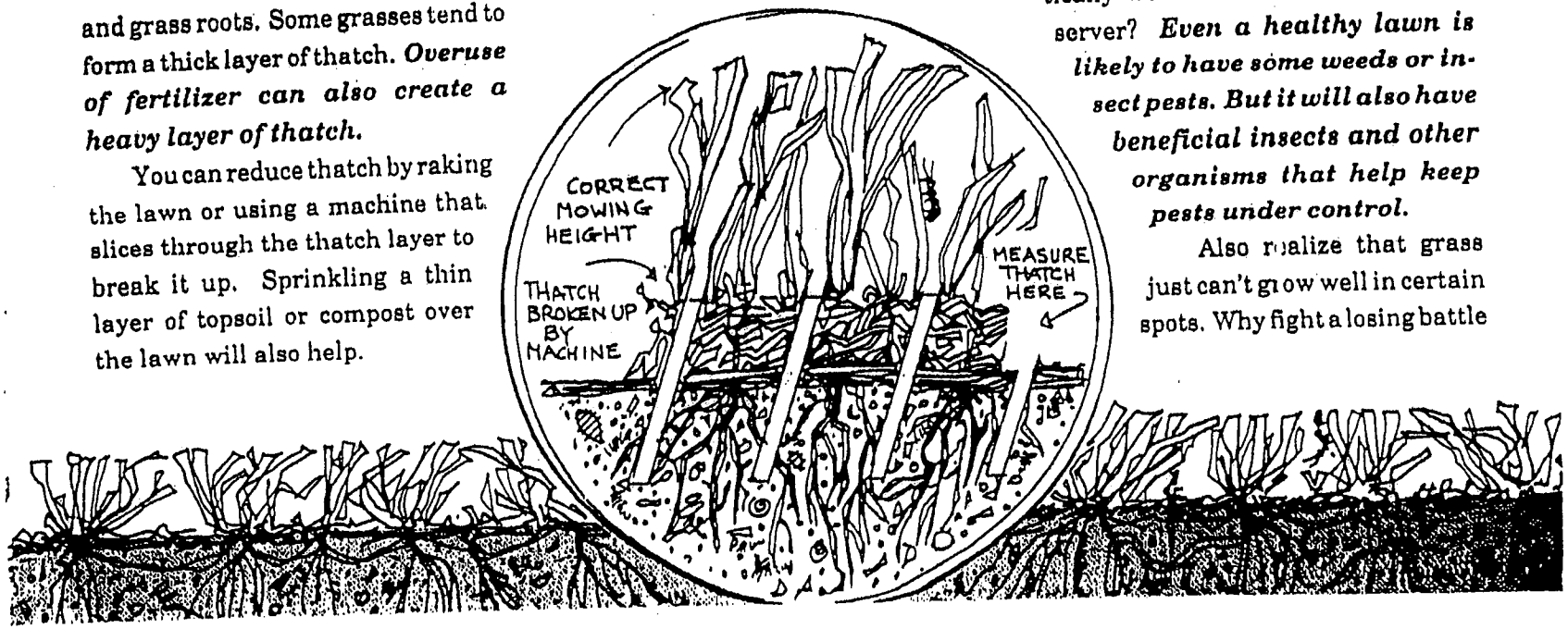


5. Correct Thatch Build-Up

All grass forms a layer of dead plant material, known as thatch, between the grass blades and the soil. When thatch gets too thick—deeper than one-half inch—it prevents water and nutrients from penetrating to the soil and grass roots. Some grasses tend to form a thick layer of thatch. ***Overuse of fertilizer can also create a heavy layer of thatch.***

You can reduce thatch by raking the lawn or using a machine that slices through the thatch layer to break it up. Sprinkling a thin layer of topsoil or compost over the lawn will also help.

In a healthy lawn, microorganisms and earthworms help keep the thatch layer in balance by decomposing it and releasing the nutrients into the soil.



6. Set Realistic Goals

Setting realistic goals will allow you to conduct an environmentally sensible lawn care program. It's probably not necessary to aim for putting-green perfection. Did you know that a lawn with 15 percent weeds can look practically weed-free to the average observer? ***Even a healthy lawn is likely to have some weeds or insect pests. But it will also have beneficial insects and other organisms that help keep pests under control.***

Also realize that grass just can't grow well in certain spots. Why fight a losing battle

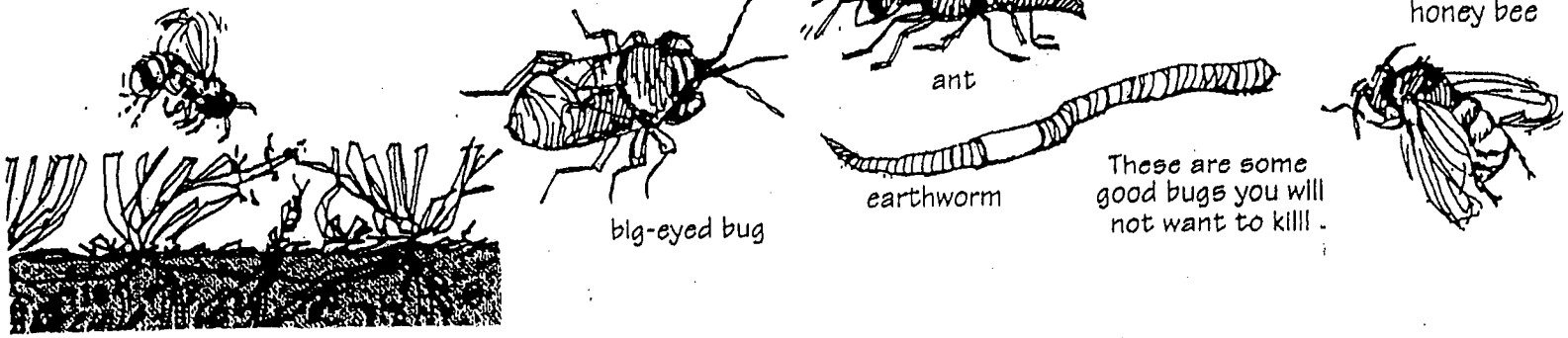
with your lawn, when you have other options? At the base of a tree, for example, you might have better luck with wood chips or shade-loving ornamental plants like ivy, periwinkle, or pachysandra. If your climate is very dry, consider converting some of your lawn to dry-garden landscaping. It could save time, money, and water resources.

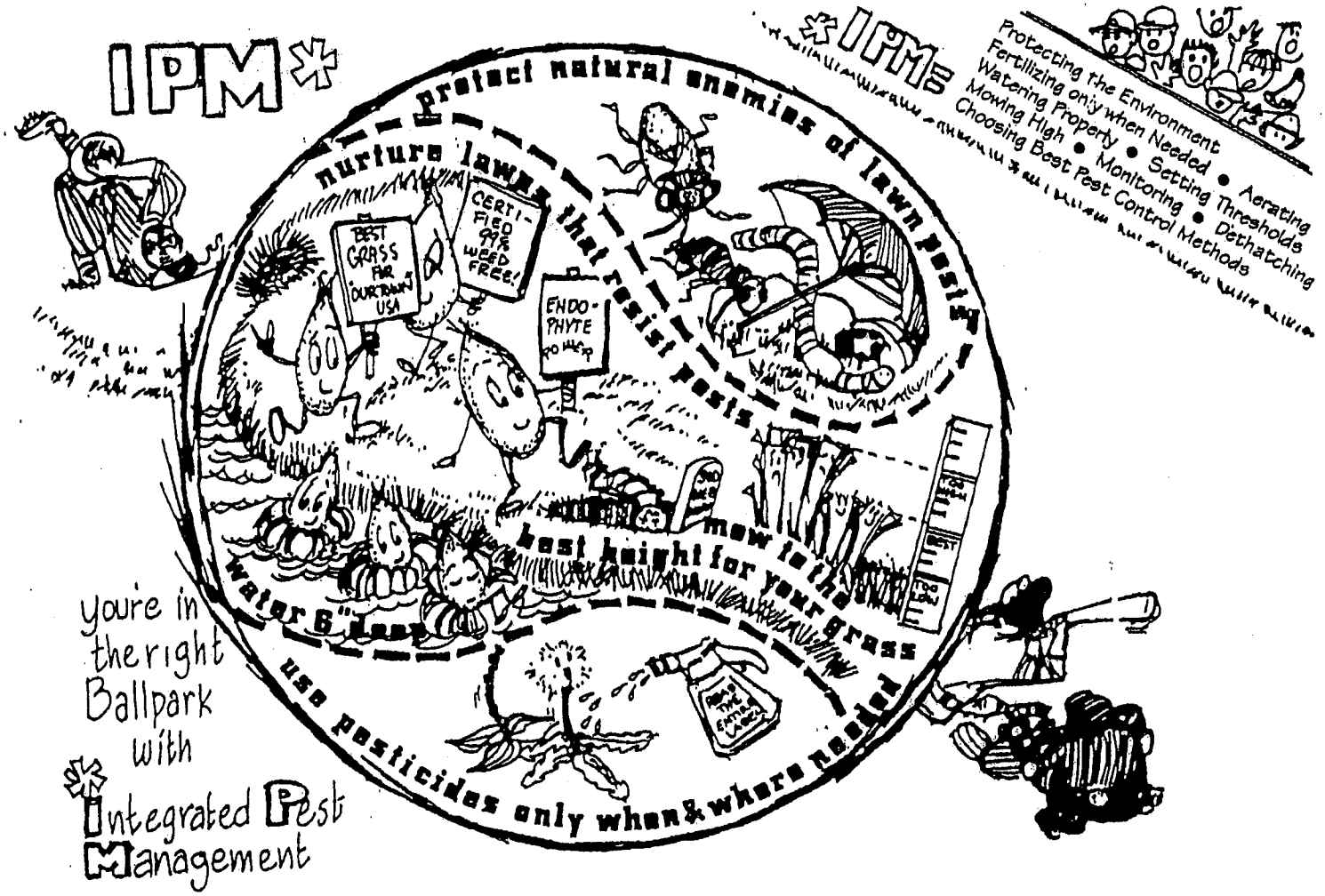
What Is IPM?

Integrated Pest Management is essentially common-sense pest control. IPM is not a new concept; some forms of it have been practiced for centuries.

IPM involves the carefully managed use of three different pest control tactics—biological, cultural, and chemical—to get the best long-term results with the least disruption of the environment. Biological control means using natural enemies of the pest, like lady bugs to control aphids. Cultural or horticultural control involves the use of gardening methods, like mowing high to shade out weeds. Chemical control involves the judicious use of pesticides.

IPM is a highly effective approach that minimizes the use of pesticides and maximizes the use of natural processes. Lawn care professionals who use IPM should have a sophisticated understanding of the ecosystem of your turf and the available pest control tactics. Home gardeners can also practice IPM by following the steps outlined in this brochure.



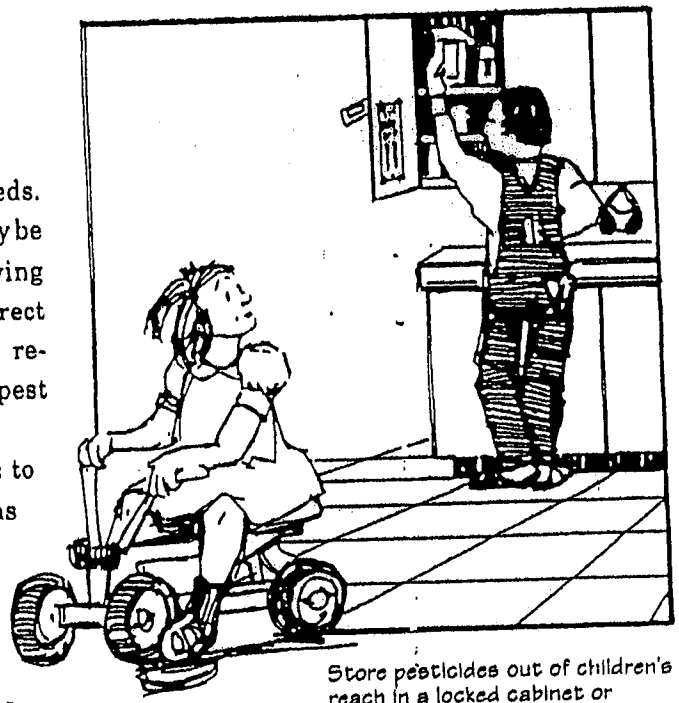

IPM*
Protect natural enemies of lawn pests
nurture lawns that resist pests
BEST GRASS FOR OUR RAINY USA
CERTIFIED 0% WEED FREE!
ENDOPHYTE POWER
mow to the best height for your grass
water 6" deep
use pesticides only when & where needed
DON'T TIME EATING LAWNS
*IPM
Protecting the Environment
Fertilizing only when Needed • Aerating
Watering Properly • Setting Thresholds
Mowing High • Monitoring • Dethatching
Choosing Best Pest Control Methods
you're in the right Ballpark with
*Integrated Pest Management

Tips For Using Pesticides

Sometimes, even with good lawn care practices, weather conditions or other factors can cause pest problems to develop. Pesticides can help control many lawn pests. But pesticides have risks as well as benefits, and it's important to use them properly.

The chemicals we call pesticides include insecticides, herbicides, and fungicides. These products are designed to kill or control pest insects, weeds, and fungal diseases. Pesticides can be very effective. But don't be tempted to rely solely on pesticides as a quick-fix solution to any lawn problem. Serious, ongoing pest problems are often a sign that your lawn is not getting everything it needs. In other words, the pests may be a symptom of an underlying problem. You need to correct the underlying problem to reduce the chance that the pest will reappear.

All pesticides are toxic to some degree. This means they can pose some risk to you, to your children and pets, and to any wildlife that venture onto your lawn—especially if these chemicals are overused or carelessly applied. Pesticides can also kill earthworms and other beneficial organisms, disrupting the ecological balance of your lawn.



Store pesticides out of children's reach in a locked cabinet or garden shed.

2. Use pesticides to minimize pests, not eradicate them. The latter is often impossible and unnecessary.

3. Be sure you have accurately identified the pest so you can choose the best pesticide for the job and use it most effectively. Obtain professional advice from your county extension agent or a local expert.

4. Spot treat whenever possible. In most cases, it isn't necessary to treat the whole lawn with pesticides if the problem is confined to certain areas. Spraying more than necessary is wasteful and can be environmentally damaging.

If you have questions about a pesticide, call EPA's toll-free National Pesticide Telecommunications Network (1-800-858-7378). For general information on minimizing pesticide risks, call or write EPA for a free copy of the *Citizen's Guide to Pesticides*. The number to call is 703-305-5017; the address is: *EPA, Office of Pesticide Programs, Field Operations Division, H7506C, 401 M Street, S.W., Washington, D.C. 20460.*



When Spraying, Protect

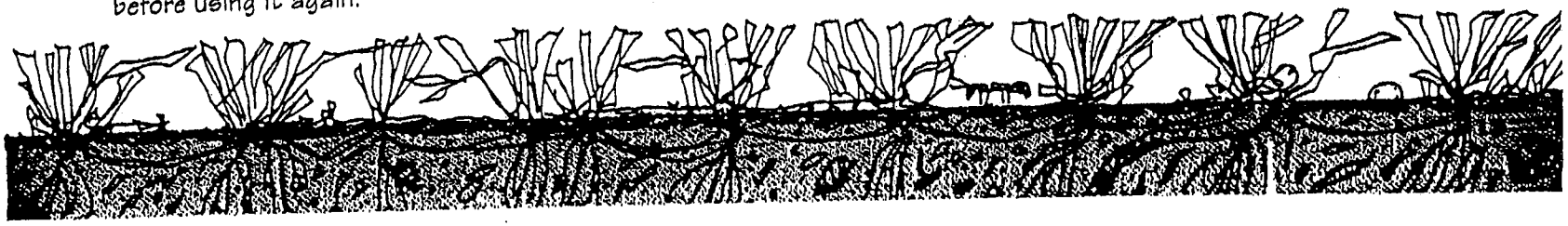


Wash this clothing separately before using it again.

Before Using Any Pesticide, Be Sure To Review These Basic Rules

1. ***Take safety precautions. Never assume a pesticide is harmless.***

- ❑ Read the entire label and follow its instructions. Use only the amount directed, at the time and under the conditions specified, and for the purpose listed.
- ❑ Be sure to wear any protective clothing—like gloves, long sleeves, and long pants—indicated on the label. Wash this clothing separately before using it again.
- ❑ Keep children and pets away from pesticides, and make sure no one goes on a treated lawn for at least the time prescribed by the pesticide label.
- ❑ Remember to follow any state or local requirements for posting your treated lawn or notifying your neighbors that a pesticide has been applied.
- ❑ Store and dispose of pesticides properly, according to the label directions and any state and local regulations.



often reduces pesticide use by combining it with other, non-chemical methods of pest control?

A. More and more lawn companies are offering integrated pest management (IPM) in response to public concern about pesticides. Be aware that IPM is a general term and that companies may use it to describe a wide range of activities. Find out exactly what a company means if it says it uses IPM.

Q. Is the company willing to help you understand your lawn's problems and the solutions?

A. Lawn services generally apply fertilizers and pesticides. But you may be the one who mows and waters—and poor watering and mowing practices can lead to disappointing results. The



Choosing A Lawn Care Service

Many people choose to hire a professional company to help maintain their lawn. Lawn care companies offer a range of services, from fertilizing and pest control to aerating, mowing, and renovation.

Lawn care companies should follow the same healthy lawn program outlined in this brochure. They should also follow the same precautions for minimizing pesticide risks.

How can you be sure that a service will do these things? Start by asking questions like these:

Q. Is the company licensed?

A. Nearly all states require lawn care companies to be licensed. The qualifications for obtaining a license vary from state to state, but having a license is one indication that the company is reputable and operating legally.

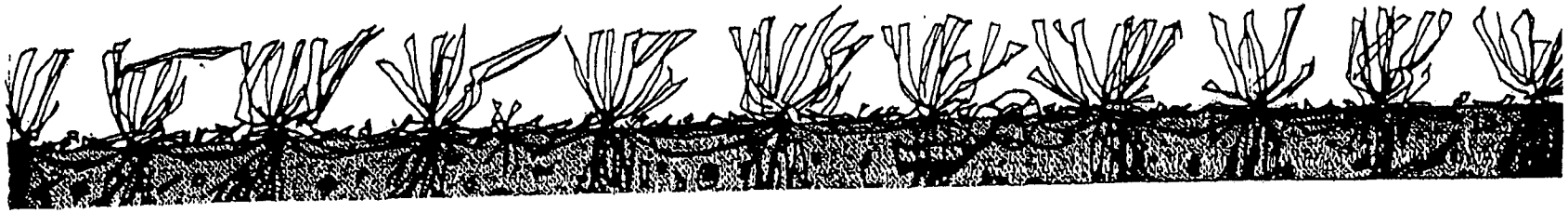
Q. Does the company have a good track record?

A. Ask neighbors and friends who have dealt with the company if they were satisfied with the service they received. Call the Better Business Bureau or the state or local consumer protection office listed in your phone book; have they received any complaints about the company? Determine from the state pesticide regulatory agency if the company has a history of violations.

Q. Is the company affiliated with a professional lawn care association?

A. Affiliation with a professional association helps members to stay informed of new developments in the lawn care field.

Q. Does the company offer a variety of pest management approaches? Does it apply pesticides on a set schedule or only when they are really needed? Does it use integrated pest management, or "IPM"—an approach that



For More Information

Affiliated with the Land Grant university in each state is a system of **County Cooperative Extension Offices.** Usually listed in the telephone directory under county or state government, these offices often have a range of resources on lawn care and landscape maintenance, including plant selection, pest control, and soil testing.

State agriculture and/or environmental agencies may publish information on pests and pest management strategies. The state pesticide regulatory agency can provide information on pesticide regulations, and may also have information on companies with a history of complaints or violations. NPTN (see below) can identify the agency responsible for pesticide regulation in each state.

The **National Pesticide Telecommunications Network** is a toll-free, 24-hour information service that can be reached by calling 1-800-858-7378 or by FAX at 806-743-3094. The operators can provide a wide range of information about the health effects of pesticides, and provide assistance in dealing with pesticide-related emergencies.

Libraries, bookstores, and garden centers usually have a wide selection of books that discuss lawn care and other aspects of landscape management. Garden centers may also have telephone hotlines or experts available on the premises to answer your gardening questions.

The **Environmental Protection Agency** can provide information on integrated pest management strategies for lawn care. Write EPA's Office of Pesticide Programs, Field Operations Division (H7506C), 401 M St., S.W., Washington, D.C. 20460.

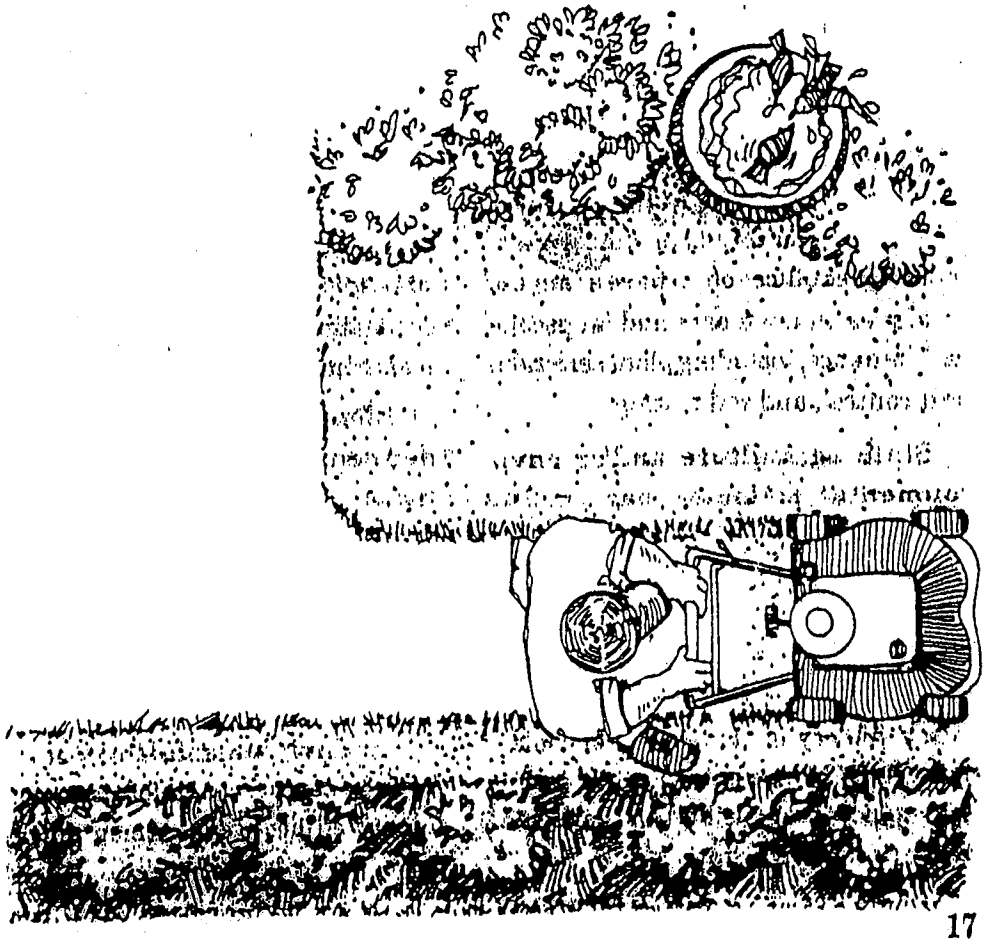
Some **suppliers of lawn care products** can provide helpful tips, answer questions, and help identify problems. Look for information/hotline numbers on product packaging.

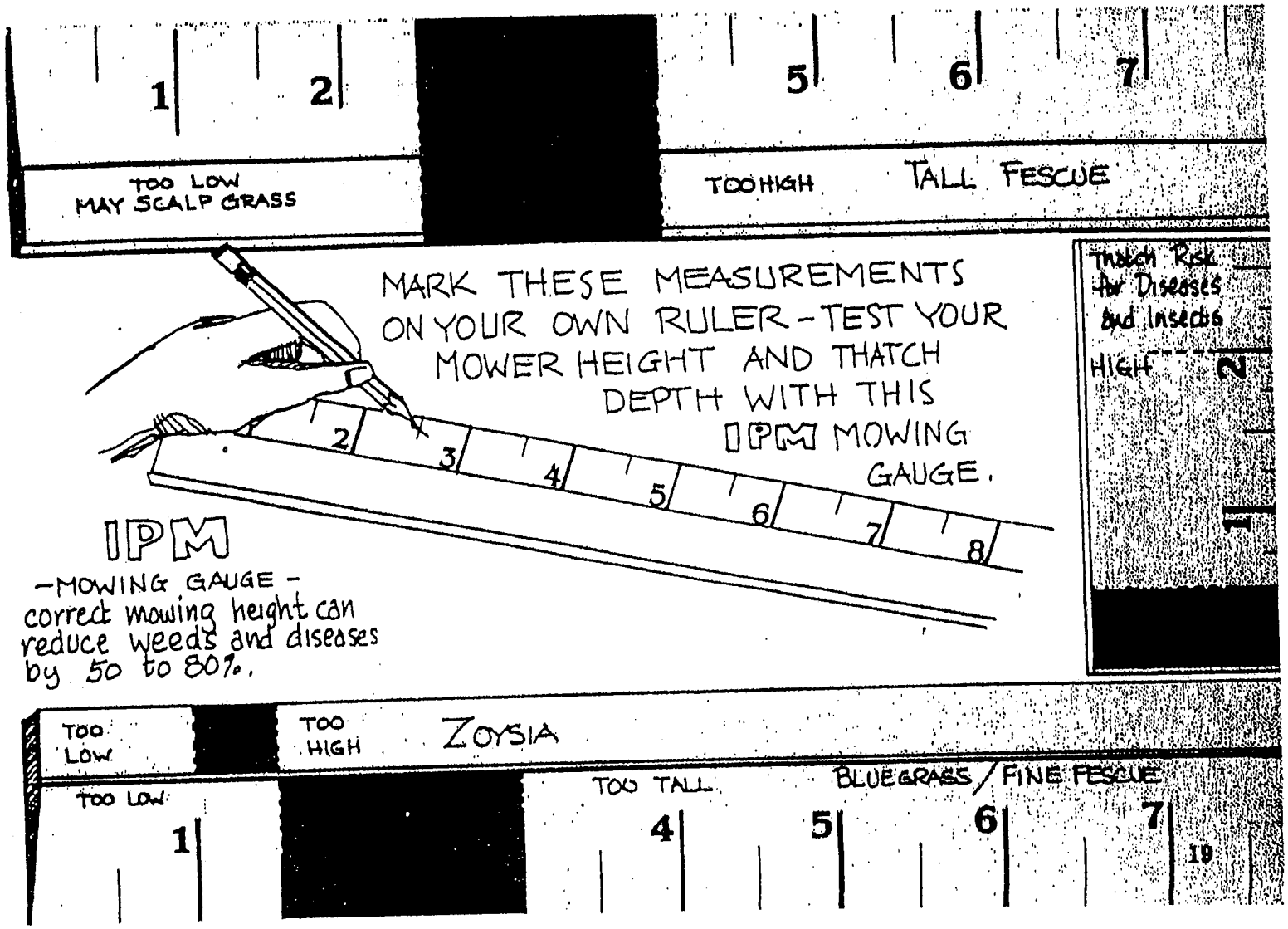
The **Bio-Integral Resource Center (BIRC)**, a non-profit organization formed in 1978 through an EPA grant, has information on least-toxic methods for lawn care. BIRC's address is: P.O. Box 7414, Berkeley, CA 94707.

company should tell you how it plans to take care of your lawn, and advise you about the work you need to do to keep your lawn in good shape.

Q. Will the company tell you what pesticides it applies to your lawn and why, and what health and environmental risks may be presented by their use?

A. You have a right to this information. If asked, the company should readily supply it. All pesticides sold legally in the United States are registered by EPA, but such registration is *not* a guarantee of safety. Ask to see a copy of pesticide labels to make sure they bear an EPA registration number, and to review the directions that should be followed. If the company can't answer your questions about the chemicals it uses, call NPTN (1-800-858-7378) for more information.




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TOO LOW
MAY SCALP GRASS
TOO HIGH
TALL FESCUE
MARK THESE MEASUREMENTS ON YOUR OWN RULER - TEST YOUR MOWER HEIGHT AND THATCH DEPTH WITH THIS IPM MOWING GAUGE.
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IPM
-MOWING GAUGE-
correct mowing height can reduce weeds and diseases by 50 to 80%.
Thatch Risk for Diseases and Insects
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TOO LOW
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BLUEGRASS / FINE FESCUE
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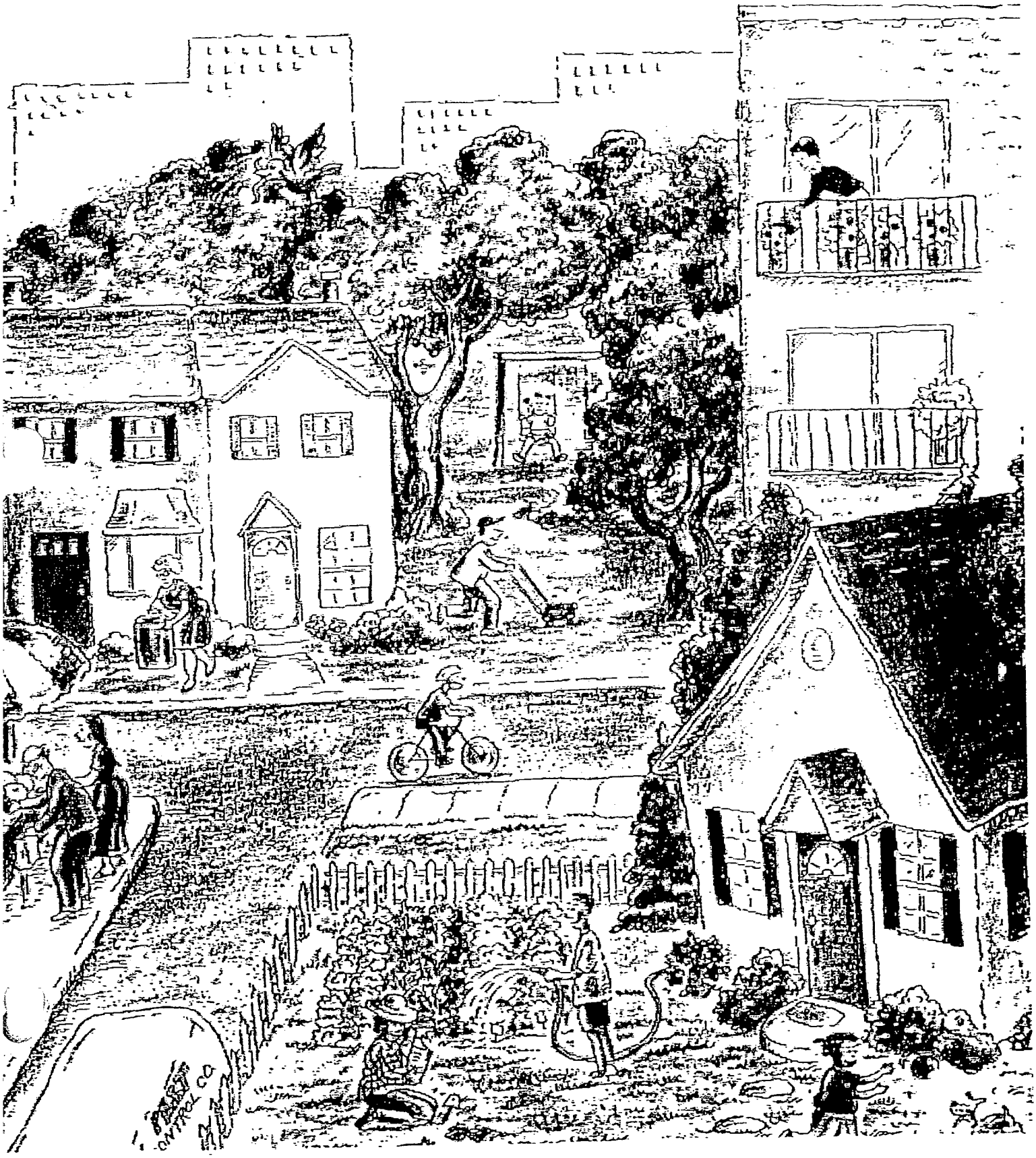
United States
Environmental Protection
Agency

Prevention, Pesticides,
and Toxic Substances
(7501C)

EPA 730-K-95-001
September 1995

EPA

Citizen's Guide to Pest Control and Pesticide Safety



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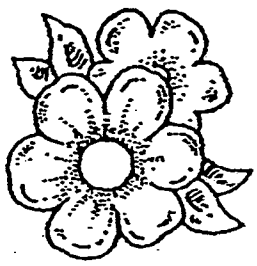
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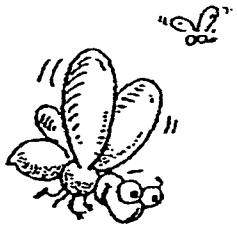
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Foreword

The Environmental Protection Agency (EPA) is charged with ensuring that pesticides do not pose unreasonable risks to the public and to the environment. EPA regulates the use of pesticides under the authority of two laws—the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Federal Food, Drug and Cosmetic Act (FFDCA). Most all pesticides may legally be sold in the United States if they have been "registered" by EPA and if they bear an EPA registration number. Federal pesticide registration, however, is only the first step in preventing pesticide risks. Just as important are the steps that consumers take to control pests and use pesticides safely. EPA hopes that this booklet will help you control pests safely.

Introduction

SOONER OR LATER, we're all pestered by pests. Whether it's ants in the kitchen or weeds in the vegetable garden, pests can be annoying and bothersome. At the same time, many of us are concerned that the pesticides we use to control pests can cause problems too. How can pests be controlled safely? When and how should pesticides be used?

This booklet is intended to help answer these questions. The questions have no single right answer, but *Citizen's Guide to Pest Control and Pesticide Safety* gives the information you need to make informed decisions. You should be able to control pests without risking your family's health and without harming the environment.

The major goals of this booklet are to help you understand—

- What steps to take to control pests in and around your home.
- What alternatives to chemical pesticides are available, including pest prevention and non-chemical pest controls.
- How to choose pesticides and how to use, store, and dispose of them safely.
- How to reduce your exposure when others use pesticides.
- How to choose a pest control company.
- What to do if someone is poisoned by a pesticide.

Did you know that these common household products are pesticides?

- ✔ Cockroach sprays and baits.
- ✔ Insect sprays and wasp repellents for indoor use.
- ✔ Insect repellents for personal use.
- ✔ Termite control products.
- ✔ Rat and other rodent poisons.
- ✔ Flea and tick sprays, powders, and pet collars.
- ✔ Kitchen, laundry, and bath disinfectants and sanitizers, including bleach.
- ✔ Products to kill mold and mildew.
- ✔ Lawn and garden products such as weed killers.
- ✔ Swimming pool chemicals, including those that kill algae.
- ✔ Repellents that keep deer, raccoons, or rabbits away from your garden.

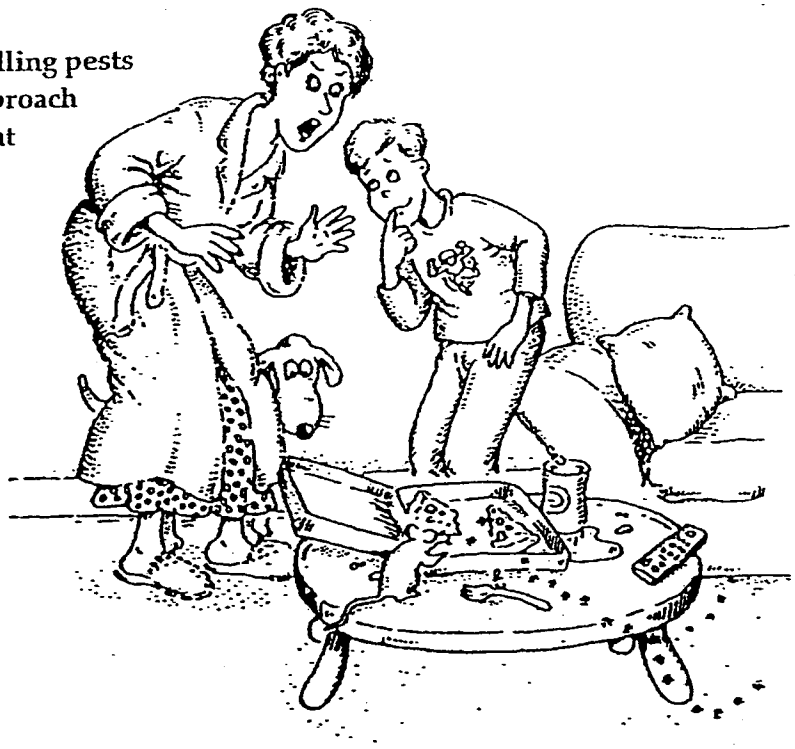
Pests, Pest Control, and Pesticides

PLANTS, insects, mold, mildew, rodents, bacteria, and other organisms are a natural part of the environment. They can benefit people in many ways. But they can also be pests. Apartments and houses are often hosts to common pests such as cockroaches, fleas, termites, ants, mice, rats, mold, or mildew. Weeds, hornworms, aphids, and grubs can be a nuisance outdoors when they get into your lawn, flowers, yard, vegetable garden, or fruit and shade trees. Pests can also be a health hazard to you, your family, and your pets. It's easy to understand why you may need and want to control them.

Nowadays, you can choose from many different methods as you plan your strategy for controlling pests. Sometimes a non-chemical method of control is as effective and convenient as a chemical alternative. For many pests, total elimination is almost impossible, but it is possible to control them. Knowing your options is the key to pest control. Methods available to you include pest prevention, non-chemical pest controls, and chemical pesticides. Each of these methods will be described in more detail in the next three sections of this booklet (starting on pages 6, 11, and 13).

Pest Management

The most effective strategy for controlling pests may be to combine methods in an approach known as integrated pest management (IPM) that emphasizes preventing pest damage. In IPM, information about pests and available pest control methods is used to manage pest damage by the most economical means and with the least possible hazard to people, property, and the environment. An example of using the IPM approach for lawn care is presented in the next section of this booklet titled "Preventing Pests."



Some signs of pest infestation are unmistakable.

Knowing a range of pest control methods gives you the ability to choose among them for an effective treatment. Knowing the options also gives you the choice of limiting your exposure to potentially harmful chemicals. No matter what option you choose, you should follow these steps to control your pest problem:

First Steps in Pest Management

1 **Identify the pest problem.** This is the first and most important step in pest control—figuring out exactly what you're up against. Some pests (or signs of them) are unmistakable—most people recognize a cockroach or a mouse. Other signs that make you think "pest" can be misleading. For example, what may look like a plant "disease" may be, in fact, a sign of poor soil or lack of water.

Use free sources to help identify your pest and to learn the most effective methods to control it. These sources include library reference books (such as insect field guides or gardening books) and pest specialists at your County Cooperative Extension Service or local plant nurseries. These resources are usually listed in the telephone book.

2 **Decide how much pest control is necessary.** Pest control is not the same as pest elimination. Insisting on getting rid of all pests inside and outside your home will lead you to make more extensive, repeated, and possibly hazardous chemical treatments than are necessary. Be reasonable. Ask yourself these questions:

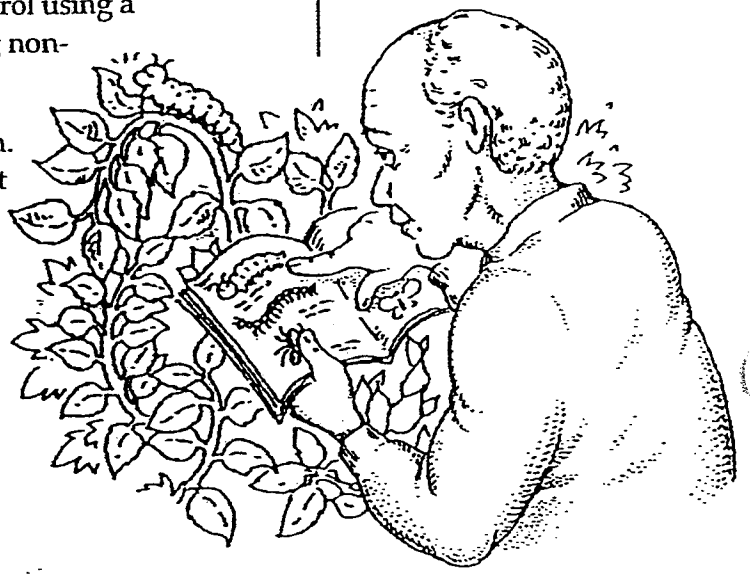
- Does your lawn really need to be totally weed free?
- Recognizing that some insects are beneficial to your lawn, do you need to get rid of all of them?
- Do you need every type of fruit, vegetable, or flower you grow, or could you replace ones that are sensitive to pests with hardier substitutes?
- Can you tolerate some blemished fruits and vegetables from your garden?
- Is anyone in your home known to be particularly sensitive to chemicals?

3 **Choose an effective option.** Use the information gathered in Step 1, your answers to the questions in Step 2, and guidance in the sections titled "Preventing Pests," "Using Non-Chemical Pest Controls," and "Using Chemical Pest Controls" to determine which option you want to choose. If you're still uncertain, get further advice from the free sources listed in Step 1.

4 **Evaluate the results.** Once a pest control method has been chosen and implemented, always allow time for it to work and then evaluate its effectiveness by taking the following steps:

- Compare pre-treatment and post-treatment conditions. Is there evidence of a clear reduction in the number of pests?
- Weigh the benefits of short-term chemical pesticide control against the benefits of long-term control using a variety of other treatments, including non-chemical methods.

It's easier to prevent pests than to control them. You may not need to worry about the four pest control steps just mentioned IF you make the effort to prevent pests in the first place.



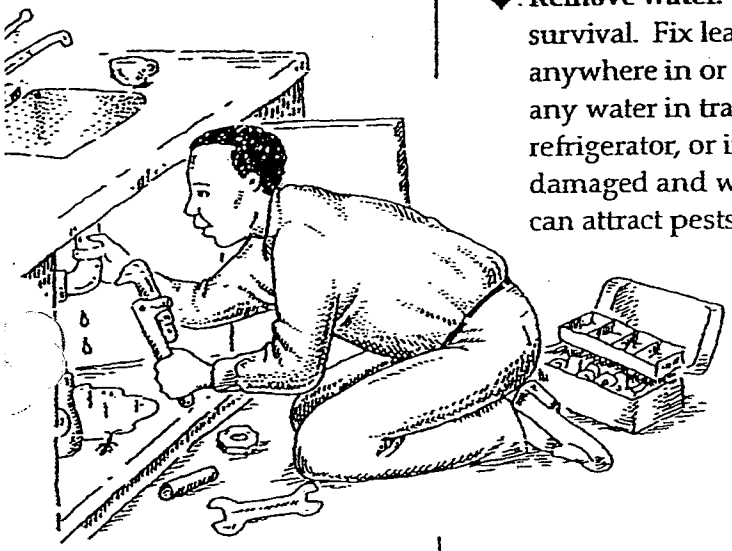
The first step in pest control is to identify the pest.

Preventing Pests

PESTS SEEK PLACES TO LIVE that satisfy basic needs for air, moisture, food, and shelter. The best way to control pests is to try to prevent them from entering your home or garden in the first place. You can do this by removing the elements that they need to survive. Take the following preventive actions:

Indoor Prevention

- **Remove water.** All living things, including pests, need water for survival. Fix leaky plumbing, and do not let water accumulate anywhere in or around your home. For example, do not leave any water in trays under your houseplants, under your refrigerator, or in buckets overnight. Remove or dry out water-damaged and wet materials. Even dampness or high humidity can attract pests.

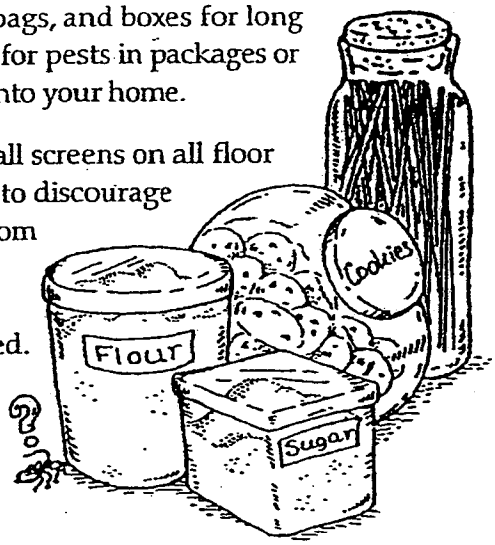


Pests need water to survive. Fix leaky pipes.

- **Remove food.** Store your food in sealed glass or plastic containers, and keep your kitchen clean and free from cooking grease and oil. Do not leave food in pet bowls on the counter or floor for long periods of time. Put food scraps or refuse in tightly covered, animal-proof garbage cans, and empty your garbage frequently.

- **Remove or block off indoor pest hiding places.** Caulk cracks and crevices to control pest access. Bathe pets regularly and wash any mats or surfaces they lie on to control fleas. Avoid storing newspapers, paper bags, and boxes for long periods of time. Also, check for pests in packages or boxes before carrying them into your home.

- **Block pest entryways.** Install screens on all floor drains, windows, and doors to discourage crawling and flying pests from entering your home. Make sure any passageways through the floor are blocked. Place weatherstripping on doors and windows. Caulk and seal openings in walls. Keep doors shut when not in use.



Store food in sealed containers.

Outdoor Prevention

- **Remove or destroy outdoor pest hiding places.** Remove piles of wood from under or around your home to avoid attracting termites and carpenter ants. Destroy diseased plants, tree prunings, and fallen fruit that may harbor pests. Rake fallen leaves. Keep vegetation, shrubs, and wood mulch at least 18 inches away from your house.

- **Remove breeding sites.** Clean up pet droppings from your yard; they attract flies that can spread bacteria. Do not accumulate litter or garbage; it draws mice, rats, and other rodents. Drain off or sweep away standing puddles of water; water is a breeding place for mosquitos and other pests. Make sure drain pipes and other water sources drain away from your house.



Remove breeding sites.
Clean up litter or garbage.

- **Take proper care of all outdoor plants.** These include flowers, fruit and shade trees, vegetable and other plants, and your lawn. Good plant health care reduces pest control needs—healthy plants resist pests better than do weak plants. Plant at the best time of year to promote healthy growth. Use mulch to reduce weeds and maintain even soil temperature and moisture. Water adequately. Native flowers, shrubs, and trees often are good choices because they adapt well to local conditions and require minimal care.

Gardening

- Select healthy seeds and seedlings that are known to resist diseases and are suited to the climate where you live. Strong seeds are likely to produce mature plants with little need for pesticides.

- If your garden is large, alternate rows of different kinds of plants. Pests that prefer one type of vegetable (carrots, for example) may not spread to every one of your carrot plants if other vegetables (not on the pests' diet) are planted in the neighboring rows.

- Don't plant the same crop in the same spot year after year. That way your plants are not as vulnerable to pests that survive the winter.

- Make sure your garden plot has good drainage. Raised beds will improve drainage, especially of clay soils. If a heavy clay soil becomes compacted, it does not allow air and water to get to the roots easily, and plants struggle to grow. To loosen



fore planting, add organic matter to rich the soil mixture in your garden plot.

compacted soil and create air spaces so that water and nutrients can reach the roots, buy or rent a tiller that breaks up the dirt and turns it over. Before planting, add sand and organic matter to enrich the soil mixture in your garden plot. Also, have the soil tested periodically to see whether you need to add more organic matter or adjust the pH (acidity/alkalinity) balance by adding lime or sulfur. Your County Cooperative Extension Service, listed in the telephone book, or local nursery should be able to tell you how to do this.

- Mulch your garden with leaves, hay, grass clippings, shredded/chipped bark, or seaweed. **Do not use newspapers** to keep down weeds or to fertilize plants. **Newsprint may contain toxic metals** such as lead and mercury.

Lawn Care

Tending a garden may not be your hobby; but if you rent or own a home, you might need to care for the lawn. You don't have to be an expert to grow a healthy lawn—the key is to work with nature. You need to create the right conditions for your grass to grow strong and stay healthy. A healthy lawn can resist damage from weeds, disease, and insect pests. Set realistic weed and pest control goals for your lawn.

Think of lawn care as a preventive health care program, like one you would follow to stay healthy yourself. The goal is to prevent problems from ever occurring.

Pesticides can be effective, but should not be relied on as the quick-fix solution to any lawn problem. Serious, ongoing pest problems are often a sign that your lawn is not getting what it needs to stay healthy. Pests may be a symptom of an underlying problem. You need to correct the underlying problem to reduce the chances of pests reappearing.

Make these six steps part of a preventive health care program for your lawn:

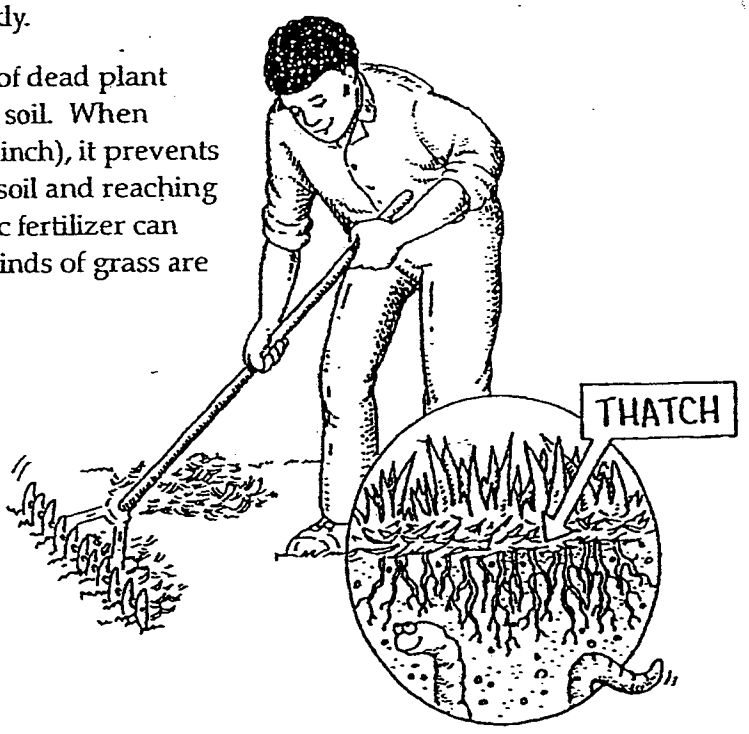
1 **Develop healthy soil that has the right pH balance, key nutrients, and good texture.** You can buy easy-to-use soil analysis kits at hardware stores or contact your local County Cooperative Extension Service for a soil analysis.

2 **Choose a type of grass that grows well in your climate.** For instance, if your area gets very little rain, don't plant a type of grass that needs a lot of water. Your local County Cooperative Extension Service can advise you on which grasses grow best in your area.

3 **Mow high, mow often, and make sure the lawn mower blades are sharp.** Grass that is slightly long makes a strong, healthy lawn with few pest problems. Weeds have a hard time taking root and growing when grass is fairly long (around 2½ to 3½ inches for most types of grass). A foot-high meadow isn't necessary; just adding an inch to the length of your grass will give most lawns a real boost.

4 **Water deeply but not too often.** The best rule is to water only when the lawn begins to wilt from dryness—when the color dulls and footprints stay in the grass for more than a few seconds. Avoid watering during the hottest part of the day because the water will evaporate too quickly.

5 **Correct thatch buildup.** Thatch is a layer of dead plant material between the grass blades and the soil. When thatch gets too thick (deeper than ¾ of an inch), it prevents water and nutrients from getting into the soil and reaching the roots of the grass. Overusing synthetic fertilizer can create a heavy layer of thatch, and some kinds of grass are prone to thatch buildup.



Get rid of excess thatch by raking the lawn or using a dethatching rake.

In a healthy lawn, earthworms, spiders, millipedes, and a variety of microorganisms help keep the thatch layer in balance by breaking it up and using it for food, which releases nutrients into the soil. You can get rid of excess thatch by raking the lawn using a dethatching rake or by using a machine that pulls plugs out of the grass and thatch layer to break it up. Sprinkle a thin layer of topsoil or compost over the lawn after dethatching or aerating it to speed up the process of decomposition.

6 **Set realistic weed and pest control goals.** It is almost impossible to get rid of all weeds and pests. However, even a lawn that is 15 percent weeds can look almost weed-free to the casual observer. A healthy lawn will probably always have some weeds and some insect pests. But a healthy lawn will also have beneficial insects and other organisms like earthworms that keep pests under control. Improper use of pesticides can kill these beneficial organisms.

By following this preventive health care program for your lawn, you should be able to rely very little, if at all, on chemical pesticides for weed and insect pest control. For additional information, refer to EPA's booklet *Healthy Lawn, Healthy Environment*. (See page 42 in the Reference Section.)

If you use the preventive techniques just described, you reduce the chance of pests ever getting into your home or garden in the first place.

Using Non-Chemical Pest Controls

YOU'VE GOT PESTS, and you want to control them with a dependable pest control method that does not contain chemical pesticides. Non-chemical pest control methods really work, and they have many advantages. Compared to chemical treatments, non-chemical methods are generally effective for longer periods of time. They are less likely to create hardy pest populations that develop the ability to resist pesticides. And many non-chemical pest controls can be used with fewer safeguards, because they are generally thought to pose virtually no hazards to human health or the environment. Two examples of non-chemical pest control methods are biological and manual treatments.

Biological Controls

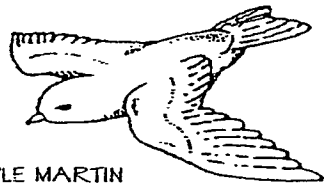
Did you know that pests themselves may be eaten or otherwise controlled by birds, insects, or other living organisms? You can use a pest's natural enemies (predators) to your advantage. These "biological controls," as they are called, take many forms:

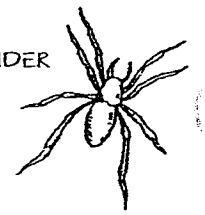
- **Beneficial predators** such as purple martins and other birds eat insects; bats can eat thousands of insects in one night; lady beetles (ladybugs) and their larvae eat aphids, mealybugs, whiteflies, and mites. Other beneficial bugs include spiders, centipedes, ground beetles, lacewings, dragonflies, big-eyed bugs, and ants. You can install a purple martin house in your yard. You can also buy and release predatory insects. They are available from sources such as gardening catalogs and magazines.

  Contact your County Cooperative Extension Service, a nursery, or a garden association for information on how to attract and protect beneficial predators.

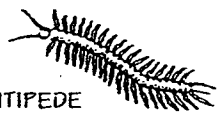
- **Parasitoids** such as miniature wasps lay their eggs inside the eggs or bodies of insect pests such as tomato hornworms. Once the eggs hatch, the offspring kill their insect hosts, making parasitoids highly effective pest controllers.

Beneficial Predators

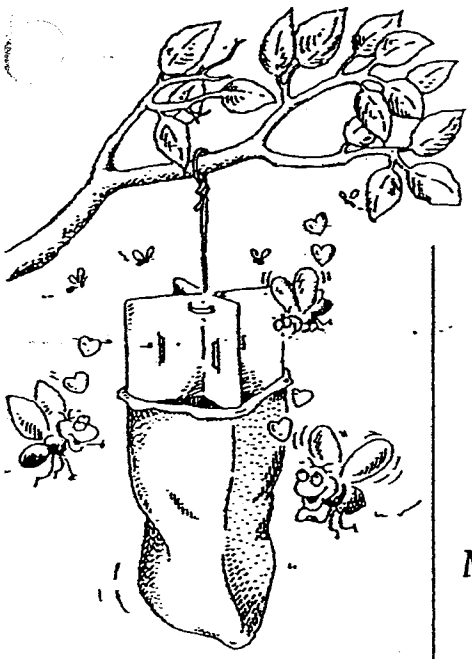

PURPLE MARTIN


SPIDER


LADYBUG


CENTIPEDE


MINI-WASP



Pheromone traps lure pests.

- **Microscopic pathogens** such as fungi, bacteria, and viruses control pests. An example is milky spore disease, which attacks Japanese beetles. A number of these biological pesticides are available commercially at hardware and garden stores. (See page 43 in the Reference Section for more information.)

- **Biochemical pesticides** include pheromones and juvenile insect hormones. Pheromones are chemical substances released by various organisms (including insects) as means of communicating with others of the same species, usually as an aid to mating. Pheromones lure pests inside a trap. Juvenile insect hormones interfere with an insect's normal growth and reproductive functions by mimicking the effects of compounds that occur naturally in the pest.

Manual Methods

- Spading and hoeing to cut up weeds.
- Hand-picking weeds from your lawn and pests from your plants, indoors or out.
- Using a flyswatter.
- Setting traps to control rats, mice, and some insects.
- Mulching to reduce weed growth.

One or a combination of several non-chemical treatments may be just what you need for your pest problem. You must be patient because results may not be immediate. And, you must work to prevent pests from entering your home or garden in the first place.

Using Chemical Pest Controls

IF YOU DECIDE that the best solution to your pest problem is chemical—by itself or, preferably, combined with non-chemical treatments—be aware that one of the greatest causes of pesticide exposure to humans is the use of pesticides in and around the home.

Anyone can buy a wide variety of "off the shelf" pesticide products to control weeds, unwanted insects, and other pests. No special training is required to use these pesticides. Yet many of the products can be hazardous to people, especially when stored, handled, applied, or disposed of improperly. **The results achieved by using chemical pesticides are generally temporary, and repeated treatments may be required.** Over time, some pests become pesticide-resistant, meaning they adapt to the chemical and are no longer harmed by it. This forces you to choose another product or method. If used incorrectly, home-use pesticide products can be poisonous to humans. As a result, it is extremely important for you to take responsibility for making sure that these products are used properly. The basic steps in reducing pesticide risks are—

- Choosing the right pesticide product.
- Reading the product label.
- Determining the right amount to purchase and use.
- Using the product safely and correctly.
- Storing and disposing of pesticides properly.

Each of these steps is described in more detail in the sections that follow.



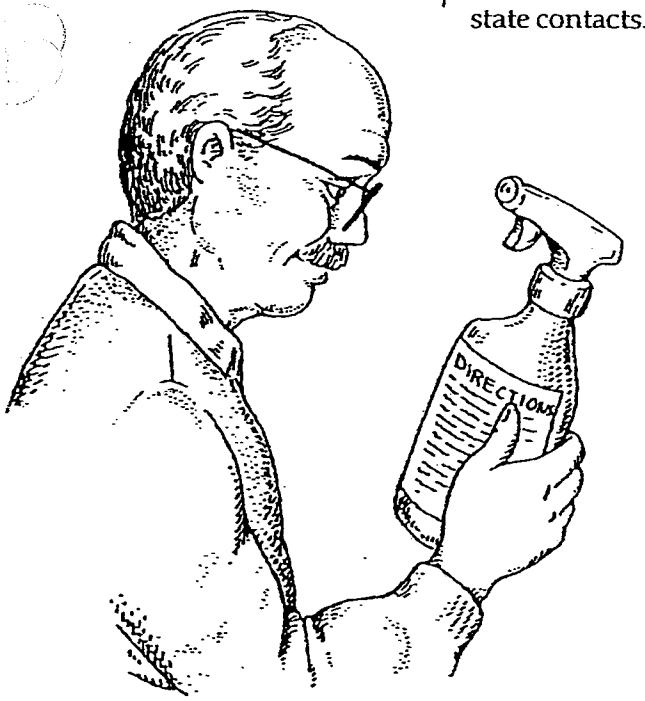
Choosing the right product is a basic step in reducing pesticide risks.

Choosing the Right Pesticide Product

Once you decide to use chemical pesticides, you must decide whether to do the job yourself or hire a professional pest control service. If you are interested in hiring professionals, see pages 36–38 for advice. If you choose to tackle the job yourself, the next question is the most important. Which pesticide product is the best one for your situation?

Home-use pesticides come in many forms—including solutions, aerosols, dusts, granules, baits, and wettable powders. As the name implies, wettable powders are usually mixed with water and/or other liquids and then applied. Pesticide solutions are often diluted with water. Certain formulations work better for some pests and/or some target areas than others. Many pesticides also come in ready-to-use forms, such as aerosols and spray bottles, which are often more practical and easy to use because they don't require measuring or mixing.

Before you buy a product, read the label! Compare product labels, and learn as much as you can about the pesticide. Contact your County Cooperative Extension Service (listed in the telephone book), local pesticide dealers, the National Pesticide Telecommunications Network (NPTN) at 1-800-858-7378, or your state pesticide agency for assistance. (See pages 45–48 in the Reference Section for state contacts.)



Read the label before you buy or use a pesticide product.

When you are ready to buy a pesticide product, follow these recommendations:

- First, be certain that you have identified the problem correctly. Then, choose the least toxic pesticide that will achieve the results you want and be the least toxic to you and the environment.
- When the words "broad-spectrum" appear on the label, this means the product is effective against a broad range of pests. If the label says "selective," the product is effective against one or a few pests.
- Find the signal word—either *Danger-Poison, Danger, Warning,* or *Caution* on the pesticide label. The signal word tells you how poisonous the product is to humans. (See page 16.)

  Pesticide products labeled *Danger-Poison* are "Restricted Use" and are mainly used under the supervision of a certified applicator. For the most part, these products should not be available for sale to the consumer.
- Choose the form of pesticide (aerosol, dust, bait, or other) best suited to your target site and the pest you want to control.



Choose the form of pesticide best suited to your target site and the pest you want to control.



DANGER-POISON means highly poisonous.

DANGER means poisonous or corrosive.

WARNING means moderately hazardous.

CAUTION means least hazardous.

Reading the Pesticide Label

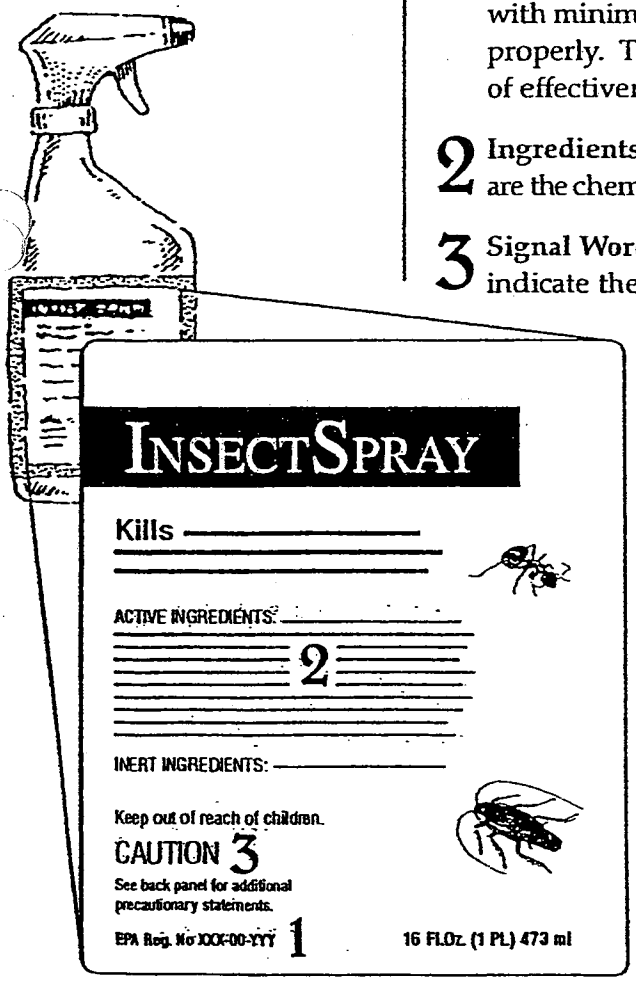
The pesticide label is your best guide to using pesticides safely and effectively. The directions on the label are there primarily to help you achieve "maximum" benefits—the pest control that you desire—with "minimum" risk. Both depend on following label directions and correctly using the pesticide. ***Read the label.*** Read the label ***before buying*** the pesticide. Read the label ***before mixing or using*** the pesticide ***each time,*** and read the label before storing or disposing of the pesticide. Do not trust your memory. You may have forgotten part of the label instructions or they may have changed. Use of any pesticide in any way that is not consistent with label directions and precautions is illegal. It may also be ineffective and, even worse, dangerous.

The main sections of a pesticide label are described below:

1 EPA Registration Number. This number tells you that EPA has reviewed the product and determined that it can be used with minimal or low risk if you follow the directions on the label properly. The number is not a stamp of approval or guarantee of effectiveness.

2 Ingredients Statement or Active Ingredients. Active ingredients are the chemicals in the pesticide that kill or control the target pest(s).

3 Signal Words. The signal words—*Caution, Warning, or Danger*—indicate the pesticide's potential for making you sick. The word *CAUTION* appears on pesticides that are the least harmful to you. A pesticide with the word *WARNING* is more poisonous than those with a *Caution* label. Pesticides with the word *DANGER* on the label are very poisonous or irritating. They should be used with extreme care because they can severely burn your skin and eyes.



Main sections on front label.

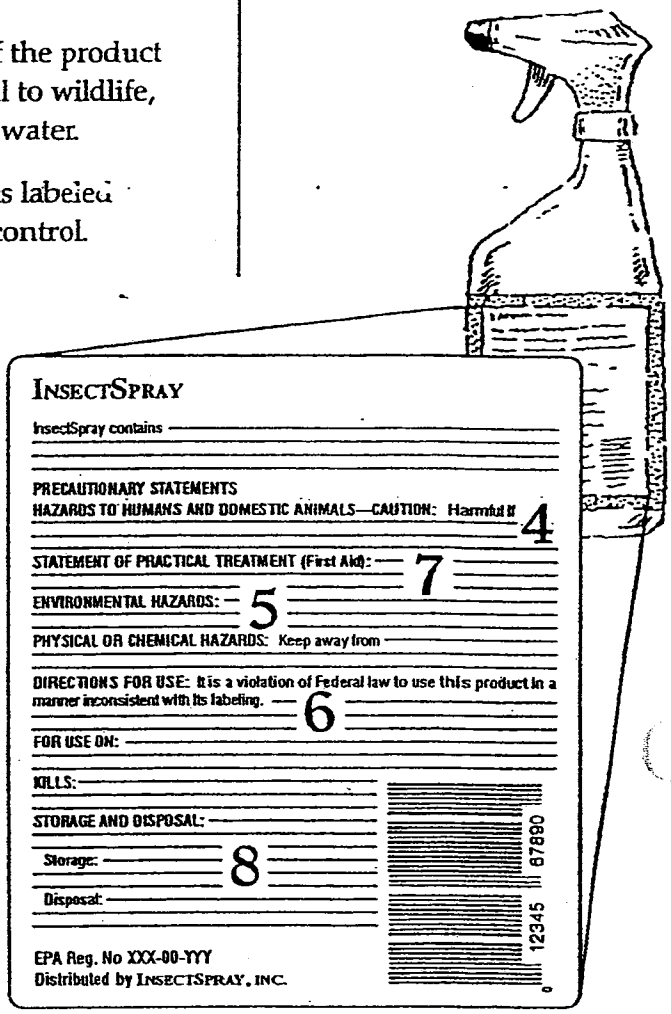
4 Precautionary Statements. This part describes the protective clothing, such as gloves or goggles, that you should wear when using the pesticide. The section also tells you how to protect children or pets by keeping them away from areas treated with pesticides.

5 Environmental Hazards. This section tells you if the product can cause environmental damage—if it's harmful to wildlife, fish, endangered plants or animals, wetlands, or water.

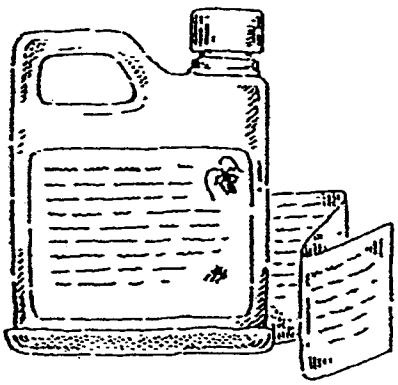
6 Directions for Use. Make sure that the product is labeled for use against the pest(s) that you are trying to control. (For example, products labeled only for termites should not be used to control fleas.) Use only the amounts recommended, and follow the directions exactly.

7 First Aid Instructions. The label tells you what to do if someone is accidentally poisoned by the pesticide. Look for this information in the *Statement of Practical Treatment* section. The instructions are only first aid. ALWAYS call a doctor or your local poison control center. You may have to take the person to a hospital right away after giving first aid. Remember to take the pesticide label or container with you.

8 Storage and Disposal. Read carefully and follow all directions for safe storage and disposal of pesticide products. Always keep products in the original container and out of reach of children, in a locked cabinet or locked garden shed.



Main sections on back label.



Some pesticides have small foldout booklets containing the label information.

Determining the Correct Amount To Use

Many products can be bought in a convenient ready-to-use form, such as in spray cans or spray bottles, that won't require any mixing. However, if you buy a product that has to be measured out or mixed with water, prepare only the amount of pesticide that you need for the area where you plan to use the pesticide (target area). The label on a pesticide product contains much useful information, but there isn't always room to include examples of different dilutions for every home use. Thus, it is important to know how to measure volume and figure out the exact size of the area where you want to apply the pesticide. Determining the correct amount for your immediate use requires some careful calculations. Use the following example as an illustration of how to prepare only the amount of pesticide needed for your immediate pest control problem.

An example: The product label says, "For the control of aphids on tomatoes, mix 8 fluid ounces of pesticide into 1 gallon of water and spray until foliage is wet." You have only 6 tomato plants. From experience, you know that 1 gallon is too much, and that you really need only 1 quart of water to wet the leaves on these 6 plants. A quart is only ¼ of a gallon. Because you want to use less water than the label says, you need less pesticide. You need only ¼ of the pesticide amount listed on the label—only 2 fluid ounces. This makes the same strength spray recommended by the label, and is the appropriate amount for the 6 tomato plants.

In short, all you need to do is figure the amount of pesticide you need for the size of your target area, using good measurements and careful arithmetic. For help in making these calculations, see pages 39–41 in the Reference Section.



When using pesticides that must be mixed, determine the correct amount for your immediate use.

Caution: When you use cups, teaspoons, or tablespoons to measure pesticides, use only level measures or level spoonfuls. NEVER use the same tools that you use for measuring pesticides—spoons, cups, bottles—to prepare food, even if you've washed them.

Using Pesticides Safely and Correctly

Once you have read the pesticide label and are familiar with all precautions, including first aid instructions, follow these recommendations to reduce your risks:

Before Using a Pesticide

- Wear the items of protective clothing the label requires: for example, long-sleeved shirts, long pants, overalls, non-absorbent gloves (not leather or fabric), rubber footwear (not canvas or leather), a hat, goggles, or a dust-mist filter. If no specific clothing is listed, gloves, long-sleeved shirts and long pants, and closed shoes are recommended. You can buy protective clothing and equipment at hardware stores or building supply stores.

When Mixing or Applying a Pesticide

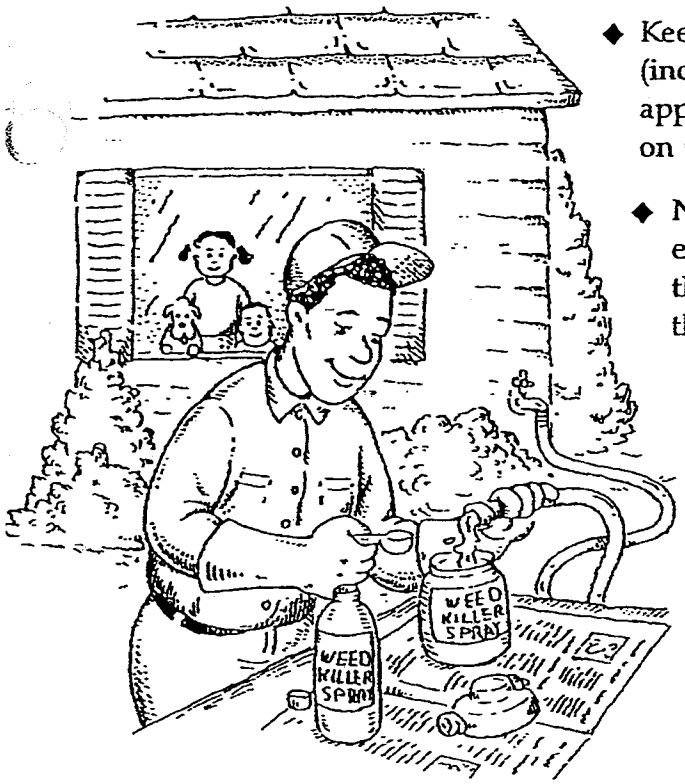
- Never smoke or eat while mixing or applying pesticides. You could easily carry traces of the pesticide from your hands to your mouth. Also, some pesticide products are flammable.
- Follow the use directions on the label carefully. Use only for the purpose listed. Use only the amount directed, at the time and under the conditions specified. **Don't change the recommended amount.** Don't think that twice the amount will do twice the job. It won't. You could harm yourself, others, or whatever you are trying to protect.
- If the directions on the label tell you to mix or dilute the pesticide, do so outdoors or in a well-ventilated area. Use the amount listed on the label and measure the pesticide carefully. (Never use the same measuring cups or spoons that you use in the kitchen.) Mix only the amount that you need for each application. Do not prepare larger amounts to store for possible future use. (See "Determining the Correct Amount To Use" on page 18.)



When using a pesticide—

- ✓ Read and follow the label directions.
- ✓ Wear protective clothing.
- ✓ Don't smoke or eat.
- ✓ Mix and apply only the amount you need.





Mix pesticides outdoors or in a well-ventilated area.

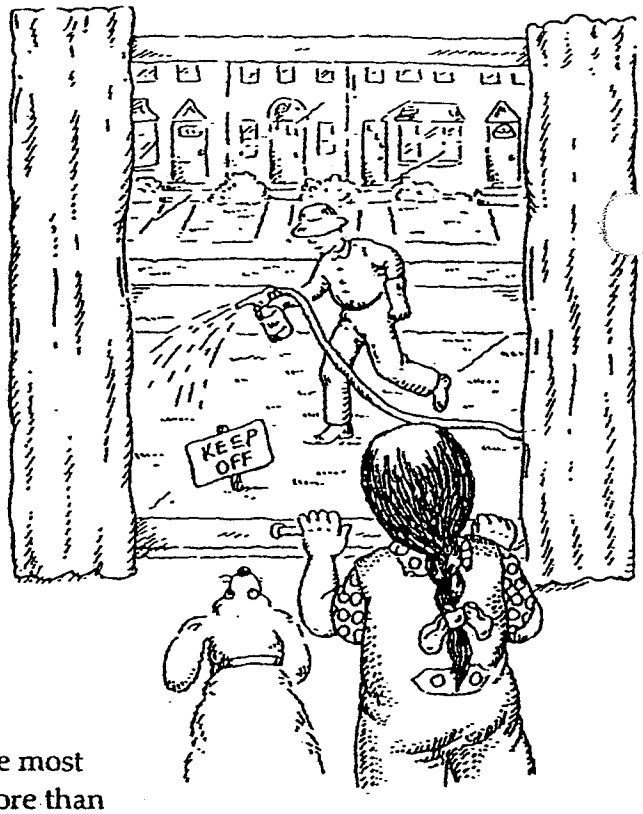
- Keep children, pets (including birds and fish), and toys (including pet toys) away from areas where you mix and apply pesticides for at least the length of time required on the label.
- Never transfer pesticides to other containers, such as empty soft drink or milk bottles. Keep pesticides in their original containers—ones that clearly identify the contents. Refasten all childproof caps tightly.
- If a spill occurs, clean it up promptly. Don't wash it away. Instead, sprinkle the spill with sawdust, vermiculite, or kitty litter. Sweep it into a plastic garbage bag, and dispose of it as directed on the pesticide product label.
- Indoors or outdoors, never put bait for insects or rats, mice, and other rodents where small children or pets can reach it. When using traps, make sure the animal inside is dead before you touch or open the trap.

Indoor Applications

- Use pesticides indoors only when absolutely necessary, and use only very limited amounts.
- Provide adequate ventilation. If the label directions permit, leave all windows open and fans operating after the application is completed. If the pesticide product is only effective in an unventilated (sealed) room or house, do not stay there. Put all pets outdoors, and take yourself and your family away from treated areas for at least the length of time prescribed on the label.
- Apply most surface sprays only to limited areas such as cracks; don't treat entire floors, walls, or ceilings.
- Remove food, pots and pans, and dishes before treating kitchen cabinets. Don't let pesticides get on any surfaces that are used for food preparation. Wait until shelves dry before refilling them. Wash any surfaces that may have pesticide residues before placing food on them.

Outdoor Applications

- Never apply pesticides outdoors on a windy day (winds higher than 10 mph). Position yourself so that a light breeze does not blow pesticide spray or dust into your face.
- Before spraying, close the doors and windows of your home.
- Use coarse droplet nozzles on your sprayer to reduce misting, and spray as close to the target as possible.
- Keep pesticides away from plants and wildlife you do not want to treat. Do not apply any pesticide to blooming plants, especially if you see honeybees or other pollinating insects around them. Do not spray bird nests when treating trees.
- Follow label directions carefully to ensure that you don't apply too much pesticide to your lawn, shrubs, or garden. Never water your lawn after applying pesticides. Before using a pesticide outdoors, check the label or contact your EPA Regional Office or County Cooperative Extension Service to find out whether the pesticide is known or suspected to run off or seep into ground water. Ground water is the underground reservoir that supplies water to wells, springs, creeks, and the like. Excessive application of pesticides could cause the pesticide to run off or seep into water supplies and contaminate them. Excess spray may also leave harmful residues on your home-grown fruit and vegetables, and could affect other plants, wildlife, and fish.
- Never mix or apply a pesticide near a wellhead.
- If you have a well, be sure it extends downward to water sources that are below, and isolated from, surface water sources. Be sure the well shaft is tightly sealed. For further information, see EPA's brochure *Pesticides in Drinking Water Wells*. (See page 42 for information on how to order a copy from EPA's Public Information Center.)
- When using total release foggers to control pests, the most important precautions you can take are to use no more than the amount needed and to keep foggers away from ignition sources (ovens, stoves, air conditioners, space heaters, and water heaters, for example). Foggers should not be used in small, enclosed places such as closets and cabinets or under tables and counters.



Keep children and pets away from areas where you apply pesticides.

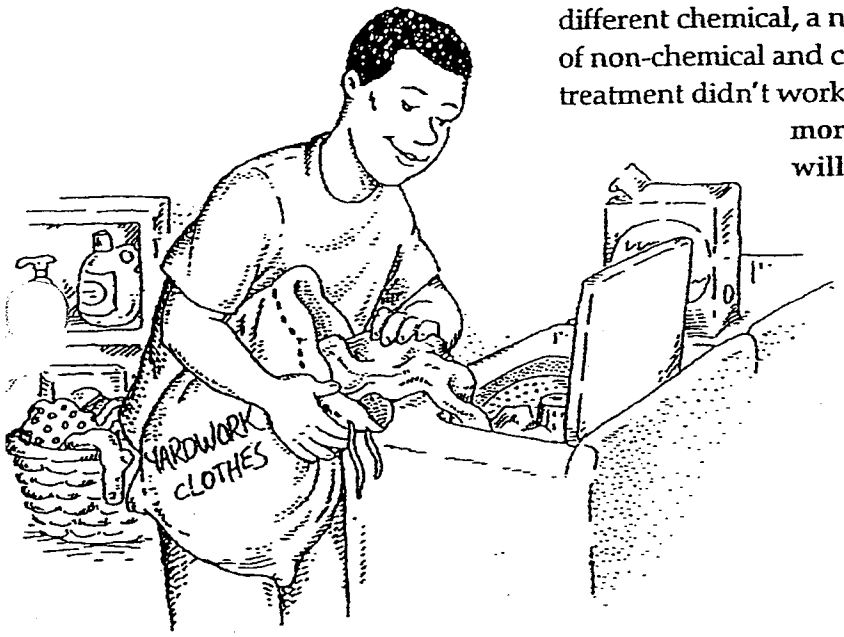
After Applying a Pesticide, Indoors or Outdoors

- To remove pesticide residues, use a bucket to rinse tools or equipment three times, including any containers or utensils that you used when mixing the pesticide. Then pour the rinsewater into the pesticide sprayer and reuse the solution by applying it according to the pesticide product label directions. (See pages 24–25 for safe disposal guidelines.)

- Always wash your hands after applying any pesticide. Wash any other parts of your body that may have come in contact with the pesticide. To prevent tracking pesticides inside, remove or rinse your boots or shoes before entering your home. Wash any clothes that have been exposed to a lot of pesticide separately from your regular wash.

- Evaluate the results of your pesticide use. Consider using a different chemical, a non-chemical method, or a combination of non-chemical and chemical methods if the chemical treatment didn't work. Again, **do not assume** that using more pesticide than the label recommends will do a better job. It won't.

- Watch for negative effects on wildlife (birds, butterflies, and bees) in and near treated areas. If you see any unusual behavior, stop using that pesticide, and contact EPA's Pesticide Incident Response Officer (see page 35).



Wash clothing worn when using pesticides separately from other laundry.

Storing and Disposing of Pesticides Properly

Improper pesticide storage and disposal can be hazardous to human health and the environment. Follow these safety recommendations:

Safe Storage of Pesticides

- Don't stockpile. Reduce storage needs by buying only the amount of pesticide that you will need in the near future or during the current season when the pest is active.
- Follow all storage instructions on the pesticide label.
- Store pesticides high enough so that they are out of reach of children and pets. Keep all pesticides in a locked cabinet in a well-ventilated utility area or garden shed.
- Store flammable liquids outside your living area and far away from an ignition source such as a furnace, a car, an outdoor grill, or a power lawn mower.
- Never store pesticides in cabinets with or near food, animal feed, or medical supplies.
- Always store pesticides in their original containers, complete with labels that list ingredients, directions for use, and first aid steps in case of accidental poisoning.
- *Never* transfer pesticides to soft drink bottles or other containers. Children or others may mistake them for something to eat or drink.
- Use child-resistant packaging correctly—close the container tightly after using the product. Child resistant does not mean child proof, so you still must be extra careful to store properly—out of children's reach—those products that are sold in child-resistant packaging.
- Do not store pesticides in places where flooding is possible or in places where they might spill or leak into wells, drains, ground water, or surface water.
- If you can't identify the contents of the container, or if you can't tell how old the contents are, follow the advice on safe disposal in the next section.

Store pesticides in a locked cabinet out of reach of children and pets.



***Never* transfer pesticides to soft drink bottles or other containers that children or others may mistake for something to eat or drink.**



Safe Disposal of Pesticides

- The best way to dispose of small amounts of excess pesticides is to use them—apply them—according to the directions on the label. If you cannot use them, ask your neighbors whether they have a similar pest control problem and can use them.

- If all of the remaining pesticide cannot be properly used, check with your local solid waste management authority, environmental agency, or health department to find out whether your community has a household hazardous waste collection program or a similar program for getting rid of unwanted, leftover pesticides. These authorities can also inform you of any local requirements for pesticide waste disposal.

- State and local laws regarding pesticide disposal may be stricter than the Federal requirements on the label. Be sure to check with your state or local agencies before disposing of your pesticide containers.



Do not pour leftover pesticides down the sink, into the toilet, or down a sewer or street drain.

- If no community program or guidance exists, follow the label directions for disposal. In general, to dispose of less than a full container of a liquid pesticide, leave it in the original container with the cap tightly in place to prevent spills or leaks. Wrap the container in several layers of newspaper and tie it securely. Put the package in a covered trash can for routine collection with municipal trash. If you do not have a regular trash collection service, take the package to a permitted landfill (unless your town has other requirements).

  Note: No more than 1 gallon of liquid pesticide at a time should be thrown out with the regular trash in this manner.

- Wrap individual packages of dry pesticides in several layers of newspaper (or place the pesticides in a tight carton or bag), and tape or tie the package closed. Put the package in a covered trash can for routine collection.

  Note: No more than 5 pounds of dry pesticide at a time should be thrown out with the regular trash in this manner.

- Do **not** pour leftover pesticides down the sink, into the toilet, or down a sewer or street drain. Pesticides may interfere with the operation of wastewater treatment systems or pollute waterways. Many municipal systems are not equipped to remove all pesticide residues. If pesticides reach waterways, they may harm fish, plants, and other living things.

- An empty pesticide container can be as hazardous as a full one because of residues left inside. **Never reuse such a container.** When empty, a pesticide container should be rinsed carefully **three times** and the rinsewater thoroughly drained back into the sprayer or the container previously used to mix the pesticide. Use the rinsewater as a pesticide, following label directions. Replace the cap or closure securely. Dispose of the container according to label instructions. Do not puncture or burn a pressurized container like an aerosol—it could explode. Do cut or puncture other empty pesticide containers made of metal or plastic to prevent someone from reusing them. Wrap the empty container and put it in the trash after you have rinsed it.

- Many communities have programs to recycle household waste such as empty bottles and cans. Do not recycle any pesticide containers, however, unless the label specifically states that the empty container may be recycled after cleaning.



Follow the label directions for disposal.

Reducing Your Exposure When Others Use Pesticides



EVEN IF YOU NEVER USE PESTICIDES YOURSELF, you can still be exposed to them—at home, school, work, or play—by being in treated areas, as a consumer of commodities that others have treated with pesticides, or through food, water, and air that may have beencontaminated with pesticides.

This section describes sources of exposure other than your own use of pesticides. It also suggests ways to reduce your overall exposure. If you know or suspect that you, or others close to you, are sensitive to chemicals, consult an expert who can help you develop a strategy for handling your potential exposure problems.

Exposure Through Food

Commercial Food

To ensure a safe food supply, EPA regulates the safety of food by setting safety standards to limit the amount of pesticide residues that legally may remain in or on food or animal feed that is sold in the United States. Both domestic and imported foods are monitored by the Food and Drug Administration (FDA) and the U.S. Department of Agriculture (USDA) to ensure compliance with these safety standards.

Because most crops are treated with pesticides at least some of the time, foods you buy at the grocery store may contain small traces of pesticide residues. Pesticide levels tend to decline over time because the residues break down and because crops are usually washed and processed before reaching the marketplace. So, while we all consume small amounts of pesticides regularly, levels in our food generally are well below legal limits by the time the food reaches the grocery shelves.

Although EPA sets safety standards for the amount of pesticide residues allowed both in and on foods, you can take extra precautions to reduce the traces of pesticide residues you and your family consume in the food you buy. Follow these suggestions:

- Trim the fat from meat and poultry because residues of some pesticides concentrate in fat. Remove the skin from fish.
- Discard the fats and oils in broths and pan drippings.

- Rinse fruits and vegetables thoroughly with water. Scrub them with a brush and peel them, if possible. Taking these safety steps will remove most of the existing surface residues, along with any remaining dirt. Note that surface cleaning (rinsing and scrubbing) will not remove pesticide residues that are absorbed into the growing fruit or vegetable before harvest.
- Cook or bake foods to reduce residues of some pesticides even further.



Rinse fruits and vegetables with water. Scrub them with a brush and peel them, if possible.

Home-Grown Food

Growing your own food can be an enjoyable activity. It is also a way to reduce your exposure to pesticide residues in food—especially if you decide not to use chemical pesticides on your produce and you choose a garden site where drift or runoff from a neighbor's use of pesticides will not result in unintended residues on your food. If your house is regularly treated for pest prevention, don't plant your garden where the treatments are applied.

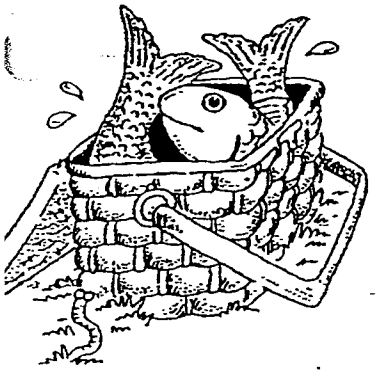
Food from the Wild

While it may seem that hunting your own game, catching your own fish, or gathering wild plant foods would reduce your overall exposure to pesticides, that isn't necessarily true. If you eat wild animals or plants from areas where pesticides are frequently used, this food may contain pesticide residues. In addition, birds such as ducks and geese may absorb pesticide residues if they have stopped to eat treated crops anywhere along their flight path.

If you eat food from the wild, you may want to take the following steps to reduce your exposure to pesticides:

- Do not fish in water bodies where contamination has occurred. Pay attention to posted signs that warn of contamination.
- Consult with fish and game officials or other appropriate officials where you plan to hunt or fish to determine whether there are any chemical problems associated with the area.
- Do not pick wild plants that are growing right next to a road, utility right-of-way, or hedgerow between farm fields. These areas may have been treated with pesticides.
- When preparing wild foods, trim fat from the meat. Discard the skin from fish.

Exposure Through Water



Do not fish in water bodies where contamination has occurred.

When pesticides are applied to land, a certain amount may run off into streams and rivers. This runoff, together with industrial waste, may result in low-level contamination of surface water. In certain settings—for example, when sandy soil lies over a ground-water source that is near the surface—pesticides can seep down through the soil to the ground water.

To ensure a safe supply of drinking water, EPA's Office of Water sets standards for pesticides and other chemicals that may be found in drinking water. Municipal water systems test their water periodically and provide treatment or alternate supply sources if residue problems occur. Generally, private wells are not tested unless the well owner requests an analysis. If you get your drinking water from a private well—

- Contact your state or local health department if you have any questions about pesticide or other chemical residues in your well water.
- If your well water is analyzed and found to contain pesticide residue levels above established or recommended health standards, use an alternate water source such as bottled water for drinking and cooking. The safest choice is distilled spring water in glass bottles. If you buy water from a local bottler, ask for the results of any recent pesticide analysis of the bottled water.



EPA sets standards for chemicals that may be found in drinking water.

Exposure Through Air

Outdoors

Air currents may carry pesticides that were applied on properties nearby. You can reduce your exposure outdoors to airborne pesticide residues, or drift, by following these recommendations:

- If a close neighbor or someone else is applying pesticides outdoors near your home, you may want to stay indoors with your children and pets. Keep windows and exterior doors closed.
- If you live near fields, parks, or other areas that receive regular pesticide treatment, consider planting a group of hardy, thick-branched trees or shrubs to help serve as a buffer zone and windbreak.

- Careless application can lead to drift or direct spraying of non-target sites. If your property is accidentally sprayed during an aerial pesticide application, you should call your local, state, or regional pesticide office. (See pages 44–48 in the Reference Section for phone numbers.) If you or someone in your family is accidentally sprayed, wash pesticide off immediately and change into clean clothes. Then call your local poison control center.

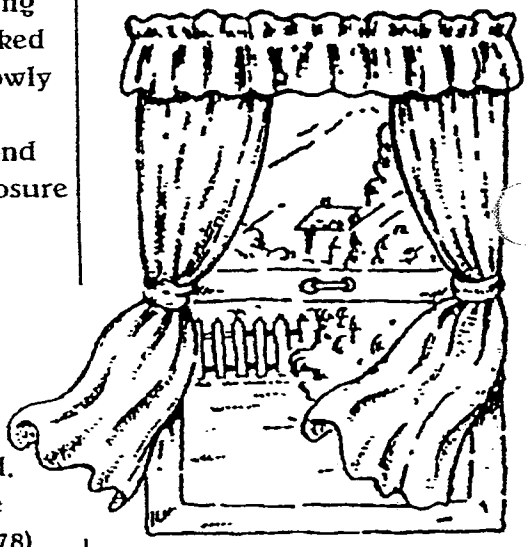
Some local governments require public notice before area-wide or broad-scale pesticide spraying activities take place. Affected residents are notified through newspaper announcements, fliers, letters, or signs posted in areas to be treated. Some communities have also enacted "right-to-know" ordinances that require public notice (usually through posting) of lawn treatments and other small-scale outdoor pesticide uses.

Indoors

The air you breathe may contain low levels of pesticide residues long after a pesticide has been applied to objects inside a building or to indoor surfaces and crawl spaces, or after it has been tracked in from outside. Pesticides break down and disappear more slowly indoors than outdoors. In addition, many homes have built-in energy efficiency features that reduce the exchange of indoor and outdoor air and thus aggravate the problem. To limit your exposure to indoor pesticide residues—

- Air out the building adequately after a pesticide is applied indoors. Open doors and windows, and run overhead, whole-house, or window fans to exchange indoor air for outdoor air rapidly and completely.

- If you suspect that the air in your building is contaminated, consult knowledgeable professionals in your local or state health department or EPA's pesticide hotline (1-800-858-7378, 6:30 a.m.– 4:30 p.m. Pacific time (9:30 a.m.–7:30 p.m. Eastern time) Monday–Friday, for advice on the apropriate steps to take.



Air out the building adequately after a pesticide is applied indoors.

Poisoned by Pesticides: Don't Let This Happen to Your Child!

A 5-year-old boy drinks from a bottle of bleach that he found under the bathroom sink.

A 3-year-old girl tries to spray her hair the way mommy does, but sprays an aerosol disinfectant in her eyes instead.

A baby who has just begun to crawl eats green pebbles from behind the sofa. They look like candy, but are really rat poison.

These accidents could happen to your children or to children visiting your home if you don't store pesticides out of their reach or if you don't read the label carefully before using the pesticide product.

The dangers are real. In 1993 alone, an estimated 80,000 children were exposed to or poisoned by a household pesticide product that was used or stored incorrectly.

Where do you store your pesticides?

A 1992 nationwide study conducted by EPA revealed that almost half (approximately 47 percent) of surveyed households with children under the age of 5 had at least one pesticide stored within their reach.

Whether or not you have young children in your home, take the following precautions to protect all children from unintentional pesticide poisonings or exposures:

- Always store pesticides out of children's reach, in a locked cabinet or garden shed. Installing child-proof safety latches or padlocks on cupboards and cabinets is a good idea. Safety latches are available at your local hardware store or building supply warehouse.
- Before applying pesticides—indoors or outdoors—remove children and their toys, along with any pets and their toys, from the area. Keep them away from the area that has been treated until the pesticide has dried and for at least the length of time recommended on the pesticide label.
- If you are interrupted while applying a pesticide—by a phone call, for example—be sure to close the pesticide container properly and put it out of reach of any child who may come into the area while you are gone.

- Never remove labels from containers, and never transfer pesticides to other containers. Children may mistake them for food or drink.
- Never put rodent or insect baits where small children can find them, pick them up, and put them in their mouths.
- Make sure you close any container marked "child resistant" very tightly after you use the product. Check periodically to make sure the product is securely closed. Child resistant does not mean child proof, so you should still be careful with products that are sold in child-resistant packaging.
- Make sure others—especially babysitters, grandparents, and other caregivers—know about the potential hazards of pesticides.
- Teach children that "pesticides are poisons"—something they should never touch or eat.
- Keep the telephone number of your nearest poison control center near each phone. Have the pesticide container handy when you call.
- Always keep Syrup of Ipecac on hand (in your medicine cabinet) to use to induce vomiting. (Be sure the date is current.) But do not give it to your child until a physician or poison control center advises you to do so. The pesticide label may not recommend using Syrup of Ipecac.



Store pesticides out of children's reach.

Handling a Pesticide Emergency

"Help! Someone's Been Poisoned!" What To Do in a Pesticide Emergency



If the person is unconscious, having trouble breathing, or having convulsions . . .
ACT FAST! Speed is crucial.



Give needed first aid immediately.



Call 911 or your local emergency service. If possible, have someone else call for emergency help while you give first aid.



If the person is awake or conscious, not having trouble breathing, and not having convulsions . . .



Read the label for first aid instructions.



Call a doctor, a poison control center, a local emergency service (911), or the National Pesticide Telecommunications Network (toll free at 1-800-858-7378).



Give first aid.

First Aid for Pesticide Poisoning

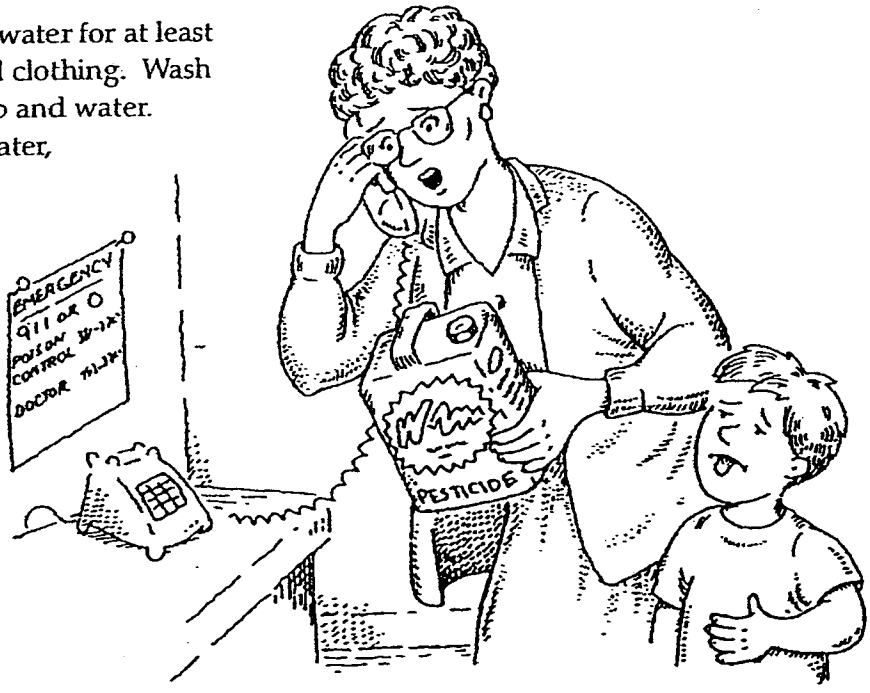
When you realize a pesticide poisoning has occurred or is occurring, try to determine what the victim was exposed to and what part of the body was affected before you take action—taking the right action is as important as taking immediate action. If the person is unconscious, having trouble breathing, or having convulsions, ACT FAST! Speed is crucial. Give needed first aid immediately. Call 911 or your local emergency service. If possible, have someone else call for emergency help while you give first aid. If the person is awake or conscious, not having trouble breathing, and not having convulsions, read the label for first aid instructions. Call a doctor, a poison control center, a local emergency service (911), or the National Pesticide Telecommunications Network (toll free at 1-800-858-7378). Give first aid.

Read the *Statement of Practical Treatment* section on the product label. The appropriate first aid treatment depends on the kind of poisoning that has occurred. Follow these general guidelines:

- **Swallowed poison.** A conscious victim should drink a small amount of water to dilute the pesticide. Always keep Syrup of Ipecac on hand (in your medicine cabinet) to use to induce vomiting. Be sure the date on the bottle is current. Induce vomiting only if a poison control center or physician advises you to do so, or if instructions on the pesticide label say so. If there is no label available to guide you, do not induce vomiting. Never induce vomiting if the victim is unconscious or is having convulsions.

- **Poison on skin.** Drench skin with water for at least 15 minutes. Remove contaminated clothing. Wash skin and hair thoroughly with soap and water. Dry victim and wrap in blanket. Later, discard contaminated clothing or thoroughly wash it separately from other laundry.

- **Chemical burn on skin.** Drench skin with water for at least 15 minutes. Remove contaminated clothing. Cover burned area immediately with loose, clean, soft cloth. Do not apply ointments, greases, powders, or other drugs. Later, discard contaminated clothing or thoroughly wash it separately from other laundry.



If a poisoning has occurred, call for help, and be ready to read information from the pesticide label.

- **Poison in eye.** Hold eyelid open and wash eye quickly and gently with clean cool running water from the tap or a hose for 15 minutes or more. Use only water; do not use eye drops, chemicals, or drugs in the eye. Eye membranes absorb pesticides faster than any other external part of the body, and eye damage can occur in a few minutes with some types of pesticides.

- **Inhaled poison.** If the victim is outside, move or carry the victim away from the area where pesticides were recently applied. If the victim is inside, carry or move the victim to fresh air immediately. If you think you need protection like a respirator before helping the victim, call the Fire Department and wait for emergency equipment before entering the area. Loosen the victim's tight clothing. If the victim's skin is blue or the victim has stopped breathing, give artificial respiration (if you know how) and call 911 for help. Open doors and windows so no one else will be poisoned by fumes.

What To Do After First Aid

- First aid may precede but should not replace professional medical treatment. After giving first aid, call 911 or your local emergency service immediately. Have the pesticide label at hand when you call.

- Take the pesticide product container with its label to the doctor's office or emergency room where the victim will be treated. Carry the container in your trunk or flatbed away from the passengers in your vehicle. The doctor needs to know what active ingredient is in the pesticide before prescribing treatment. This information is on the label, which sometimes also includes a telephone number to call for additional treatment information.

National Pesticide Telecommunications Network (NPTN)

Call Toll Free 1-800-858-7378

Another good resource in a pesticide emergency is NPTN, the National Pesticide Telecommunications Network, a toll-free telephone service that operates Monday through Friday, from 6:30 a.m.– 4:30 p.m. Pacific time (9:30 a.m.– 7:30 p.m. Eastern time). NPTN provides information on pesticides and how to recognize and respond to pesticide poisonings. If necessary, staff at NPTN can transfer your call directly to a local poison control center. Call NPTN toll free at 1-800-858-7378.

NPTN staff answer questions about animal poisonings, too. To keep your pets from being poisoned, follow label directions on flea and tick products carefully. If you are concerned about the chemicals used in these products, consult your veterinarian.

How To Recognize Pesticide Poisoning

External irritants that contact skin may cause skin damage such as redness, itching, or pimples. External irritants may also cause an allergic skin reaction that produces redness, swelling, or blistering. The mucous membranes of the eyes, nose, mouth, and throat are also quite sensitive to chemicals. Pesticide exposure may cause stinging and swelling in these membranes.

Internal injuries also may occur if a pesticide is swallowed, inhaled, or absorbed through the skin. Symptoms vary from organ to organ. Lung injury may result in shortness of breath, drooling (heavy salivation), or rapid breathing. Direct injury to the stomach and intestines may produce nausea, vomiting, abdominal cramps, or diarrhea. Injury to the nervous system may cause excessive fatigue, sleepiness, headache, muscle twitching, and numbness. In general, different types of pesticides produce different sets of symptoms.

If someone develops symptoms after working with pesticides, seek medical help immediately to determine if the symptoms are pesticide related. In certain cases, blood or urine should be collected for analysis, or other specific exposure tests can be made. It is better to be too cautious than too late.

Avoid potential health problems by minimizing your exposure to pesticides. Follow all the safety recommendations on pages 19–25.

EPA wants to know about any adverse effects associated with pesticide exposure. If you have such information, contact—

Pesticide Incident Response Officer
Office of Pesticide Programs (7506C)
U.S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460

Choosing a Pest Control Company



IF YOU HAVE a pest control problem that you do not want to handle on your own, you may decide to turn to a professional applicator. How can you be sure that the pest control company you hire will do a good job? Before you choose a company, get answers to these questions:

1 **Is the company licensed?**
Most state or local agencies issue state pest control licenses. Make sure the pest control operator's licence is current if one is required in your state. Also, ask if the company's employees are bonded, meaning that the company reimburses you for any loss or damage caused by the employee.

You may want to contact your state pesticide agency to find out about its pesticide certification and training programs and to ask whether periodic recertification is required for pest control operators. (See pages 45–48 for addresses and phone numbers.)

In addition, possession of a city license—where they are issued—is one more assurance that the company you are dealing with is reputable and responsible.

2 **Is the company willing and able to discuss the treatment proposed for your home?**
Selecting a pest control service is just as important as selecting other professional services. Look for the same high degree of competence you would expect from a doctor or lawyer. Any company, including those advertising themselves as "green," should inspect your premises and outline a recommended control program, including the—

- Pests to be controlled.
- Extent of the problem.
- Active ingredient(s) in the pesticide chosen.
- Potential adverse health effects and typical symptoms of poisoning associated with the active ingredient.
- Form of the pesticide and application techniques.
- Non-chemical alternatives available.

- Special instructions to reduce your exposure to the pesticide (such as vacating the house, emptying the cupboards, and removing pets).
- Steps to take to minimize your pest problems in the future.

3 **Does the company have a good track record?** Don't rely on the company salesperson to answer this question. Research the answer yourself. Ask neighbors and friends if they have ever dealt with the company. Were they satisfied with the service they received? Call the Better Business Bureau or local consumer office and find out if they have received complaints about the company.

4 **Does the company have appropriate insurance? Can the salesperson show proof on paper that the company is insured?** Most contractors carry general liability insurance, including insurance for sudden and accidental pollution. Their insurance gives you a certain degree of protection should an accident occur while pesticides are being applied in your home. Contractors may also carry workmen's compensation insurance, which can help protect you should one of their employees be injured while working in or around your apartment or house. Although most states do not require pest control companies to buy insurance, you should think twice before hiring a company that is not insured.

5 **Does the company guarantee its work?** You should be skeptical about a company that does not guarantee its work. In addition, be sure to find out what you must do to keep your part of the bargain. For example, in the case of termite control treatments, the company's guarantee may become invalid if you make structural alterations to your home without giving prior notice to the pest control company.

6 **Is the company affiliated with a professional pest control association?** Professional associations—national, state, or local—keep members informed of new developments in pest control methods, safety, training, research, and regulations. Members agree to honor a code of ethics. The fact that a company, small or large, chooses to join a professional association signals its concern for quality.



Ask questions before choosing a pesticide company.

You and the company of your choice should develop the contract together. Your safety concerns should be noted and reflected in the choice of pesticides to be used. These concerns may include allergies, sensitivities, age of occupants (infants or elderly), resident pets, and treatment near wildlife and fish. Wise consumers get bids from two or three companies and look at value more than price. What appears to be a bargain may warrant a second look.

If you hire a pest control firm to do the job, ask the company to use the least toxic chemical method available that will do the job. Ask to see the label or Material Safety Data Sheet, which will show precautionary warnings.

Hiring a company to take care of your pest problem does not mean your job is over. You must evaluate the results. If you believe something has gone wrong with the pesticide application, contact the company and/or your state pesticide agency. Be a responsible, wise consumer and keep asking questions until your pests are under control.

Reference Section

Calculating the Correct Amount of Pesticide To Use for Your Target Area

To determine the size of your target area outdoors (usually a square or rectangular part of your lawn or garden), measure each side and multiply the length times the width. For example, if you want to apply a pesticide in an area that is 15 feet long and 15 feet wide, multiply 15 x 15 to get a total of 225 square feet.

When you read the label for pesticides commonly applied outdoors, you will see measurements in square feet or in square yards. A section of lawn that is 1 yard long x 1 yard wide has an area of 1 square yard. Because 1 yard = 3 feet, another way to calculate the same area is this: 3 feet long x 3 feet wide = 9 square feet = 1 square yard.

To know the size of your target area indoors, you may need to determine the volume of a room. You must calculate the volume of a room, for instance, before using a bug bomb (aerosol release) to control cockroaches or fleas. In a case like this, measure and multiply the room's length times width times height. For example, if the kitchen in your apartment is 6 feet long, 5 feet wide, and 8 feet high, its volume is 240 cubic feet (6 x 5 = 30 x 8 = 240).

Tables 1 to 3 (on pages 40–41) give examples for changing measurements you find on the pesticide label to match your specific target area and pest problem.



For most pesticide uses in and around the home, you need to know some common ways to measure volume and some common abbreviations:

1 gallon (gal.)	= 16 cups = 8 pints (pt.) = 4 quarts (qt.) = 128 fluid ounces (fl. oz.)
1 quart (qt.)	= 4 cups = 2 pt. = 32 fl. oz.
1 pint (pt.)	= 2 cups = 16 fl. oz.
1 cup	= 8 fl. oz.
1 tablespoon	= 3 teaspoons = ½ fl. oz.
1 teaspoon	= ⅙ fl. oz.
1 sq. yard	= 9 square feet = 3 ft. long x 3 ft. wide



Not all amounts are included in the tables. For amounts not included, use the following notes as a guide:

- To figure the amount of a ready-to-use pesticide (not to be diluted with water), you must change the quantity of pesticide in the same way that you change the area/volume/number of items treated to keep the correct proportion.

  For example—

  ½ lb. of pesticide per 1,000 sq.ft. = ¼ lb. of pesticide per 500 sq.ft.

- To figure the amount of a pesticide that is to be diluted with water, you must change the quantity of pesticide and the quantity of water in the same way that you change the area/volume/number of items treated to keep the correct proportion.

  For example—

  1 lb. of pesticide in 2 gals. of water per 2,000 sq.ft. = ½ lb. of pesticide in 1 gal. of water per 1,000 sq.ft.

TABLE 1 — Diluting Pesticides with Water

Unit stands for any measure of pesticide quantity. Read across.

Pesticide Label Says: Mix "x" Units of Pesticide . . .	*You mix . . .*		
8 units *per* 1 gal water	2 units *per* 1 qt water	*or*	1 unit *per* 1 pt water
16 units *per* 1 gal water	4 units *per* 1 qt water	*or*	2 units *per* 1 pt water
32 units *per* 1 gal water	8 units *per* 1 qt water	*or*	4 units *per* 1 pt water
128 units *per* 1 gal water	32 units *per* 1 qt water	*or*	16 units *per* 1 pt water

TABLE 2 — Measuring Pesticides for a Surface Application
Unit stands for any measure of pesticide quantity. Read across.

Pesticide Label Says: Apply "x" Units of Pesticide . . .		*Your surface measures . . .* 20,000 sq.ft.	10,000 sq.ft.	500 sq.ft.
1 unit per 1,000 sq.ft.	*Apply:*	20 units	10 units	½ unit
2 units per 1,000 sq.ft.		40 units	20 units	1 unit
5 units per 1,000 sq.ft.		100 units	50 units	2½ units
10 units per 1,000 sq.ft.		200 units	100 units	5 units

TABLE 3 — Buying Pesticides for a Room Application
Read across.

Pesticide Label Says: Release One Aerosol Can . . .		*Your room measures . . .* 20,000 cu.ft.	10,000 cu.ft.	5,000 cu.ft.
1 per 10,000 cu.ft.	*Use:*	2 cans	1 can	don't use
1 per 5,000 cu.ft.		4 cans	2 cans	1 can
1 per 2,500 cu.ft.		8 cans	4 cans	2 cans



You may need to measure quantities of pesticides that are too small to be measured accurately with common measuring tools available at home. In this case, you should—

- ✓ Search for another pesticide product or a less concentrated form of the same pesticide.
- ✓ Find a more accurate measuring device, such as a graduated cylinder or a scale that measures small weights.



For More Information

For additional copies of this booklet, or for more information on subjects discussed in this booklet, contact—

EPA's Public Information Center (PIC), 401 M Street, SW, Washington, DC 20460 (Telephone: 202-260-2080); or the National Center for Environmental Publications and Information (NCEPI), P.O. Box 42419, Cincinnati, OH 45242-2419 (Telephone: 513-489-8190 or Fax: 513-489-8695).

PIC and NCEPI have the following free information available:

- *Healthy Lawn, Healthy Environment* (EPA 700-K-92-005).
- *Pesticides in Drinking Water Wells* (EPA 20T-1004).
- *Pest Control in the School Environment: Adopting Integrated Pest Management* (EPA 735-F-93-012).
- *Pesticides and Child Safety* fact sheet (English and Spanish) (EPA 735-F-93-050 and EPA 735-F-93-051).
- *Using Insect Repellents Safely* fact sheet (English and Spanish).
- *Safety Precautions for Total Release Foggers* fact sheet.
- NCEPI also has EPA's *National Publications Catalog 1995* (EPA 703-B-95-001) and the *Catalog of Office of Pesticide Programs (OPP) Publications and Other Information Media* (EPA 730-B-94-001).

Other sources for information about pesticides and pest control include—

- The National Pesticide Telecommunications Network (NPTN)—1-800-858-7378 (general public), 6:30 a.m.–4:30 p.m. Pacific time (9:30 a.m.–7:30 p.m. Eastern time) Monday–Friday. NPTN provides the following information:
  - Pesticide information.
  - Information on recognizing and managing pesticide poisonings.
  - Safety information.
  - Health and environmental effects.
  - Referrals for investigation of pesticide incidents and emergency treatment information.
  - Cleanup and disposal procedures, and much more.

- County Cooperative Extension Service offices are usually listed in the telephone directory under county or state government; these offices often have a range of resources on lawn care and landscape maintenance, including plant selection, pest control, and soil testing.

- State agriculture and environmental agencies may publish information on pests, pest management strategies, and state pesticide regulations. (See state contacts on pages 45–48.)

- Libraries, bookstores, and garden centers usually have a wide selection of books that identify various pests and discuss lawn care. Garden centers may also have telephone hotlines or experts available on the premises to answer gardening questions.

- The California Department of Pesticide Regulation's Environmental Monitoring and Pest Management Branch publishes a booklet on mail order sources of biological control organisms. Single free copies of *Suppliers of Beneficial Organisms in North America* are available by writing the Department at 1020 N Street, Room 161, Sacramento, CA 95814-5624. Telephone: 916-324-4100.

- Bio-Integral Resource Center (BIRC), a non-profit organization formed in 1978 through an EPA grant, has information on least toxic methods for pest management. Write to P.O. Box 7414, Berkeley, CA 94707.

EPA Addresses

ıdquarters

U.S. Environmental Protection Agency
Office of Pesticide Programs (7506C)
401 M Street, SW
Washington, DC 20460

Telephone: (703) 305-5017
Fax: (703) 305-5558

EPA Regional Offices

U.S. EPA, Region 1
Air, Pesticides and Toxic Management Division
State Assistance Office (ASO)
1 Congress Street
Boston, MA 02203

Telephone: (617) 565-3932
Fax: (617) 565-4939

U.S. EPA, Region 2
Building 10 (MS-105)
Pesticides and Toxics Branch
2890 Woodbridge Avenue
ison, NJ 08837-3679

hone: (908) 321-6765
(908) 321-6788

U.S. EPA, Region 3
Toxics and Pesticides Branch (3AT-30)
841 Chestnut Building
Philadelphia, PA 19107

Telephone: (215) 597-8598
Fax: (215) 597-3156

U.S. EPA, Region 4
Pesticides and Toxics Branch
(4-APT-MD)
345 Courtland Street, NE
Atlanta, GA 30365

Telephone: (404) 347-5201
Fax: (404) 347-5056

U.S. EPA, Region 5
Pesticides and Toxics Branch (SP-14J)
77 West Jackson Boulevard
Chicago, IL 60604

Telephone: (312) 886-6006
Fax: (312) 353-4342

U.S. EPA, Region 6
Pesticides and Toxics Branch (6PD-P)
1445 Ross Avenue
Dallas, TX 75202-2733

Telephone: (214) 665-7240
Fax: (214) 665-7263

U.S. EPA, Region 7
Water, Wetlands and Pesticides Division
726 Minnesota Avenue
Kansas City, KS 66101

Telephone: (913) 551-7030
Fax: (913) 551-7065

U.S. EPA, Region 8
Air, Radiation and Toxics Division
(8ART)
One Denver Place, Suite 500
999 18th Street
Denver, CO 80202-2405

Telephone: (303) 293-1730
Fax: (303) 293-1229

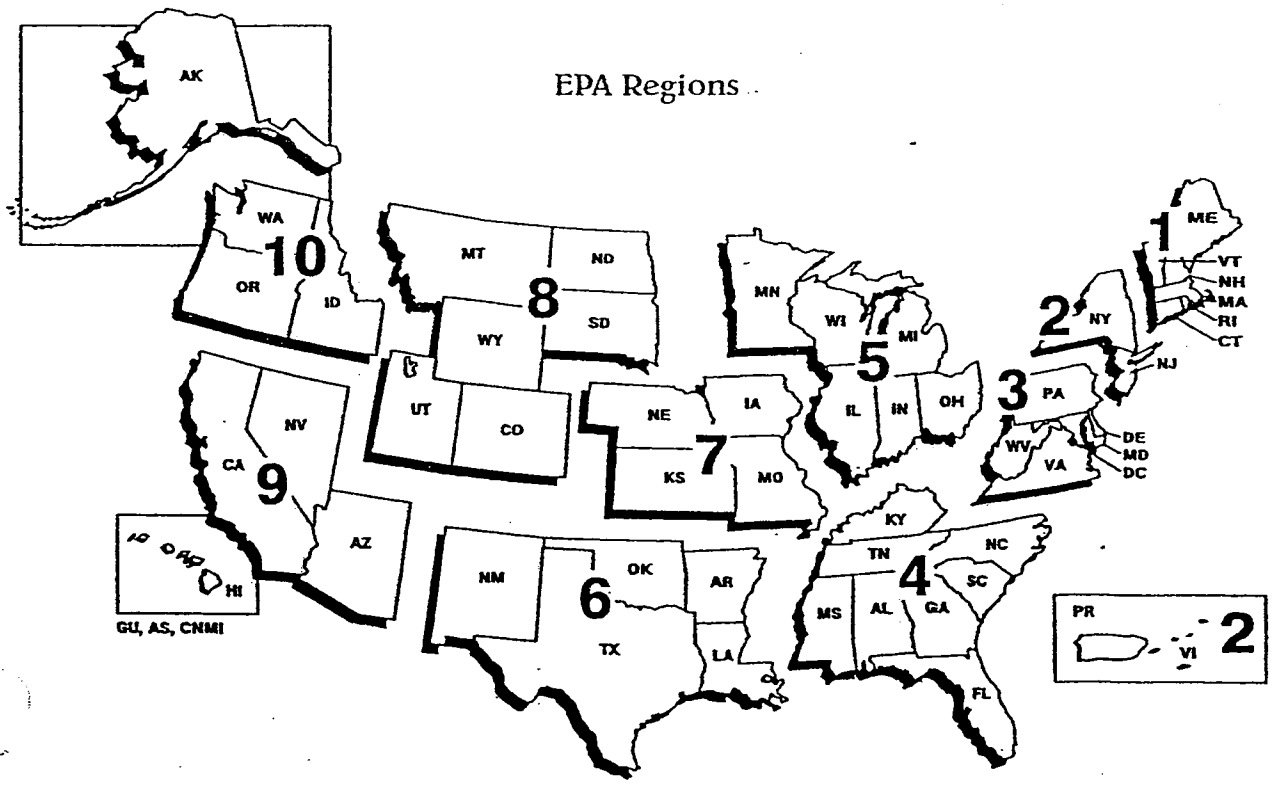
U.S. EPA, Region 9
Pesticides and Toxics Branch (A-4)
75 Hawthorne Street
San Francisco, CA 94105

Telephone: (415) 744-1090
Fax: (415) 744-1073

U.S. EPA, Region 10
Pesticides and Toxics Branch (AT-083)
1200 Sixth Avenue
Seattle, WA 98101

Telephone: (206) 553-1091
Fax: (206) 553-8338

EPA Regions



Addresses for State Pesticide Agencies

Region 1

Connecticut
Director
Pesticide Management Division
Department of Environmental Protection
79 Elm Street
Hartford, CT 06106
(203) 424-3369

Maine
Director
Board of Pesticide Control
Maine Department of Agriculture
State House Station #28
Augusta, ME 04333
(207) 287-2731

Massachusetts
Chief
Pesticides Bureau
Massachusetts Department of Food and Agriculture
100 Cambridge Street, 21st Floor
Boston, MA 02202
(617) 727-3000

New Hampshire
Director
Division of Pesticide Control
New Hampshire Department of Agriculture, Markets and Food
P.O. Box 2042
Concord, NH 03302-2042
(603) 271-3550

Rhode Island
Chief
Division of Agriculture
Rhode Island Department of Environmental Management
22 Hayes Street
Providence, RI 02908
(401) 277-2782

Vermont
Director
Plant Industry, Laboratory and Standards Division
Vermont Department of Agriculture
116 State Street
Montpelier, VT 05602
(802) 828-2431

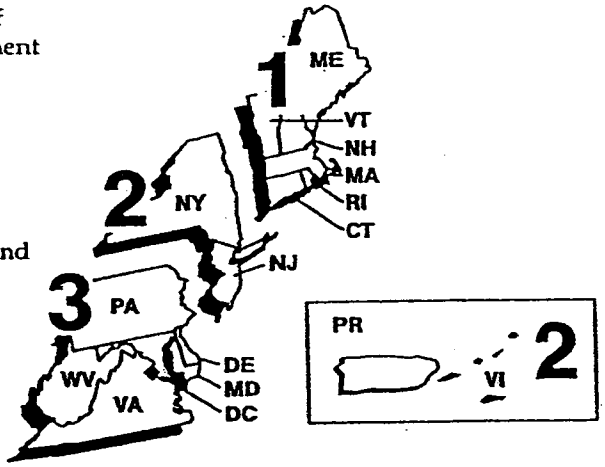
Region 2

New Jersey
Assistant Director
Pesticide Control Program
New Jersey Department of Environmental Protection
CN 411
Trenton, NJ 08625-0411
(609) 530-4011

New York
Chief
Bureau of Pesticides and Radiation
Division of Solid and Hazardous Materials Regulation
New York Department of Environmental Conservation
50 Wolf Road
Albany, NY 12233-7254
(518) 457-7482

Puerto Rico
Director
Analysis and Registration of Agricultural Materials
Puerto Rico Department of Agriculture
Agrological Laboratory
P.O. Box 10163
Santurce, PR 00908
(809) 796-1735

Virgin Islands
Pesticide Program Director
8000 Nisky Center, Suite 231
Estate Nisky, Charlotte Amalie
St. Thomas, US VI 00802
(809) 774-3320, ext. 135



Region 3

Delaware
Deputy Secretary
Delaware Department of Agriculture
Division of Consumer Protection
2320 South DuPont Highway
Dover, DE 19901
(302) 739-4811

District of Columbia
Program Manager
Pesticide Hazardous Waste and Underground Storage Tank Division
Environmental Regulation Administration
Department of Consumer and Regulatory Affairs
2100 Martin Luther King, Jr. Avenue, SE, Room 203
Washington, DC 20020
(202) 645-6080

Maryland
Chief
Pesticide Regulation Section
Office of Plant Industries and Pest Management
Maryland Department of Agriculture
50 Harry S. Truman Parkway
Annapolis, MD 21401-7080
(410) 841-5710

Pennsylvania
Chief
Agronomic Services Division
Bureau of Plant Industry
Pennsylvania Department of Agriculture
2301 North Cameron Street
Harrisburg, PA 17110-9408
(717) 787-4843

Virginia
Program Manager
Office of Pesticide Services
Virginia Department of Agriculture and Consumer Service
P.O. Box 1163
Richmond, VA 23209
(804) 371-6558

West Virginia
Director
Pesticide Division
West Virginia Department of Agriculture
1900 Kanawha Boulevard, East
Charleston, WV 25305-0190
(304) 558-2209

Region 4

Alabama
Director
Division of Plant Protection and
Pesticide Management
Alabama Department of
Agriculture and Industries
P.O. Box 3336
Montgomery, AL 36109-0336
(334) 242-2656

Florida
Director
Division of Agricultural
Environmental Services
Department of Agriculture
and Consumer Services
3125 Conner Boulevard
Tallahassee, FL 32399-1650
(904) 488-3731

Georgia
Assistant Commissioner
Plant Industry Division
Georgia Department of Agriculture
19 Martin Luther King Drive, SW
Atlanta, GA 30334
(404) 656-4958

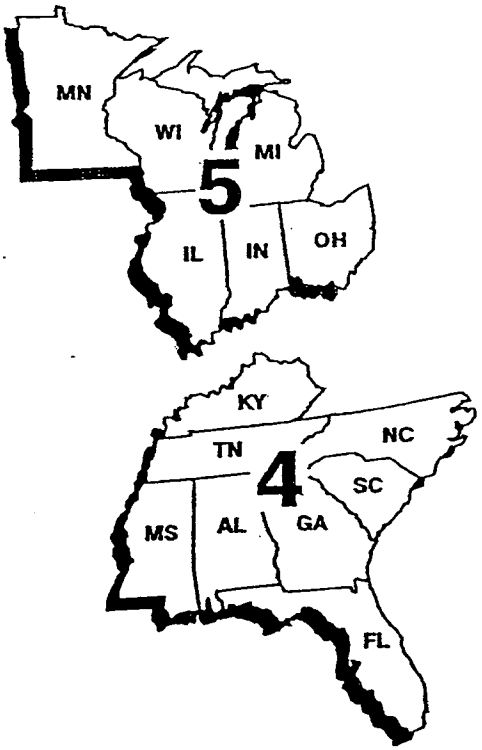
Kentucky
Director
Division of Pesticides
Kentucky Department
of Agriculture
100 Fair Oaks Lane
Frankfort, KY 40601
(502) 564-7274

Mississippi
Director
Bureau of Plant Industry
Mississippi Department of
Agriculture and Commerce
P.O. Box 5207
Mississippi State, MS 39762
(601) 325-3390

North Carolina
Assistant Pesticide Administrator
Food and Drug Protection Division
North Carolina Department of
Agriculture
P.O. Box 27647
Raleigh, NC 27611-0647
(919) 733-3556

South Carolina
Department Head
Department of Pesticide Regulation
257 Poole Agriculture Center
Clemson University
Clemson, SC 29634-0394
(803) 656-3171

Tennessee
Director
Plant Industries Division
Tennessee Department of Agriculture
P.O. Box 40627
Nashville, TN 37204
(615) 360-0130



Region 5

Illinois
Chief
Bureau of Environmental Programs
Illinois Department of Agriculture
P.O. Box 19281
Springfield, IL 62794-9281
(217) 785-2427

Indiana
Pesticide Administrator
Office of the Indiana State Chemist
1154 Biochemistry Building
Purdue University
West Lafayette, IN 47907-1154
(317) 494-1585

Michigan
Director
Pesticide and Plant
Management Division
Michigan Department of Agriculture
P.O. Box 30017
Lansing, MI 48909
(517) 373-1087

Minnesota
Director
Division of Agronomy Services
Minnesota Department of Agriculture
90 West Plato Boulevard
St. Paul, MN 55107
(612) 296-5639

Ohio
Specialist in Charge of
Pesticide Regulation
Division of Plant Industry
Ohio Department of Agriculture
8995 East Main Street
Reynoldsburg, OH 43068-3399
(614) 728-6987

Wisconsin
Administrator
Agricultural Resources
Management Division
Wisconsin Department of Agriculture
Trade and Consumer Protection
2811 Agriculture Drive
Madison, WI 53704
(608) 224-4546

Region 6

Arkansas
Director
Division of Feeds, Fertilizer and Pesticides
Arkansas State Plant Board
#1 Natural Resources Drive
Little Rock, AR 72205
(501) 225-1598

Louisiana
Director
Pesticide and Environmental Programs
Louisiana Department of Agriculture and Forestry
P.O. Box 3596
Baton Rouge, LA 70821-3596
(504) 925-3763

New Mexico
Chief
Bureau of Pesticide Management
Division of Agricultural and Environmental Services
New Mexico State Department of Agriculture
P.O. Box 3005, Department 3AQ
New Mexico State University
Las Cruces, NM 88003-0005
(505) 646-2133

Oklahoma
Director
Department of Environmental Quality
Plant Industry and Consumer Services
Oklahoma Department of Agriculture
2800 North Lincoln Boulevard
Oklahoma City, OK 73105-4298
(405) 271-1400

Texas
Assistant Commissioner for Pesticides
Texas Department of Agriculture
P.O. Box 12847
Austin, TX 78711
(512) 463-7624

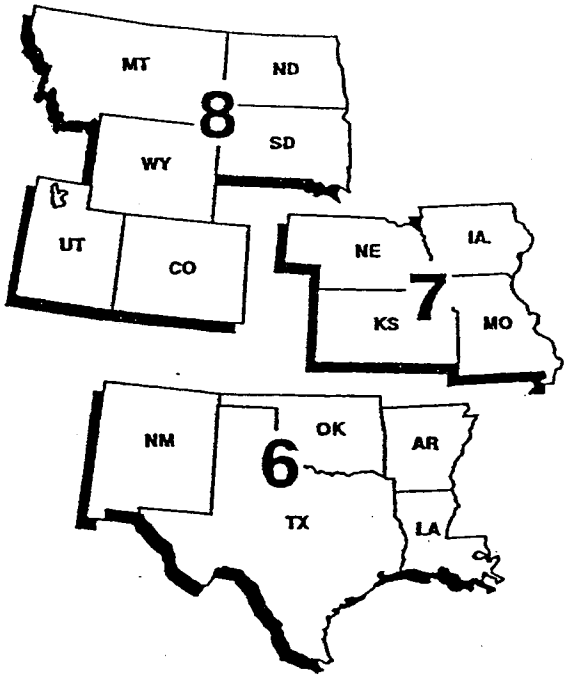
Region 7

Iowa
Chief
Pesticide Bureau
Iowa Department of Agriculture
Henry A. Wallace Building
East 9th Street and Grand Avenue
Des Moines, IA 50319
(515) 281-8591

Kansas
Director
Plant Health Division
Kansas Department of Agriculture
109 S.W. 9th Street
Topeka, KS 66612-1281
(913) 296-2263

Missouri
Director
Bureau of Pesticide Control
Missouri Department of Agriculture
P.O. Box 630
Jefferson City, MO 65102
(314) 751-2462

Nebraska
Director
Bureau of Plant Industry
Nebraska Department of Agriculture
301 Centennial Mall
P.O. Box 94756
Lincoln, NE 68509
(402) 471-2394



Region 8

Colorado
Director
Division of Plant Industry
Colorado Department of Agriculture
700 Kipling Street, Suite 4000
Lakewood, CO 80215-5894
(303) 239-4140

Montana
Administrator
Agricultural Sciences Division
Montana Department of Agriculture
P.O. Box 200201
Helena, MT 59620-0201
(406) 444-2944

North Dakota
Director
Pesticide Division
North Dakota Department of Agriculture
State Capitol, 600 East Boulevard, 6th Floor
Bismarck, ND 58505-0020
(701) 328-4756

South Dakota
Administrator
Office of Agronomy Services
Agricultural Services
South Dakota Department of Agriculture
Foss Building
523 E. Capitol
Pierre, SD 57501-3182
(605) 773-4432

Utah
Director
Division of Plant Industry
Utah Department of Agriculture
Box 146500
Salt Lake City, UT 84114-6500
(801) 538-7180

Wyoming
Director
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Wyoming Department of Agriculture
2219 Carey Avenue
Cheyenne, WY 82002-0100
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State Pesticide Agencies (cont'd)

Region 9

Arizona
Director
Environmental Services Division
Arizona Department of Agriculture
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Phoenix, AZ 85007
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California
Director
California Department of
Pesticide Regulation
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(916) 445-4300

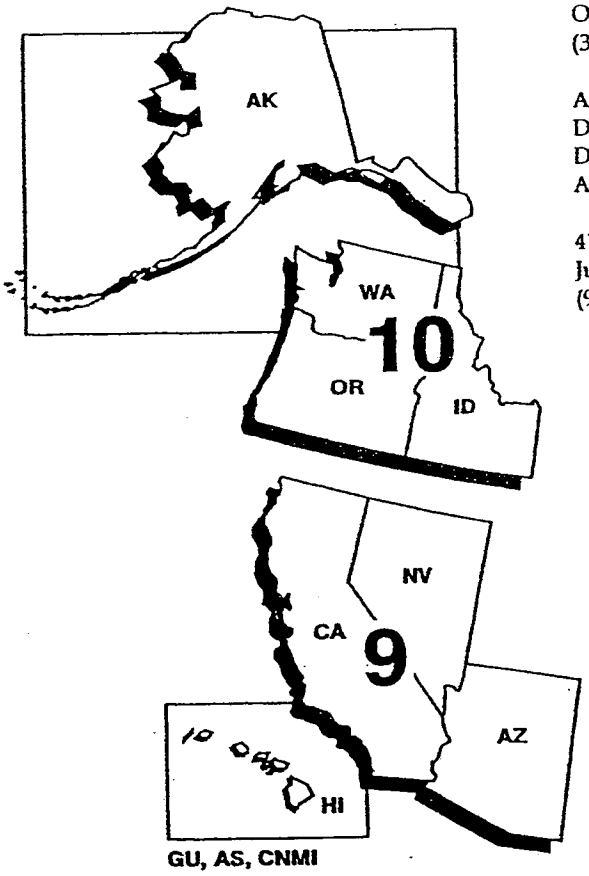
Hawaii
Administrator
Pesticide Programs
Hawaii Department of Agriculture
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Nevada
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(702) 688-1180

Guam
Pesticide Program Director
Guam Environmental
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P.O. Box 22439-GMF
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(671) 472-8863

American Samoa EPA
Office of the Governor
American Samoa Government
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Pago Pago, American Samoa 97699
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Plant Division
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Washington
Assistant Director
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Washington State Department
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Alaska
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"Help! Someone's Been Poisoned!"
What To Do in a Pesticide Emergency



If the person is unconscious, having trouble breathing, or having convulsions . . .
ACT FAST! Speed is crucial.



Give needed first aid immediately.



Call 911 or your local emergency service. If possible, have someone else call for emergency help while you give first aid.



If the person is awake or conscious, not having trouble breathing, and not having convulsions . . .



Read the label for first aid instructions.



Call a doctor, a poison control center, a local emergency service (911), or the National Pesticide Telecommunications Network (toll free at 1-800-858-7378).



Give first aid.

6/15/92

MODEL

WATER EFFICIENT

LANDSCAPE

ORDINANCE

NOV 09 1993

STATE OF CALIFORNIA

TEXT OF PROPOSED REGULATIONS

In Division 2, Title 23, California Code of Regulations, add Chapter 2.7, Sections 490 through 495, inclusive to read as follows:

Chapter 2.7. Model Water Efficient Landscape Ordinance.

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490. Purpose.

(a) The State Legislature has found:

(1) that the limited supply of state waters are subject to ever increasing demands;

(2) that California's economic prosperity depends on adequate supplies of water;

(3) that state policy promotes conservation and efficient use of water;

(4) that landscapes provide recreation areas, clean the air and water, prevent erosion, offer fire protection, and replace ecosystems displaced by development; and

(5) that landscape design, installation, and maintenance can and should be water efficient.

(b) Consistent with the legislative findings, the purpose of this model ordinance is to:

(1) promote the values and benefits of landscapes while recognizing the need to invest water and other resources as efficiently as possible;

(2) establish a structure for designing, installing, and maintaining water efficient landscapes in new projects; and

(3) establish provisions for water management practices and water waste prevention for established landscapes.

Note: Authority cited: Sections 65591.5, 65594, Gov. Code. Reference: Sections 65591, 65591.5, 65597, Gov. Code.

491. Definitions.

The words used in this ordinance have the meaning set forth below.

(a) "anti-drain valve" or "check valve" means a valve located under a sprinkler head to hold water in the system so it minimizes drainage from the lower elevation sprinkler heads.

(b) "application rate" means the depth of water applied to a given area, usually measured in inches per hour.

(c) "applied water" means the portion of water supplied by the irrigation system to the landscape.

(d) "automatic controller" means a mechanical or solid state timer, capable of operating valve stations to set the days and length of time of a water application.

(e) "backflow prevention device" means a safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from the irrigation system.

(f) "conversion factor (0.62)" means a number that converts the maximum applied water allowance from acre-inches per acre per year to gallons per square foot per year. The conversion factor is calculated as follows:

(325,851 gallons/ 43,560 square feet)/12 inches = (0.62)
325,851 gallons = one acre foot
43,560 square feet = one acre
12 inches = one foot

To convert gallons per year to 100-cubic-feet per year, another common billing unit for water, divide gallons per year by 748. (748 gallons = 100 cubic feet.)

(g) "ecological restoration project" means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.

(h) "effective precipitation" or "usable rainfall" means the portion of total precipitation that is used by the plants. Precipitation is not a reliable source of water, but can contribute to some degree toward the water needs of the landscape.

(i) "emitter" means drip irrigation fittings that deliver water slowly from the system to the soil.

(j) "established landscape" means the point at which plants in the landscape have developed roots into the soil adjacent to the root ball.

(k) "establishment period" means the first year after installing the plant in the landscape.

(l) "Estimated Applied Water Use" means the portion of the Estimated Total Water Use that is derived from applied water. The Estimated Applied Water Use shall not exceed the Maximum Applied Water Allowance. The Estimated Applied Water Use may be the sum of the water recommended through the irrigation schedule, as referenced in Section 492 (c) (3).

(m) "Estimated Total Water Use" means the annual total amount of water estimated to be needed to keep the plants in the landscaped area healthy. It is based upon such factors as the local evapotranspiration rate, the size of the landscaped area, the types of plants, and the efficiency of the irrigation system, as described in Section 492 (c) (4).

(n) "ET adjustment factor" means a factor of 0.8, that, when applied to reference evapotranspiration, adjusts for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscape.

A combined plant mix with a site-wide average of 0.5 is the basis of the plant factor portion of this calculation. The irrigation efficiency for purposes of the ET Adjustment Factor is 0.625.

Therefore, the ET Adjustment Factor (0.8) = (0.5/0.625).

(o) "evapotranspiration" means the quantity of water evaporated from adjacent soil surfaces and transpired by plants during a specific time.

(p) "flow rate" means the rate at which water flows through pipes and valves (gallons per minute or cubic feet per second).

(q) "hydrozone" means a portion of the landscaped area having plants with similar water needs that are served by a valve or set of valves with the same schedule. A hydrozone may be irrigated or non-irrigated. For example, a naturalized area planted with native vegetation that will not need supplemental irrigation once established is a non-irrigated hydrozone.

(r) "infiltration rate" means the rate of water entry into the soil expressed as a depth of water per unit of time (inches per hour).

(s) "irrigation efficiency" means the measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The minimum irrigation efficiency for purposes of this ordinance is 0.625. Greater irrigation efficiency can be expected from well designed and maintained systems.

(t) "landscape irrigation audit" means a process to perform site inspections, evaluate irrigation systems, and develop efficient irrigation schedules.

(u) "landscaped area" means the entire parcel less the building footprint, driveways, non-irrigated portions of parking lots, hardscapes- such as decks and patios, and other non-porous areas. Water features are included in the calculation of the landscaped area. Areas dedicated to edible plants, such as orchards or vegetable gardens are not included.

(v) "lateral line" means the water delivery pipeline that supplies water to the emitters or sprinklers from the valve.

(w) "main line" means the pressurized pipeline that delivers water from the water source to the valve or outlet.

(x) "Maximum Applied Water Allowance" means, for design purposes, the upper limit of annual applied water for the established landscaped area as specified in Section 492 (c) (2). It is based upon the area's reference evapotranspiration, the ET Adjustment Factor, and the size of the landscaped area. The Estimated Applied Water Use shall not exceed the Maximum Applied Water Allowance.

(y) "mined-land reclamation projects" means any surface mining operation with a reclamation plan approved in accordance with the Surface Mining and Reclamation Act of 1975.

(z) "mulch" means any material such as leaves, bark, straw or other materials left loose and applied to the soil surface for the beneficial purpose of reducing evaporation .

(aa) "operating pressure" means the pressure at which a system of sprinklers is designed to operate, usually indicated at the base of a sprinkler.

(bb) "overhead sprinkler irrigation systems" means those with high flow rates (pop-ups, impulse sprinklers, rotors, etc.)

(cc) "overspray" means the water which is delivered beyond the landscaped area, wetting pavements, walks, structures, or other non-landscaped areas.

(dd) "plant factor" means a factor that when multiplied by reference evapotranspiration, estimates the amount of water used by plants. For purposes of this ordinance, the average plant factor of low water using plants ranges from .0 to 0.3, for average water using plants the range is 0.4 to 0.6, and for high water using plants the range is 0.7 to 1.0.

(ee) "rain sensing device" means a system which automatically shuts off the irrigation system when it rains.

(ff) "record drawing" or "as-builts" means a set of reproducible drawings which show significant changes in the work made during construction and which are usually based on drawings marked up in the field and other data furnished by the contractor.

(gg) "recreational area" means areas of active play or recreation such as sports fields, school yards, picnic grounds, or other areas with intense foot traffic.

(hh) "recycled water," "reclaimed water," or "treated sewage effluent water" means treated or recycled waste water of a quality suitable for nonpotable uses such as landscape irrigation; not intended for human consumption.

(ii) "reference evapotranspiration" or "ETo" means a standard measurement of environmental parameters which affect the water use of plants. ETo is given in inches per day, month, or year as represented in Section 495, and is an estimate of the evapotranspiration of a large field of four- to seven-inch tall, cool-season grass that is well watered. Reference evapotranspiration is used as the basis of determining the Maximum Applied Water Allowances so that regional differences in climate can be accommodated.

(jj) "rehabilitated landscape" means any relandscaping project that requires a permit.

(kk) "run off" means water which is not absorbed by the soil or landscape to which it is applied and flows from the area. For example, run off may result from water that is applied at too great a rate (application rate exceeds infiltration rate) or when there is a severe slope.

(ll) "soil moisture sensing device" means a device that measures the amount of water in the soil.

(mm) "soil texture" means the classification of soil based on the percentage of sand, silt, and clay in the soil.

(nn) "sprinkler head" means a device which sprays water through a nozzle.

(oo) "static water pressure" means the pipeline or municipal water supply pressure when water is not flowing.

(pp) "station" means an area served by one valve or by a set of valves that operate simultaneously.

(qq) "turf" means a surface layer of earth containing mowed grass with its roots. Annual bluegrass, Kentucky bluegrass, Perennial ryegrass, Red fescue, and Tall fescue are cool-season grasses. Bermudagrass, Kikuyugrass, Seashore paspalum, St. Augustinegrass, Zoysiagrass, and Buffalo grass are warm-season grasses.

(rr) "valve" means a device used to control the flow of water in the irrigation system.

(ss) "water conservation concept statement" means a one-page checklist and a narrative summary of the project as shown in Section 492 (c) (1).

Note: Section 65594, Gov. Code. Reference: Section 65597, Gov. Code.

492. Provisions for New or Rehabilitated Landscapes

(a) Applicability

(1) Except as provided in Section 492 (a) (3), this section shall apply to:

(A) all new and rehabilitated landscaping for public agency projects and private development projects that require a permit; and

(B) developer-installed landscaping in single-family and multi-family projects.

(2) Projects subject to this section shall conform to the provisions in Section 492.

(3) This section shall not apply to:

(A) homeowner-provided landscaping at single-family and multi-family projects;

(B) cemeteries;

(C) registered historical sites;

(D) ecological restoration projects that do not require a permanent irrigation system;

(E) mined-land reclamation projects that do not require a permanent irrigation system; or

(F) any project with a landscaped area less than 2,500 square feet.

(b) Landscape Documentation Package

(1) A copy of the landscape documentation package conforming to this chapter shall be submitted to the city or county. No permit shall be issued until the city or county reviews and approves the landscape documentation package.

(2) A copy of the approved landscape documentation package shall be provided to the property owner or site manager along with the record drawings and any other information normally forwarded to the property owner or site manager.

(3) A copy of the Water Conservation Concept Statement and the Certificate of Substantial Completion shall be sent by the project manager to the local retail water purveyor.

(4) Each landscape documentation package shall include the following elements, which are described in Section 492 (c):

(A) Water Conservation Concept Statement
(B) Calculation of the Maximum Applied Water Allowance
(C) Calculation of the Estimated Applied Water Use
(D) Calculation of the Estimated Total Water Use
(E) Landscape Design Plan
(F) Irrigation Design Plan
(G) Irrigation Schedules
(H) Maintenance Schedule
(I) Landscape Irrigation Audit Schedule
(J) Grading Design Plan
(K) Soil Analysis
(L) Certificate of Substantial Completion. (To be submitted after installation of the project.)

(5) If effective precipitation is included in the calculation of the Estimated Total Water Use, then an Effective Precipitation Disclosure Statement from the landscape professional and the property owner shall be submitted with the Landscape Documentation Package.

(c) Elements of Landscape Documentation Package

(1) Water Conservation Concept Statement

Each landscape documentation package shall include a cover sheet, referred to as the Water Conservation Concept Statement similar to the following example. It serves as a check list to verify that the elements of the landscape documentation package have been completed and has a narrative summary of the project.

Sample Water Conservation Concept Statement

Project Site: Project Number:
Project Location:
Landscape Architect/ Irrigation Designer/ Contractor:

Included in this project submittal package are:
(Check to indicate completion)

___ 1. **Maximum Applied Water Allowance:**
_____**gallons or cubic feet/year**

___ 2. **Estimated Applied Water Use:**
_____**gallons or cubic feet/year**

___ 2.(a) **Estimated Amount of Water Expected from Effective Precipitation:** _____**gallons or cubic feet/year**

___ 3. **Estimated Total Water Use:**
_____**gallons or cubic feet/year**

Note: If the design assumes that a part of the Estimated Total Water Use will be provided by precipitation, the Effective Precipitation Disclosure Statement in Section 494 shall be completed and submitted.

___ 4. **Landscape Design Plan**
___ 5. **Irrigation Design Plan**
___ 6. **Irrigation Schedules**
___ 7. **Maintenance Schedule**
___ 8. **Landscape Irrigation Audit Schedule**
___ 9. **Grading Design Plan**
___10. **Soil Analysis**

(Sample Water Conservation Concept Statement, continued)

Description of Project
(Briefly describe the planning and design actions that are intended to achieve conservation and efficiency in water use.)

Date:_____ Prepared By:_____

(2) The Maximum Applied Water Allowance

(A) A project's Maximum Applied Water Allowance shall be calculated using the following formula:

MAWA = (ETo) (0.8) (LA) (0.62) where:

MAWA	= Maximum Applied Water Allowance (gallons per year)
ETo	= Reference Evapotranspiration (inches per year)
0.8	= ET Adjustment Factor
LA	= Landscaped Area (square feet)
0.62	= conversion factor (to gallons per square foot)

(B) Two example calculations of the Maximum Applied Water Allowance are:

(i) PROJECT SITE ONE: Landscaped area of 50,000 sq. ft. in Fresno

MAWA = (ETo) (.8) (LA) (.62)
= (51 inches) (.8) (50,000 square feet) (.62)
Maximum Applied Water Allowance = 1,264,800 gallons per year
(or 1,691 hundred-cubic-feet per year: 1,264,800/748=1,691)

(ii) PROJECT SITE TWO: Landscaped area of 50,000 sq. ft. in San Francisco

MAWA = (ETo) (.8) (LA) (.62)
= (35 inches) (.8) (50,000 square feet) (.62)
Maximum Applied Water Allowance = 868,000 gallons per year
(or 1,160 hundred-cubic-feet per year)

(C) Portions of landscaped areas in public and private projects such as parks, playgrounds, sports fields, golf courses, or school yards where turf provides a playing surface or serves other recreational purposes are considered recreational areas and may require water in addition to the Maximum Applied Water Allowance. A statement shall be included with the landscape design plan, designating recreational areas to be used for such purposes and specifying any needed amount of additional water above the Maximum Applied Water Allowance.

(3) Estimated Applied Water Use

(A) The Estimated Applied Water Use shall not exceed the Maximum Applied Water Allowance.

(B) A calculation of the Estimated Applied Water Use shall be submitted with the Landscape Documentation Package. It may be calculated by summing the amount of water recommended in the irrigation schedule.

(4) Estimated Total Water Use

(A) A calculation of the Estimated Total Water Use shall be submitted with the Landscape Documentation Package. The Estimated Total Water Use may be calculated by summing the amount of water recommended in the irrigation schedule and adding any amount of water expected from effective precipitation (not to exceed 25 percent of the local annual mean precipitation) or may be calculated from a formula such as the following:

The Estimated Total Water Use for the entire landscaped area equals the sum of the Estimated Water Use of all hydrozones in that landscaped area.

$$EWU\ (hydrozone) = \frac{(ETo)\ (PF)\ (HA)\ (.62)}{(IE)}$$

EWU (hydrozone) = Estimated Water Use (gallons per year)
ETo = Reference Evapotranspiration (inches per year)
PF = plant factor
HA = hydrozone area (square feet)
(.62) = conversion factor
IE = irrigation efficiency

(B) If the Estimated Total Water Use is greater than the Estimated Applied Water Use due to precipitation being included as a source of water, an Effective Precipitation Disclosure Statement such as the one in Section 494 shall be included in the Landscape Documentation Package.

(5) Landscape Design Plan

A landscape design plan meeting the following requirements shall be submitted as part of the landscape documentation package.

(A) Plant Selection and Grouping

(i) Any plants may be used in the landscape, providing the Estimated Applied Water Use recommended does not exceed the Maximum Applied Water Allowance and that the plants meet the specifications set forth in (ii), (iii) and (iv).

(ii) Plants having similar water use shall be grouped together in distinct hydrozones.

(iii) Plants shall be selected appropriately based upon their adaptability to the climatic, geologic, and topographical conditions of the site. Protection and preservation of native species and natural areas is encouraged. The planting of trees is encouraged wherever it is consistent with the other provisions of this ordinance.

(iv) Fire prevention needs shall be addressed in areas that are fire prone. Information about fire prone areas and appropriate landscaping for fire safety is available from local fire departments or the California Department of Forestry.

(B) Water Features

(i) Recirculating water shall be used for decorative water features.

(ii) Pool and spa covers are encouraged.

(C) Landscape Design Plan Specifications

The landscape design plan shall be drawn on project base sheets at a scale that accurately and clearly identifies:

(i) Designation of hydrozones.

(ii) Landscape materials, trees, shrubs, groundcover, turf, and other vegetation. Planting symbols shall be clearly drawn and plants labeled by botanical name, common name, container size, spacing, and quantities of each group of plants indicated.

(iii) Property lines and street names.

(iv) Streets, driveways, walkways, and other paved areas.

(v) Pools, ponds, water features, fences, and retaining walls.

(vi) Existing and proposed buildings and structures including elevation if applicable.

(vii) Natural features including but not limited to rock outcroppings, existing trees, shrubs that will remain.

(viii) Tree staking, plant installation, soil preparation details, and any other applicable planting and installation details.

(ix) A calculation of the total landscaped area.

(x) Designation of recreational areas.

(6) Irrigation Design Plan

An irrigation design plan meeting the following conditions shall be submitted as part of the Landscape Documentation Package.

(C) Irrigation Design Plan Specifications

Irrigation systems shall be designed to be consistent with hydrozones.

The irrigation design plan shall be drawn on project base sheets. It shall be separate from, but use the same format as, the landscape design plan. The scale shall be the same as that used for the landscape design plan described in Section 492 (c) (5) (C).

The irrigation design plan shall accurately and clearly identify:

(i) Location and size of separate water meters for the landscape.

(ii) Location, type, and size of all components of the irrigation system, including automatic controllers, main and lateral lines, valves, sprinkler heads, moisture sensing devices, rain switches, quick couplers, and backflow prevention devices.

(iii) Static water pressure at the point of connection to the public water supply.

(iv) Flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (psi) for each station.

(v) Recycled water irrigation systems as specified in the Section 492 (c) (4) (B).

(7) Irrigation Schedules

Irrigation schedules satisfying the following conditions shall be submitted as part of the Landscape Documentation Package.

(A) An annual irrigation program with monthly irrigation schedules shall be required for the plant establishment period, for the established landscape, and for any temporarily irrigated areas.

(B) The irrigation schedule shall:

(i) include run time (in minutes per cycle), suggested number of cycles per day, and frequency of irrigation for each station; and

(ii) provide the amount of applied water (in hundred cubic feet, gallons, or in whatever billing units the local water supplier uses) recommended on a monthly and annual basis.

(C) The total amount of water for the project shall include water designated in the Estimated Total Water Use calculation plus water needed for any water features, which shall be considered as a high water using hydrozone.

(D) Recreational areas designated in the landscape design plan shall be highlighted and the irrigation schedule shall indicate if any additional water is needed above the Maximum Applied Water Allowance because of high plant factors (but not due to irrigation inefficiency.)

(E) Whenever possible, irrigation scheduling shall incorporate the use of evapotranspiration data such as those from the California Irrigation Management Information System (CIMIS) weather stations to apply the appropriate levels of water for different climates.

(F) Whenever possible, landscape irrigation shall be scheduled between 2:00 a.m. and 10:00 a.m. to avoid irrigating during times of high wind or high temperature.

(A) Irrigation Design Criteria

(i) Runoff and Overspray. Soil types and infiltration rate shall be considered when designing irrigation systems. All irrigation systems shall be designed to avoid runoff, low head drainage, overspray, or other similar conditions where water flows onto adjacent property, non-irrigated areas, walks, roadways, or structures. Proper irrigation equipment and schedules, including features such as repeat cycles, shall be used to closely match application rates to infiltration rates therefore minimizing runoff.

Special attention shall be given to avoid runoff on slopes and to avoid overspray in planting areas with a width less than ten feet, and in median strips.

No overhead sprinkler irrigation systems shall be installed in median strips less than ten feet wide.

(ii) Irrigation Efficiency. For the purpose of determining the maximum applied water allowance, irrigation efficiency is assumed to be 0.625. Irrigation systems shall be designed, maintained, and managed to meet or exceed 0.625 efficiency.

(iii) Equipment.

Water meters. Separate landscape water meters shall be installed for all projects except for single family homes or any project with a landscaped area of less than 5,000 square feet.

Controllers. Automatic control systems shall be required for all irrigation systems and must be able to accommodate all aspects of the design.

Valves. Plants which require different amounts of water shall be irrigated by separate valves. If one valve is used for a given area, only plants with similar water use shall be used in that area. Anti-drain (check) valves shall be installed in strategic points to minimize or prevent low-head drainage.

Sprinkler heads. Heads and emitters shall have consistent application rates within each control valve circuit. Sprinkler heads shall be selected for proper area coverage, application rate, operating pressure, adjustment capability, and ease of maintenance.

Rain Sensing Override Devices. Rain sensing override devices shall be required on all irrigation systems.

Soil Moisture Sensing Devices. It is recommended that soil moisture sensing devices be considered where appropriate.

(B) Recycled Water

(i) The installation of recycled water irrigation systems (dual distribution systems) shall be required to allow for the current and future use of recycled water, unless a written exemption has been granted as described in the following section (B) (ii).

(ii) Irrigation systems shall make use of recycled water unless a written exemption has been granted by the local water agency, stating that recycled water meeting all health standards is not available and will not be available in the foreseeable future.

(iii) The recycled water irrigation systems shall be designed and operated in accordance with all local and state codes.

(8) Maintenance Schedules

A regular maintenance schedule satisfying the following conditions shall be submitted as part of the Landscape Documentation Package:

(A) Landscapes shall be maintained to ensure water efficiency. A regular maintenance schedule shall include but not be limited to checking, adjusting, and repairing irrigation equipment; resetting the automatic controller; aerating and dethatching turf areas; replenishing mulch; fertilizing; pruning, and weeding in all landscaped areas.

(B) Whenever possible, repair of irrigation equipment shall be done with the originally specified materials or their equivalents.

(9) Landscape Irrigation Audit Schedules

A schedule of landscape irrigation audits, for all but single family residences, satisfying the following conditions shall be submitted to the city or county as part of the Landscape Documentation Package.

(A) At a minimum, audits shall be in accordance with the State of California Landscape Water Management Program as described in the Landscape Irrigation Auditor Handbook, the entire document, which is hereby incorporated by reference. (See Landscape Irrigation Auditor Handbook (June 1990) version 5.5 [formerly Master Auditor Training].)

(B) The schedule shall provide for landscape irrigation audits to be conducted by certified landscape irrigation auditors at least once every five years.

(10) Grading Design Plan

Grading design plans satisfying the following conditions shall be submitted as part of the Landscape Documentation Package:

(A) A grading design plan shall be drawn on project base sheets. It shall be separate from but use the same format as the landscape design plan.

(B) The grading design plan shall indicate finished configurations and elevations of the landscaped area, including the height of graded slopes, drainage patterns, pad elevations, and finish grade.

(11) Soils

(A) A soil analysis satisfying the following conditions shall be submitted as part of the Landscape Documentation Package.

(i) Determination of soil texture, indicating the percentage of organic matter.

(ii) An approximate soil infiltration rate (either measured or derived from soil texture/infiltration rate tables.) A range of infiltration rates shall be noted where appropriate.

(iii) Measure of pH, and total soluble salts.

(B) A mulch of at least three inches shall be applied to all planting areas except turf.

(12) Certification

(A) Upon completing the installation of the landscaping and the irrigation system, an irrigation audit shall be conducted by a certified landscape irrigation auditor prior to the final field observation. (See Landscape Irrigation Auditor Handbook as referenced in Section 492 (c)(9)(A)).

(B) A licensed landscape architect or contractor, certified irrigation designer, or other licensed or certified professional in a related field shall conduct a final field observation and shall provide a certificate of substantial completion to the city or county. The certificate shall specifically indicate that plants were installed as specified, that the irrigation system was installed as designed, and that an irrigation audit has been performed, along with a list of any observed deficiencies.

(C) Certification shall be accomplished by completing a Certificate of Substantial Completion and delivering it to the city or county, to the retail water supplier, and to the Owner of Record. A sample of such a form, which shall be provided by the city or county is:

SAMPLE CERTIFICATE OF SUBSTANTIAL COMPLETION

Project Site:_____ Project Number:_____
Project Location:_____

Preliminary Project Documentation Submitted: (check indicating submittal)

___ 1. **Maximum Applied Water Allowance:**
_____ **(gallons or cubic feet per year)**

___ 2. **Estimated Applied Water Use:**
_____ **(gallons or cubic feet/year)**

• __ 2a. **Estimated Amount of Water Expected from Effective Precipitation:**_____ **(gallons or cubic feet/year)**

____ 3. **Estimated Total Water Use:**
_____ **(gallons or cubic feet/year)**

Note: • If the design assumes that a part of the Estimated Total Water Use will be provided by precipitation, the Effective Precipitation Disclosure Statement in Section 495 shall be completed and submitted. The Estimated Amount of Water Expected from Effective Precipitation shall not exceed 25 percent of the local annual mean precipitation (average rainfall.)

_____ 4. Landscape Design Plan
_____ 5. Irrigation Design Plan
_____ 6. Irrigation Schedules
_____ 7. Maintenance Schedule
_____ 8. Landscape Irrigation Audit Schedule
_____ 9. Grading Design Plan
_____ 10. Soil Analysis

Post-Installation Inspection: (Check indicating substantial completion)

_____ A. Plants installed as specified
_____ B. Irrigation system installed as designed
___ dual distribution system for recycled water
___ minimal run off or overspray
_____ C. Landscape Irrigation Audit performed

(Certificate of Substantial Completion, continued)

____Project submittal package and a copy of this certification has been provided to owner/manager and local water agency

Comments:

I/we certify that work has been installed in accordance with the contract documents.

Contractor Signature Date State License Number

I/we certify that based upon periodic site observations, the work has been substantially completed in accordance with the Water Efficient Landscape Ordinance and that the landscape planting and irrigation installation conform with the approved plans and specifications.

Landscape Architect Signature Date State License Number
or Irrigation Designer/Consultant
or Licensed or Certified Professional in a Related Field

I/we certify that I/we have received all of the contract documents and that it is our responsibility to see that the project is maintained in accordance with the contract documents.

Owner Signature Date

Note: Authority cited: Section 65594, Gov. Code. Reference: Section 65597, Gov. Code.

(d) Public Education

(1) Publications.

(A) Local agencies shall provide information to owners of all new single family residential homes regarding the design, installation, and maintenance of water efficient landscapes.

(B) Information about the efficient use of landscape water shall be provided to water users throughout the community.

(2) Model Homes.

At least one model home that is landscaped in each project consisting of eight or more homes shall demonstrate via signs and information the principles of water efficient landscapes described in this ordinance.

(A) Signs shall be used to identify the model as an example of a water efficient landscape and featuring elements such as hydrozones, irrigation equipment and others which contribute to the overall water efficient theme.

(B) Information shall be provided about designing, installing, and maintaining water efficient landscapes.

Note: Authority cited: Section 65594, Gov. Code. Reference: Section 65597.

493. PROVISIONS FOR EXISTING LANDSCAPES.

(a) Water Management

All existing landscaped areas to which the city or county provides water that are one acre or more, including golf courses, green belts, common areas, multi-family housing, schools, businesses, parks, cemeteries, and publicly owned landscapes shall have a landscape irrigation audit at least every five years. At a minimum, the audit shall be in accordance with the California Landscape Water Management Program as described in the Landscape Irrigation Auditor Handbook, the entire document which is hereby incorporated by reference. (See Landscape Irrigation Auditor Handbook, Dept. of Water Resources. Water Conservation Office (June 1990) version 5.5.)

(1) If the project's water bills indicate that they are using less than or equal to the Maximum Applied Water Allowance for that project site, an audit shall not be required.

(2) Recognition of projects that stay within the Maximum Applied Water Allowance is encouraged.

(b) Water Waste Prevention

Cities and counties shall prevent water waste resulting from inefficient landscape irrigation by prohibiting runoff, low head drainage, overspray, or other similar conditions where water flows onto adjacent property, non-irrigated areas, walks, roadways, or structures. Penalties for violations of these prohibitions shall be established locally.

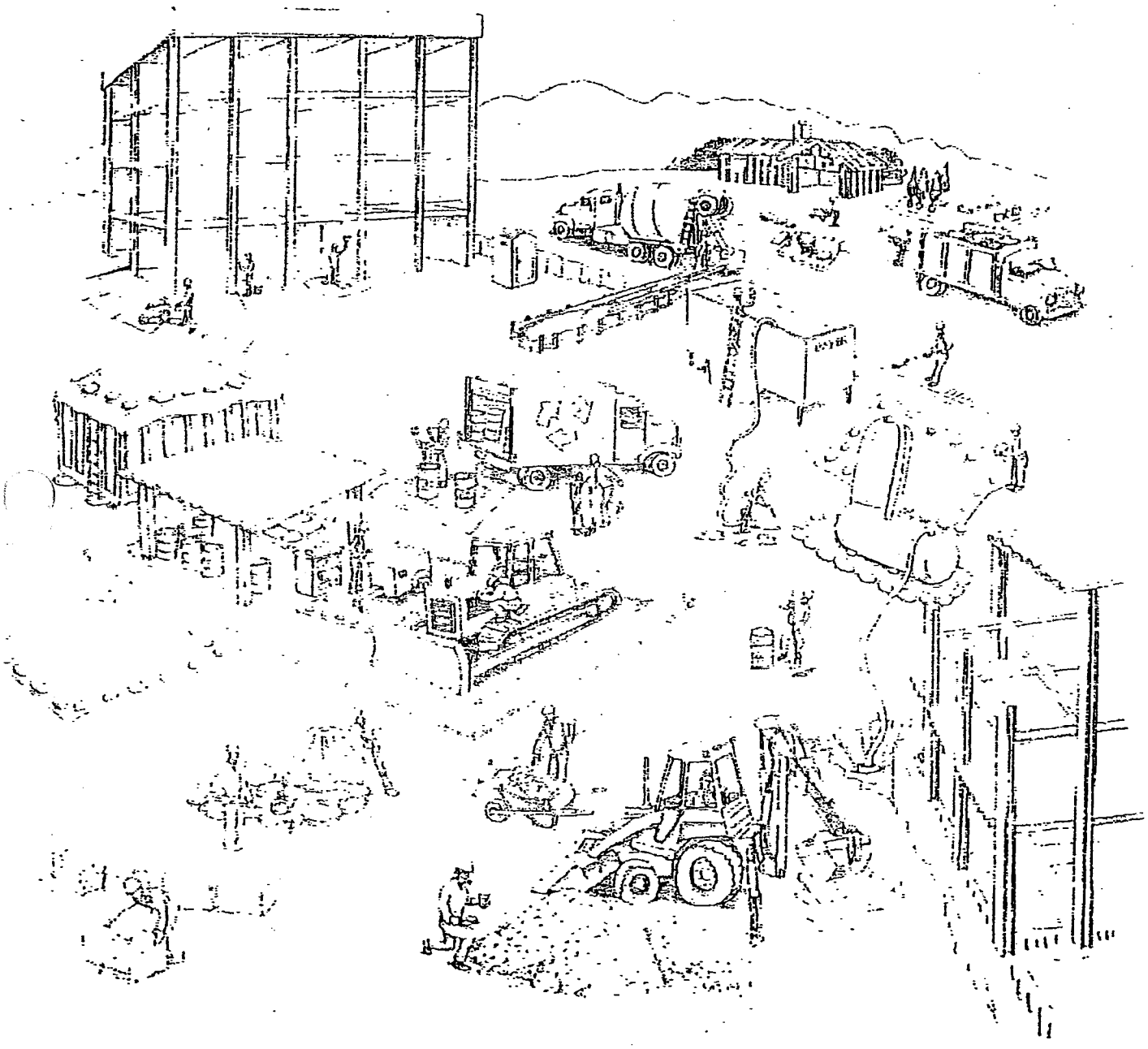
(Authority cited: Section 65594, Gov. Code. Reference: Section 65597, Gov. Code.)

6.0 CONSTRUCTION RELATED

Blueprint for a Clean Ocean
Employee/Subcontractor Training (CA40, CASQA BMP Handbook)
Building Repair, Remodeling and Construction (SC-12, CASQA BMP Handbook)
Waste handling and Disposal (SC-9, CASQA BMPHandbook)

Blueprint for a Clean Ocean

Best Management Practices to Prevent Stormwater Pollution from Construction-Related Activities



LOS ANGELES COUNTY PUBLIC WORKS
Public Service That Works

NO DUMPING • THIS DRAINS TO OCEAN •

This booklet has been developed as a resource for all general contractors, home builders, and subcontractors working on construction sites

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Introduction

Stormwater pollution is rapidly growing in importance as a national environmental issue. In California, stormwater pollution is a major source of water pollution. To help combat the problems of stormwater pollution, federal and state governments have developed a program for monitoring and permitting discharges to municipal storm drain systems, creeks, and water bodies such as the Pacific Ocean.

Municipalities in the Los Angeles Area are required by the Clean Water Act to develop stormwater management programs that include requirements for construction activities. Your construction project will need to comply with local municipal requirements. If your construction activity will disturb five acres or more, you must also obtain coverage under the General Construction Activity Permit (see Requirements for Dischargers).

Blueprint for a Clean Ocean is an introductory guide to stormwater quality control on construction sites. It contains several principles and techniques that you can use to help prevent stormwater pollution. This booklet has been developed as a resource for general contractors, home builders, and subcontractors working on construction sites.

Blueprint for a Clean Ocean is not a design manual or a Stormwater Pollution Prevention Plan (SWPPP) (see Requirements for Dischargers). For more information on the General Permit, designing stormwater quality controls, or producing a Stormwater Pollution Prevention Plan, please refer to the California Storm Water Best Management Practice Handbook for Construction Activity, or consult your local program or the SWRCB (see below). Please note that this booklet is concerned only with the management of construction sites and activities during construction.

Stormwater Pollution

Storm Drain System

Stormwater or runoff from sources like sprinklers and hoses flows over the ground into the storm drain system. In the Los Angeles Area, storm drain systems consist of gutters, storm drains, underground pipes, open channels, culverts, and creeks. Storm drain systems are designed to drain directly to the Pacific Ocean with no treatment.

Pollution From Construction Sites

Stormwater runoff is part of a natural hydrologic process. However, land development and construction activities can significantly alter natural drainage patterns and pollute stormwater runoff. Runoff picks up pollutants as it flows over the ground or paved areas and carries these pollutants into the storm drain system. Common sources of pollutants from construction sites include: sediments from soil erosion; construction materials and waste (e.g., paint, solvents, concrete, drywall); landscaping runoff containing fertilizers and pesticides; and spilled oil, fuel, and other fluids from construction vehicles and heavy equipment.

Adverse Effects from Stormwater Pollution

Stormwater pollution is a major source of water pollution in California. It can cause declines in fisheries, disrupt habitats, and limit water recreation activities. Even more importantly, stormwater pollution poses a serious threat to the overall health of the ecosystem.

For more information on stormwater requirements, call the State Water Resources Control Board's Stormwater Information Line at (916) 657-1146 or your local program.

equirements for Dischargers

ipal Stormwater Program

inicipalities in the Los Angeles Area are required federal regulations to develop programs to control discharge of pollutants to the storm drain system, luding the discharge of pollutants from construc- n sites and areas of new development or significant levelopment. As a result, your development and nstruction projects may be subject to new require- nts designed to improve stormwater quality such expanded plan check and review, new contract ecifications, and increased site inspection. For more ormation on municipal requirements, please contact municipal representative listed on the back cover this booklet.

ojects Equal To Or Greater an 5 Acres

your construction activity will disturb five acres or ore, you must obtain coverage under the General nstruction Activity Storm Water Permit (General nstruction Permit) issued by the State Water ources Control Board (SWRCB) for stormwater ges associated with construction activity. To coverage under the General Permit, a Notice of (NOI) must be filed with the SWRCB. The Gen- al Construction Permit requires you to prepare and rry out a "Stormwater Pollution Prevention Plan" or VPPP. Your SWPPP must identify appropriate storm- ater pollution prevention measures or best manage- ent practices (BMPs), like the ones described in this ooklet, to reduce pollutants in stormwater discharges om the construction site both during and after con- ruction is completed. A best management practice or MP is defined as any program, technology, process, actice, operating method, measure, or device which ntrols, prevents, removes, or reduces pollution.

rojects Less Than 5 Acres

your project is less than five acres, you may still eed to use BMPs to comply with local municipal equirements. Check with the local planning or ngineering department for details.

Best Management Practices

General Practices

The following are some general principles that can significantly reduce pollution from construction activity and help make compliance with stormwater regulations easy:

- ❑ Identify all storm drains, drainage swales and creeks located near the construction site and make sure all subcontractors are aware of their locations to prevent pollutants from entering them.
- ❑ Clean up leaks, drips, and other spills immediately so they do not contact stormwater.
- ❑ Refuel vehicles and heavy equipment in one designated location on the site and take care to clean up spills immediately.
- ❑ Wash vehicles at an appropriate off-site facility. If equipment must be washed on-site, do not use soaps, solvents, degreasers, or steam cleaning equipment, and prevent wash water from entering the storm drain. If possible, direct wash water to a low point where it can evaporate and/or infiltrate.
- ❑ Never wash down pavement or surfaces where materials have spilled. Use dry cleanup methods whenever possible.
- ❑ Avoid contaminating clean runoff from areas adjacent to your site by using berms and/or temporary or permanent drainage ditches to divert water flow around the site. Reduce stormwater runoff velocities by constructing temporary check dams and/or berms where appropriate.
- ❑ Protect all storm drain inlets using filter fabric cloth or other best management practices to prevent sediments from entering the storm drainage system during construction activities.
- ❑ Keep materials out of the rain — prevent runoff pollution at the source. Schedule clearing or heavy earth moving activities for periods of dry weather. Cover exposed piles of soil, construction materials and wastes with plastic sheeting or temporary roofs. Before it rains, sweep and remove materials from surfaces that drain to storm drains, creeks, or channels.

For more information on the General Permits, call the State Water Resources Control Board's Stormwater Information Line at (916) 657-1146 or your local program.

:p pollutants off exposed surfaces. Place trash ..ns around the site to reduce litter. Dispose of non-hazardous construction wastes in covered dumpsters or recycling receptacles.

Practice source reduction — reduce waste by ordering only the amount you need to finish the job.

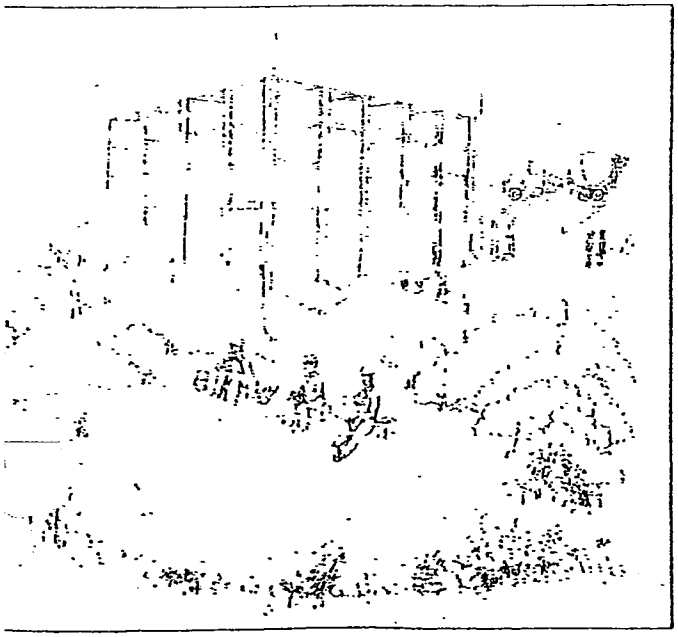
Do not over-apply pesticides or fertilizers and follow manufacturers instructions for mixing and applying materials.

Recycle leftover materials whenever possible. Materials such as concrete, asphalt, scrap metal, solvents, degreasers, cleared vegetation, paper, rock, and vehicle maintenance materials such as used oil, antifreeze, batteries, and tires are recyclable.

Dispose of all wastes properly. Materials that cannot be reused or recycled must be taken to an appropriate landfill or disposed of as hazardous waste. Never throw debris into channels, creeks or into ..tland areas. Never store or leave debris in the ..et or near a creek where it may contact runoff.

..legal dumping is a violation subject to a fine and/or time in jail. Be sure that trailers carrying your materials are covered during transit. If not, the hauler may be cited and fined.

Train your employees and inform subcontractors about the stormwater requirements and their own responsibilities.



Specific Practices

Following is a summary of specific best management practices for erosion and sediment control and contractor activities. For more information on erosion and sediment control BMPs and their design, please refer to the California Storm Water Best Management Practice Handbook for Construction Activity (March 1993).

Erosion Prevention and Sediment Control

Prevent erosion

Soil erosion is the process by which soil particles are removed from the land surface, by wind, water and/or gravity. Soil particles removed by stormwater runoff are pollutants that when deposited in local creeks, lakes, and the Pacific Ocean, can have negative impacts on aquatic habitat. Exposed soil after clearing, grading, or excavation is easily eroded by wind or water. The following practices will help prevent erosion from occurring on the construction site:

- ☐ Plan the development to fit the topography, soils, drainage pattern and natural vegetation of the site.
- ☐ Delineate clearing limits, easements, setbacks, sensitive or critical areas, trees, drainage courses, and buffer zones to prevent excessive or unnecessary disturbances and exposure.
- ☐ Phase grading operations to reduce disturbed areas and time of exposure.
- ☐ Avoid excavation and grading during wet weather.
- ☐ Limit on-site construction routes and stabilize construction entrance(s).
- ☐ Remove existing vegetation only when absolutely necessary.
- ☐ Construct diversion dikes and drainage swales to channel runoff around the site.
- ☐ Use berms and drainage ditches to divert runoff around exposed areas. Place diversion ditches across the top of cut slopes.

- ❑ Plant vegetation on exposed slopes. Where replanting is not feasible, use erosion control blankets (e.g., jute or straw matting, glass fiber or excelsior matting, mulch netting).
- ❑ Consider slope terracing with cross drains to increase soil stability.
- ❑ Cover stockpiled soil and landscaping materials with secured plastic sheeting and divert runoff around them.
- ❑ As a back-up measure, protect drainage courses, creeks, or catch basins with straw bales, silt fences and/or temporary drainage swales.
- ❑ Once grading is completed, stabilize the disturbed areas using permanent vegetation as soon as possible.
- ❑ Conduct routine inspections of erosion control measures especially before and immediately after rainstorms, and repair if necessary.

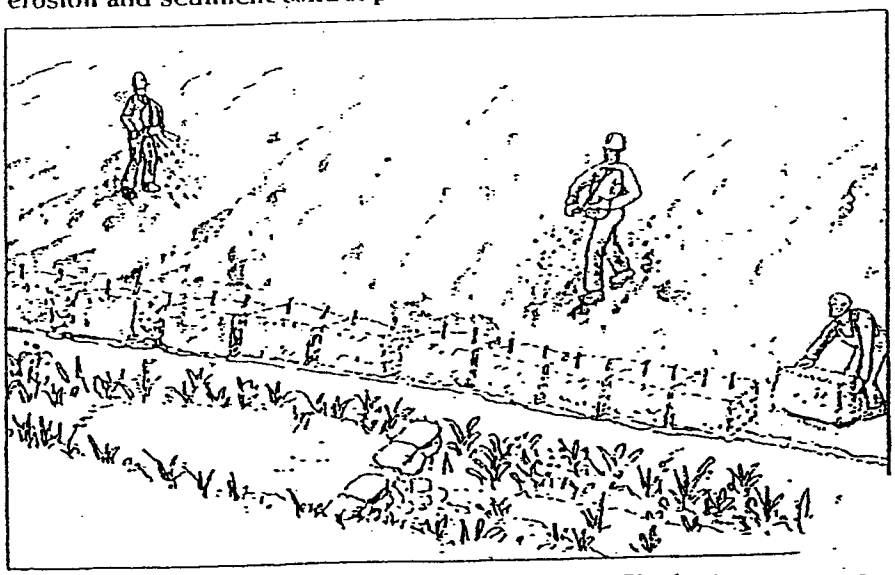
Control sediment

Sedimentation is defined as the process of depositing sediments picked up by runoff. Sediments consist of soil particles, clays, sands, and other minerals. The purpose of sediment control practices is to remove sediments from stormwater before they are transported off-site or reach a storm drain inlet or nearby creek. The most effective sediment control practices reduce runoff velocity and trap or detain runoff allowing sediments to settle out.

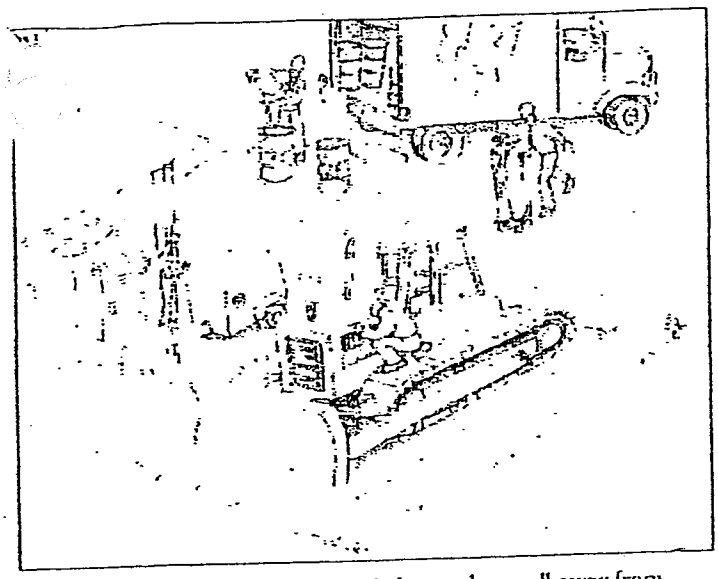
- ❑ Use terracing, rip rap, sand bags, rocks, straw bales, and/or temporary vegetation on slopes to reduce runoff velocity and trap sediments. Do not use asphalt rubble or other demolition debris for this purpose.
- ❑ Use check dams in temporary drains and swales to reduce runoff velocity and promote sedimentation.
- ❑ Protect storm drain inlets from sediment-laden runoff. Storm drain inlet protection devices include sand bag barriers, filter fabric fences, block and gravel filters, and excavated drop inlet sediment traps.
- ❑ Collect and detain sediment-laden runoff in sediment traps (an excavated or bermed area or constructed device) to allow sediments to se out prior to discharge.
- ❑ Use sediment controls and filtration to remove sediments from water generated by dewatering.
- ❑ Prevent construction vehicle tires from tracking soil onto adjacent streets by constructing a temporary stone pad with a filter fabric underliner near the site exit where dirt and mud can be removed.
- ❑ When cleaning sediments from streets, driveways and paved areas on construction sites, use dry sweeping methods where possible. If water must be used to flush pavement, collect runoff to settle out sediments and protect storm drain inlets.

Note: Performance of erosion and sediment controls is dependent on proper installation, routine inspections and maintenance of the controls. Most of the BMPs described above are temporary and if left alone can quickly fall into disrepair and/or become ineffective. Routine inspections and maintenance, particularly before and after a storm event, must be part of a erosion and sediment control plan.

The California Storm Water Best Management Practices Handbook for Construction Activity provides specific details and design criteria for erosion and sediment control plans.



Drainage swales channel runoff around a construction site. Planting tempora ge-tation on freshly graded areas, and trenching and staking straw bales and/or sil es downslope are common techniques for preventing erosion and controlling sedi nt.



Make sure equipment repair area is bermed or well away from creeks and storm drains.

General Site Maintenance

Prevent spills and leaks

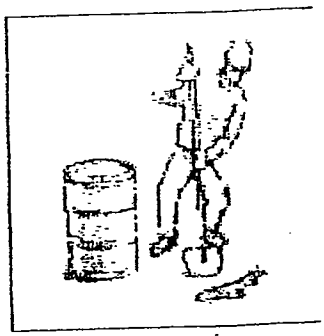
Poorly maintained vehicles and heavy equipment leaking fuel, oil, antifreeze, or other fluids on the construction site are common sources of stormwater pollution and soil contamination. Construction material spills can also cause serious problems. Careful site planning, preventive maintenance, and good materials handling practices can eliminate most spills and leaks.

- ☐ Maintain all vehicles and heavy equipment. Inspect frequently for and repair leaks.
- ☐ Designate specific areas of the construction site, well away from creeks or storm drain inlets, for auto and equipment parking and routine vehicle and equipment maintenance.
- ☐ Perform major maintenance, repair jobs and vehicle and equipment washing off-site when feasible, or in designated and controlled areas on-site.
- ☐ If you must drain and replace motor oil, radiator coolant, or other fluids on-site, use drip pans or drop cloths to catch drips and spills. Collect all spent fluids, store in labeled separate containers, and recycle whenever possible. Note that in order to be recyclable, such liquids must not be mixed with other fluids. Non-recycled fluids generally must be disposed of as hazardous wastes.

Clean up spills immediately after they happen

When vehicle fluids or materials such as paints or solvents are spilled, cleanup should be immediate, automatic, and routine.

- ☐ Sweep up spilled dry materials (e.g., cement, mortar, or fertilizer) immediately. Never attempt to "wash them away" with water, or bury them. Use only minimal water for dust control.
- ☐ Clean up liquid spills on paved or impermeable surfaces using "dry" cleanup methods (e.g., absorbent materials like cat litter, sand or rags).
- ☐ Clean up spills on dirt areas by digging up and properly disposing of the contaminated soil.



Clean up spills on dirt areas by removing contaminated soil.

- ☐ Report significant spills to the appropriate spill response agencies immediately (See reference list on the back cover of this booklet for more information).

Note: Used cleanup rags that have absorbed hazardous materials must either be sent to a certified industrial laundry or dry cleaner, or disposed of through a licensed hazardous waste disposal compay.

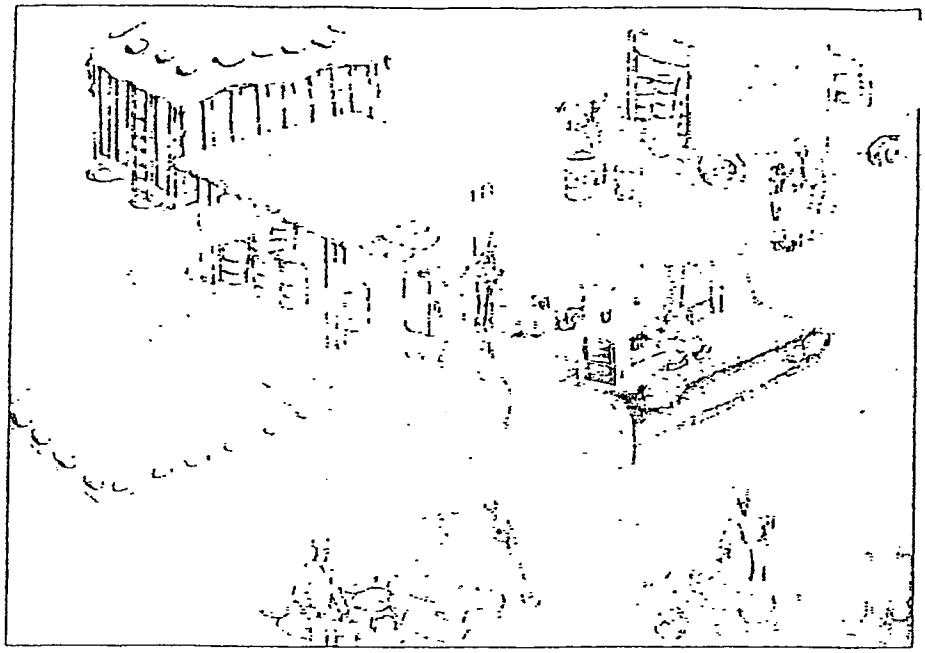
materials under cover

.id dry building materials with e potential to pollute runoff should : stored under cover and/or rrounded by berms when rain is recast or during wet weather.

Store stockpiled materials and wastes under a temporary roof or secured plastic sheeting or tarp.

Berm around storage areas to prevent contact with runoff.

Plaster or other powders can create large quantities of suspended solids in runoff, which may be toxic to aquatic life and cause serious environmental harm even if the materials are inert. Store all such potentially polluting dry materials —especially open bags— under a temporary roof or inside a ·uilding, or cover securely with an impermeable By storing dry materials under a roof, you also help protect air quality, as well as water quality.



Store building materials under cover. Make sure dumpsters are properly covered to keep out rain.

Store containers of paints, chemicals, solvents, and other hazardous materials in accordance with secondary containment regulations and under cover during rainy periods.

ver and maintain dumpsters

en or leaking dumpsters can be a source of rmwater pollution.

Cover open dumpsters with plastic sheeting or a tarp during rainy weather. Secure the sheeting or tarp around the outside of the dumpster. If your dumpster has a cover, close it.

If a dumpster is leaking, contain and collect leaking material. Return the dumpster to the leasing company for repair/exchange.

Do not clean dumpsters on-site. Return to leasing pany for periodic cleaning, if necessary.

Collect and properly dispose of paint removal wastes

Paint removal wastes include chemical paint strippir residues, paint chips and dust, sand blasting material and wash water. These wastes contain chemicals that are harmful to the wildlife in our creeks and the water bodies they flow to. Keep all paint wastes away from the gutter, street, and storm drains.

- ☐ Non-hazardous paint chips and dust from dry stripping and sand blasting may be swept up or collected in plastic drop cloths and disposed of as trash. Chemical paint stripping residue and chips and dust from marine paints or paints containing lead or tributyl tin must be disposed of as a hazardous waste.

- ☐ When stripping or cleaning building exteriors with high-pressure water, cover or berm storm drain inlets. If possible (and allowed by your local wastewater treatment plant), collect (mop or vacuum) building cleaning water and discharge to the sanitary sewer. Alternatively, discharge non-contaminated wash water onto a dirt area and spade into the soil. Be sure to shovel or sweep up any debris that remains in the gutter and dispose of as garbage.

Clean up paints, solvents, adhesives, and cleaning solutions properly

Although many paint materials can and should be recycled, liquid residues from paints, thinners, solvents, glues, and cleaning fluids are hazardous wastes. When they are thoroughly dry, empty paint cans, used brushes, rags, absorbent materials, and drop cloths are no longer hazardous and may be disposed of as garbage.

- ❑ Never clean brushes or rinse paint containers into a street, gutter, storm drain, or creek.
- ❑ For water-based paints, paint out brushes to the extent possible and rinse to a drain leading to the sanitary sewer (i.e., indoor plumbing).
- ❑ For oil-based paints, paint out brushes to the extent possible, and filter and reuse thinners and solvents. Dispose of unusable thinners and residue as hazardous waste.
- ❑ Recycle, return to supplier or donate unwanted water-based (latex) paint. You may be able to recycle clean empty dry paint cans as metal.
- ❑ Dried latex paint may be disposed of in the garbage.
- ❑ Unwanted paint (that is not recycled), thinners, and sludges must be disposed of as hazardous waste.
- ❑ More and more paint companies are recycling excess latex paint (See separate list of "Recyclers and Disposal Services" for more information).

Keep fresh concrete and cement mortars out of gutters, storm drains, and creeks

Concrete and cement-related mortars that wash into gutters and storm drains are toxic to fish and the aquatic environment.

- ❑ Avoid mixing excess amounts of fresh concrete or cement mortar on-site.
- ❑ Store dry and wet materials under cover, protected from rainfall and runoff.
- ❑ Wash out concrete transit mixers only in designated wash-out areas where the water will flow into settling ponds or onto dirt or stockpiles of aggregate base or sand. Pump water from settling ponds to the sanitary sewer, where allowed. Whenever possible, recycle washout by pumping back into mixers for reuse. Never dispose of washout into the street, storm drains, drainage ditches, or creeks.
- ❑ Whenever possible, return contents of mixer barrel to the yard for recycling. Dispose of small amounts of excess concrete, grout, and mortar in the trash.

Service and maintain portable toilets

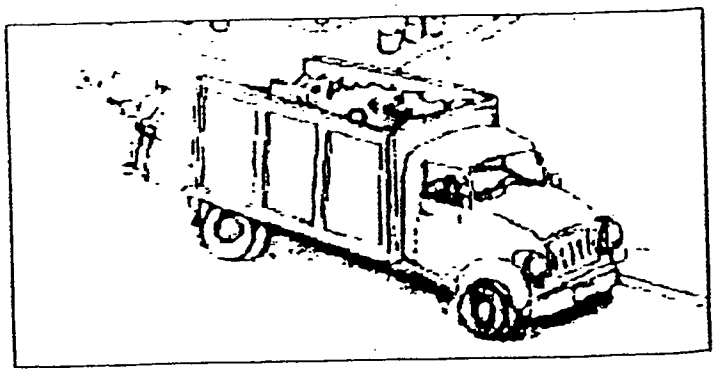
Leaking portable toilets are a potential health and environmental hazard.

- ❑ Inspect portable toilets for leaks.
- ❑ Be sure the leasing company adequately maintains, promptly repairs, and replaces units as needed.
- ❑ The leasing company must have a permit to dispose of waste to the sanitary sewer.

Dispose of cleared vegetation properly

Cleared vegetation, tree trimmings, and other plant material can cause environmental damage if it gets into creeks. Such "organic" material requires large quantities of oxygen to decompose, which reduces the oxygen available to fishes and other aquatic life.

- ❑ Do not dispose of plant material in a creek or drainage facility or leave it in a roadway where it can clog storm drain inlets.
- ❑ Avoid disposal of plant material in trash dumpsters or mixing it with other wastes. Compost plant material or take it to a landfill or other facility that composts yard waste.



Recycle yard waste and tree prunings at a landfill that chips and composts plant material.

molition Waste Management

re all demolition waste is properly d of

olition debris that is left in the street or pushed a bank into a creek bed or drainage facility causes us problems for flood control, storm drain tenance, and the health of our environment. rent types of materials have different disposal irements or recycling options.

laterials that can be recycled from demolition rojects include: metal framing, wood, concrete, sphalt, and plate glass.

laterials that can be salvaged for reuse from old ructures include: doors, banisters, floorboards, indows, 2x4s, and other old, dense lumber.

lnusable, unrecycleable debris should be confined) dumpsters, covered at night and during wet eather, and taken to a landfill for disposal.

lazardous debris such as asbestos must be andled in accordance with specific laws and lations and disposed of as a hazardous waste. ore information of asbestos handling and sal regulations, contact the South Coast Air uality Management District.

rrange for an adequate debris disposal schedule o insure that dumpsters do not overflow.

Roadwork and Pavement Construction

Plan roadwork and pavement construction to avoid stormwater pollution

Road paving, surfacing, and asphalt removal happen right in the street, with numerous opportunities for stormwater pollution from the asphalt mix, saw-cut slurry, or excavated material. Properly proportioned asphalt mix and well-compacted pavement avoid a host of water pollution problems.

- ❑ Apply concrete, asphalt, and seal coat during dry weather to prevent contaminants from contacting stormwater runoff.
- ❑ Cover storm drain inlets and manholes when paving or applying seal coat, slurry seal, fog seal, etc.
- ❑ Always park paving machines over drip pans or absorbent materials, since they tend to drip continuously.
- ❑ When making saw-cuts in pavement, use as little water as possible. Cover each catch basin completely with filter fabric during the sawing operation and contain the slurry by placing straw bales, sand bags, or gravel dams around the catch basin. After the liquid drains or evaporates, shovel or vacuum the slurry residue from the pavement or gutter and remove from site.
- ❑ Wash down exposed aggregate concrete only when the wash water can: (1) flow onto a dirt area; (2) drain onto a bermed surface from which it can be pumped and disposed of properly; or (3) be vacuumed from a catchment created by blocking a storm drain inlet. If necessary, place straw bales downslope, or divert runoff with temporary berms. Make sure runoff does not reach gutters or storm drains.
- ❑ Allow aggregate rinse to settle, and pump the water to the sanitary sewer if allowed by your local wastewater authority.
- ❑ Never wash sweepings from exposed aggregate concrete into a street or storm drain. Collect and return to aggregate base stockpile, or dispose with trash.
- ❑ Recycle broken concrete and asphalt.

... for ponded stormwater, groundwater, ıd/or soil contamination

ınded stormwater, groundwater and soil may become ntaminated if exposed to hazardous materials. If any the following conditions apply, contaminated ponded ɔrmwater, groundwater, and/or soil may be present ıd pose a potential health and environmental hazard:

- The project site is in an area of previous commercial/industrial activity;
- There is a history of illegal dumping on the site or adjacent properties;
- The construction site is subject to a Superfund, state, or local cleanup order;
- Ponded stormwater, groundwater and/or water generated by dewatering exhibits an oily-sheen and/or smells of petroleum;
- Soil appears discolored, smells of petroleum ıd/or exhibits other unusual properties;
- ☐ Abandoned underground storage tanks, drums, or other buried debris are encountered during construction activities; or
- ☐ Spills have occurred on the site or adjacent properties involving pesticides and herbicides; fertilizers; detergents; plaster and other products; petroleum products such as fuel, oil, and grease; or other hazardous chemicals such as acids, lime, glues, paints, solvents, and curing compounds.

Take appropriate action

Ponded stormwater, groundwater, or water generated by dewatering that is contaminated cannot be discharged to a street, gutter, or storm drain. If contamination is suspected, the water should be contained an held for testing. Call the appropriate local agency and/or the Regional Water Quality Control Board for further guidance (See reference list on the back cove: of this booklet for more information).

Remember: The property owner and the contractor share ultimate responsibility for the activities that occur on a construction site. You may be held responsible for any environmental damage caused by your subcontractors or employees.

Pollution Control Agencies and Sources of Information

m water quality agement program

County of Los Angeles
800) 303-0003

City of Los Angeles
800) 974-9794

Agencies to call for ocal construction ite requirements

n county unincorporated areas nd in the cities of:

rtesia
ellflower
radbury
arson
erritos
ommerce
uarte
ndustry
dale
nada/Flintridge
wood
a Mirada
a Puente
awndale
omita
olling Hills
anta Fe Springs
emple City
Vestlake Village

818) 458-3187

Agencies to call in the event of a spill

You are required by law to report all significant releases or suspected significant releases of hazardous materials, including oil.

To report a spill, call the following agencies:

1. Dial (800) 303-0003 or your local emergency response number.
2. Call the Governor's Office of Emergency Services Warning Center, (800) 852-7550 (24 hours).

For spills of "Federal Reportable Quantities" of oil, chemicals, or other hazardous materials to land, air, or water, notify the National Response Center (800-424-8802). If you are not sure whether the spill is of a "reportable quantity," call the federal Environmental Protection Agency (800) 424-9346 for clarification.

For further information, see *California Hazardous Material Spill/ Release Notification Guidance* (State Office of Emergency Services, Hazardous Materials Division).

Agencies to call if you find or suspect contaminated soil or groundwater

Regional Water Quality Control Board:

Los Angeles Basin
(213) 266-7500

California Environmental Protection Agency (Cal EPA), Department of Toxic Substances Control (DTSC) (510) 540-3732

Documents and available resources

From State Water Resources Control Board (SWRCB) (916) 657-1146:

General Construction Activity Storm Water Permit

California Storm Water Best Management Practice Handbook - Construction Activity

From Cal EPA, DTSC (916) 322-3670:

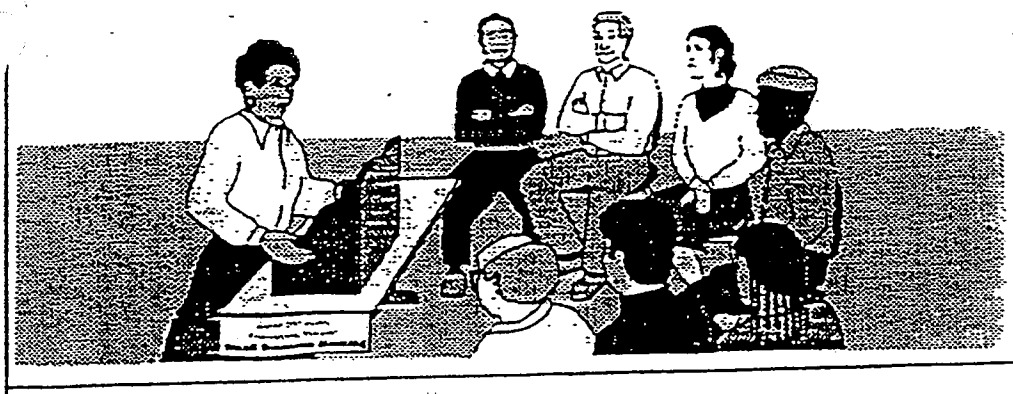
Waste Minimization for the Building Construction Industry - Fact Sheet

Los Angeles County gratefully acknowledges the Santa Clara Valley NonPoint Source Pollution Control Program and BASMAA for the concept, content, and artwork for this booklet.

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♻ Printed on Recycled Paper

ACTIVITY: EMPLOYEE/SUBCONTRACTOR TRAINING



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

DESCRIPTION

Employee/subcontractor training, like maintenance or a piece of equipment, is not so much a best management practice as it is a method by which to implement BMPs. This fact sheet highlights the importance of training and of integrating the elements of employee/subcontractor training from the individual source controls into a comprehensive training program as part of a company's Storm Water Pollution Prevention Plan (SWPPP).

The specific employee/subcontractor training aspects of each of the source controls are highlighted in the individual fact sheets. The focus of this fact sheet is more general, and includes the overall objectives and approach for assuring employee/ subcontractor training in storm water pollution prevention.

OBJECTIVES

Employee/subcontractor training will be based on four objectives:

Promote a clear identification and understanding of the problem, including activities with the potential to pollute storm water;
Identify solutions (BMPs);
Promote employee/subcontractor ownership of the problems and the solutions; and
Integrate employee/subcontractor feedback into training and BMP implementation.

APPROACH

Integrate training regarding storm water quality management with existing training programs that may be required for your business by other regulations such as: the Illness and Injury Prevention Program (IIPP) (SB 198) (California Code of Regulations Title 8, Section 3203), the Hazardous Waste Operations and Emergency Response (HAZWOPER) standard (29 CFR 1910.120), the Spill Prevention Control and Countermeasure (SPCC) Plan (40 CFR 112), and the Hazardous Materials Management Plan (Business Plan) (California Health and Safety Code, Section 6.95).

Use the quick reference on disposal alternatives (Table 4.2) to train employee/subcontractors in proper and consistent methods for disposal.

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Best Management Practices

ACTIVITY: EMPLOYEE/SUBCONTRACTOR TRAINING (Continue)

Consider posting the quick reference table around the job site or in the on-site office trailer to reinforce training.

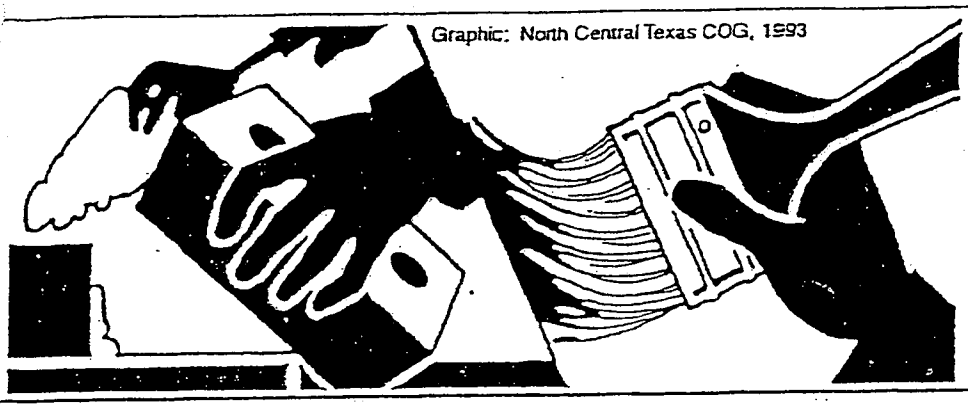
Train employee/subcontractors in standard operating procedures and spill cleanup techniques described in the fact sheets and in the SWPPP. Employee/subcontractors trained in spill containment and cleanup should be present during the loading/unloading and handling of materials.

Personnel who use pesticides will be trained in their use. The California Department of Pesticide Regulation and county agricultural commissioners licensed pesticide dealers, certify pesticide applicators, and conduct on-site inspections.

Proper education of off-site contractors is often overlooked. The conscientious efforts of well trained employee/subcontractors, can be lost by unknowing off-site contractors, so make sure they are well informed about what they are expected to do on-site.

Ensure that workers who are non-English speakers or for whom English is a second language either receive training and materials in their native language or ensure that those persons adequately comprehend materials and training given in English.

ACTIVITY: BUILDING REPAIR, REMODELING AND CONSTRUCTION



Graphic: North Central Texas COG, 1993

Applications

- Manufacturing
- Material Handling
- Vehicle Maintenance
- (Construction)
- (Commercial Activities)
- Roadways
- Waste Containment
- (Housekeeping Practices)

DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from building repair, remodeling, and construction by using soil erosion controls, enclosing or covering building material storage areas, using good housekeeping practices, using safer alternative products, and training employees.

APPROACH

- Use soil erosion control techniques if bare ground is temporarily exposed. See the Construction Activity Best Management Practice Handbook.
- Use permanent soil erosion control techniques if the remodeling clears buildings from an area that are not to be replaced. See SC10 (Contaminted or Erodible Surface Areas).
- Enclose painting operations, consistent with local air quality regulations and OSHA.
- Properly store materials that are normally used in repair and remodeling such as paints and solvents.
- Properly store and dispose waste materials generated from the activity. See CA20, Solid Waste Management, Construction Handbook.
- Maintain good housekeeping practices while work is underway.

REQUIREMENTS

- Costs (Capital, O&M)
  - These BMPs are generally of low to modest in cost.

LIMITATIONS

- This BMP is for minor construction only. The State's General Construction Activity Storm Water Permit has more requirements for larger projects. The companion "Construction Activity Best Management Practice Handbook" contains specific guidance and best management practices for larger-scale projects.
- Hazardous waste that cannot be re-used or recycled must be disposed of by a licensed hazardous waste hauler.
- Safer alternative products may not be available, suitable, or effective in every case.
- Be certain that actions to help storm water quality are consistent with Cal- and Fed-OSHA and air quality regulations.

Modifications are a common occurrence particularly at large industrial sites. The activity

Targeted Constituents

- ● Sediment
- ○ Nutrients
- ● Heavy Metals
- ● Toxic Materials
- ● Floatable Materials
- ○ Oxygen Demanding Substances
- ● Oil & Grease
- ○ Bacteria & Viruses

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ○ Capital Costs
- ◒ O&M Costs
- ◒ Maintenance
- ◒ Training

● High ○ Low

SC12

Best Management Practices

Additional Information — Building Repair, Remodeling, and Construction

may vary from minor and normal building repair to major remodeling, or the installation of new facilities on currently open space. These activities can generate pollutants that can reach storm water if proper care is not taken. The sources of these contaminants may be solvents, paints, paint and varnish removers, finishing residues, spent thinners, soap cleaners, kerosene, asphalt and concrete materials, adhesive residues, and old asbestos installation.

Good Housekeeping

Proper care involves a variety of mostly common sense, housekeeping actions such as:

- Keep the work site clean and orderly. Removing debris in a timely fashion. Sweep the area.
- Cover materials of particular concern that must be left out, particularly during the rainy season.
- Educate employees who are doing the work.
- Inform on-site contractors of company policy on these matters and include appropriate provisions in their contract to make certain proper housekeeping and disposal practices are implemented.
- Make sure that nearby storm drains are well marked to minimize the chance of inadvertent disposal of residual paints and other liquids.
- Do not dump waste liquids down the storm drain.
- Advise concrete truck drivers to not wash their truck over the storm drain. Have a designated area that does not drain to the storm drain.
- Clean the storm drain system in the immediate vicinity of the construction activity after it is completed.

Proper education of off-site contractors is often overlooked. The conscientious efforts of well trained employees can be lost by unknowing off-site contractors, so make sure they are well informed about what they are expected to do.

Painting operations should be properly enclosed or covered to avoid drift. Use temporary scaffolding to hang drop cloths or draperies to prevent drift. Application equipment that minimizes overspray also helps. Local air pollution regulations may, in many areas of the state, specify painting procedures which if properly carried out are usually sufficient to protect water quality. If painting requires scraping or sand blasting of the existing surface, use a ground cloth to collect the chips. Dispose the residue properly. If the paint contains lead or tributyl tin, it is considered a hazardous waste.

Mix paint indoors before using so that any spill will not be exposed to rain. Do so even during dry weather because cleanup of a spill will never be 100% effective. Dried paint will erode from a surface and be washed away by storms. If using water based paints, clean the application equipment in a sink that is connected to the sanitary sewer. Properly store leftover paints if they are to be kept for the next job, or dispose properly.

When using sealants on wood, pavement, roofs, etc, quickly clean up spills. Remove excess liquid with absorbent material or rags. If when repairing roofs, small particles have accumulated in the gutter, either sweep out the gutter or wash the gutter and trap the particles at the outlet of the downspout. A sock or geofabric placed over the outlet may effectively trap the materials. If the downspout is tight lined, place a temporary plug at the first convenient point in the storm drain and pump out the water with a vactor truck, and clean the catch basin sump where you placed the plug.

Soil/Erosion Control

If the work involves exposing large areas of soil employ the appropriate soil erosion and control techniques. See the Construction Best Management Practice Handbook. If old buildings are being torn down and not replaced in the near future, stabilize the site using measures described in SC10, Contaminated or Erodible Surface Areas.

If a building is to be placed over an open area with a storm drainage system, make sure the storm inlets within the

SC12



building are covered or removed, or the storm line is connected to the sanitary sewer. If because of the remodeling a new drainage system is to be installed or the existing system is to be modified, consider installing catch basins as they serve as effective "in-line" treatment devices. See TC2 (Wet Ponds) in Chapter 5 regarding design criteria. Include in the catch basin a "turn-down" elbow or similar device to trap floatables.

Recycle residual paints, solvents, lumber, and other materials to the maximum extent practical. Buy recycled products to the maximum extent practical..

REFERENCES

Best Management Practices for Industrial Storm Water Pollution Control, Santa Clara Valley Nonpoint Source Pollution Control Program, 1992.

SC12



ACTIVITY: WASTE HANDLING AND DISPOSAL





DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from waste handling and disposal by tracking waste generation, storage, and disposal; reducing waste generation and disposal through source reduction, re-use, and recycling; and preventing runon and runoff from waste management areas.

APPROACH

- Maintain usage inventory to limit waste generation.
- Raw material substitution or elimination.
- Process or equipment modification.
- Production planning and sequencing.
- SARA Title III, Section 313 requires reporting for over 300 listed chemicals and chemical compounds. This requirement should be used to track these chemicals although this is not as accurate a means of tracking as other approaches.

  Track waste generated.
  - Characterize waste stream.
  - Evaluate the process generating the waste.
  - Prioritize waste streams using: manifests, biennial reports, permits, environmental audits, SARA Title III reports, emission reports, NPDES monitoring reports.
  - Inventory reports.
  - Data on chemical spills.
  - Emissions.
  - Shelf life expiration.
- Use design data and review: process flow diagram, materials and applications diagram, piping and instructions, equipment list, plot plan.
- Use raw material and production data and review: composition sheets, materials safety data sheets (MSDS), batch sheets, product or raw material inventory records, production schedule, operator data log.
- Use economic data and review:
  - Waste treatment and disposal cost.
  - Product utility and economic cost.
  - Operation and maintenance labor cost.
- Recycle materials whenever possible.
- Maintain list of and the amounts of materials disposed.
- Waste segregation and separation.
- Check industrial waste management areas for spills and leaks.
- Cover, enclose, or berm industrial wastewater management areas whenever possible to prevent contact with runon or runoff.

  Equip waste transport vehicles with anti-spill equipment.

Applications

- *Manufacturing*
- *Material Handling*
- *Vehicle Maintenance*
- *Construction*
- *Commercial Activities*
- *Roadways*
- *Waste Containment*
- *Housekeeping Practices*

Targeted Constituents

- ○ *Sediment*
- ○ *Nutrients*
- ● *Heavy Metals*
- ● *Toxic Materials*
- ○ *Floatable Materials*
- ○ *Oxygen Demanding Substances*
- ● *Oil & Grease*
- ○ *Bacteria & Viruses*

- ● *Likely to Have Significant Impact*
- ○ *Probable Low or Unknown Impact*

Implementation Requirements

- ○ *Capital Costs*
- ◒ *O&M Costs*
- ○ *Maintenance*
- ◒ *Training*

● *High* ○ *Low*

SC9

Best Management Practices

- Minimize spills and fugitive losses such as dust or mist from loading systems.
- Ensure that sediments or wastes are prevented from being tracked off-site.
- Training and supervision.
- Stencil storm drains on the facility's property with prohibitive message regarding waste disposal.
- For a quick reference on disposal alternatives for specific wastes see Table 4.1, SC1.
- Consider ordering industry-specific or waste stream-specific guidance from PPIC (see Appendix G).

REQUIREMENTS

- Costs (Capital, O&M)
  - Capital and O&M costs for these programs will vary substantially depending on the size of the facility and the types of waste handled. Costs should be low if there is an inventory program in place.
- Maintenance
  - None except for maintaining equipment for material tracking program.

LIMITATIONS

- Hazardous waste that cannot be re-used or recycled must be disposed of by a licensed hazardous waste hauler.

Additional Information — Waste Handling and Disposal

Industrial waste management activities occur in areas that can contaminate storm water and include landfills, waste piles, wastewater and solid waste treatment and disposal, and land application. Typical operations which affect storm water pollution may include waste pumping, treatment chemicals storage, mixing, aeration, clarification, and solids dewatering.

Waste Reduction

Waste spilled, leaked, or lost from waste management areas or outside manufacturing activities may build up in soils or in other surfaces and be carried away by storm water runoff. There is also a potential for liquid waste from lagoons or surface impoundments to overflow to surface waters or soak the soil where pollutants may be picked up by storm water runoff.

Waste reduction for manufacturing activities is the best way to reduce the potential of storm water contamination from waste management areas. Reduction in the amount of industrial waste generated can be accomplished using many different types of source controls such as:

- Production planning and sequencing.
- Process or equipment modification.
- Raw material substitution or elimination.
- Loss prevention and housekeeping.
- Waste segregation and separation.
- Close loop recycling.

An approach to reduce storm water pollution from waste handling and disposal is to assess process activities at the facility and reduce waste generation. The assessment is designed to find situations where waste can be eliminated or reduced and emissions and environmental damage can be minimized. The assessment involves collecting process specific information, setting pollution prevention targets, and developing, screening and selecting waste reduction options for further study. Starting a waste reduction program is economically beneficial because of reduced raw material purchases and lower waste disposal fees. In addition, material tracking systems to increase awareness about material usage can reduce spills and minimize contamination, thus reducing the amount of waste produced.

Spill/Leak Control

Waste can be prevented from contaminating storm water by checking waste management areas for leaking containers or spills. Corroded or damaged containers can begin to leak at any time. Transfer waste from these damaged containers into safe containers. Dumpsters should be covered to prevent rain from washing waste out of holes or cracks in the bottom of the dumpster. Leaking equipment including valves, lines, seals, or pumps should be repaired promptly.

Vehicles transporting waste should have spill prevention equipment that can prevent spills during transport. The spill prevention equipment includes:

- Vehicles equipped with baffles for liquid waste.
- Trucks with sealed gates and spill guards for solid waste.

Loading or unloading wastes can contaminate storm water when the wastes are lost from the transfer. Loading systems can also be used to minimize spills and fugitive emission losses such as dust or mist. Vacuum transfer systems can minimize waste loss.

Runon/Runoff Prevention

Storm water runon should be prevented from entering the waste management area. Storm water pollution from runon can be prevented by enclosing the area or building a berm around the area. Other alternatives for reducing storm water pollution include:

- Preventing the waste materials from directly contacting rain.

SC9



Additional Information — Waste Handling and Disposal

- Moving the activity indoor after ensuring that all safety concerns such as fire hazard and ventilation are addressed.
- Covering the area with a permanent roof.
- Covering waste piles with temporary covering material such as reinforced tarpaulin, polyethylene, polyurethane, polypropylene or hypalon.

To avoid tracking materials off-site, the waste management area should be kept clean at all times by sweeping and cleaning up spills immediately. Vehicles should never drive through spills. If necessary, wash vehicles in designated areas before they leave the site, and control the wash water.

Minimizing the runoff of polluted storm water from land application of industrial waste on-site can be accomplished by:

- Choosing a site where:
  - slopes are under 6 percent
  - the soil is permeable
  - there is a low water table
  - it is located away from wetlands or marshes
  - there is a closed drainage system
- Avoiding applying waste to the site:
  - when it is raining
  - when the ground is frozen
  - when the ground is saturated with water
- Growing vegetation on land disposal areas to stabilize soils and reduce the volume of surface water runoff from the site.
- Maintaining adequate barriers between the land application site and the receiving waters. Planted strips are particularly good.
- Using erosion control techniques
  - mulching and matting,
  - filter fences,
  - straw bales,
  - diversion terracing,
  - sediment basins.
- Performing routine maintenance to ensure the erosion control or site stabilization measures are working.

Examples of Effective Programs

The port of Long Beach has a state-of-the-art database for identifying potential pollutant sources, documenting facility management practices, and tracking pollutants.

REFERENCES

Best Management Practices for Industrial Storm Water Pollution Control, Santa Clara Valley Nonpoint Source Pollution Control Program, 1992.

Publications Than Can Work For You!; California Department of Toxic Substances Control, Sacramento, CA, 1991 (A list and order form for waste minimization publications from the State).

Storm Water Management for Industrial Activities: Developing Pollution Prevention Plans, and Best Management Practices, EPA 832-R-92-006, USEPA, 1992.

Distribute List, Pollution Prevention Information Clearinghouse, USEPA 1992.

SC9



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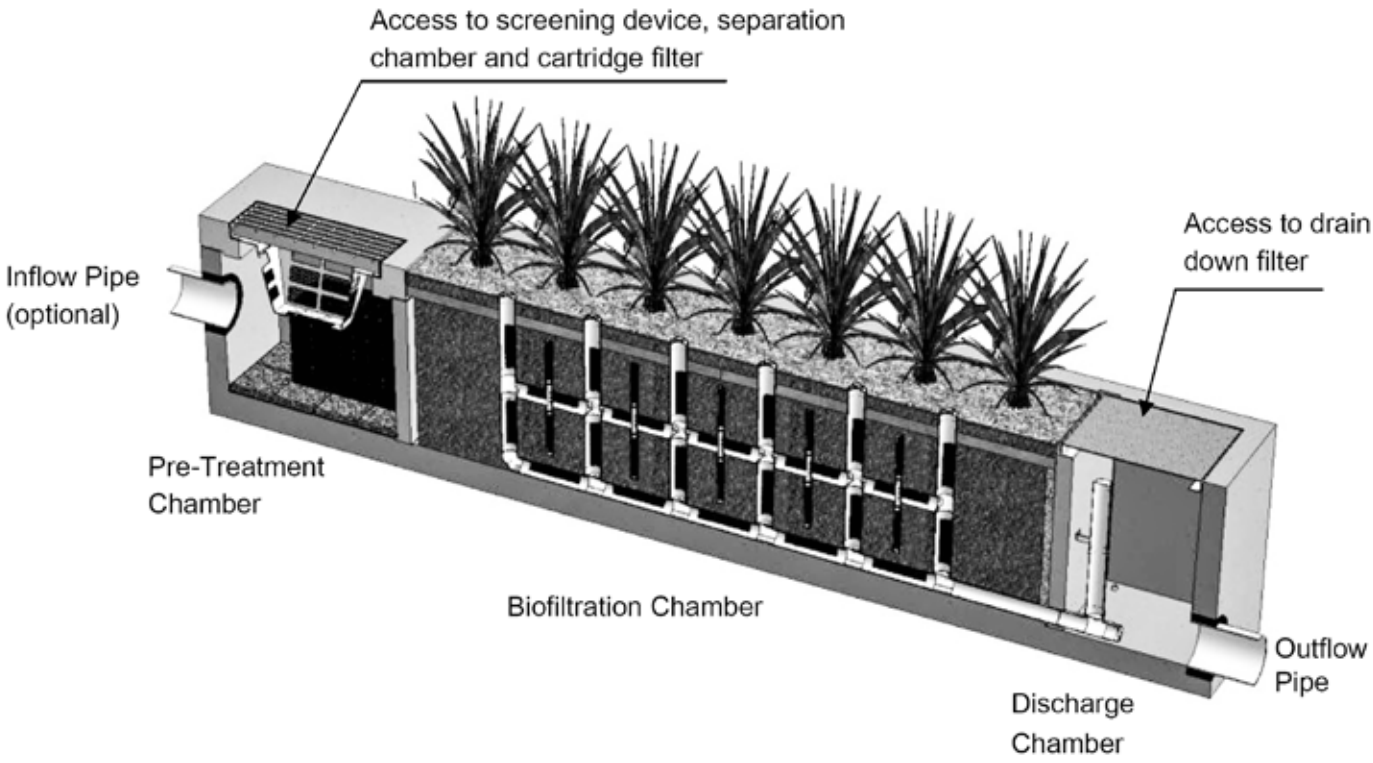
Modular Wetlands® Linear
Operation & Maintenance Manual



MODULAR WETLANDS®

Maintenance Summary

- Remove Trash from Screening Device – average maintenance interval is 6 to 12 months.
  - *(5 minute average service time).*
- Remove Sediment from Separation Chamber – average maintenance interval is 12 to 24 months.
  - *(10 minute average service time).*
- Replace Cartridge Filter Media – average maintenance interval 12 to 24 months.
  - *(10-15 minute per cartridge average service time).*
- Replace Drain Down Filter Media – average maintenance interval is 12 to 24 months.
  - *(5 minute average service time).*
- Trim Vegetation – average maintenance interval is 6 to 12 months.
  - *(Service time varies).*



System Diagram

Maintenance Procedures

Screening Device

1. Remove grate or manhole cover to gain access to the screening device in the Pre- Treatment Chamber. Vault type units do not have screening device. Maintenance can be performed without entry.
2. Remove all pollutants collected by the screening device. Removal can be done manually or with the use of a vacuum truck.
3. Screening device can easily be removed from the Pre-Treatment Chamber to gain access to separation chamber and media filters below. Replace grate or manhole cover when completed.

Separation Chamber

1. Perform maintenance procedures of screening device listed above before maintaining the separation chamber.
2. With a pressure washer, spray down pollutants accumulated on walls and cartridge filters.
3. Vacuum out Separation Chamber and remove all accumulated pollutants. Replace screening device, grate or manhole cover when completed.

Cartridge Filters

1. Perform maintenance procedures on screening device and separation chamber before maintaining cartridge filters.
2. Enter separation chamber.
3. Unscrew the two bolts holding the lid on each cartridge filter and remove lid.
4. Remove each of 4 to 8 media cages holding the media in place.
5. Spray down the cartridge filter to remove any accumulated pollutants.
6. Vacuum out old media and accumulated pollutants.
7. Reinstall media cages and fill with new media from manufacturer or outside supplier. Manufacturer will provide specification of media and sources to purchase.
8. Replace the lid and tighten down bolts. Replace screening device, grate or manhole cover when completed.

Drain Down Filter

1. Remove hatch or manhole cover over discharge chamber and enter chamber. Entry into chambers may require confined space training based on state and local regulations.
2. Unlock and lift drain down filter housing and remove old media block. Replace with new media block. Lower drain down filter housing and lock into place.
3. Exit chamber and replace hatch or manhole cover.

Maintenance Notes

1. Following maintenance and/or inspection, it is recommended the maintenance operator prepare a maintenance/ inspection record. The record should include any maintenance activities performed, amount and description of debris collected, and condition of the system and its various filter mechanisms.
2. The owner should keep maintenance/inspection record(s) for a minimum of five years from the date of maintenance. These records should be made available to the governing municipality for inspection upon request at any time.
3. Transport all debris, trash, organics and sediments to approved facility for disposal in accordance with local and state requirements.
4. Entry into chambers may require confined space training based on state and local regulations.
5. No fertilizer shall be used in the Biofiltration Chamber.
6. Irrigation should be provided as recommended by manufacturer and/or landscape architect. Amount of irrigation required is dependent on plant species. Some plants may require irrigation.

Maintenance Procedure Illustration

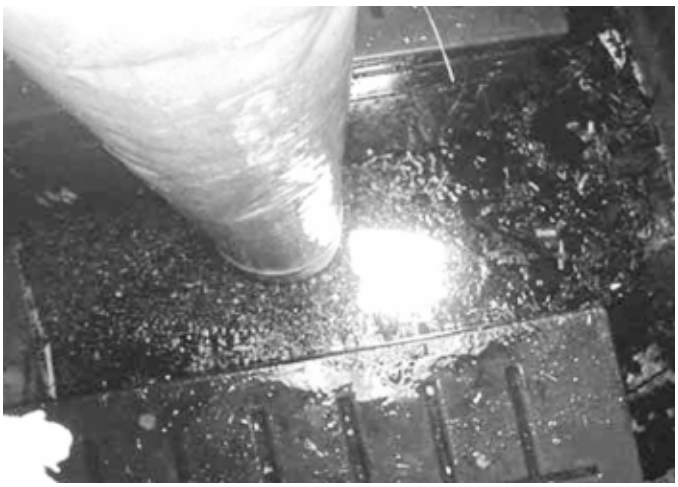
Screening Device

The screening device is located directly under the manhole or grate over the Pre-Treatment Chamber. It's mounted directly underneath for easy access and cleaning. Device can be cleaned by hand or with a vacuum truck.



Separation Chamber

The separation chamber is located directly beneath the screening device. It can be quickly cleaned using a vacuum truck or by hand. A pressure washer is useful to assist in the cleaning process.



Cartridge Filters

The cartridge filters are located in the Pre-Treatment chamber connected to the wall adjacent to the biofiltration chamber. The cartridges have removable tops to access the individual media filters. Once the cartridge is open media can be easily removed and replaced by hand or a vacuum truck.



Drain Down Filter

The drain down filter is located in the Discharge Chamber. The drain filter unlocks from the wall mount and hinges up. Remove filter block and replace with new block.



Trim Vegetation

Vegetation should be maintained in the same manner as surrounding vegetation and trimmed as needed. No fertilizer shall be used on the plants. Irrigation per the recommendation of the manufacturer and or landscape architect. Different types of vegetation requires different amounts of irrigation.



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Inspection Report
Modular Wetlands Linear

Project Name _____

Project Address _____
(city) (Zip Code)

Owner / Management Company _____

Contact _____ Phone ( ) –

For Office Use Only
(Reviewed By)
(Date)
Office personnel to complete section to the left.

Inspector Name _____ Date ____/____/____ Time _____ AM / PM

Type of Inspection ☐ Routine ☐ Follow Up ☐ Complaint ☐ Storm Storm Event in Last 72-hours? ☐ No ☐ Yes

Weather Condition _____ Additional Notes _____

Inspection Checklist

Modular Wetland System Type (Curb, Grate or UG Vault): _____ Size (22', 14' or etc.): _____

Structural Integrity:	**Yes**	**No**	**Comments**
Damage to pre-treatment access cover (manhole cover/grate) or cannot be opened using normal lifting pressure?			
Damage to discharge chamber access cover (manhole cover/grate) or cannot be opened using normal lifting pressure?			
Does the MWS unit show signs of structural deterioration (cracks in the wall, damage to frame)?			
Is the inlet/outlet pipe or drain down pipe damaged or otherwise not functioning properly?			
Working Condition:			
Is there evidence of illicit discharge or excessive oil, grease, or other automobile fluids entering and clogging the unit?			
Is there standing water in inappropriate areas after a dry period?			
Is the filter insert (if applicable) at capacity and/or is there an accumulation of debris/trash on the shelf system?			
Does the depth of sediment/trash/debris suggest a blockage of the inflow pipe, bypass or cartridge filter? If yes, specify which one in the comments section. Note depth of accumulation in in pre-treatment chamber.			Depth:
Does the cartridge filter media need replacement in pre-treatment chamber and/or discharge chamber?			Chamber:
Any signs of improper functioning in the discharge chamber? Note issues in comments section.			
Other Inspection Items:			
Is there an accumulation of sediment/trash/debris in the wetland media (if applicable)?			
Is it evident that the plants are alive and healthy (if applicable)? Please note Plant Information below.			
Is there a septic or foul odor coming from inside the system?			

Waste:	**Yes**	**No**
Sediment / Silt / Clay		
Trash / Bags / Bottles		
Green Waste / Leaves / Foliage		

Recommended Maintenance	
No Cleaning Needed	
Schedule Maintenance as Planned	
Needs Immediate Maintenance	

Plant Information	
Damage to Plants	
Plant Replacement	
Plant Trimming	

Additional Notes: _____

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ENGINEERED SOLUTIONS

Cleaning and Maintenance Report
Modular Wetlands Linear

Project Name _____

Project Address _____
(city) (Zip Code)

Owner / Management Company _____

Contact _____ Phone ( ) –

Inspector Name _____ Date ____/____/____ Time _____ AM / PM

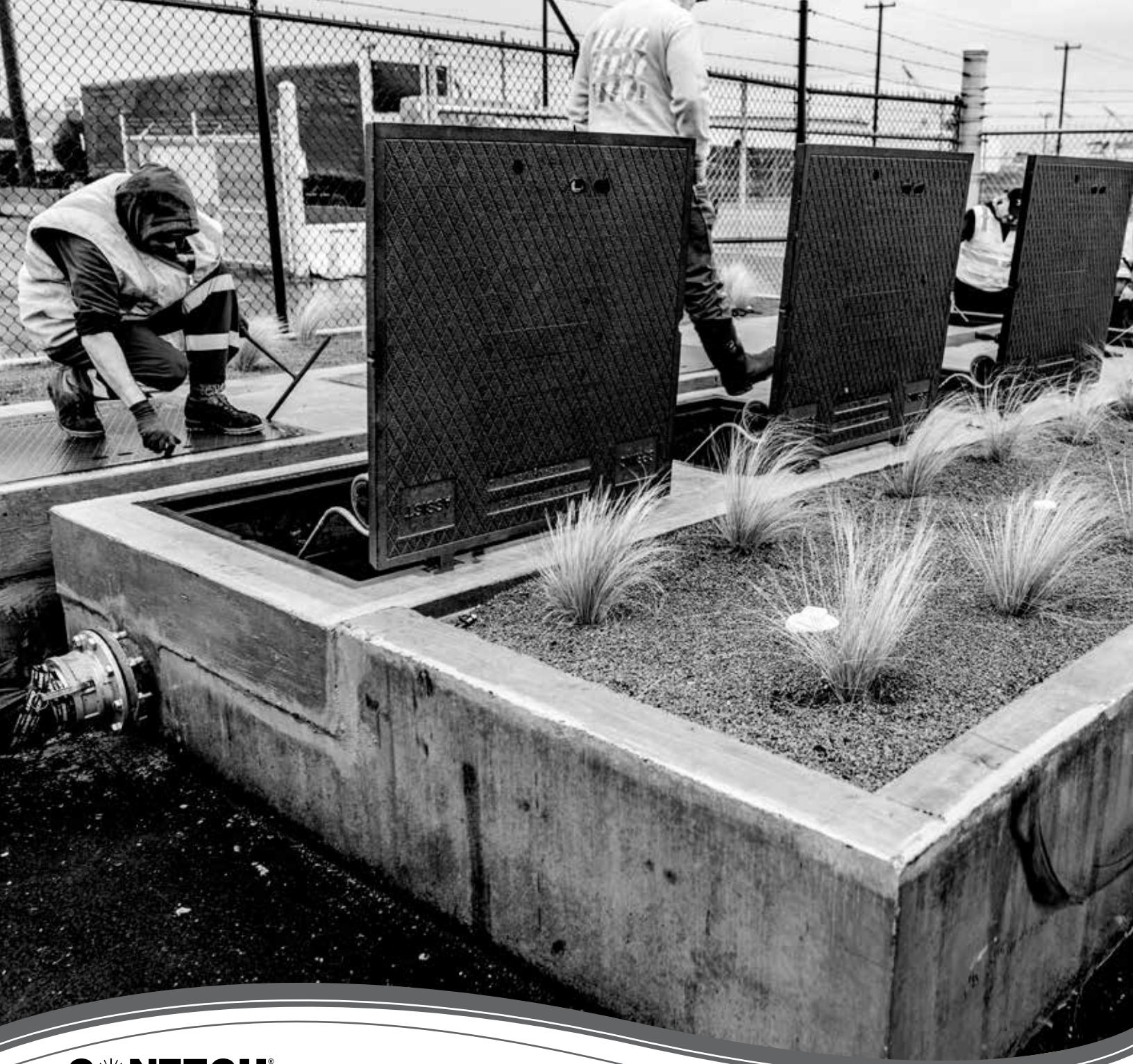
For Office Use Only
(Reviewed By)
(Date)
Office personnel to complete section to the left.

Type of Inspection ☐ Routine ☐ Follow Up ☐ Complaint ☐ Storm Storm Event in Last 72-hours? ☐ No ☐ Yes

Weather Condition _____ Additional Notes _____

Site Map #	GPS Coordinates of Insert	Manufacturer / Description / Sizing	Trash Accumulation	Foliage Accumulation	Sediment Accumulation	Total Debris Accumulation	Condition of Media 25/50/75/100 (will be changed @ 75%)	Operational Per Manufactures' Specifications (If not, why?)
	Lat: Long:	MWS Catch Basins						
		MWS Sedimentation Basin						
		Media Filter Condition						
		Plant Condition						
		Drain Down Media Condition						
		Discharge Chamber Condition						
		Drain Down Pipe Condition						
		Inlet and Outlet Pipe Condition						

Comments:



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SUPPORT

DRAWINGS AND SPECIFICATIONS ARE AVAILABLE AT WWW.CONTECHES.COM

Modular Wetlands Maintenance Guide 08/22

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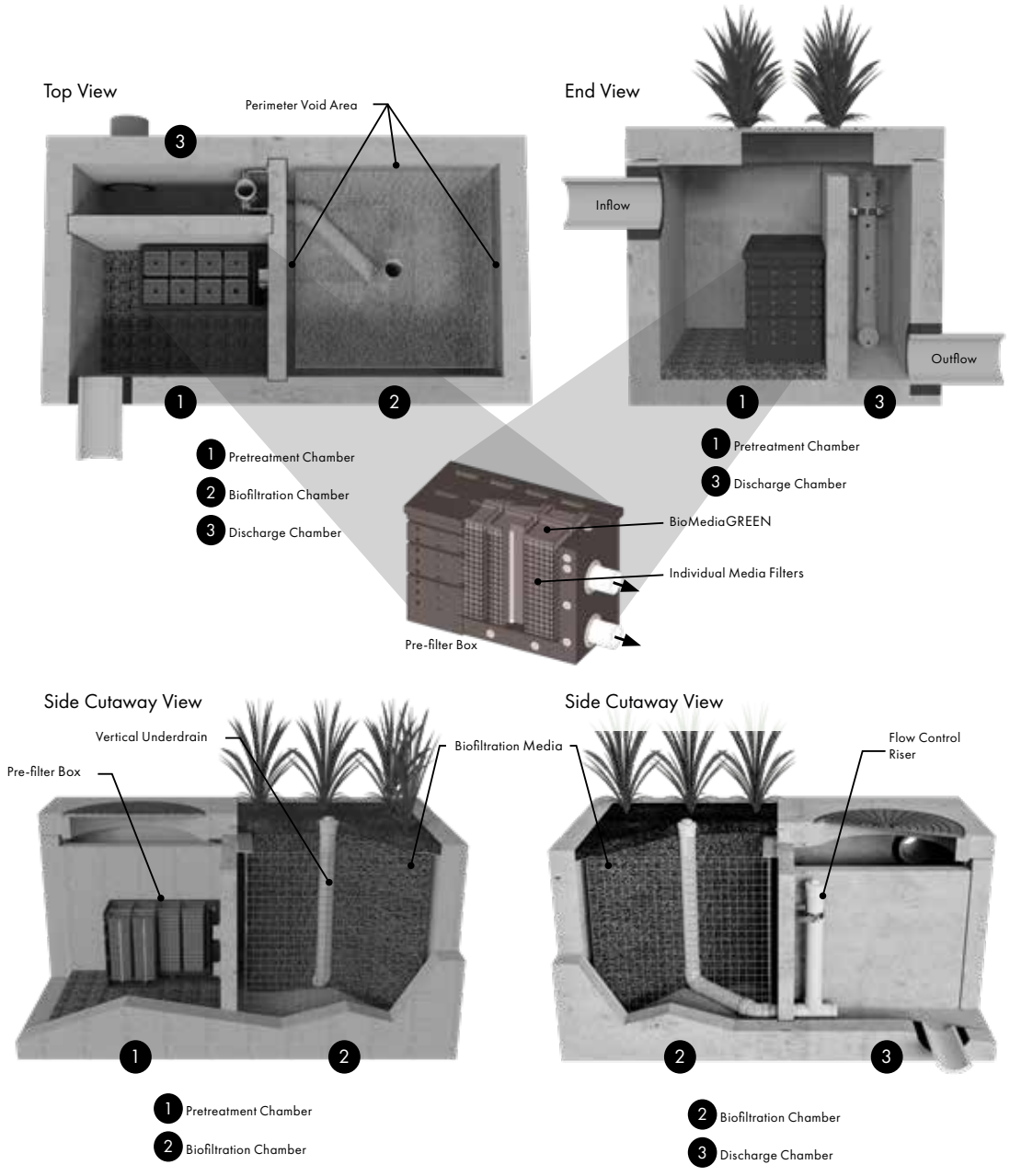
Modular Wetlands® Linear Concrete Installation Manual



MODULAR WETLANDS®

Overview

The Modular Wetland® Linear Biofilter is designed to remove high levels of trash, debris, sediments, nutrients, metals, and hydrocarbons. Its simple design allows for quick and easy installation. The system is housed in a standard pre-cast structure and can be installed at various depths to meet site-specific conditions.



Introduction

This is the Modular Wetlands® Linear installation manual. Before starting, make sure there is enough room for installing and assembling the product. Inspect all materials for defects and gather the recommended tools listed on the following page. The contractor shall furnish all labor, equipment, materials, and incidentals required to conduct the installation in accordance with the contract documents.

Instructions

Delivery & Unloading / Lifting

- Contech shall deliver the unit(s) to the site in coordination with the Contractor.
- The Contractor may be required to provide spreader bars and chains/cables to safely and securely lift the base section, risers, and top section along with suitable lifting hooks, knuckles, shackles and eyebolts.
- Please see project specific drawings for weights and lifting details. Contact Contech for additional lifting details.

Inspection

Inspection of the Modular Wetlands® Linear and all parts contained in or shipped outside of the unit shall be inspected at time of delivery by the site Engineer/Inspector and the Contractor. Any nonconformance to approved drawings or damage to any part of the system shall be documented on the Contech shipping ticket.

- Damage to the unit during and after unloading shall be corrected at the expense of the Contractor. Any necessary repairs to the Modular Wetlands® Linear unit shall be made to the acceptance of the Engineer/ Inspector.

Site Preparation

- The Contractor is responsible for providing adequate and complete vault protection when the Modular Wetlands® Linear unit is installed prior to final site stabilization (full landscaping, grass cover, final paving, and street sweeping completed) to prevent construction debris or construction phase runoff from entering the unit.
- The Contractor shall adhere to all jurisdictional and/or OSHA safety rules in providing temporary shoring of the excavation.
- The Contractor or Owner is responsible for appropriately barricading the Modular Wetlands® Linear unit from traffic (in accordance with local codes).



- Each Modular Wetlands® Linear unit shall be constructed based on the locations and elevations according to the sizes shown on the approved drawings. Any modifications to the elevation or location shall be at the direction of and approved by the Engineer.
- The Modular Wetlands® Linear unit shall be placed on level compacted sub-grade with a minimum 6-inch gravel base. Compact undisturbed sub-grade materials to be per Geotechnical/Soils report. Unsuitable material below sub-grade shall be replaced to site engineer's approval. Place granular sub-base and compact to State and local standards as per the Engineers requirements.
- Once the base piece is set, the riser(s) and top section should be sealed onto the base section before backfilling, using a non-shrink grout, butyl rubber or similar waterproof seal.
- Pipe connections shall be aligned and sealed to meet the approved drawings with modifications necessary to meet site conditions and local regulations. The correct connection (inlet/outlet) will be marked on the Modular Wetlands® Linear unit.

- NOTE: The inlet and outlet pipe cannot protrude past the structures I.D. wall as it will interfere with the internal components.
- Once the Modular Wetlands® Linear unit is set, it should be protected from construction runoff entering it. Contractor will be responsible for cleaning if unit is contaminated by such construction runoff and associated pollutants and damaged (i.e. concrete wash water).
- Backfilling should be performed in a careful manner, bringing the appropriate fill material up in 6-inch lifts on all sides. Pre-cast sections shall be set in a manner that will result in a watertight joint. In all instances, installation of the Modular Wetlands® Linear unit shall conform to ASTM specification C891 "Standard Practice for Installation of Underground Precast Utility Structures" unless specified otherwise in contract documents.
- If applicable, it is the responsibility of the Contractor to provide curb and gutter and transition to the Modular Wetlands® Linear unit for proper stormwater flow into the system through the throat, pipe or grate opening. A standard drawing of the throat and gutter detail is available in the following section; however the plans and contract documents supersede all standard drawings. Several variations of the standard design are available. Effective bypass for an offline Modular Wetlands® Linear unit is essential for correct operation (i.e. bypass to an overflow at lower elevation).

Installation

1. Each Modular Wetlands® Linear unit shall be constructed based on the locations and elevations according to the sizes shown on the approved drawings. Any modifications to the elevation or location shall be at the direction of and approved by the Engineer.



Position crane in a safe and optimal position for unloading. Ensure that the crane operator has the proper weights and distance to install location to allow for proper setup. The crane operator will provide instructions to the delivery driver on where to position the truck for offload.

2. The Modular Wetlands® Linear unit shall be placed on level compacted sub-grade with a minimum 6-inch gravel base and mark the base. Compact undisturbed subgrade materials to be per Geotechnical/Soils report. Unsuitable material below sub-grade shall be replaced to site engineer's approval. Place granular sub-base and compact to State and local standards as per the Engineer's requirements.

3. Pipe material selection should be indicated on the Site Plan. Connect the pipe using a Kor-N-Seal, Press Seal, Fernco, or other approved watertight boot connection. In the case of concrete pipes, grout the connection watertight with non-shrink grout.



The contractor is responsible to provide the appropriate rigging and lifting connectors. Spreader bars are recommended to prevent damage to the concrete vault. All lifting points on the concrete vault must be used for safe offloading. Guide ropes can be used to stabilize the vault during offloading.

4. Lift the vault off of the delivery truck and safely move vault over the excavated area for installation. Before setting the vault ensure the hole is the right size, level, and properly sized.



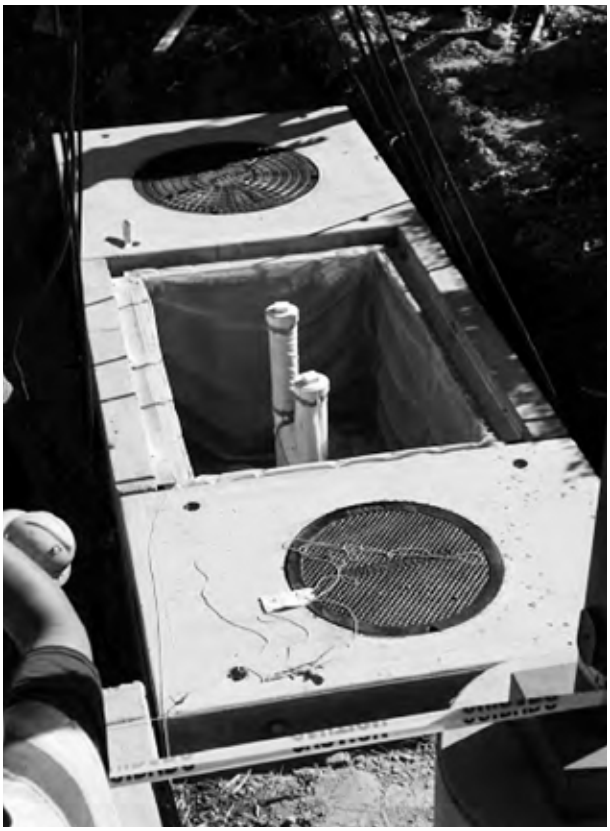
5. Position the concrete vault over the excavated area and slowly lower into position. Ensure the inlet and outlet sides of the vault are in the correct position and the correct elevations are verified.



6. Once the vault is set in place, check all four corners are in the correct position. Take tension off of the rigging to ensure the vault is set properly and the compacted rock backfill below is holding the weight of the vault.



7. Use a string and or level to make sure the vault is level in both directions. The vault cannot be more than 0.5% slope off from level in any direction. If the vault slopes more than 0.5%, pick back up, move to a safe area, re-level the rock below and reset until properly level.



8. After pipe connections are completed, backfill in 12 inch increments and compact per local and state requirements. If curb type configurations, pour and connect curb and gutter system as shown in the picture to the right.

   The last step is to install the wetland media that can be delivered in super sacks or in bulk based on preference. Install the plant propagation blocks as shown in the drawings below. Install the vegetation and cover with decorative rock and mulch.



Pipe Connections

- Pipe material selection should be indicated on the Site Plan. Connect the pipe using a Kor-N-Seal, Press Seal, Fernco, or other approved watertight boot connection. In the case of concrete pipes, grout the connection watertight with non-shrink grout
- Inlet pipe(s) shall be stubbed in and connected to the precast manhole according to the Engineer's requirement or specifications. The Contractor is to grout all inlet pipes flush with the interior wall of the structure per plans and specifications.
- Outlet pipe shall be stubbed in and connected to the precast manhole according to the Engineer's requirement or specifications. The Contractor is to grout all inlet pipes flush with the interior wall of the structure per plans and specifications.
- For illustration a BAD example of a pipe installation is included below. The pipe is off-center, the pipe invert is not in the appropriate position, it is protruding beyond the inside wall, the grout is not clean and properly finished. This site was corrected by re-excavating and reconnecting the pipe properly.



Example of a BAD pipe installation. Protruding past the internal wall of the structure, poor grouting, and wrong position.



Example of a GOOD pipe installation. Pipe flush with the internal wall of the structure, clean grouting, and proper position.

- Once the pipes are connected, carefully backfill around them, compacting in "lifts" that will not deflect, disturb or damage them.



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Corrugated Metal Pipe Detention Design Guide

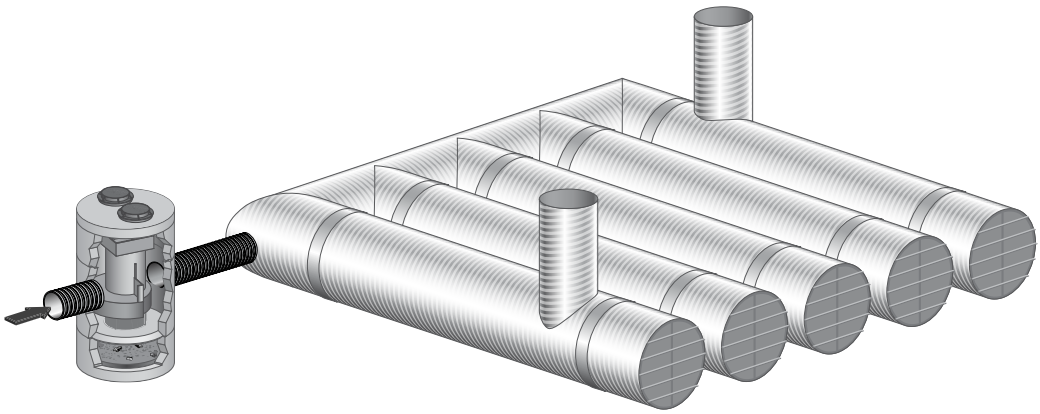


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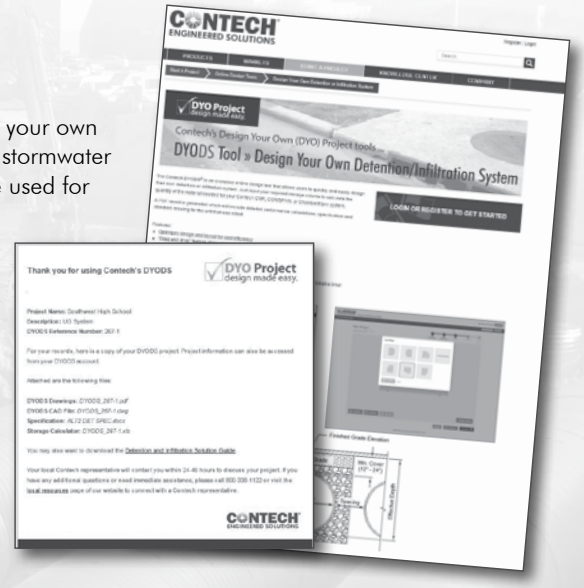
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CMP Detention System Design Tools



Design Your Own Detention System (DYODS®)

Contech's DYODS is an exclusive, online design tool that allows you to design your own detention or infiltration system. DYODS fully automates the layout process for stormwater detention and infiltration systems and produces CAD and PDF files that can be used for creating plans and specs, and for estimating total installed costs.
Features of the new tool include:

- Optimizes design and layout for cost efficiency
- "Drag and drop" feature allow users to customize layout
- Design multiple systems per project and save for future use
- Provides instant access to customized, project specific drawings
- CAD/PDF files provided for use in creating plans and specs
- Guides the selection of CMP material and coatings

The DYODS tool is available at www.conteches.com/DYO.

Online Product Design Worksheet (PDW)

Our in-house team of engineers can support you through the entire permitting process. Just enter your information into the online form, and one of our in-house engineers will contact you with specific recommendations for your project.

The Detention Product Design Worksheet
is available at www.conteches.com/detentionpdw

Engineering Services & Support

Contech has regional engineering offices and local stormwater consultants trained to provide regulatory guidance and permitting assistance, preliminary standard details and/or site specific final drawings and specifications, Low Impact Development design assistance, engineering calculations for hydraulics/hydrology, buoyancy, and stage-storage, installation support, maintenance support and more.

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Guidelines for Designing CMP Detention Systems

Please follows these guidelines when designing a custom fabricated CMP detention system.

- No riser or stubs on a weld.
- Minimum distance from riser or stub to a weld joint is 12".
- Riser minimum distance to end of pipe is 24".
- Stub minimum distance to end of pipe is 12".
- Spacing between pipe runs up to /incl 24"diameter pipe is 12", 24" to 72" diameter pipe is equal to half the diameter of pipe, =>72" Diameter pipe is 3 ft standard spacing.
- Minimum depth of earth cover is 1' above crown of pipe up 96" diameter pipe, 102" diameter pipe and over is 18" min. earth cover.
- Standardized length of pipe is 24' but can vary from one region to another. Speak to your local Contech representative for additional information.
- Minimum length of pipe needs to be 4 feet greater than the diameter of the pipe.
- Any system should be outside the building's foundation zone of influence and any system beneath a structure should be evaluated on an individual basis.

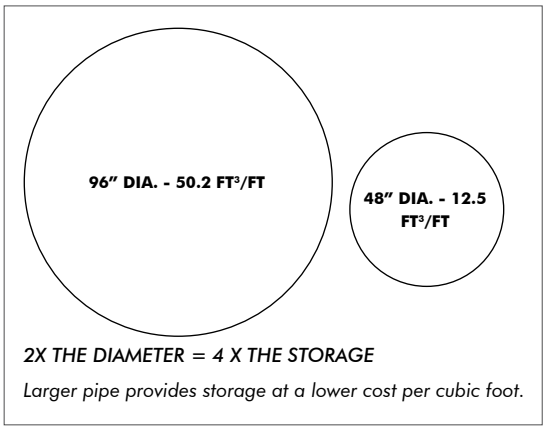
Cost-Effective Design and Layout

The three most important goals should be to shrink the footprint of the system by maximizing the storage volume within a given area, eliminate unnecessary welding and fabrication, and eliminate unnecessary structures.

Shrinking the Footprint

The goal of any CMP detention system should be to maximize the vertical space available to minimize the overall footprint, to reduce material, excavation, and backfill costs. To do this we recommend using the largest diameter pipe possible.

Increasing the depth of a CMP detention system allows for a smaller footprint while storing the same amount of water. For example, doubling the diameter of pipe yields four times as much storage volume per foot in the pipe. This provides significant cost savings per cubic foot of storage. Also, more vertical storage space means a smaller footprint equating to less excavation, less backfill and lower project costs.

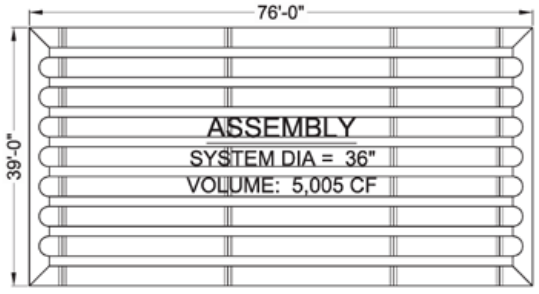


2X THE DIAMETER = 4 X THE STORAGE

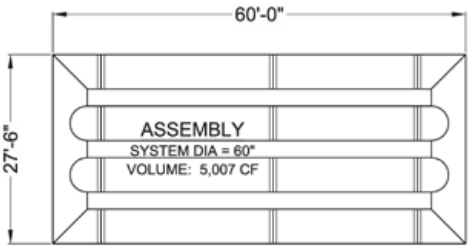
Larger pipe provides storage at a lower cost per cubic foot.

Consider the following example:

System 1 is made from 36" diameter pipe that provides 5,005 cubic feet of storage. System 2 is made from 60" diameter pipe that provides the same 5,005 cubic feet of storage. Both systems provide the same amount of storage, but System 2 is the most economical design as it reduces material costs, fabrication costs, excavation, and backfill costs. Having fewer runs of pipe will cut down on the number of welds and special fabrication requirements. Having fewer welds will also cut down on lead times. Lastly, System 2 has a footprint that is 1,300 square feet smaller than System 1, reducing excavation and backfill costs. The only instance, where System 2 may not be feasible, is when you do not have the available depth for the larger diameter pipe.



System 1

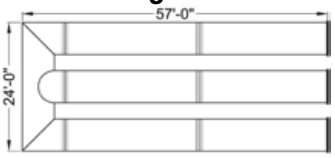


System 2

Eliminating Unnecessary Welds

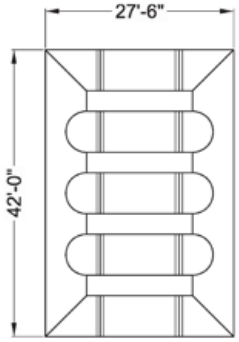
The rule of thumb is to use as much straight pipe as possible to reduce the number of tees and elbows in your design. Doing so will result in a more cost effective and efficient design, and will also reduce lead times. In the example below, both systems are designed with 72" diameter pipe and roughly the same storage volume. System 1 uses only two elbows and one tee and will be much more cost effective than System Two that uses four elbows and six tees.

Efficient Design



System 1

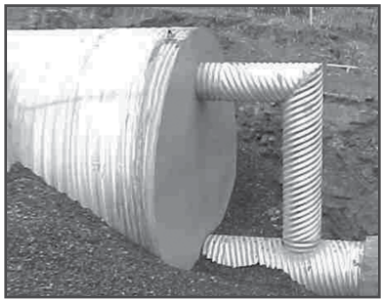
Inefficient Design



System 2

Eliminating Unnecessary Structures

Costs can also be reduced by eliminating concrete structures such as catch basins and outlet control structures by incorporating them into the CMP system. For example, a riser can be added to a system in the low point of a parking lot with a grated inlet to eliminate a concrete catch basin. Internal weir plates and multiple external outlet stubs can often be used to eliminate a separate concrete outlet control structure downstream. Such designs may seem a bit unusual for an engineer that is used to designing with concrete structures. Contech's team of stormwater design engineers have experience in this and can assist with the routing designs of CMP detention systems.

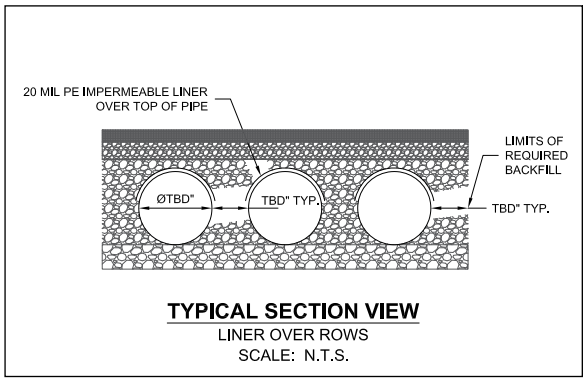




CMP Detention Systems in Corrosive Environments

A site's resistivity may change over time when various types of salting agents are used, such as road salts for deicing purposes. If salting agents are used on or near the project site, a geomembrane barrier must be used with the system. The geomembrane liner is intended to help protect the system from the potential adverse effects that may result from the use of such salting agents including premature corrosion and reduced actual service life.

The project's Engineer of Record is to evaluate whether salting agents will be used on or near the project site, and use his/her best judgement to determine if any additional protective measures are required. Below is a typical detail showing the placement of a geomembrane barrier for projects where salting agents are used on or near the project site.



Standard Liner Over Rows

Detention Pipe Selection

Durability Design Guide for CMP Detention Products

Proper design of detention systems requires structural, hydraulic and durability considerations. While most designers are comfortable with structural and hydraulic design, the mechanics of evaluating abrasion, corrosion and water chemistry to perform a durability design are not found in most civil engineering handbooks.

The durability and service life of a CMP detention installation is directly related to the environmental conditions encountered at the site and the type of materials and coatings from which the system is fabricated. Two principle causes of early failure for CMP are corrosion and abrasion.

Service life can be affected by the corrosive action of the backfill in contact with the outside of a CMP detention or occasionally by the corrosive and abrasive action of the flow in the invert of the CMP detention. The design life analysis should include a check for both the water side and soil side environments to determine which is more critical— or which governs service life.

Metal loss in the invert of a CMP detention due to abrasive flows is not typical as the hydraulic dynamics are different as compared to a culvert application. An estimate for potential abrasion is required at each pipe location in order to determine the appropriate material and gage. Typical Detention applications are considered to have an Abrasion Level 1, or non-abrasive.

This manual is intended to guide specifiers through the mechanics of selecting appropriate materials to meet service life requirements. The information contained in the following pages is a composite of several national guidelines.



Procedure for Selection of the Appropriate System

The choice of material, gage and product type can be extremely important to service life. The following steps describe the procedure for selecting the appropriate CMP detention material and gage to meet a specific service life requirement.

Design Sequence:

1. Select pipe or structure based on hydraulic and clearance requirements.

2. Use Height of Cover tables for the chosen pipe or structure to determine the material gage required for the specific loading condition.

3. Use Table 2 to select the appropriate material for the site-specific environmental conditions. There may be some instances where more than one material is appropriate for the project environmental conditions. Generally speaking, the metal material types increase in price as you move from top down on Table 2. Please contact your local Contech Representative for pricing.

4. Use Table 3 to determine which abrasion level most accurately describes site conditions. The expected stream velocity and associated abrasion conditions should be based on a typical flow and not a 10 or 50-year design flood. Abrasion Level 1 is typically an accepted value for detention and infiltration applications.

5. Use Table 4 to determine whether the structural gage for the selected material is sufficient for the design service life. If the structural gage is greater than or equal to the gage required for a particular abrasion condition and service life, use the structural gage. Conversely, if the structural gage is less than the gage required for a particular abrasion condition and service life, use the gage required by Table 4.

Note: *Corrosive environments, such as seawater and road/de-icing salt infiltration, and other environments with pH and resistivity outside of the recommended range may cause premature corrosion and reduce actual service life. See page 19 for additional information.*

Table 1 - AASHTO Reference Specifications

	Material Type	Material	Pipe	Design*	Installation*
Pipe & Pipe Arch	**CMP (1/2" or 1" deep corrugations)**				
	Galvanized (2 oz.)	M218	M36	Section 12	Section 26
	Asphalt Coated	M190	M36	Section 12	Section 26
	Asphalt Coated and Paved Invert	M190	M36	Section 12	Section 26
	Aluminized Type 2	M274	M36	Section 12	Section 26
	Polymer Coated	M246	M36 & M245	Section 12	Section 26
	Aluminum Alloy	M197	M196	Section 12	Section 26
	ULTRA FLO® (3/4" x 3/4" x 7-1/2" corrugation)				
	Galvanized (2 oz.)	M218	M36	Section 12	Section 26
	Aluminized Type 2	M274	M36	Section 12	Section 26
	Polymer Coated	M246	M36 & M245	Section 12	Section 26
	Aluminum Alloy	M197	M196	Section 12	Section 26
	Smooth Cor™				
	Polymer Coated	M246	M36 & M245	Section 12	Section 26

* *AASHTO LRFD Bridge Design Specification and AASHTO Standard Specification for Highway Bridges*

Table 2 — Recommended Environments

Material Type	Soil* and Water pH										Resistivity (ohm-cm)	
	3	4	5	6	7	8	9	10	11	12	Minimum	Maximum
Galvanized Steel*											2,000	10,000
Aluminized Steel Type 2											1,500	N/A
Polymer Coated											250	N/A
Aluminum Alloy											500	N/A

**Appropriate pH range for Galvanized Steel is 6.0 to 10*

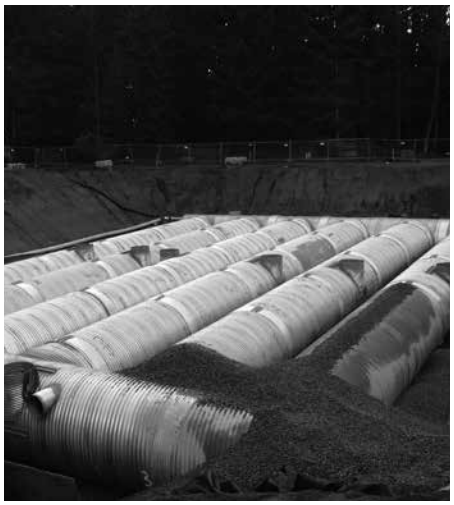


Table 3 — FHWA Abrasion Guidelines

Abrasion Level	Abrasion Condition	Bed Load	Flow Velocity (fps)
1*	Non-Abrasive	None	Minimal
2	Low Abrasion	Minor	< 5
3	Moderate Abrasion	Moderate	5 - 15
4	Severe Abrasion	Heavy	> 15

"Interim Direct Guidelines on CMP Drainage Alternative Selection." FHWA, 2005.

** Typical abrasion level for Detention and Infiltration applications is level 1.*

Table 4 – CMP Detention & Infiltration Typical Gage Recommendations

Design Service Life[1] Estimates Abrasion Level 1 & 2	25 Years	50 Years	75 Years	100 Years
Galvanized (2 oz.)[2]	16	12	10	8[5]
Aluminized Type 2[3]	16	16	16	14[6]
Polymer Coated[4]	16	16	16[7]	16[8]
Aluminum Alloy	16	16	16	16

"Interim Direct Guidelines on CMP Drainage Alternative Selection." FHWA, 2005.

1. All service life guidance is based on use in certain recommended environments only.
2. The National Corrugated Steel Pipe Association (NCSPA) provides service life guidance for galvanized materials, with service life guidance up to 97 years for 8 GA galvanized.
3. Aluminized Type 2 is the typical coating for most detention and infiltration applications. The NCSPA service life guidance of 75+ years for ALT2 in recommended environments, for pH 5-9 and resistivity > 1,500 ohm-cm.
4. The NCSPA provides service life guidance for polymer coated materials. Service life guidance of up to 75 years for polymer coated materials is based on a pH range of 4-9 and resistivity greater than 750 ohm-cm and of up to 100 years for polymer coated is based on a pH range of 5-9 and resistivity greater than 1,500 ohm-cm.
5. Design service life for 8 GA galvanized is 97 years.
6. NCSPA states that 14 GA ALT2 can achieve a 100 year service life when the environmental conditions have a pH of 5 to 9 and a resistivity greater than 1,500 ohm-cm.
7. 75 year service life for polymer-coated is based on a pH range of 4-9 and resistivity greater than 750 ohm-cm.
8. 100 year service life for polymer-coated is based on a pH range of 5-9 and resistivity greater than 1,500 ohm-cm.

CMP for Subsurface Infilitration

- CMP infiltration systems can be designed to meet HS 20 or greater load requirements with proper depths of cover.
- Protective pipe coatings such as Aluminized Type 2 (ALT2), Galvanized, and Polymer-Coated are matched to the pH and resistivity of the surrounding soil. See table 3 for additional information.
- CMP infiltration systems need to be surrounded by clean crushed stone to provide increased capacity utilizing storage in the void space. The system is then wrapped with fabric on the sides and top. The fabric is primarily used to keep native soils from filling stone voids and reducing long term storage capacity.

Storage Volumes for Corrugated Steel Pipe

Round Pipe - Hydraulic Storage per Linear Foot	
Diameter (Inches)	Hydraulic Storage (CF per FT)
12	0.8
15	1.2
18	1.8
21	2.4
24	3.1
30	4.9
36	7.1
42	9.6
48	12.6
54	15.9
60	19.6
66	23.8
72	28.3
78	33.2
84	38.5
90	44.2
96	50.3
102	56.7
108	63.6
114	70.9
120	78.5
126	86.6
132	95.0
138	103.9
144	113.1

Pipe Arch - Hydraulic Storage per Linear Foot		
2 2/3" x 1/2" Corrugated Steel Pipe		
Diameter (Inches)	Pipe Arch Equivalent Size (Inches)	Hydraulic Storage (CF per FT)
15	17 x 13	1.1
18	21 x 15	1.6
21	24 x 18	2.2
24	28 x 20	2.4
30	35 x 24	4.5
36	42 x 29	6.5
42	49 x 33	8.9
48	57 x 38	11.6
54	64 x 43	14.7
60	71 x 47	18.1
66	77 x 52	21.9
72	83 x 57	26.0

Pipe Arch - Hydraulic Storage per Linear Foot		
3" x 1" or 5" x 1" Corrugated Steel Pipe		
Diameter (Inches)	Pipe Arch Equivalent Size (Inches)	Hydraulic Storage (CF per FT)
54	60 x 46	15.6
60	66 x 51	19.3
66	73 x 55	23.2
72	81 x 59	27.4
78	87 x 63	32.1
84	95 x 67	37.0
90	103 x 71	42.4
96	112 x 75	48.0
102	117 x 79	54.2
108	128 x 83	60.5
114	137 x 87	67.4
120	142 x 91	74.5

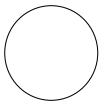


Height of Cover and Weights Tables for HEL-COR® Corrugated Steel Pipe (CSP)

Heights of Cover Notes:

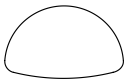
1. *These tables are for lock-seam or welded-seam construction. They are not for riveted construction. Consult your Contech Stormwater Consultant for Height of Cover tables on riveted pipe.*
2. *These values, where applicable, were calculated using a load factor of K=0.86 as adopted in the NCSPA CSP Design Manual, 2008.*
3. *The span and rise shown in these tables are nominal. Typically the actual rise that forms is greater than the specified nominal. This actual rise is within the tolerances as allowed by the AASHTO & ASTM specifications. The minimum covers shown are more conservative than required by the AASHTO and ASTM specifications to account for this anticipated increase in rise. Less cover height may be tolerated depending upon actual rise of supplied pipe arch.*
4. *H 20 and H 25 minimum cover is measured from top of pipe to bottom of flexible pavement or top of rigid pavement.*
5. *The H 20 and H 25 pipe-arch tables are based on 2 tons per square foot corner bearing pressures.*
6. *0.052" is 18 gage.*
   0.064" is 16 gage.
   0.079" is 14 gage.
   0.109" is 12 gage.
   0.138" is 10 gage.
   0.168" is 8 gage.
7. *For construction and firetruck loads, see Page 18.*
8. *1-1/2" x 1/4" corrugation. H 20, H 25 and E 80 loading.*
9. *Sewer gage (trench conditions) tables for corrugated steel pipe can be found in the AISI book "Modern Sewer Design," 4th Edition, 1999. These tables may reduce the minimum gage due to a higher flexibility factor allowed for a trench condition.*
10. *The haunch areas of a pipe-arch are the most critical zone for backfilling. Extra care should be taken to provide good material and compaction to a point above the spring line.*

Heights of Cover Limits – 2 2/3" x ½" HEL-COR CSP



H 20 and H 25 Live Loads

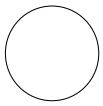
Diameter or Span, Inches	Minimum Cover, Inches	Maximum Cover, Feet					
		Specified Thickness, Inches					
		0.052	0.064	0.079	0.109	0.138	0.168
6[8]	12	388	486				
8[8]	12	291	365				
10[8]	12	233	392				
12	12	197	248	310			
15	12	158	198	248			
18	12	131	165	206			
21	12	113	141	177	248		
24	12	98	124	155	217		
30	12		99	124	173		
36	12		83	103	145	186	
42	12		71	88	124	159	195
48	12		62	77	108	139	171
54	12			67	94	122	150
60	12				80	104	128
66	12				68	88	109
72	12					75	93
78	12						79
84	12						66



H 20 and H 25 Live Loads, Pipe-Arch

Size		Minimum Structural Thickness, Inches	Minimum Cover, Inches	Maximum Cover, Feet
Round Equivalent, Inches	Span x Rise, Inches			2 Tons/Ft.² Corner Bearing Pressure
15	17 x 13	0.064	12	16
18	21 x 15	0.064	12	15
21	24 x 18	0.064	12	15
24	28 x 20	0.064	12	15
30	35 x 24	0.064	12	15
36	42 x 29	0.064	12	15
42	49 x 33	0.064*	12	15
48	57 x 38	0.064*	12	15
54	64 x 43	0.079*	12	15
60	71 x 47	0.109*	12	15
66	77 x 52	0.109*	12	15
72	83 x 57	0.138*	12	15

Heights of Cover Limits – 5" x 1" or 3" x 1" HEL-COR CSP



H 20 and H 25 Live Loads

Diameter or Span, Inches	Minimum Cover, Inches	Maximum Cover, Feet				
		Specified Thickness, Inches				
		0.064	0.079	0.109	0.138	0.168
54	12	56	70	98	127	155
60	12	50	63	88	114	139
66	12	46	57	80	103	127
72	12	42	52	74	95	116
78	12	39	48	68	87	107
84	12	36	45	63	81	99
90	12	33	42	59	76	93
96	12	31	39	55	71	87
102	18	29	37	52	67	82
108	18		35	49	63	77
114	18		32	45	58	72
120	18		30	42	54	66
126	18			39	50	61
132	18			36	46	58
138	18			33	43	53
144	18				39	49

Maximum cover heights shown are for 5" x 1".
To obtain maximum cover for 3" x 1", increase these values by 12%.



H 20 and H 25 Live Loads, Pipe-Arch

Size		Minimum Structural Thickness, Inches	Minimum Cover, Inches	Maximum Cover, Feet
Round Equivalent, Inches	Span x Rise, Inches			2 Tons/Ft.² Corner Bearing Pressure
72	81 x 59	0.109	18	21
78	87 x 63	0.109	18	20
84	95 x 67	0.109	18	20
90	103 x 71	0.109	18	20
96	112 x 75	0.109	21	20
102	117 x 79	0.109	21	19
108	128 x 83	0.109	24	19
114	137 x 87	0.109	24	19
120	142 x 91	0.138	24	19

Larger sizes are available in some areas of the United States. Check with your local Contech representative . Some minimum heights of cover for pipe-arches have been increased to take into account allowable "plus" tolerances on the manufactured rise.

Approximate Weight – Pounds/Foot
HEL-COR® CSP

(Estimated Average Weights—Not for Specification Use)

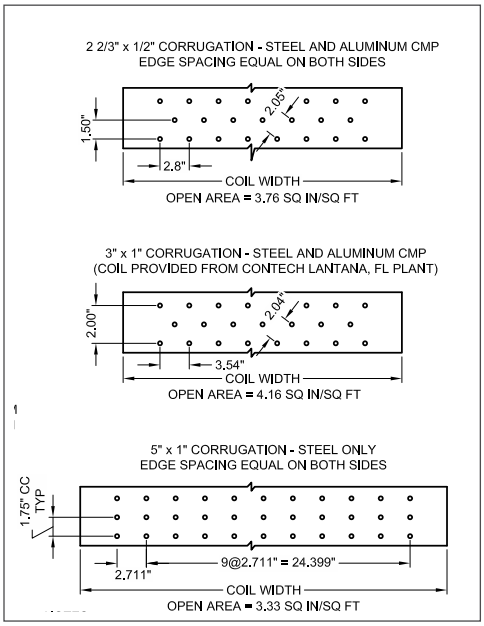
2 ²/₃" x ¹/₂" HEL-COR® CSP						
Inside Diameter, Inches	Weight (Pounds/Feet) Specified Thickness (Gage)					
	0.052 18	0.064 16	0.079 14	0.109 12	0.138 10	0.168 8
12	8	10	12			
15	10	12	15			
18	12	15	18			
21	14	17	21	29		
24	15	19	24	33		
30		24	30	41		
36		29	36	49	62	
42		34	42	57	72	88
48		38	48	65	82	100
54			54	73	92	112
60				81	103	124
66				89	113	137
72					123	149
78						161
84						173

3" x 1" HEL-COR® CSP						
Inside Diameter, Inches	Weight (Pounds/Feet) Specified Thickness (Gage)					
	0.052 18	0.064 16	0.079 14	0.109 12	0.138 10	0.168 8
54		50	61	83	106	129
60		55	67	92	118	143
66		60	74	101	129	157
72		66	81	110	140	171
78		71	87	119	152	185
84		77	94	128	164	199
90		82	100	137	175	213
96		87	107	147	188	228
102		93	114	155	198	241
108			120	165	211	256
114			127	174	222	271
120			134	183	234	284
126				195	247	299
132				204	259	259
138				213	270	328
144					282	344

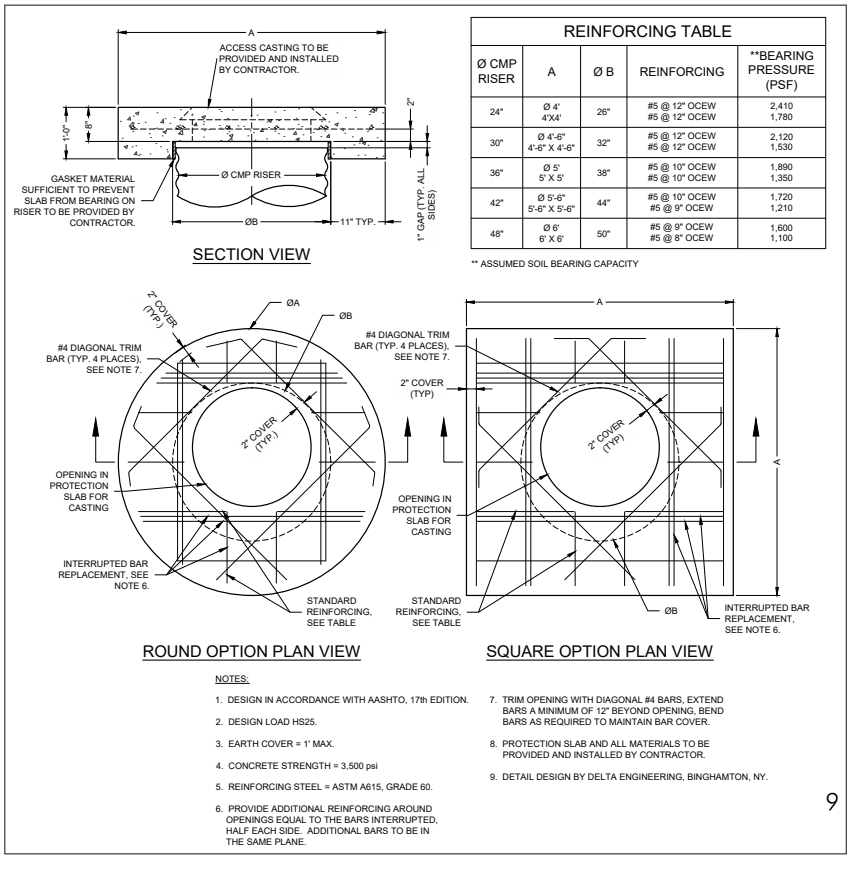
Notes::

1. *Weights shown apply to galvanized and aluminized type 2 (ALT2) CSP only. Weights for polymer coated CSP are 1% to 4% higher, varying by gage.*
2. *Please contact your Contech Stormwater Consultant.*
3. *Weights listed in the 3" x 1" or 5" x 1" table are for 3" x 1" pipe. Weights for 5" x 1" are approximately 12% less than those used in this table, for metallic coated pipe.*

CMP Perforation Details

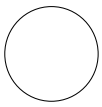


Manhole Cap Detail



Height of Cover and Weights Tables - CORLIX® Corrugated Aluminum Pipe (CAP)

Heights of Cover Limits – 2 ²/₃" x ½" CORLIX CAP



HL 93 Live Load

Diameter or Span, Inches	Minimum Cover, Inches	Maximum Cover, Feet[2] Specified Thickness (Gage) 18	16	14	12	10	8[5]
6[4]	12	197	247				
8[4]	12	147	185				
10[4]	12	119	148				
12	12		125	157			
15	12		100	125			
18	12		83	104			
21	12		71	89			
24	12		62	78	109		
27	12			69	97		
30	12			62	87		
36	12			51	73	94	
42	12				62	80	
48	12				54	70	85
54	15				48	62	76
60	15					52	64
66	18						52
72	18						43



HL 93 Live Load, Pipe-Arch

Round Pipe Dia. (Inches)	Size, Inches Span x Rise	Minimum Gage	Minimum[3] Cover (Inches)	Maximum Cover, (Ft.) Aluminum Pipe-Arch[2] 2 Tons/Ft.² for Corner Bearing Pressures
15	17 x 13	16	12	13
18	21 x 15	16	12	12
21	24 x 18	16	12	12
24	28 x 20	14	12	12
30	35 x 24	14	12	12
36	42 x 29	12	12	12
42	49 x 33	12	15	12
48	57 x 38	10	15	12
54	64 x 43	10	18	12
60	71 x 47	8[5]	18	12

Notes:

1. Height of cover is measured to top of rigid pavement or to bottom of flexible pavement.
2. Maximum cover meets AASHTO LRFD design criteria.
3. Minimum cover meets AASHTO and ASTM B 790 design criteria.
4. 1 1/2" x 1/4" corrugation.
5. 8-gage pipe has limited availability.
6. For construction loads, see page 18.

Approximate Weight – Pounds/Foot

CORLIX® CAP

(Estimated Average Weights—Not for Specification Use)

2 ²/₃" x ¹/₂" CORLIX® CAP

Diameter or Span, Inches	Weight (Pounds/Feet) Specified Thickness (Gage) 0.048 18	0.060 16	0.075 14	0.105 12	0.135 10	0.164 8[3]
6[4]	1.3	1.6				
8[4]	1.7	2.1				
10[4]	2.1	2.6				
12		3.2	4			
15		4	4.9			
18		4.8	5.9			
21		5.6	6.9			
24		6.3	7.9	10.8		
27			8.8	12.2		
30			9.8	13.5		
36			11.8	16.3	20.7	
42				19	24.2	
48				21.7	27.6	33.5
54				24.4	31.1	37.7
60					34.6	41.9
66						46
72						50.1

3" x 1" CORLIX® CAP

Diameter or Span, Inches	Weight (Pounds/Feet) Specified Thickness (Gage) 0.060 16	0.075 14	0.105 12	0.135 10	0.164 8[3]
30	9.3	11.5	15.8	20.2	
36	11.1	13.7	18.9	24.1	
42	12.9	16	22	28	
48	14.7	18.2	25.1	32	38.8
54	16.5	20.5	28.2	35.9	43.6
60	18.3	22.7	31.3	40	48.3
66	20.2	24.9	34.3	43.7	53
72	22	27.1	37.4	47.6	57.8
78		29.3	40.4	51.5	62.5
84			43.5	55.4	67.2
90			46.6	59.3	71.9
96			49.6	63.2	76.7
102				66.6	80.8
108				71	86.1
114					90.9
120					95.6

Notes:

1. Helical lockseam pipe only. Annular riveted pipe weights will be higher.
2. 1 ½" x ¼" Corrugation.
3. 8-gage pipe has limited availability.

Pretreatment Options

Regardless of infiltration material type and configuration, one of the most important components to consider is pretreatment. A pretreatment device prolongs the life of the infiltration system by removing debris and sediment that can collect on the invert and within the stone backfill voids. Pretreatment will maintain the efficiency of an infiltration system as well as extend the life cycle, therefore preventing a premature replacement. Pretreatment also offers these additional benefits:

- Pretreatment creates a single collection point which is easier to clean and maintain compared to the infiltration system alone.
- Cost savings due to the extended service life of the system.
- Removing trash and debris protects downstream outlet control structures from clogging.

Contech offers a number of pretreatment options, all of which will extend the life of subsurface infiltration systems and improve water quality. The type of system chosen will depend on a number of factors including footprint, soil conditions, local regulations, and the desired level of pretreatment.

Hydrodynamic Separation

Hydrodynamic Separation (HDS) provides a basic level of pretreatment by capturing and retaining trash and debris, sediment, and oil from stormwater runoff.

Cascade Separator™
The Cascade Separator™ is the latest innovation in hydrodynamic separation from Contech. The Cascade uses advanced sediment capture technology to provide the highest sediment removal efficiency of any Contech HDS product. Cascade also captures trash and hydrocarbons.

CDS®
The CDS® uses both swirl concentration and a nonblocking screen to capture and retain 100% of floatables and neutrally buoyant debris 4.7mm or larger.

Vortechs®
Vortechs combines swirl concentration and flow controls into a shallow treatment unit that traps and retains trash, debris, sediment, and hydrocarbons from stormwater runoff. Vortechs removes sediment down to 50 microns and is the ideal solution for projects that require a shallow treatment device due to groundwater, utility, or bedrock constraints.

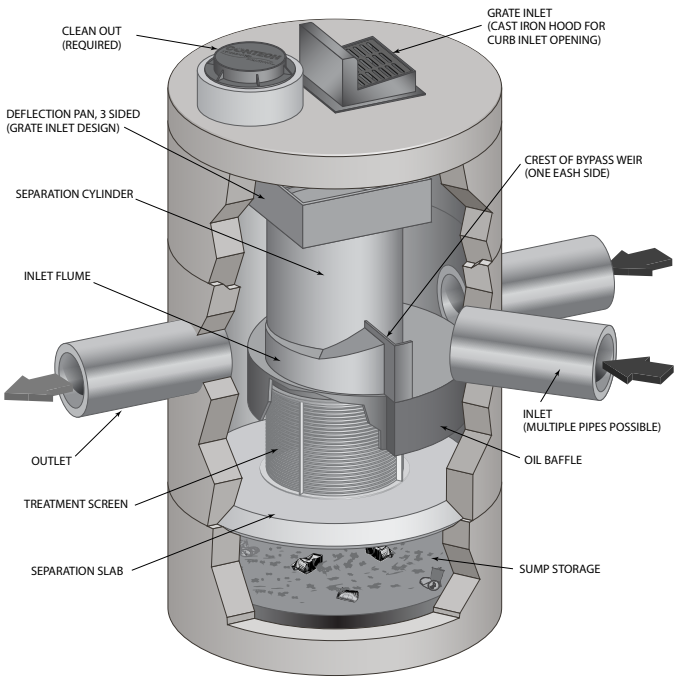
Filtration

Filtration provides a higher level of pretreatment and improved water quality by removing trash and debris, oil, fine solids, and dissolved pollutants such as metals, hydrocarbons, and nutrients.

Filterra® Bioretention System
Filterra is an engineered bioretention system that has been optimized for high volume/flow treatment and high pollutant removal.

The Stormwater Management StormFilter®
The StormFilter system is comprised of a structure that houses rechargeable, media-filled cartridges. The media can be customized to target site-specific pollutants.

Jellyfish® Filter
The Jellyfish filter uses membrane filtration in a compact footprint to remove a high level and a wide variety of stormwater pollutants such as fine particulates, oil, trash and debris, metals, and nutrients.



CDS® Hydrodynamic Separator

Custom Fabrication and Fittings

One of the benefits of CMP detention systems is its flexibility. With the addition of elbows, tees, stubs, and other components, CMP detention systems can be configured to meet sight specific constraints.

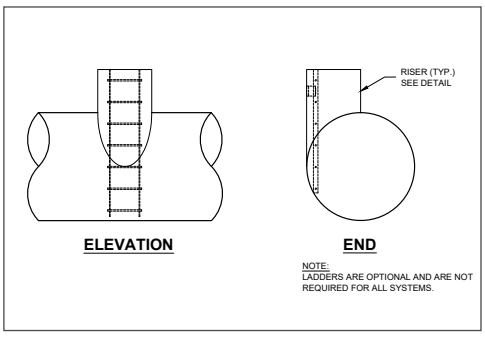
Benefits of Custom Fabrication

- More efficiently match site constraints
- System components are easy to install
- Provide maintenance ready structures - easily accessible
- Easily control influent and effluent
- Eliminate concrete structures such as junction boxes

CMP is also versatile enough for use for the entire stormwater system, including:

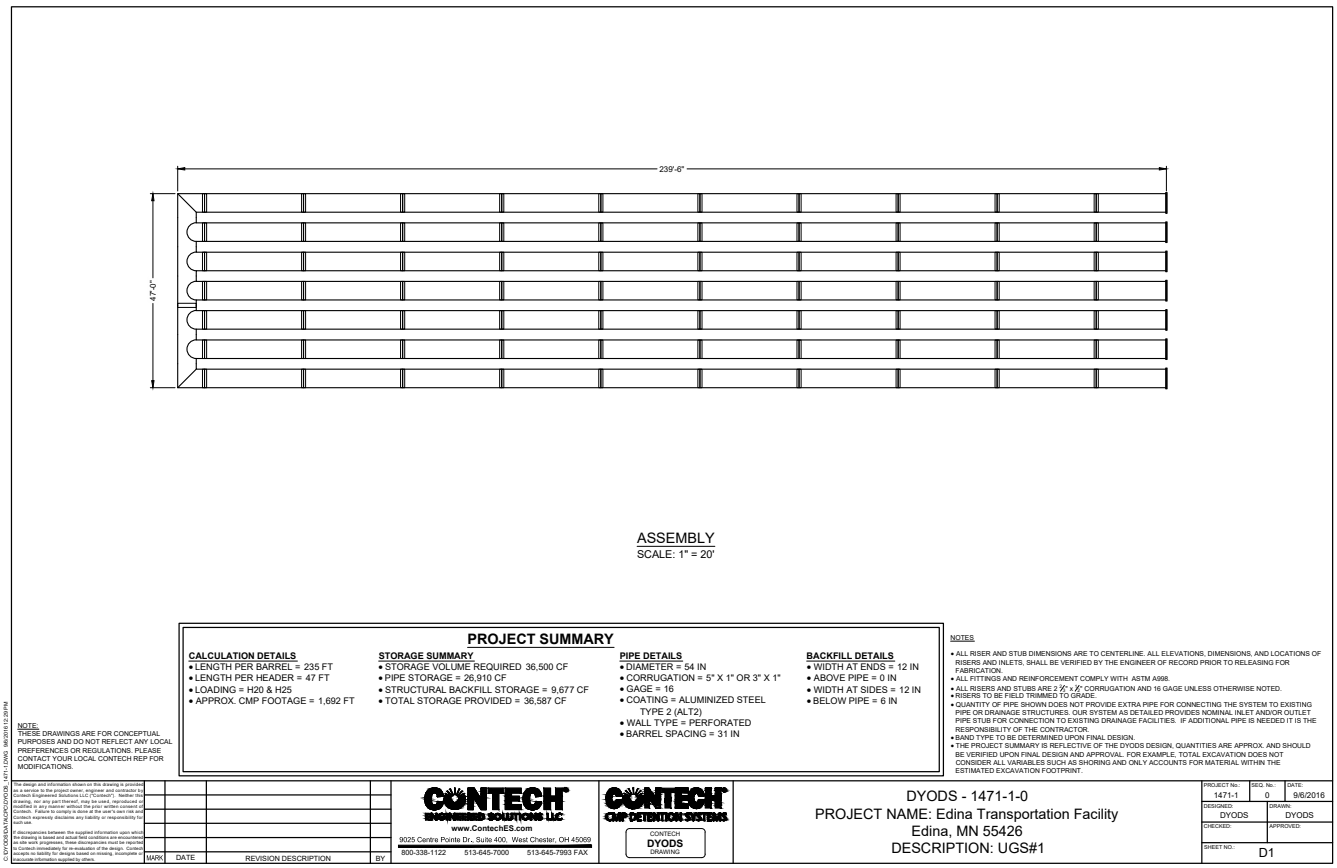
- Slotted drain pipe
- Storm sewer pipe
- Manholes / Inlet structures

Typical Riser Detail



One benefit to CMP detention systems is that we can integrate the manhole risers so you don't have to have an additional concrete junction box which can add cost to the project. Vertical risers can be used as manholes or inlets…or both, and ladders can be added so the opening can be used for access. We typically locate the manhole on the side of the pipe so that the ladder can be extend down the wall of the pipe to the invert.

Sample Proposal Drawing



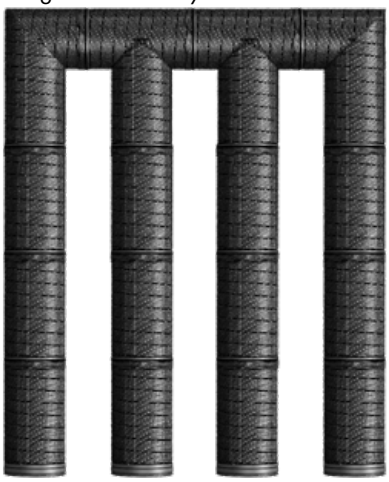
Note: Fittings will need to be structurally checked for reinforcements.

CMP Detention System Bedding and Backfill

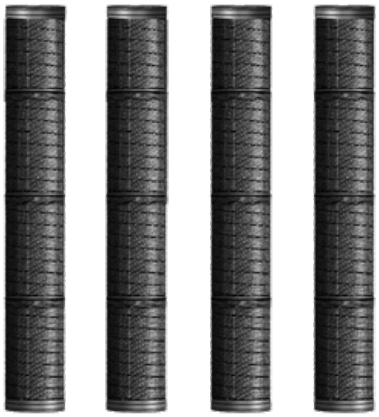
Please follow the guidelines below regarding pipe bedding and backfill.

1. Minimum trench width must allow room for proper compaction of haunch materials under pipe. min. width = (1.5 x diameter) + 12" (follow AASHTO Section 12 & 26).
    a. The minimum embankment width is 3 pipe diameters.
2. The foundation shall be well consolidated & stable.
3. The bedding material shall be a relatively loose material that is roughly shaped to fit the bottom of the pipe, 4" to 6" in depth.
4. Bedding material shall be a relatively loose material that is roughly shaped to fit the bottom of the pipe, and a minimum of twice the corrugation depth in thickness, with the maximum particle size of one-half of the corrugation depth (AASHTO Section 26.3.8.1, 26.5.3).
    a. Haunch zone material shall be hand shoveled or shovel sliced into place to allow for proper compaction.
5. H 20 and H 25 minimum cover is measured from top of pipe to bottom of flexible pavement or top of rigid pavement. Minimum cover is 12 inches for diameters up to and including 96", 18 inches for diameters ranging from 102" and greater.
6. Final backfill material selection and compaction requirements per the project plans, specifications, or engineer of record.
7. Geotextile shall be used as required to prevent soil migration.
8. Final backfill material selection and compaction requirements shall follow the project plans and specifications per the engineer of record (26.5.4.1).

Single Manifold System



No Manifold System



CMP Detention System Installation

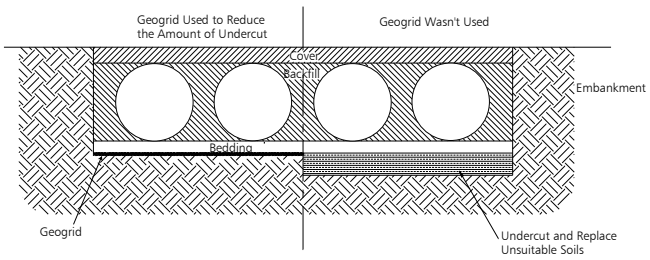
Overview

Proper installation of a flexible underground detention system will ensure long-term performance. The configuration of these systems often requires special construction practices that differ from conventional flexible pipe construction. Contech Engineered Solutions strongly suggests scheduling a pre-construction meeting with your local Sales Engineer to determine if additional measures, not covered in this guide, are appropriate for your site.

Foundation

Construct a foundation that can support the design loading applied by the pipe and adjacent backfill weight as well as maintain its integrity during construction.

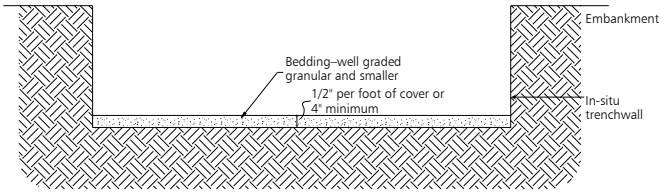
If soft or unsuitable soils are encountered, remove the poor soils down to a suitable depth and then build up to the appropriate elevation with a competent backfill material. The structural fill material gradation should not allow the migration of fines, which can cause settlement of the detention system or pavement above. If the structural fill material is not compatible with the underlying soils an engineering fabric should be used as a separator. In some cases, using a stiff reinforcing geogrid reduces over excavation and replacement fill quantities.



Grade the foundation subgrade to a uniform or slightly sloping grade. If the subgrade is clay or relatively non-porous and the construction sequence will last for an extended period of time, it is best to slope the grade to one end of the system. This will allow excess water to drain quickly, preventing saturation of the subgrade.

Bedding

A 4 to 6-inch thick, well-graded, granular material is the preferred pipe bedding. If construction equipment will operate for an extended period of time on the bedding, use either an engineering fabric or a stiff geogrid to ensure the base material maintains its integrity.

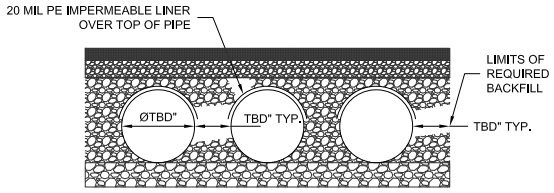


Using a relatively loose material, grade the base to a smooth, uniform grade to allow for the proper placement of the pipe. Using an open-graded bedding material is acceptable; however, an engineering fabric separator is required between the base and the subgrade.

Geomembrane Barrier

A site's resistivity may change over time when various types of salting agents are used, such as road salts for deicing purposes. If salting agents are used on or near the project site, a geomembrane barrier must be used with the system. The geomembrane liner is intended to help protect the system from the potential adverse effects that may result from the use of such salting agents including premature corrosion and reduced actual service life.

The project's Engineer of Record is to evaluate whether salting agents will be used on or near the project site, and use his/her best judgement to determine if any additional protective measures are required. Below is a typical detail showing the placement of a geomembrane barrier for projects where salting agents are used on or near the project site.



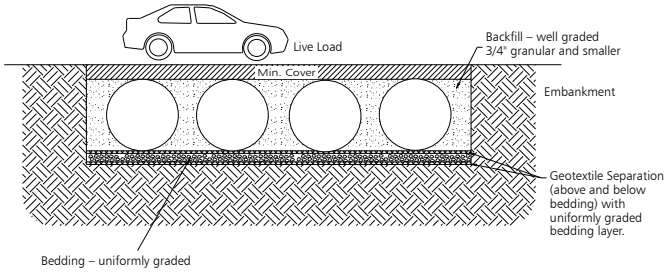
Standard Liner Over Rows

In-Situ Trench Wall

If excavation is required, the trench wall needs to be capable of supporting the load that the pipe sheds as the system is loaded. If soils are not capable of supporting these loads, the pipe can deflect. Perform a simple soil pressure check using the applied loads to determine the limits of excavation beyond the spring line of the outer most pipes. In most cases the requirements for a safe work environment and proper backfill placement and compaction take care of this concern.

Backfill Material

Typically, the best backfill material is an angular, well-graded, granular fill meeting the requirements of AASHTO A-1, A-2 or A-3. In some cases, it may be desirable to use a uniformly graded material for the first 18- to 24-inches. This type of material is easier to place under the haunches of the pipe and requires little compactive effort. Depending on the bedding material, a separation geotextile might be required above and below these initial lifts.

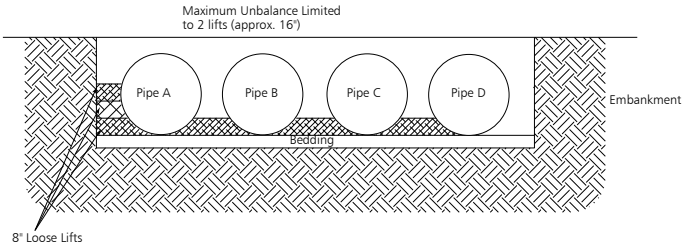


Open-graded fill is typically not used beyond the initial 18- to 24-inches because this type of fill often does not provide adequate confining restraint to the pipes. If a uniformly graded material (particles all one size) is used, install a geotextile separation fabric to prevent the migration of fines into the backfill.

Backfill using controlled low-strength material (CLSM or "flowable fill") when the spacing between the pipes will not allow for placement and adequate compaction of the backfill. Work closely with the local Contech Stormwater Consultant regarding the special installation techniques required when using CLSM.

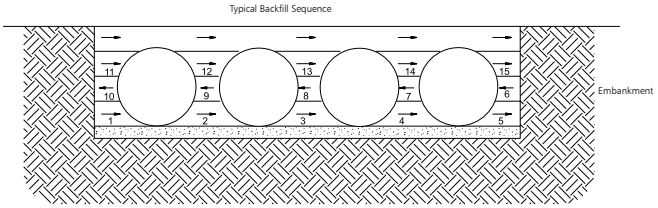
Backfill Placement

Place backfill in 8-inch loose lifts and compact to 90% AASHTO T99 standard proctor density. Material shall be worked into the pipe haunches by means of shovel-slicing, rodding, air tamper, vibratory rod, or other effective methods. If AASHTO T99 procedures are determined infeasible by the geotechnical engineer of record, compaction is considered adequate when no further yielding of the material is observed under the compactor, or under foot, and the geotechnical engineer of record (or representative thereof) is satisfied with the level of compaction.

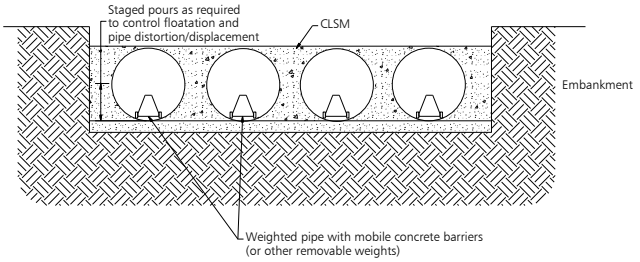


For large systems, conveyor systems, backhoes with long reaches or draglines with stone buckets may be used to place backfill.

Once minimum cover for construction loading across the entire width of the system is reached, advance the equipment to the end of the recently placed fill, and begin the sequence again until the system is completely backfilled. This type of construction sequence provides room for stockpiled backfill directly behind the backhoe, as well as the movement of construction traffic. Material stockpiles on top of the backfilled detention system should be limited to 8- to 10-feet high and must provide balanced loading across all barrels. To determine the proper cover over the pipes to allow the movement of construction equipment see Table 1, or contact your local Contech Stormwater Consultant.



When flowable fill is used, you must prevent pipe floatation. Typically, small lifts are placed between the pipes and then allowed to set-up prior to the placement of the next lift. The allowable thickness of the CLSM lift is a function of a proper balance between the uplift force of the CLSM, the opposing weight of the pipe, and the effect of other restraining measures. The pipe can carry limited fluid pressure without pipe distortion or displacement, which also affects the CLSM lift thickness. Your local Contech Stormwater Consultant can help determine the proper lift thickness.

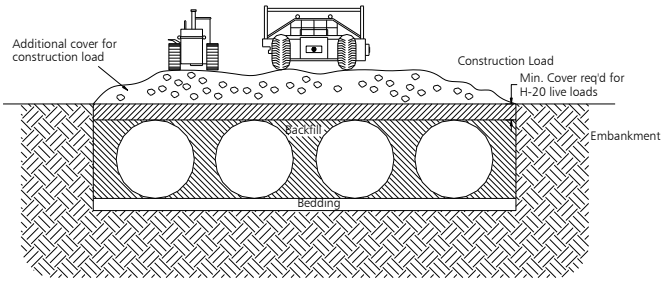


Construction Loading

Typically, the minimum cover specified for a project assumes H-20 live load. Because construction loads often exceed design live loads, increased temporary minimum cover requirements are necessary. Since construction equipment varies from job to job, it is best to address equipment specific minimum cover requirements with your local Contech Stormwater Consultant during your pre-construction meeting.

HEL-COR® CSP Minimum Height of Cover Requirements for Heavy Off-Road Construction Equipment

Pipe Span, Inches	Minimum Cover, Inches for Indicated Axle Loads (kips)			
	18-50	50-75	75-110	110-150
12 - 42	24	30	36	36
48-72	36	36	42	48
78-120	36	42	48	48
126 - 144	42	48	54	54



Firetruck Loading

Please use the table below for general guidance.

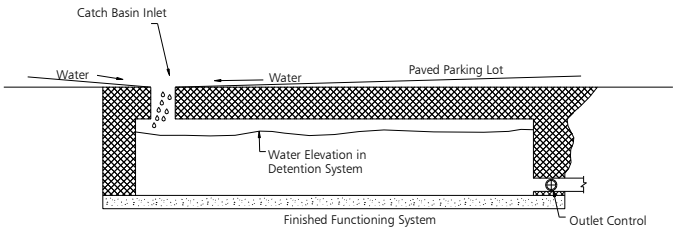
HEL-COR® CSP Minimum Height of Cover Requirements for Firetruck Loading[1]

Pipe Span, Inches	Corrugation Profile, Inches	Minimum Cover, Inches for Firetruck Outrigger Load (64 kips)[2,3]			
		16 GA	14 GA	12 GA	10 GA
		0.064	0.079	0.109	0.138
12 - 36	2 2/3 x ½	12	12	12	12
42 - 48	2 2/3 x ½	18	18	18	18
54 - 60	3 x 1 or 5 x 1	24	18		
72	3 x 1 or 5 x 1	30	24		
78 - 120	3 x 1 or 5 x 1		36	30	
126 - 144	3 x 1 or 5 x 1			42	36

1. *Minimum cover may vary depending on local conditions. The contractor must provide additional cover required to avoid damage to the pipe.* ***Minimum cover is measured from the top of the pipe to the top of the maintained construction roadway surface****.*
2. *Table is based on a typical 85,000 lb GVW firetruck with an outrigger load of 64,000 lbs. The 64,000 lb outrigger force is applied over a surface area of about 850.6 in2. The dimensions of the outrigger square pad are 25-7/8" x 32-7/8".*
3. *The outrigger load will be the heaviest load applied from the firetruck.*

Additional Considerations

Because most systems are constructed below-grade, rainfall can rapidly fill the excavation; potentially causing floatation and movement of the previously placed pipes. To help mitigate potential problems, it is best to start the installation at the downstream end with the outlet already constructed to allow a route for the water to escape. Temporary diversion measures may be required for high flows due to the restricted nature of the outlet pipe.





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CONTECH®
ENGINEERED SOLUTIONS

BRO-CMP-DETENTION DESIGN 8/19 MC

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Contech® CMP Detention Inspection and Maintenance Guide

Underground stormwater detention and infiltration systems must be inspected and maintained at regular intervals for purposes of performance and longevity.

Inspection

Inspection is the key to effective maintenance of CMP detention systems and is easily performed. Contech recommends ongoing, annual inspections. Sites with high trash load or small outlet control orifices may need more frequent inspections. The rate at which the system collects pollutants will depend more on-site specific activities rather than the size or configuration of the system.

Inspections should be performed more often in equipment washdown areas, in climates where sanding and/or salting operations take place, and in other various instances in which one would expect higher accumulations of sediment or abrasive/corrosive conditions. A record of each inspection is to be maintained for the life of the system.

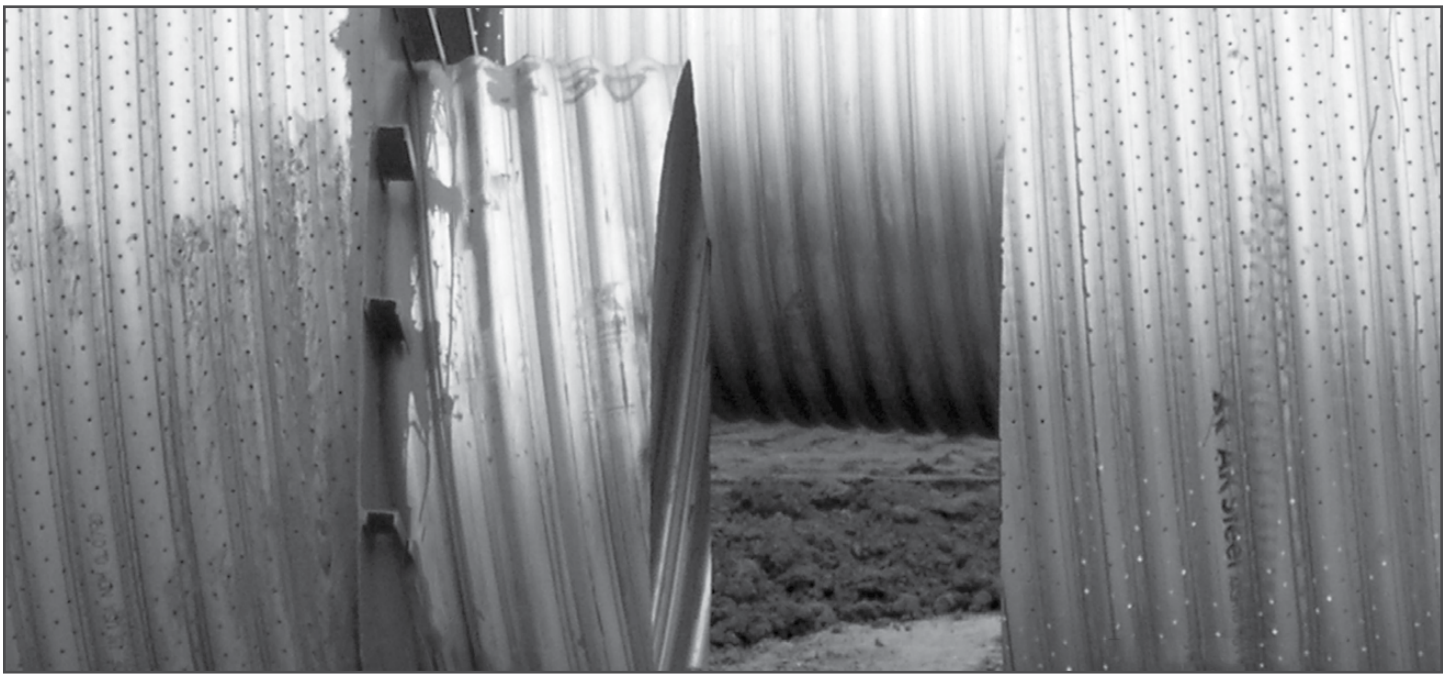
Maintenance

CMP detention systems should be cleaned when an inspection reveals accumulated sediment or trash is clogging the discharge orifice. Accumulated sediment and trash can typically be evacuated through the manhole over the outlet orifice. If maintenance is not performed as recommended, sediment and trash may accumulate in front of the outlet orifice. Manhole covers should be securely seated following cleaning activities. Contech suggests that all systems be designed with an access/inspection manhole situated at or near the inlet and the outlet orifice. Should it be necessary to get inside the system to perform maintenance activities, all appropriate precautions regarding confined space entry and OSHA regulations should be followed.

Annual inspections are best practice for all underground systems. During this inspection if evidence of salting/de-icing agents is observed within the system, it is best practice for the system to be rinsed, including above the spring line soon after the spring thaw as part of the maintenance program for the system.

Maintaining an underground detention or infiltration system is easiest when there is no flow entering the system. For this reason, it is a good idea to schedule the cleanout during dry weather.

The foregoing inspection and maintenance efforts help ensure underground pipe systems used for stormwater storage continue to function as intended by identifying recommended regular inspection and maintenance practices. Inspection and maintenance related to the structural integrity of the pipe or the soundness of pipe joint connections is beyond the scope of this guide.



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CMP DETENTION SYSTEMS

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Appendix E

Infiltration Results

December 17, 2021

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

First Industrial Realty Trust, Inc.
898 N. Pacific Coast Highway. Suite 175
El Segundo, CA 90245

Attention: Mr. Matt Pioli
Investment Officer

Project No.: **21G271-2**

Subject: **Results of Infiltration Testing**
Proposed Warehouse
NEC Lincoln Avenue and 4th Street
Banning, California

Reference: Geotechnical Investigation, Proposed Warehouse, NEC Lincoln Avenue and 4th Street, Banning, California, prepared for First Industrial Realty Trust, Inc., by Southern California Geotechnical, Inc. (SCG), SCG Project No. 21G271-1, dated December 17, 2021.

Mr. Pioli:

In accordance with your request, we have conducted infiltration testing at the subject site. We are pleased to present this report summarizing the results of the infiltration testing and our design recommendations.

Scope of Services

The scope of services performed for this project was in general accordance with our Proposal No. 21P476, dated November 4, 2021. The scope of services included site reconnaissance, subsurface exploration, field testing, and engineering analysis to determine the infiltration rates of the onsite soils. The infiltration testing was performed in general accordance with the guidelines published in Riverside County – Low Impact Development BMP Design Handbook – Section 2.3 of Appendix A, prepared for the Riverside County Department of Environmental Health (RCDEH), dated December, 2013.

Site and Project Description

The subject site is located at the northeast corner of Lincoln Street and 4th Street in Banning, California. The site is bounded to the north by a railroad easement, to the west by Gilman Home Storm Channel, to the south by Lincoln Street, and to the east by an existing commercial/industrial building. The general location of the site is illustrated on the Site Location Map, enclosed as Plate 1 in this report.

The site is comprised to two (2) contiguous parcels totaling 6.23± acres in size. The site is currently vacant and undeveloped and appears to have been recently disced, or tilled, and cleared of heavy vegetation. Several large trees are located along the northern boundary of the site.

Ground surface cover for currently consists of exposed soil with negligible native grass and weed growth.

Topographic information was included in the conceptual site plan provided by Stantec. Based on the review of this plan, the overall site topography slopes downward to the south to southeast at a gradient of approximately 2½ percent. There is up to 16± feet of elevation differential across the subject site. The site appears to be 4 to 7± feet higher in elevation than the adjacent commercial lot located to the southeast. A descending slope, separates the project site from the adjacent commercial property.

Proposed Development

SCG was provided with a preliminary site plan which was prepared by Stantec. Based on the site plan, the site will be developed with one (1) warehouse. The warehouse will be located in the central area of the site and will be 118,786± ft² in size. Dock-high doors will be constructed along a portion of the northern building wall. The building is assumed to be surrounded by asphaltic concrete pavements in the parking and drive areas, Portland cement concrete pavements in the truck court areas, and limited areas of concrete flatwork and landscape planters.

We understand that the proposed development will include on-site storm water infiltration. The type, location and depth of the infiltration system was not available at the time of our investigation. Based on our experience with similar projects in the vicinity of the subject site, the infiltration system is expected to consist of one (1) below-grade chamber system, located in the northern area of the site. The bottom of the infiltration system is expected to be 10± feet below the existing site grades.

Concurrent Study

SCG concurrently conducted a geotechnical investigation at the subject site, which is referenced above. As part of this study, five (5) borings were advanced to depths of 20 to 50± feet below existing site grades. Two of these borings were used as a part of a liquefaction evaluation. Artificial fill soils were encountered at the ground surface at all of the boring locations, extending to depths of 2½ to 5½± feet below the existing site grades. The fill soils generally consist of medium dense silty fine sands with varying medium to coarse sand and fine gravel content. These materials possess pinhole porosity with some fine root fibers. Native alluvium was encountered beneath the fill soils at all of the boring locations. The near-surface alluvium generally consists of medium dense silty fine sands, clayey fine sands and fine sandy silts with varying medium to coarse sand, fine gravel and varying clay content, extending to depths of 20 to 32± feet. The near-surface alluvium possesses pinhole porosity and some Calcareous nodules and veining. Below these materials, Boring Nos. B-1 and B-4 encountered older alluvium, extending to at least the maximum depth explored of 50± feet. The older alluvium generally consists of medium dense to very dense fine to coarse sands with varying silt and fine to coarse gravel content.

Groundwater

Free water was not encountered during the drilling of any of the borings. Based on the lack of any water within the borings, and the moisture contents of the recovered soil samples, the static

groundwater table is considered to have existed at a depth in excess of 50± feet at the time of the subsurface exploration.

As a part of our research, we reviewed available groundwater data in order to determine groundwater levels for the site. Water level data was obtained from the California Department of Water Resources Water Data Library website, https://wdl.water.ca.gov/waterdatalibrary/. The nearest monitoring well on record is located 1,500± feet southeast of the site. Water level readings within this monitoring well indicate a groundwater level of 500± feet below the ground surface in December 2005.

Subsurface Exploration

Scope of Exploration

The subsurface exploration conducted for the infiltration testing consisted of two (2) infiltration test borings, advanced to a depth of 10± feet below the existing site grades. The infiltration borings were advanced using a truck-mounted drilling rig, equipped with 8-inch-diameter hollow stem augers and were logged during drilling by a member of our staff. The approximate locations of the infiltration test borings (identified as I-1 and I-2) are indicated on the Infiltration Test Location Plan, enclosed as Plate 2 of this report.

Geotechnical Conditions

Artificial fills soils were encountered at the ground surface at both of the infiltration test locations, extending to a depth of 6± feet below the existing site grades. The artificial fill soils consist of silty fine sands with varying medium to coarse sand content. Native alluvium was encountered at the artificial fill soils at both of the infiltration test locations, extending to at least the maximum explored depth of 10± feet below existing site grades. The alluvial soils consist of medium dense clayey fine sands as well as very stiff fine sandy clays, with varying medium to coarse sands and silt content. The Boring Logs, which illustrate the conditions encountered at the infiltration test locations, are presented in this report.

Infiltration Testing

As previously mentioned, the infiltration testing was performed in general accordance with the Riverside County guidelines: Riverside County – Low Impact Development BMP Design Handbook – Section 2.3 of Appendix A.

Pre-soaking

In accordance with the county infiltration standards both of the infiltration test borings were pre-soaked prior to the infiltration testing. The pre-soaking process consisted of filling the test borings by inverting a full 5-gallon bottle of clear water supported over each hole so that the water level reaches a level of at least 5 times the hole's radius above the gravel at the bottom of each hole. The pre-soaking was completed after all of the water had percolated through each test hole or after 15 hours since initiating the pre-soak. Based on the results of the pre-soaking process, different infiltration procedures were used during the infiltration testing at the infiltration boring locations.

Infiltration Testing

Following the pre-soaking process of the infiltration test borings, SCG performed the infiltration testing. Each test hole was filled with water to a depth of at least 5 times the hole's radius above the gravel at the bottom of each test hole, and less than or equal to the water level used during the pre-soaking process. In accordance with the Riverside County guidelines, since "sandy soils" were encountered at the bottom of the infiltration borings (when two-consecutive measurements show that 6 inches of water seep away in less than 25 minutes), these tests were run for an additional hour with measurements taken at 10-minute intervals. After each reading, the borings were refilled to the correct water level above the gravel at the bottom of each test hole. The water level readings are presented on the spreadsheets enclosed with this report. The infiltration rates for each of the timed intervals are also tabulated on the spreadsheets.

The infiltration rates from the test are tabulated in inches per hour. In accordance with the typically accepted practice, it is recommended that the most conservative reading from the latter part of the infiltration tests be used as the design infiltration rate. The rates are summarized below:

Infiltration Test No.	Depth (feet)	Soil Description	Infiltration Rate (inches/hour)
I-1	10	Clayey fine to medium Sand, little coarse Sand, little Silt	0.8
I-2	10	Clayey fine Sand to fine Sandy Clay, trace to little medium to coarse Sand, little Silt	0.2

Design Recommendations

Two (2) infiltration tests were performed at the subject site. As note above, the calculated infiltration rates at the infiltration test locations range from 0.2 to 0.8 inches per hour. **Based on the results of infiltration testing, we recommend an infiltration rate of 0.5 inches per hour to be used for the design of the proposed infiltration system located in the northern region of the subject site, if the bottom of the infiltration system extends to 10± feet below the existing site grades.**

We recommend that a representative from the geotechnical engineer be on-site during the construction of the proposed infiltration system to identify the soil classification at the base of the infiltration basin. It should be confirmed that the soils at the base of the proposed infiltration system corresponds with those presented in this report to ensure that the performance of the system will be consistent with the rates reported herein.

The design of the storm water infiltration system should be performed by the project civil engineer, in accordance with the City of Banning and/or County of Riverside guidelines. It is recommended that the system be constructed so as to facilitate removal of silt and clay, or other deleterious materials from any water that may enter the systems. The presence of such materials would decrease the effective infiltration rates. **It is recommended that the project civil**

engineer apply an appropriate factor of safety. The infiltration rates recommended above is based on the assumption that only clean water will be introduced to the subsurface profile. Any fines, debris, or organic materials could significantly impact the infiltration rate. It should be noted that the recommended infiltration rates are based on infiltration testing at two (2) discrete locations and that the overall infiltration rates of the proposed infiltration system could vary considerably.

Infiltration Rate Considerations

The infiltration rates presented herein was determined in accordance with the Riverside County guidelines and are considered valid only for the time and place of the actual test. Varying subsurface conditions will exist in other areas of the site, which could alter the recommended infiltration rates presented above. The infiltration rates will decline over time between maintenance cycles as silt or clay particles accumulate on the BMP surface. The infiltration rate is highly dependent upon a number of factors, including density, silt and clay content, grainsize distribution throughout the range of particle sizes, and particle shape. Small changes in these factors can cause large changes in the infiltration rates.

Infiltration rates are based on unsaturated flow. As water is introduced into soils by infiltration, the soils become saturated and the wetting front advances from the unsaturated zone to the saturated zone. Once the soils become saturated, infiltration rates become zero, and water can only move through soils by hydraulic conductivity at a rate determined by pressure head and soil permeability. Changes in soil moisture content will affect the infiltration rate. Infiltration rates should be expected to decrease until the soils become saturated. Soil permeability values will then govern groundwater movement. Permeability values may be on the order of 10 to 20 times less than infiltration rates. The system designer should incorporate adequate factors of safety and allow for overflow design into appropriate traditional storm drain systems, which would transport storm water off-site.

Construction Considerations

The infiltration rates presented in this report are specific to the tested locations and tested depths. Infiltration rates can be significantly reduced if the soils are exposed to excessive disturbance or compaction during construction. Compaction of the soils at the bottom of the infiltration system can significantly reduce the infiltration ability of the chamber system. Therefore, the subgrade soils within proposed infiltration system areas should not be over-excavated, undercut or compacted in any significant manner. **It is recommended that a note to this effect be added to the project plans and/or specifications.**

We recommend that a representative from the geotechnical engineer be on-site during the construction of the proposed infiltration systems to identify the soil classification at the base of each system. It should be confirmed that the soils at the base of the proposed infiltration system correspond with those presented in this report to ensure that the performance of the system will be consistent with the rates reported herein.

We recommend that scrapers and other rubber-tired heavy equipment not be operated on the basin bottom, or at levels lower than 2 feet above the bottom of the system, particularly within

basins. As such, the bottom 24 inches of the infiltration system should be excavated with non-rubber-tired equipment, such as excavators.

Location of Infiltration Systems

The use of on-site storm water infiltration systems carries a risk of creating adverse geotechnical conditions. Increasing the moisture content of the soil can cause the soil to lose internal shear strength and increase its compressibility, resulting in a change in the designed engineering properties. Overlying structures and pavements in the infiltration area could potentially be damaged due to saturation of the subgrade soils. **The proposed infiltration system for this site should be located at least 25 feet away from any structures, including retaining walls**. Even with this provision of locating the infiltration system at least 25 feet from the building(s), it is possible that infiltrating water into the subsurface soils could have an adverse effect on the proposed or existing structures. It should also be noted that utility trenches which happen to collect storm water can also serve as conduits to transmit storm water toward the structure, depending on the slope of the utility trench. Therefore, consideration should also be given to the proposed locations of underground utilities which may pass near the proposed infiltration system.

The infiltration system designer should also give special consideration to the effect that the proposed infiltration system may have on nearby subterranean structures, open excavations, or descending slopes. In particular, infiltration systems should not be located near the crest of descending slopes, particularly where the slopes are comprised of granular soils. Such systems will require specialized design and analysis to evaluate the potential for slope instability, piping failures and other phenomena that typically apply to earthen dam design. This type of analysis is beyond the scope of this infiltration test report, but these factors should be considered by the infiltration system designer when locating the infiltration systems.

General Comments

This report has been prepared as an instrument of service for use by the client in order to aid in the evaluation of this property and to assist the architects and engineers in the design and preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, structural engineer, and/or civil engineer. The design of the proposed storm water infiltration system is the responsibility of the civil engineer. The role of the geotechnical engineer is limited to determination of infiltration rate only. By using the design infiltration rate contained herein, the civil engineer agrees to indemnify, defend, and hold harmless the geotechnical engineer for all aspects of the design and performance of the proposed storm water infiltration system. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur.

The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between boring locations and testing depths. If the conditions encountered during construction vary significantly from those detailed herein, we

should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted. The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

Closure

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

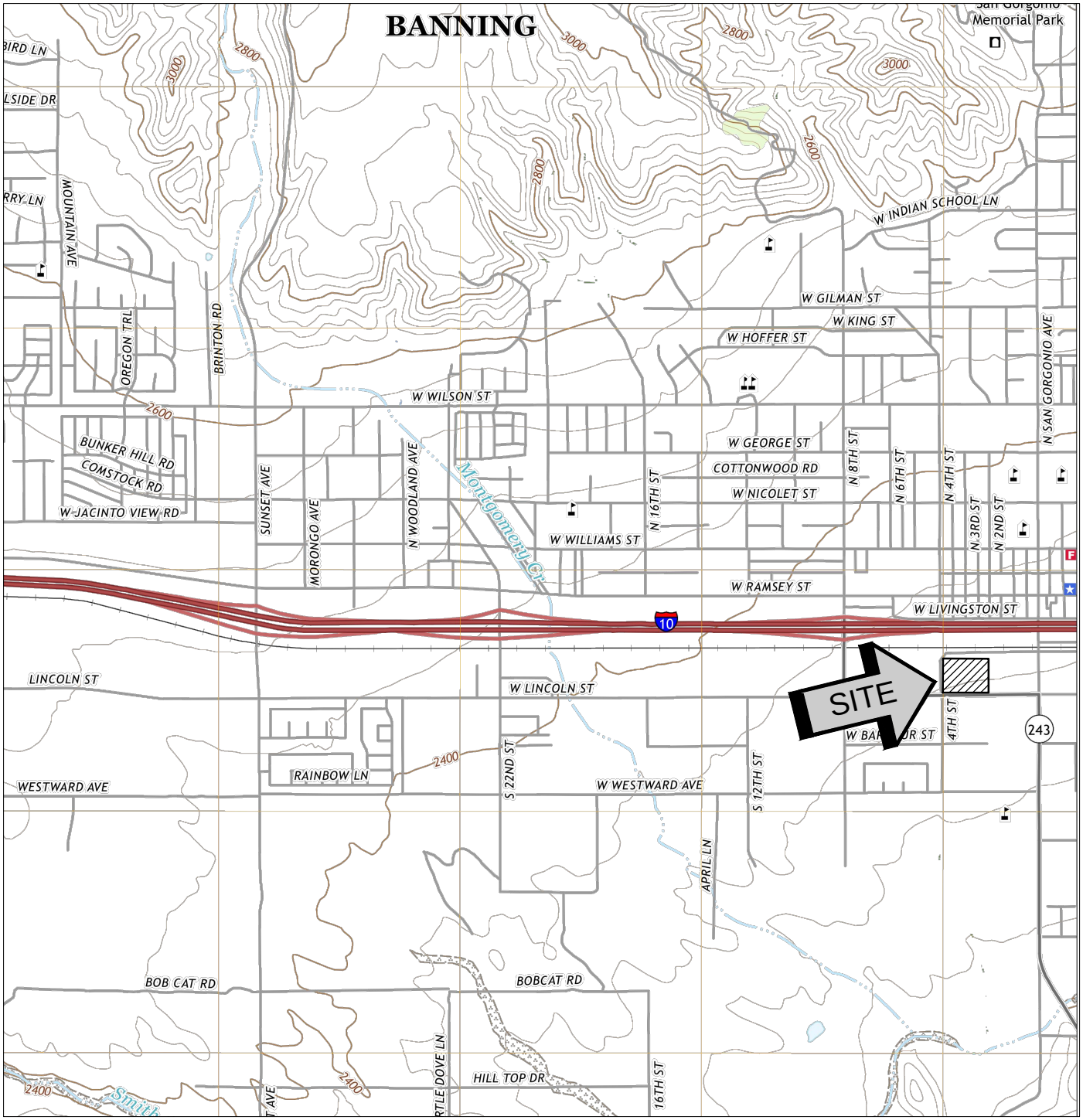
Pablo Montes Jr.
Staff Engineer

Robert G. Trazo, GE 2655
Principal Engineer



Distribution: (1) Addressee

Enclosures: Plate 1 - Site Location Map
Plate 2 - Boring Location Plan
Boring Log Legend and Logs (4 pages)
Infiltration Test Results Spreadsheets (2 pages)
Grain Size Distribution Graphs (2 pages)



SOURCE: USGS TOPOGRAPHIC MAP OF THE BEAUMONT QUADRANGLE, RIVERSIDE COUNTY, CALIFORNIA, 2018

SITE LOCATION MAP

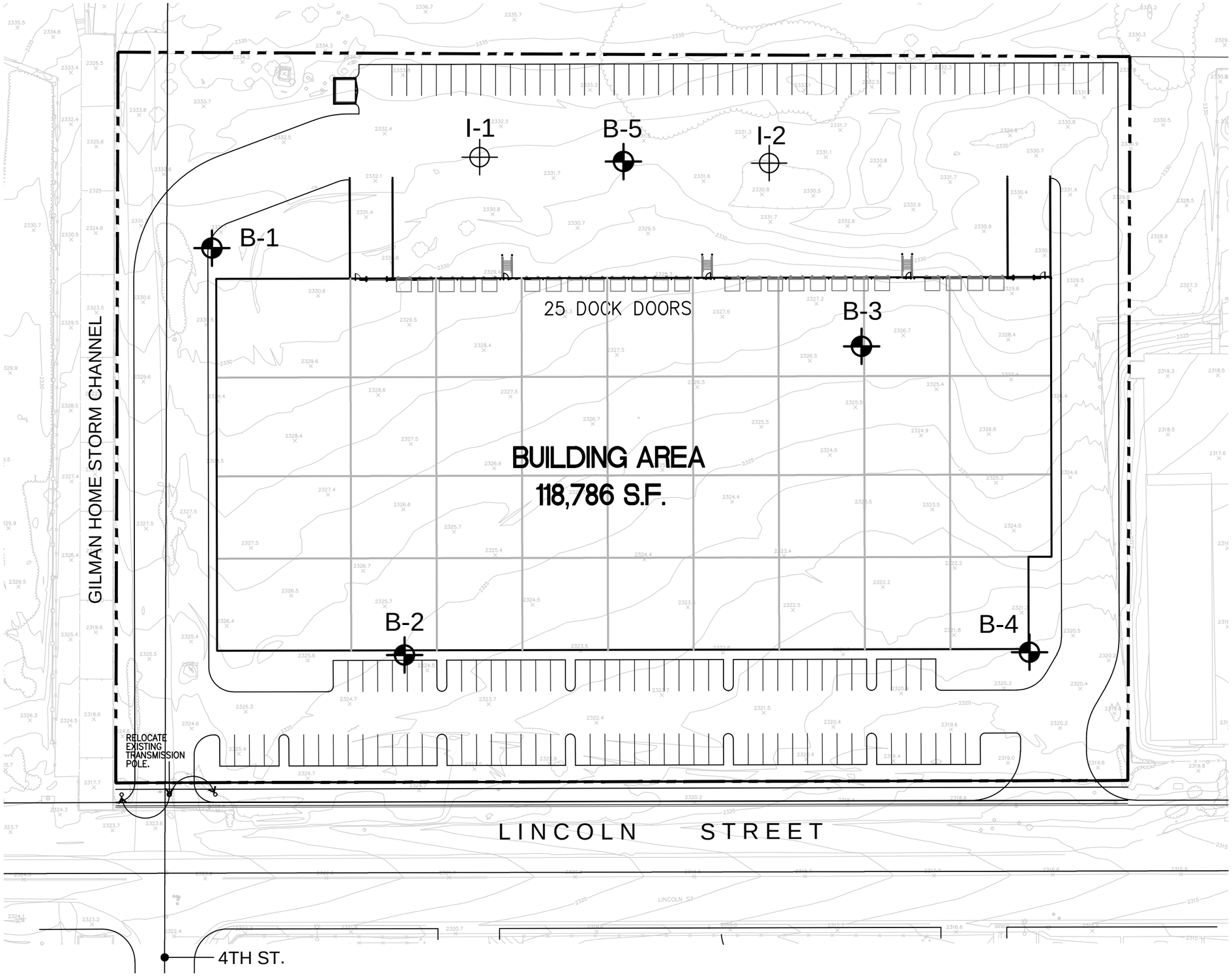
PROPOSED WAREHOUSE

BANNING, CALIFORNIA

SCALE: 1" = 2000'	
DRAWN: PM CHKD: RGT	
SCG PROJECT 21G271-2	
PLATE 1	

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



GEOTECHNICAL LEGEND

- APPROXIMATE INFILTRATION TEST LOCATION
- APPROXIMATE BORING LOCATION (SCG PROJECT NO. 21G271-1)

NOTE: BASE SITE PLAN PREPARED BY STANTEC.

INFILTRATION TEST LOCATION PLAN

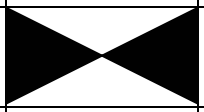
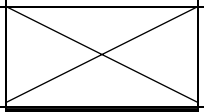
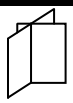
PROPOSED WAREHOUSE

BANNING, CALIFORNIA

SCALE: 1" = 60'	
DRAWN: PM CHKD: RGT	
SCG PROJECT 21G271-2	
PLATE 2	

SOUTHERN CALIFORNIA GEOTECHNICAL

BORING LOG LEGEND

SAMPLE TYPE	GRAPHICAL SYMBOL	SAMPLE DESCRIPTION
AUGER		SAMPLE COLLECTED FROM AUGER CUTTINGS, NO FIELD MEASUREMENT OF SOIL STRENGTH. (DISTURBED)
CORE		ROCK CORE SAMPLE: TYPICALLY TAKEN WITH A DIAMOND-TIPPED CORE BARREL. TYPICALLY USED ONLY IN HIGHLY CONSOLIDATED BEDROCK.
GRAB		SOIL SAMPLE TAKEN WITH NO SPECIALIZED EQUIPMENT, SUCH AS FROM A STOCKPILE OR THE GROUND SURFACE. (DISTURBED)
CS		CALIFORNIA SAMPLER: 2-1/2 INCH I.D. SPLIT BARREL SAMPLER, LINED WITH 1-INCH HIGH BRASS RINGS. DRIVEN WITH SPT HAMMER. (RELATIVELY UNDISTURBED)
NSR		NO RECOVERY: THE SAMPLING ATTEMPT DID NOT RESULT IN RECOVERY OF ANY SIGNIFICANT SOIL OR ROCK MATERIAL.
SPT		STANDARD PENETRATION TEST: SAMPLER IS A 1.4 INCH INSIDE DIAMETER SPLIT BARREL, DRIVEN 18 INCHES WITH THE SPT HAMMER. (DISTURBED)
SH		SHELBY TUBE: TAKEN WITH A THIN WALL SAMPLE TUBE, PUSHED INTO THE SOIL AND THEN EXTRACTED. (UNDISTURBED)
VANE		VANE SHEAR TEST: SOIL STRENGTH OBTAINED USING A 4 BLADED SHEAR DEVICE. TYPICALLY USED IN SOFT CLAYS-NO SAMPLE RECOVERED.

COLUMN DESCRIPTIONS

DEPTH: Distance in feet below the ground surface.

SAMPLE: Sample Type as depicted above.

BLOW COUNT: Number of blows required to advance the sampler 12 inches using a 140 lb hammer with a 30-inch drop. 50/3" indicates penetration refusal (>50 blows) at 3 inches. WH indicates that the weight of the hammer was sufficient to push the sampler 6 inches or more.

POCKET PEN.: Approximate shear strength of a cohesive soil sample as measured by pocket penetrometer.

GRAPHIC LOG: Graphic Soil Symbol as depicted on the following page.

DRY DENSITY: Dry density of an undisturbed or relatively undisturbed sample in lbs/ft^3.

MOISTURE CONTENT: Moisture content of a soil sample, expressed as a percentage of the dry weight.

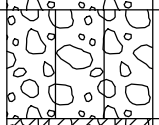
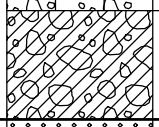
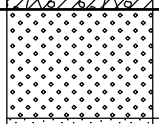
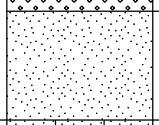
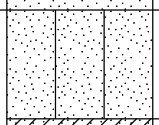
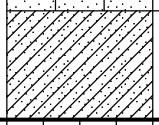
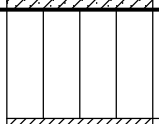
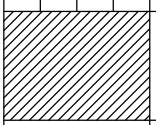
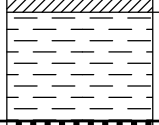
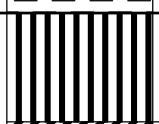
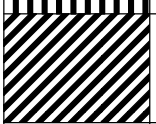
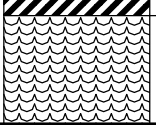
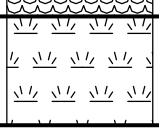
LIQUID LIMIT: The moisture content above which a soil behaves as a liquid.

PLASTIC LIMIT: The moisture content above which a soil behaves as a plastic.

PASSING #200 SIEVE: The percentage of the sample finer than the #200 standard sieve.

UNCONFINED SHEAR: The shear strength of a cohesive soil sample, as measured in the unconfined state.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-1

JOB NO.: 21G271-2
PROJECT: Proposed Warehouse
LOCATION: Banning California

DRILLING DATE: 11/9/21
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Oscar Sandoval

WATER DEPTH: Dry
CAVE DEPTH: N/A
READING TAKEN: @ Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
5		25			FILL: Light Brown Silty fine Sand, trace medium to coarse Sand, medium dense-damp		4					
					ALLUVIUM: Light Brown Clayey fine to medium Sand, little coarse Sand, little Silt, trace Calcareous veining, little fine roots, medium dense-damp							
10		20					6			28		
					Boring Terminated at 10'							

TBL 21G271-2.GPJ SOCALGEO.GDT 12/17/21

TEST BORING LOG

PLATE B-1

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-2

JOB NO.: 21G271-2
PROJECT: Proposed Warehouse
LOCATION: Banning California

DRILLING DATE: 11/9/21
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Oscar Sandoval

WATER DEPTH: Dry
CAVE DEPTH: N/A
READING TAKEN: @ Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
5		22			FILL: Light Gray Brown Silty fine Sand, little medium to coarse Sand, medium dense-damp		3					
10		21			ALLUVIUM: Light Brown Clayey fine Sand to fine Sandy Clay, trace to little medium to coarse Sand, little Silt, medium dense to very stiff-damp		4			51		
					Boring Terminated at 10'							

TBL 21G271-2.GPJ SOCALGEO.GDT 12/17/21

TEST BORING LOG **PLATE B-2**

INFILTRATION CALCULATIONS

Project Name	Proposed Warehouse
Project Location	Banning, CA
Project Number	21G171-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	10.15	(ft)

Infiltration Test Hole	I-1

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	7:45 AM	25.00	19.00	23.04	YES	SANDY SOILS
	Final	8:10 AM		20.92			
2	Initial	8:10 AM	25.00	19.00	23.16	YES	SANDY SOILS
	Final	8:35 AM		20.93			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	8:35 AM	10.00	7.20	0.28	2.81	1.13
	Final	8:45 AM		7.48			
2	Initial	8:45 AM	10.00	7.20	0.21	2.85	0.84
	Final	8:55 AM		7.41			
3	Initial	8:55 AM	10.00	7.20	0.20	2.85	0.80
	Final	9:05 AM		7.40			
4	Initial	9:05 AM	10.00	7.20	0.19	2.86	0.75
	Final	9:15 AM		7.39			
5	Initial	9:15 AM	10.00	7.20	0.20	2.85	0.80
	Final	9:25 AM		7.40			
6	Initial	9:25 AM	10.00	7.20	0.20	2.85	0.80
	Final	9:35 AM		7.40			
7	Initial	9:25 AM	10.00	7.20	0.19	2.86	0.75
	Final	9:35 AM		7.39			
8	Initial	9:25 AM	10.00	7.20	0.20	2.85	0.80
	Final	9:35 AM		7.40			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed Warehouse
Project Location	Banning, CA
Project Number	21G171-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	10.10	(ft)

Infiltration Test Hole: I-2

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	10:00 AM	25.00	19.00	23.04	YES	SANDY SOILS
	Final	10:25 AM		20.92			
2	Initial	10:25 AM	25.00	19.00	23.16	YES	SANDY SOILS
	Final	10:50 AM		20.93			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	10:50 AM	10.00	7.10	0.15	2.93	0.58
	Final	11:00 AM		7.25			
2	Initial	11:00 AM	10.00	7.10	0.10	2.95	0.39
	Final	11:10 AM		7.20			
3	Initial	11:10 AM	10.00	7.10	0.08	2.96	0.31
	Final	11:20 AM		7.18			
4	Initial	11:20 AM	10.00	7.20	0.08	2.86	0.32
	Final	11:30 AM		7.28			
5	Initial	11:30 AM	10.00	7.10	0.07	2.97	0.27
	Final	11:40 AM		7.17			
6	Initial	11:50 AM	10.00	7.10	0.06	2.97	0.23
	Final	12:00 PM		7.16			
7	Initial	12:00 PM	10.00	7.10	0.06	2.97	0.23
	Final	12:10 PM		7.16			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

Grain Size Distribution

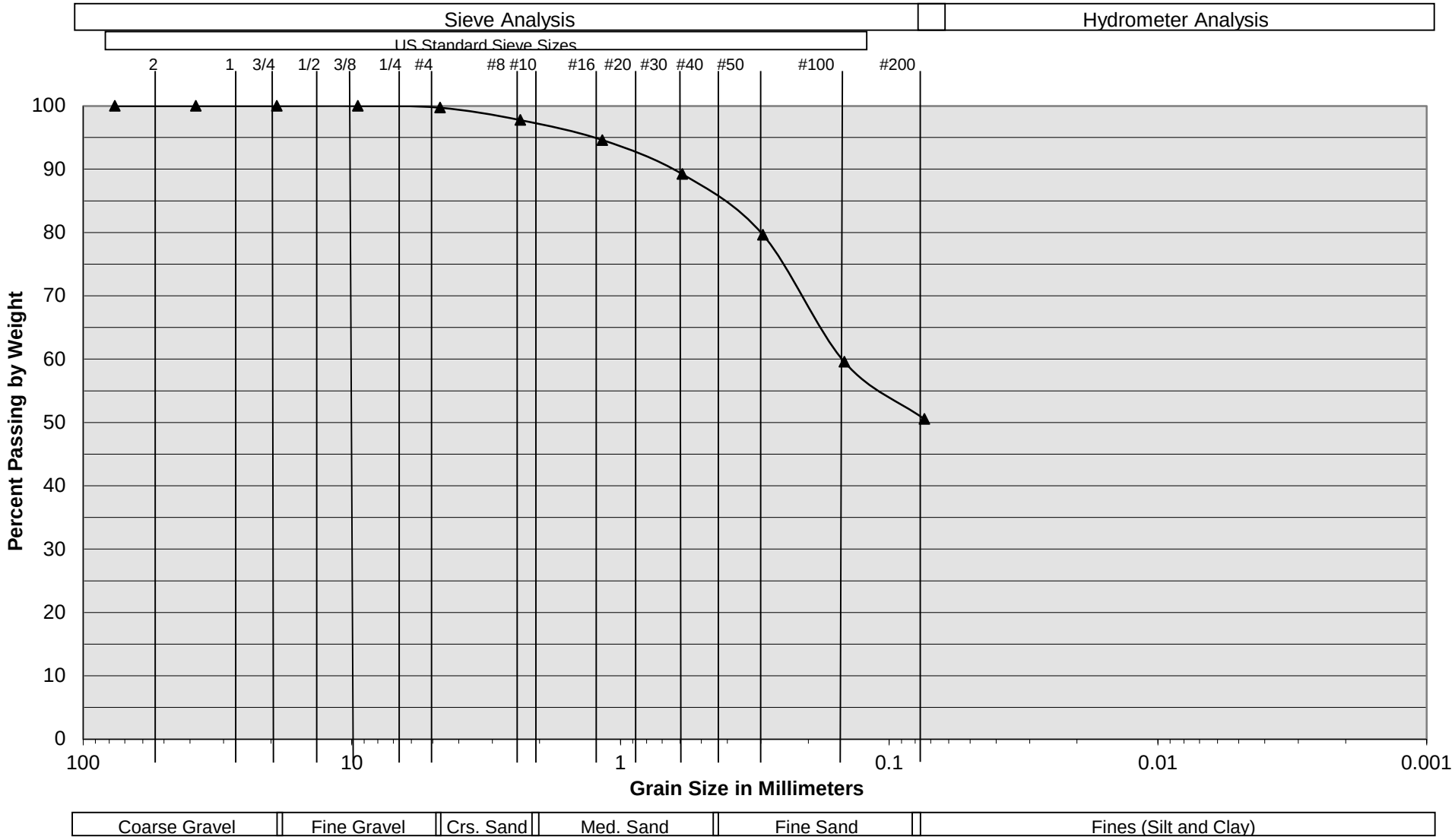


Sample Description	I-1 @ 8½'
Soil Classification	Light Brown Clayey fine to medium Sand, little coarse Sand, little Silt

Proposed Warehouse
Banning, California
Project No. 21G271-2
PLATE C- 1

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution



Sample Description	I-2 @ 8½'
Soil Classification	Light Brown Clayey fine Sand to fine Sandy Clay, trace to little medium to coarse Sand, little Silt

Proposed Warehouse
Banning, California
Project No. 21G271-2
PLATE C- 2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Appendix F

Preliminary Structural BMP Design Details

Preliminary Details are provided:

Final Basin sizing shall be addressed in Final WQMP

Whitewater Watershed

BMP Design Volume, V_{BMP} (Rev. 06-2014)

Legend: Required Entries / Calculated Cells

Company Name	Stantec	Date	11.16.2022
Designed by	vli	County/City Case No	
Company Project Number/Name	First Lincoln Logistics -TPM 38437		
Drainage Area Number/Name	DMA A		

Enter the Area Tributary to this Feature (A_{TRIB}) A_{TRIB} = 3.9 acres

Determine the Impervious Area Ratio

Determine the Impervious Area within A_{TRIB} (A_{IMP}) A_{IMP} = 3.50 acres

Calculate Impervious Area Ratio (I_f) I_f = 0.90

$I_f = A_{IMP}/A_{TRIB}$

Calculate the composite Runoff Coefficient, C for the BMP Tributary Area

Use the following equation based on the WEF/ASCE Method

$C_{BMP} = 0.858I_f^3 - 0.78I_f^2 + 0.774I_f + 0.04$ C_{BMP} = 0.73

Determine Design Storage Volume, V_{BMP}

Calculate V_U, the 80% Unit Storage Volume $V_U = 0.40 \times C_{BMP}$ V_u = 0.29 (in*ac)/ac

Calculate the design storage volume of the BMP, V_{BMP}.

$$V_{BMP}\ (ft^3) = \frac{V_U\ (in\text{-}ac/ac) \times A_T\ (ac) \times 43{,}560\ (ft^2/ac)}{12\ (in/ft)}$$

V_{BMP} = 4,106 ft^3

Notes:

*** PRELIMINARY STUDY *** DMA IS PRESUMED TO BE 90% IMPERVIOUS.

Whitewater Watershed

BMP Design Flow Rate, Q_{BMP} (Rev. 06-2014)

Legend: Required Entries / Calculated Cells

Company Name	Stantec	Date	11.16.2022
Designed by	vadjr	County/City Case No	TPM 38437
Company Project Number/Name	First Lincoln Logistics		
Drainage Area Number/Name	DMA A		

Enter the Area Tributary to this Feature (A_{TRIB}) A_{TRIB} = 3.9 acres

Determine the Impervious Area Ratio

Determine the Impervious Area within A_{TRIB} (A_{IMP}) A_{IMP} = 3.50 acres

Calculate Impervious Area Ratio (I_f) I_f = 0.90

$I_f = A_{IMP}/A_{TRIB}$

Calculate the composite Runoff Coefficient, C for the BMP Tributary Area

Use the following equation based on the WEF/ASCE Method

$C_{BMP} = 0.858I_f^3 - 0.78I_f^2 + 0.774I_f + 0.04$ C_{BMP} = 0.73

BMP Design Flow Rate

$Q_{BMP} = C_{BMP} \times I \times A_{TRIB}$ Q_{BMP} = 0.57 ft^3/s

I = Design Rainfall Intensity, 0.2 in/hr

Notes:

*** PRELIINARY STUDY*** DMA IS PRESUMED TO BE 90% IMPERVIOUS

Whitewater Watershed

BMP Design Volume, V_{BMP} (Rev. 06-2014)

Legend: Required Entries / Calculated Cells

Company Name	Stantec	Date	4.06.2022
Designed by	vadjr	County/City Case No	
Company Project Number/Name	First Lincoln Logistics -TPM 38437		
Drainage Area Number/Name	DMA B		

Enter the Area Tributary to this Feature (A_{TRIB}) A_{TRIB} = 0.6 acres

Determine the Impervious Area Ratio

Determine the Impervious Area within A_{TRIB} (A_{IMP}) A_{IMP} = 0.54 acres

Calculate Impervious Area Ratio (I_f) I_f = 0.90

$I_f = A_{IMP}/A_{TRIB}$

Calculate the composite Runoff Coefficient, C for the BMP Tributary Area

Use the following equation based on the WEF/ASCE Method

$C_{BMP} = 0.858I_f^3 - 0.78I_f^2 + 0.774I_f + 0.04$ C_{BMP} = 0.73

Determine Design Storage Volume, V_{BMP}

Calculate V_U, the 80% Unit Storage Volume $V_U = 0.40 \times C_{BMP}$ V_u = 0.29 (in*ac)/ac

Calculate the design storage volume of the BMP, V_{BMP}.

$$V_{BMP}\ (ft^3) = \frac{V_U\ (in\text{-}ac/ac) \times A_T\ (ac) \times 43{,}560\ (ft^2/ac)}{12\ (in/ft)}$$

V_{BMP} = 632 ft^3

Notes:

*** PRELIMINARY STUDY *** DMA IS PRESUMED TO BE 90% IMPERVIOUS.

Bioretention Facility - Design Procedure (Rev. 06-2014)	BMP ID: DMA B	Legend:	Required Entries / Calculated Cells

Company Name:	Stantec Consulting Inc	Date:	05.11.2022
Designed by:	vadjr	County/City Case No.:	TPM 38437

Design Volume

Enter the area tributary to this feature	A_{TRIB}=	0.6	acres
Enter V_{BMP} determined from Section 4.3 of this Handbook	V_{BMP}=	630	ft^3

Type of Bioretention Facility Design

(●) Side slopes required (parallel to parking spaces or adjacent to walkways)

( ) No side slopes required (perpendicular to parking space or Planter Boxes)

Bioretention Facility Surface Area

Depth of Soil Filter Media Layer	d_S =	2.5	ft
Top Width of Bioretention Facility, excluding curb	w_T =	6.0	ft
Total Effective Depth, d_E $d_E = (0.3) \times d_S + (0.4) \times 1 - (0.7/w_T) + 0.5$	d_E =	1.53	ft
Minimum Surface Area, A_m $A_M\,(ft^2) = \frac{V_{BMP}\,(ft^3)}{d_E\,(ft)}$	A_M =	411	ft^2
Proposed Surface Area	A=	1,800	ft^2

Bioretention Facility Properties

Side Slopes in Bioretention Facility	z =	4	:1
Diameter of Underdrain		8	inches
Longitudinal Slope of Site (3% maximum)		2.2	%
6" Check Dam Spacing		10	feet

Describe Landscaping: Other

Notes: Desert appropriate - a combination of small trees, shrubs, and native landscaping.

Whitewater Watershed

BMP Design Volume, V_{BMP} (Rev. 06-2014)

Legend: Required Entries / Calculated Cells

Company Name	Stantec	Date	11.16.2022
Designed by	vli	County/City Case No	
Company Project Number/Name	First Lincoln Logistics -TPM 38437		
Drainage Area Number/Name	DMA C		

Enter the Area Tributary to this Feature (A_{TRIB}) A_{TRIB} = 1.6 acres

Determine the Impervious Area Ratio

Determine the Impervious Area within A_{TRIB} (A_{IMP}) A_{IMP} = 1.44 acres

Calculate Impervious Area Ratio (I_f) I_f = 0.90

$I_f = A_{IMP}/A_{TRIB}$

Calculate the composite Runoff Coefficient, C for the BMP Tributary Area

Use the following equation based on the WEF/ASCE Method

$C_{BMP} = 0.858I_f^3 - 0.78I_f^2 + 0.774I_f + 0.04$ C_{BMP} = 0.73

Determine Design Storage Volume, V_{BMP}

Calculate V_U, the 80% Unit Storage Volume $V_U = 0.40 \times C_{BMP}$ V_u = 0.29 (in*ac)/ac

Calculate the design storage volume of the BMP, V_{BMP}.

$$V_{BMP}\ (ft^3) = \frac{V_U\ (in\text{-}ac/ac) \times A_T\ (ac) \times 43{,}560\ (ft^2/ac)}{12\ (in/ft)}$$

V_{BMP} = 1,684 ft^3

Notes:

*** PRELIMINARY STUDY *** DMA IS PRESUMED TO BE 90% IMPERVIOUS.

Bioretention Facility - Design Procedure (Rev. 06-2014)	BMP ID: DMA C	Legend:	Required Entries / Calculated Cells

Company Name:	Stantec Consulting Inc	Date:	11.17.2022
Designed by:	vadjr	County/City Case No.:	TPM 38437

Design Volume

Enter the area tributary to this feature	A_{TRIB}=	1.6	acres
Enter V_{BMP} determined from Section 4.3 of this Handbook	V_{BMP}=	1,684	ft^3

Type of Bioretention Facility Design

- ○ Side slopes required (parallel to parking spaces or adjacent to walkways)
- ◉ No side slopes required (perpendicular to parking space or Planter Boxes)

Bioretention Facility Surface Area

Depth of Soil Filter Media Layer	d_S =	2.5	ft
Top Width of Bioretention Facility, excluding curb	w_T =	6.0	ft
Total Effective Depth, d_E			
$d_E = [(0.3) \times d_S + (0.4) \times 1] + 0.5$	d_E =	1.65	ft
Minimum Surface Area, A_m			
$A_M\ (ft^2) = \frac{V_{BMP}\ (ft^3)}{d_E\ (ft)}$	A_M =	1,021	ft^2
Proposed Surface Area	A=	2,450	ft^2
Minimum Required Length of Landscaped Retention Facility, L	L =	170.2	ft

Bioretention Facility Properties

Side Slopes in Bioretention Facility	z =	4	:1
Diameter of Underdrain		8	inches
Longitudinal Slope of Site (3% maximum)		1.3	%
6" Check Dam Spacing		25	feet
Describe Landscaping:		Other	

Notes: Desert appropriate - a combination of small trees, shrubs, and native landscaping.

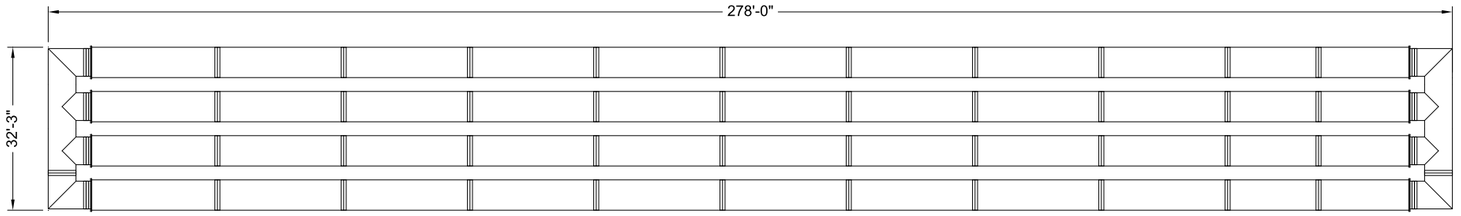
PROJECT SUMMARY

CALCULATION DETAILS
- LOADING = HS20/HS25
- APPROX. LINEAR FOOTAGE = 1,124 LF

STORAGE SUMMARY
- STORAGE VOLUME REQUIRED = N/A
- PIPE STORAGE VOLUME = 31,407 CF
- BACKFILL STORAGE VOLUME = 0 CF
- TOTAL STORAGE PROVIDED = 31,407 CF

PIPE DETAILS
- DIAMETER = 72"
- CORRUGATION = 5x1
- GAGE = 16
- COATING = ALT2
- WALL TYPE = SOLID
- BARREL SPACING = 33"

BACKFILL DETAILS
- WIDTH AT ENDS = 12"
- ABOVE PIPE = 0"
- WIDTH AT SIDES = 12"
- BELOW PIPE = 0"



NOTES

- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE. ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD PRIOR TO RELEASING FOR FABRICATION.
- ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A998.
- ALL RISERS AND STUBS ARE $2\frac{2}{3}$" x $\frac{1}{2}$" CORRUGATION AND 16 GAGE UNLESS OTHERWISE NOTED.
- RISERS TO BE FIELD TRIMMED TO GRADE.
- QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING THE SYSTEM TO EXISTING PIPE OR DRAINAGE STRUCTURES. OUR SYSTEM AS DETAILED PROVIDES NOMINAL INLET AND/OR OUTLET PIPE STUB FOR CONNECTION TO EXISTING DRAINAGE FACILITIES. IF ADDITIONAL PIPE IS NEEDED IT IS THE RESPONSIBILITY OF THE CONTRACTOR.
- BAND TYPE TO BE DETERMINED UPON FINAL DESIGN.
- THE PROJECT SUMMARY IS REFLECTIVE OF THE DYODS DESIGN, QUANTITIES ARE APPROX. AND SHOULD BE VERIFIED UPON FINAL DESIGN AND APPROVAL. FOR EXAMPLE, TOTAL EXCAVATION DOES NOT CONSIDER ALL VARIABLES SUCH AS SHORING AND ONLY ACCOUNTS FOR MATERIAL WITHIN THE ESTIMATED EXCAVATION FOOTPRINT.
- THESE DRAWINGS ARE FOR CONCEPTUAL PURPOSES AND DO NOT REFLECT ANY LOCAL PREFERENCES OR REGULATIONS. PLEASE CONTACT YOUR LOCAL CONTECH REP FOR MODIFICATIONS.

ASSEMBLY
SCALE: 1" = 30'

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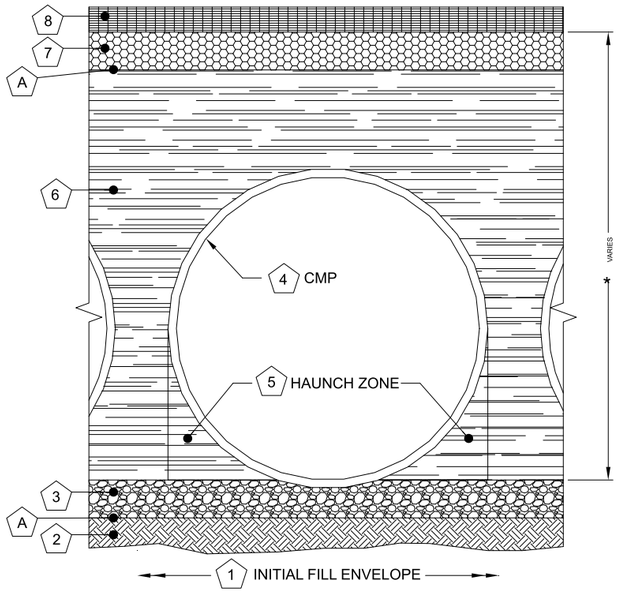
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CONTECH® CMP DETENTION SYSTEMS
CONTECH **DYODS** DRAWING

DYO17115 Lincoln Logistics
Preliminary Tentative Parcel Map - Detention - 10yr- 24hr Storm
Banning, CA
DETENTION SYSTEM

PROJECT No.:	SEQ. No.:	DATE:
7716	17115	5/17/2022
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.: 1		

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	DETENTION SYSTEMS - CMP DETENTION / CMP DRAINAGE			
	Material Location	Description	Material Designation	Designation
8	Rigid or Flexible Pavement (if applicable)			
7	Road Base (if applicable)			
A	Geotextile Layer	Non-Woven Geotextile	CONTECH C-40 or C-45	Engineer Decision for consideration to prevent soil migration into varying soil types
6	Backfill	Well graded granular material which may contain small amounts of silt or clay.	AASHTO M 145- A-1, A-2, A-3	Placed in 8" +/- loose lifts and compacted to 90% Standard Proctor Per AASHTO T 99
3	Bedding Stone	Well graded granular bedding material w/maximum particle size of 3"	AASHTO M43 - 3,357,4,467, 5, 56, 57	Engineer to determine if bedding is required. Pipe may be placed on the trench bottom of a relatively loose, native suitable well graded & granular material. For Arch pipes it is recommended to be shaped to a relatively flat bottom or fine-grade the foundation to a slight v-shape. Unsuitable material should be over-excavated and re-placed with a 4"-6" layer of well graded & granular stone per the material designation. See AASHTO 26.3.8.1 / 26.5.3 Bedding info.
A	Geotextile Layer	Non-Woven Geotextile	CONTECH C-40 or C-45	Engineer Decision for consideration to prevent soil migration into varying soil types
*	*Note: Backfill using controlled low-strength material (CLSM, "flash fill" or "flowable fill") when the spacing between the pipes will not allow for placement and adequate compaction of the backfill.*			

1 MINIMUM WIDTH DEPENDS ON SITE CONDITIONS AND ENGINEERING JUDGEMENT

FOUNDATION/BEDDING PREPARATION

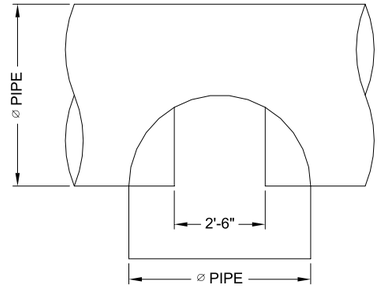
2 PRIOR TO PLACING THE BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, THEY SHALL BE REMOVED AND BROUGHT BACK TO THE GRADE WITH A FILL MATERIAL AS APPROVED BY THE ENGINEER.

5 HAUNCH ZONE MATERIAL SHALL BE PLACED AND UNIFORMALLY COMPACTED WITHOUT SOFT SPOTS.

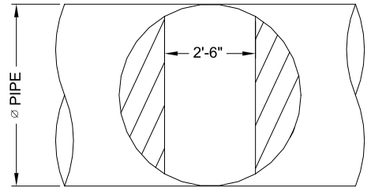
BACKFILL

WHEN PLACING THE FIRST LIFTS OF BACKFILL IT IS IMPORTANT TO MAKE SURE THAT THE BACKFILL IS PROPERLY COMPACTED UNDER AND AROUND THE PIPE HAUNCHES. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO LIFT (16") DIFFERENTIAL BETWEEN ANY OF THE PIPES AT ANY TIME DURING THE BACKFILL PROCESS. THE BACKFILL SHALL BE ADVANCED ALONG THE LENGTH OF THE DETENTION SYSTEM AT THE SAME RATE TO AVOID DIFFERENTIAL LOADING ON THE PIPE.

OTHER ALTERNATE BACKFILL MATERIAL MAY BE ALLOWED DEPENDING ON SITE SPECIFIC CONDITIONS, AS APPROVED BY SITE ENGINEER.



PLAN

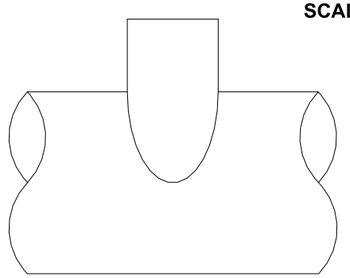


FRONT

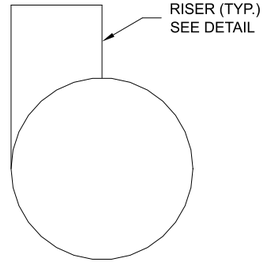
NOTE:
MANWAY DETAIL APPLICABLE FOR CMP SYSTEMS WITH DIAMETERS 48" AND LARGER. MANWAYS MAY BE REQUIRED ON SMALLER SYSTEMS DEPENDING ON ACTUAL SITE SPECIFIC CONDITIONS.

TYPICAL MANWAY DETAIL

SCALE: N.T.S.



ELEVATION

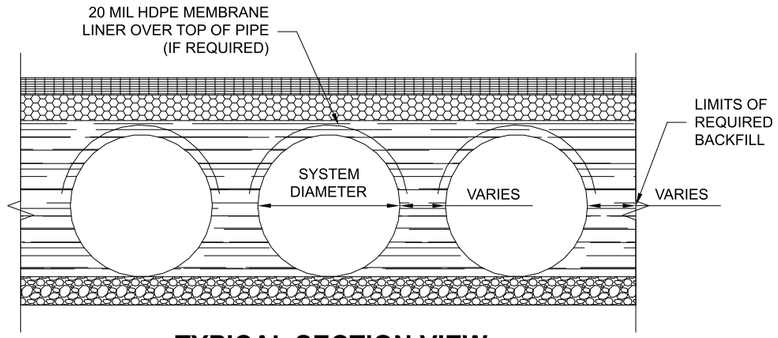


END

NOTE:
LADDERS ARE OPTIONAL AND ARE NOT REQUIRED FOR ALL SYSTEMS.

TYPICAL RISER DETAIL

SCALE: N.T.S.



TYPICAL SECTION VIEW

LINER OVER ROWS
SCALE: N.T.S.

NOTE: IF SALTING AGENTS FOR SNOW AND ICE REMOVAL ARE USED ON OR NEAR THE PROJECT, AN HDPE MEMBRANE LINER IS RECOMMENDED WITH THE SYSTEM. THE IMPERMEABLE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM A CHANGE IN THE SURROUNDING ENVIRONMENT OVER A PERIOD OF TIME. PLEASE REFER TO THE CORRUGATED METAL PIPE DETENTION DESIGN GUIDE FOR ADDITIONAL INFORMATION.

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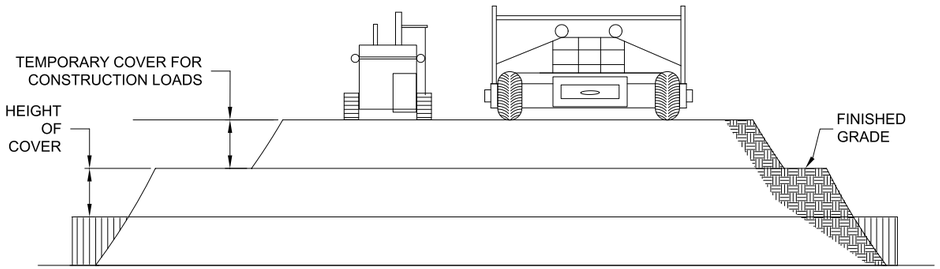
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CONTECH CMP DETENTION SYSTEMS
CONTECH DYODS DRAWING

DYO17115 Lincoln Logistics
Preliminary Tentative Parcel Map - Detention - 10yr- 24hr Storm
Banning, CA
DETENTION SYSTEM

PROJECT No.:	SEQ. No.:	DATE:
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SHEET NO.: 1		

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CONSTRUCTION LOADS

FOR TEMPORARY CONSTRUCTION VEHICLE LOADS, AN EXTRA AMOUNT OF COMPACTED COVER MAY BE REQUIRED OVER THE TOP OF THE PIPE. THE HEIGHT-OF-COVER SHALL MEET THE MINIMUM REQUIREMENTS SHOWN IN THE TABLE BELOW. THE USE OF HEAVY CONSTRUCTION EQUIPMENT NECESSITATES GREATER PROTECTION FOR THE PIPE THAN FINISHED GRADE COVER MINIMUMS FOR NORMAL HIGHWAY TRAFFIC.

PIPE SPAN, INCHES	AXLE LOADS (kips)			
	18-50	50-75	75-110	110-150
	MINIMUM COVER (FT)			
12-42	2.0	2.5	3.0	3.0
48-72	3.0	3.0	3.5	4.0
78-120	3.0	3.5	4.0	4.0
126-144	3.5	4.0	4.5	4.5

*MINIMUM COVER MAY VARY, DEPENDING ON LOCAL CONDITIONS. THE CONTRACTOR MUST PROVIDE THE ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE PIPE. MINIMUM COVER IS MEASURED FROM THE TOP OF THE PIPE TO THE TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE.

CONSTRUCTION LOADING DIAGRAM

SCALE: N.T.S.

SPECIFICATION FOR DESIGNED DETENTION SYSTEM:

SCOPE
THIS SPECIFICATION COVERS THE MANUFACTURE AND INSTALLATION OF THE DESIGNED DETENTION SYSTEM DETAILED IN THE PROJECT PLANS.

MATERIAL
THE MATERIAL SHALL CONFORM TO THE APPLICABLE REQUIREMENTS LISTED BELOW:

ALUMINIZED TYPE 2 STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-274 OR ASTM A-92.

THE GALVANIZED STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-218 OR ASTM A-929.

THE POLYMER COATED STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-246 OR ASTM A-742.

THE ALUMINUM COILS SHALL CONFORM TO THE APPLICABLE OF AASHTO M-197 OR ASTM B-744.

CONSTRUCTION LOADS
CONSTRUCTION LOADS MAY BE HIGHER THAN FINAL LOADS. FOLLOW THE MANUFACTURER'S OR NCSPA GUIDELINES.

PIPE
THE PIPE SHALL BE MANUFACTURED IN ACCORDANCE TO THE APPLICABLE REQUIREMENTS LISTED BELOW:

ALUMINIZED TYPE 2: AASHTO M-36 OR ASTM A-760

GALVANIZED: AASHTO M-36 OR ASTM A-760

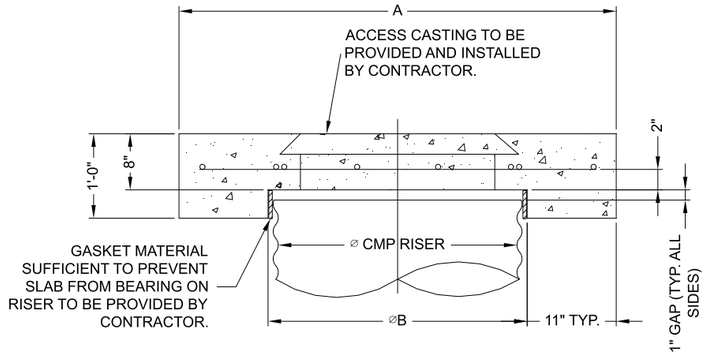
APPLICABLE POLYMER COATED: AASHTO M-245 OR ASTM A-762

ALUMINUM: AASHTO M-196 OR ASTM B-745

APPLICABLE
HANDLING AND ASSEMBLY
SHALL BE IN ACCORDANCE WITH NCSP'S (NATIONAL CORRUGATED STEEL PIPE ASSOCIATION) FOR ALUMINIZED TYPE 2, GALVANIZED OR POLYMER COATED STEEL. SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR ALUMINUM PIPE.
REQUIREMENTS
INSTALLATION
SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 26, DIVISION II DIVISION II OR ASTM A-798 (FOR ALUMINIZED TYPE 2, GALVANIZED OR POLYMER COATED STEEL) OR ASTM B-788 (FOR ALUMINUM PIPE) AND IN CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. IF THERE ARE ANY INCONSISTENCIES OR CONFLICTS THE CONTRACTOR SHOULD DISCUSS AND RESOLVE WITH THE SITE ENGINEER.

IT IS ALWAYS THE RESPONSIBILITY OF THE CONTRACTOR TO FOLLOW OSHA GUIDELINES FOR SAFE PRACTICES.

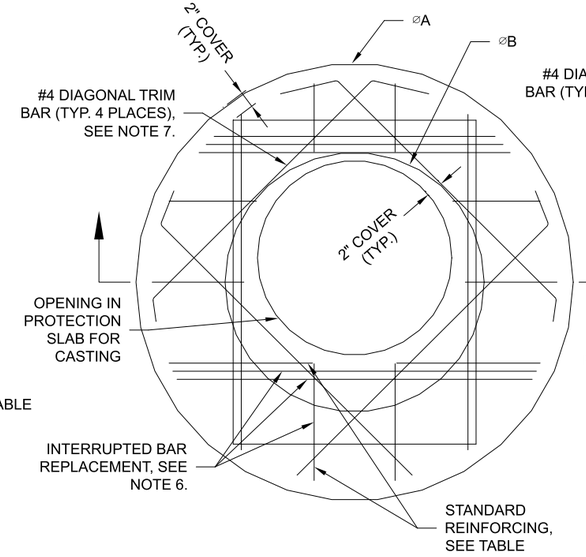
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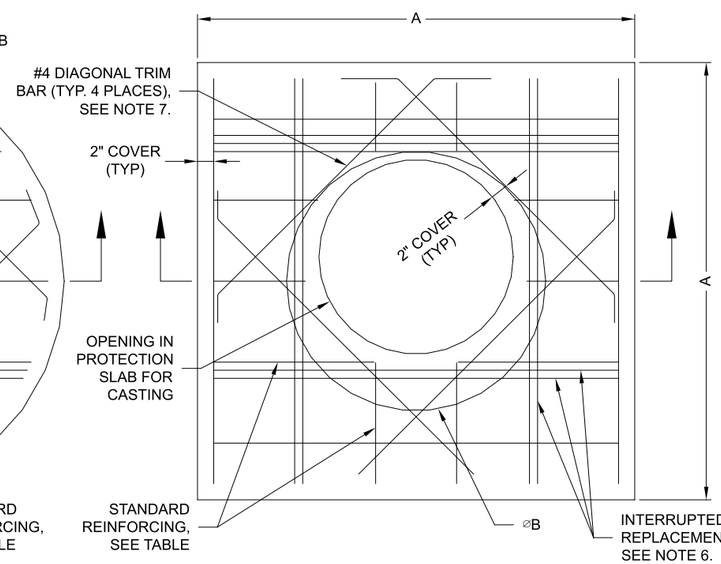
SECTION VIEW

REINFORCING TABLE				
⌀ CMP RISER	A	⌀ B	REINFORCING	**BEARING PRESSURE (PSF)
24"	⌀ 4' 4'X4'	26"	#5 @ 12" OCEW #5 @ 12" OCEW	2,410 1,780
30"	⌀ 4'-6" 4'-6" X 4'-6"	32"	#5 @ 12" OCEW #5 @ 12" OCEW	2,120 1,530
36"	⌀ 5' 5' X 5'	38"	#5 @ 10" OCEW #5 @ 10" OCEW	1,890 1,350
42"	⌀ 5'-6" 5'-6" X 5'-6"	44"	#5 @ 10" OCEW #5 @ 9" OCEW	1,720 1,210
48"	⌀ 6' 6' X 6'	50"	#5 @ 9" OCEW #5 @ 8" OCEW	1,600 1,100

** ASSUMED SOIL BEARING CAPACITY



ROUND OPTION PLAN VIEW



SQUARE OPTION PLAN VIEW

NOTES:

1. DESIGN IN ACCORDANCE WITH AASHTO, 17th EDITION.
2. DESIGN LOAD HS25.
3. EARTH COVER = 1' MAX.
4. CONCRETE STRENGTH = 3,500 psi
5. REINFORCING STEEL = ASTM A615, GRADE 60.
6. PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS EQUAL TO THE BARS INTERRUPTED, HALF EACH SIDE. ADDITIONAL BARS TO BE IN THE SAME PLANE.
7. TRIM OPENING WITH DIAGONAL #4 BARS, EXTEND BARS A MINIMUM OF 12" BEYOND OPENING, BEND BARS AS REQUIRED TO MAINTAIN BAR COVER.
8. PROTECTION SLAB AND ALL MATERIALS TO BE PROVIDED AND INSTALLED BY CONTRACTOR.
9. DETAIL DESIGN BY DELTA ENGINEERING, BINGHAMTON, NY.

MANHOLE CAP DETAIL

SCALE: N.T.S.

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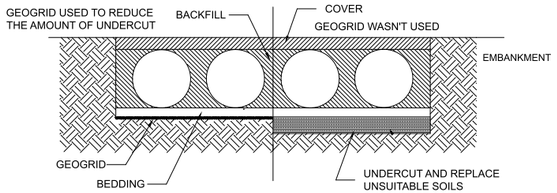
CMP DETENTION INSTALLATION GUIDE

PROPER INSTALLATION OF A FLEXIBLE UNDERGROUND DETENTION SYSTEM WILL ENSURE LONG-TERM PERFORMANCE. THE CONFIGURATION OF THESE SYSTEMS OFTEN REQUIRES SPECIAL CONSTRUCTION PRACTICES THAT DIFFER FROM CONVENTIONAL FLEXIBLE PIPE CONSTRUCTION. CONTECH ENGINEERED SOLUTIONS STRONGLY SUGGESTS SCHEDULING A PRE-CONSTRUCTION MEETING WITH YOUR LOCAL SALES ENGINEER TO DETERMINE IF ADDITIONAL MEASURES, NOT COVERED IN THIS GUIDE, ARE APPROPRIATE FOR YOUR SITE.

FOUNDATION

CONSTRUCT A FOUNDATION THAT CAN SUPPORT THE DESIGN LOADING APPLIED BY THE PIPE AND ADJACENT BACKFILL WEIGHT AS WELL AS MAINTAIN ITS INTEGRITY DURING CONSTRUCTION.

IF SOFT OR UNSUITABLE SOILS ARE ENCOUNTERED, REMOVE THE POOR SOILS DOWN TO A SUITABLE DEPTH AND THEN BUILD UP TO THE APPROPRIATE ELEVATION WITH A COMPETENT BACKFILL MATERIAL. THE STRUCTURAL FILL MATERIAL GRADATION SHOULD NOT ALLOW THE MIGRATION OF FINES, WHICH CAN CAUSE SETTLEMENT OF THE DETENTION SYSTEM OR PAVEMENT ABOVE. IF THE STRUCTURAL FILL MATERIAL IS NOT COMPATIBLE WITH THE UNDERLYING SOILS AN ENGINEERING FABRIC SHOULD BE USED AS A SEPARATOR. IN SOME CASES, USING A STIFF REINFORCING GEOGRID REDUCES OVER EXCAVATION AND REPLACEMENT FILL QUANTITIES.

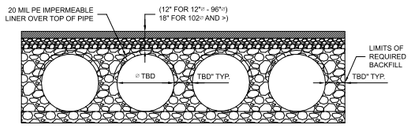


GRADE THE FOUNDATION SUBGRADE TO A UNIFORM OR SLIGHTLY SLOPING GRADE. IF THE SUBGRADE IS CLAY OR RELATIVELY NON-POROUS AND THE CONSTRUCTION SEQUENCE WILL LAST FOR AN EXTENDED PERIOD OF TIME, IT IS BEST TO SLOPE THE GRADE TO ONE END OF THE SYSTEM. THIS WILL ALLOW EXCESS WATER TO DRAIN QUICKLY, PREVENTING SATURATION OF THE SUBGRADE.

GEOMEMBRANE BARRIER

A SITE'S RESISTIVITY MAY CHANGE OVER TIME WHEN VARIOUS TYPES OF SALTING AGENTS ARE USED, SUCH AS ROAD SALTS FOR DEICING AGENTS. IF SALTING AGENTS ARE USED ON OR NEAR THE PROJECT SITE, A GEOMEMBRANE BARRIER IS RECOMMENDED WITH THE SYSTEM. THE GEOMEMBRANE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM THE USE OF SUCH AGENTS INCLUDING PREMATURE CORROSION AND REDUCED ACTUAL SERVICE LIFE.

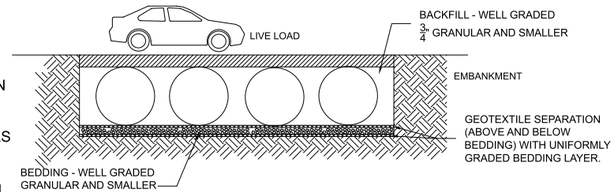
THE PROJECT'S ENGINEER OF RECORD IS TO EVALUATE WHETHER SALTING AGENTS WILL BE USED ON OR NEAR THE PROJECT SITE, AND USE HIS/HER BEST JUDGEMENT TO DETERMINE IF ANY ADDITIONAL PROTECTIVE MEASURES ARE REQUIRED. BELOW IS A TYPICAL DETAIL SHOWING THE PLACEMENT OF A GEOMEMBRANE BARRIER FOR PROJECTS WHERE SALTING AGENTS ARE USED ON OR NEAR THE PROJECT SITE.



IN-SITU TRENCH WALL

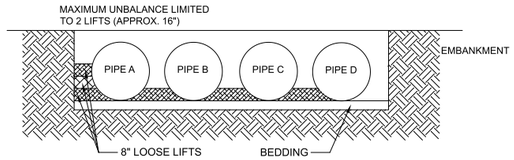
IF EXCAVATION IS REQUIRED, THE TRENCH WALL NEEDS TO BE CAPABLE OF SUPPORTING THE LOAD THAT THE PIPE SHEDS AS THE SYSTEM IS LOADED. IF SOILS ARE NOT CAPABLE OF SUPPORTING THESE LOADS, THE PIPE CAN DEFLECT. PERFORM A SIMPLE SOIL PRESSURE CHECK USING THE APPLIED LOADS TO DETERMINE THE LIMITS OF EXCAVATION BEYOND THE SPRING LINE OF THE OUTER MOST PIPES.

IN MOST CASES THE REQUIREMENTS FOR A SAFE WORK ENVIRONMENT AND PROPER BACKFILL PLACEMENT AND COMPACTION TAKE CARE OF THIS CONCERN.



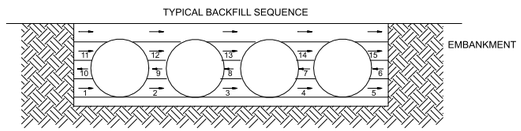
BACKFILL PLACEMENT

MATERIAL SHALL BE WORKED INTO THE PIPE HAUNCHES BY MEANS OF SHOVEL-SLICING, RODDING, AIR TAMPER, VIBRATORY ROD, OR OTHER EFFECTIVE METHODS.

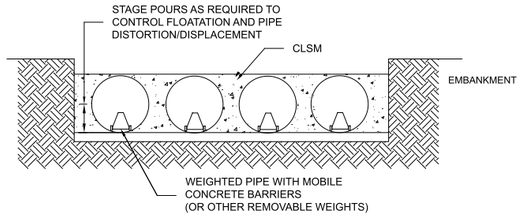


IF AASHTO T99 PROCEDURES ARE DETERMINED INFEASIBLE BY THE GEOTECHNICAL ENGINEER OF RECORD, COMPACTION IS CONSIDERED ADEQUATE WHEN NO FURTHER YIELDING OF THE MATERIAL IS OBSERVED UNDER THE COMPACTOR, OR UNDER FOOT, AND THE GEOTECHNICAL ENGINEER OF RECORD (OR REPRESENTATIVE THEREOF) IS SATISFIED WITH THE LEVEL OF COMPACTION.

FOR LARGE SYSTEMS, CONVEYOR SYSTEMS, BACKHOES WITH LONG REACHES OR DRAGLINES WITH STONE BUCKETS MAY BE USED TO PLACE BACKFILL. ONCE MINIMUM COVER FOR CONSTRUCTION LOADING ACROSS THE ENTIRE WIDTH OF THE SYSTEM IS REACHED, ADVANCE THE EQUIPMENT TO THE END OF THE RECENTLY PLACED FILL, AND BEGIN THE SEQUENCE AGAIN UNTIL THE SYSTEM IS COMPLETELY BACKFILLED. THIS TYPE OF CONSTRUCTION SEQUENCE PROVIDES ROOM FOR STOCKPILED BACKFILL DIRECTLY BEHIND THE BACKHOE, AS WELL AS THE MOVEMENT OF CONSTRUCTION TRAFFIC. MATERIAL STOCKPILES ON TOP OF THE BACKFILLED DETENTION SYSTEM SHOULD BE LIMITED TO 8- TO 10-FEET HIGH AND MUST PROVIDE BALANCED LOADING ACROSS ALL BARRELS. TO DETERMINE THE PROPER COVER OVER THE PIPES TO ALLOW THE MOVEMENT OF CONSTRUCTION EQUIPMENT SEE TABLE 1, OR CONTACT YOUR LOCAL CONTECH SALES ENGINEER.



WHEN FLOWABLE FILL IS USED, YOU MUST PREVENT PIPE FLOATATION. TYPICALLY, SMALL LIFTS ARE PLACED BETWEEN THE PIPES AND THEN ALLOWED TO SET-UP PRIOR TO THE PLACEMENT OF THE NEXT LIFT. THE ALLOWABLE THICKNESS OF THE CLSM LIFT IS A FUNCTION OF A PROPER BALANCE BETWEEN THE UPLIFT FORCE OF THE CLSM, THE OPPOSING WEIGHT OF THE PIPE, AND THE EFFECT OF OTHER RESTRAINING MEASURES. THE PIPE CAN CARRY LIMITED FLUID PRESSURE WITHOUT PIPE DISTORTION OR DISPLACEMENT, WHICH ALSO AFFECTS THE CLSM LIFT THICKNESS. YOUR LOCAL CONTECH SALES ENGINEER CAN HELP DETERMINE THE PROPER LIFT THICKNESS.

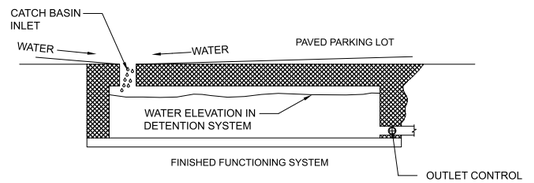


CONSTRUCTION LOADING

TYPICALLY, THE MINIMUM COVER SPECIFIED FOR A PROJECT ASSUMES H-20 LIVE LOAD. BECAUSE CONSTRUCTION LOADS OFTEN EXCEED DESIGN LIVE LOADS, INCREASED TEMPORARY MINIMUM COVER REQUIREMENTS ARE NECESSARY. SINCE CONSTRUCTION EQUIPMENT VARIES FROM JOB TO JOB, IT IS BEST TO ADDRESS EQUIPMENT SPECIFIC MINIMUM COVER REQUIREMENTS WITH YOUR LOCAL CONTECH SALES ENGINEER DURING YOUR PRE-CONSTRUCTION MEETING.

ADDITIONAL CONSIDERATIONS

BECAUSE MOST SYSTEMS ARE CONSTRUCTED BELOW-GRADE, RAINFALL CAN RAPIDLY FILL THE EXCAVATION; POTENTIALLY CAUSING FLOATATION AND MOVEMENT OF THE PREVIOUSLY PLACED PIPES. TO HELP MITIGATE POTENTIAL PROBLEMS, IT IS BEST TO START THE INSTALLATION AT THE DOWNSTREAM END WITH THE OUTLET ALREADY CONSTRUCTED TO ALLOW A ROUTE FOR THE WATER TO ESCAPE. TEMPORARY DIVERSION MEASURES MAY BE REQUIRED FOR HIGH FLOWS DUE TO THE RESTRICTED NATURE OF THE OUTLET PIPE.



CMP DETENTION SYSTEM INSPECTION AND MAINTENANCE

UNDERGROUND STORMWATER DETENTION AND INFILTRATION SYSTEMS MUST BE INSPECTED AND MAINTAINED AT REGULAR INTERVALS FOR PURPOSES OF PERFORMANCE AND LONGEVITY.

INSPECTION

INSPECTION IS THE KEY TO EFFECTIVE MAINTENANCE OF CMP DETENTION SYSTEMS AND IS EASILY PERFORMED. CONTECH RECOMMENDS ONGOING, ANNUAL INSPECTIONS. SITES WITH HIGH TRASH LOAD OR SMALL OUTLET CONTROL ORIFICES MAY NEED MORE FREQUENT INSPECTIONS. THE RATE AT WHICH THE SYSTEM COLLECTS POLLUTANTS WILL DEPEND MORE ON SITE SPECIFIC ACTIVITIES RATHER THAN THE SIZE OR CONFIGURATION OF THE SYSTEM.

INSPECTIONS SHOULD BE PERFORMED MORE OFTEN IN EQUIPMENT WASHDOWN AREAS, IN CLIMATES WHERE SANDING AND/OR SALTING OPERATIONS TAKE PLACE, AND IN OTHER VARIOUS INSTANCES IN WHICH ONE WOULD EXPECT HIGHER ACCUMULATIONS OF SEDIMENT OR ABRASIVE/ CORROSIVE CONDITIONS. A RECORD OF EACH INSPECTION IS TO BE MAINTAINED FOR THE LIFE OF THE SYSTEM

MAINTENANCE

CMP DETENTION SYSTEMS SHOULD BE CLEANED WHEN AN INSPECTION REVEALS ACCUMULATED SEDIMENT OR TRASH IS CLOGGING THE DISCHARGE ORIFICE.

ACCUMULATED SEDIMENT AND TRASH CAN TYPICALLY BE EVACUATED THROUGH THE MANHOLE OVER THE OUTLET ORIFICE. IF MAINTENANCE IS NOT PERFORMED AS RECOMMENDED, SEDIMENT AND TRASH MAY ACCUMULATE IN FRONT OF THE OUTLET ORIFICE. MANHOLE COVERS SHOULD BE SECURELY SEATED FOLLOWING CLEANING ACTIVITIES. CONTECH SUGGESTS THAT ALL SYSTEMS BE DESIGNED WITH AN ACCESS/INSPECTION MANHOLE SITUATED AT OR NEAR THE INLET AND THE OUTLET ORIFICE. SHOULD IT BE NECESSARY TO GET INSIDE THE SYSTEM TO PERFORM MAINTENANCE ACTIVITIES, ALL APPROPRIATE PRECAUTIONS REGARDING CONFINED SPACE ENTRY AND OSHA REGULATIONS SHOULD BE FOLLOWED.

ANNUAL INSPECTIONS ARE BEST PRACTICE FOR ALL UNDERGROUND SYSTEMS. DURING THIS INSPECTION, IF EVIDENCE OF SALTING/DE-ICING AGENTS IS OBSERVED WITHIN THE SYSTEM, IT IS BEST PRACTICE FOR THE SYSTEM TO BE RINSED, INCLUDING ABOVE THE SPRING LINE SOON AFTER THE SPRING THAW AS PART OF THE MAINTENANCE PROGRAM FOR THE SYSTEM.

MAINTAINING AN UNDERGROUND DETENTION OR INFILTRATION SYSTEM IS EASIEST WHEN THERE IS NO FLOW ENTERING THE SYSTEM. FOR THIS REASON, IT IS A GOOD IDEA TO SCHEDULE THE CLEANOUT DURING DRY WEATHER.

THE FOREGOING INSPECTION AND MAINTENANCE EFFORTS HELP ENSURE UNDERGROUND PIPE SYSTEMS USED FOR STORMWATER STORAGE CONTINUE TO FUNCTION AS INTENDED BY IDENTIFYING RECOMMENDED REGULAR INSPECTION AND MAINTENANCE PRACTICES. INSPECTION AND MAINTENANCE RELATED TO THE STRUCTURAL INTEGRITY OF THE PIPE OR THE SOUNDNESS OF PIPE JOINT CONNECTIONS IS BEYOND THE SCOPE OF THIS GUIDE.

C:\EXPORTS\TEMPLATES\CMP_V8.DWG 10/18/2019 10:02 AM

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www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CONTECH CMP DETENTION SYSTEMS

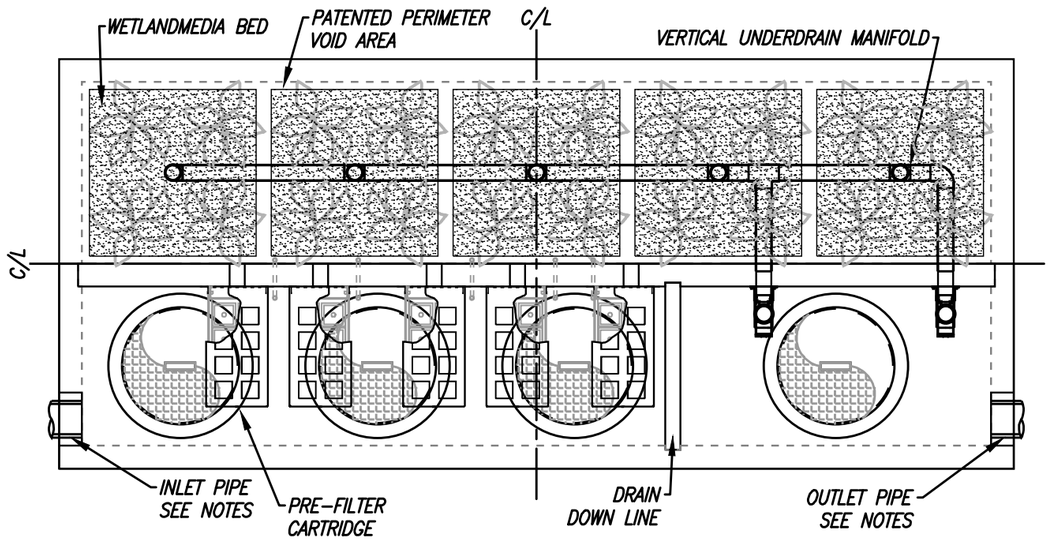
CONTECH **DYODS** DRAWING

DYO17115 Lincoln Logistics
Preliminary Tentative Parcel Map - Detention - 10yr- 24hr Storm
Banning, CA
DETENTION SYSTEM

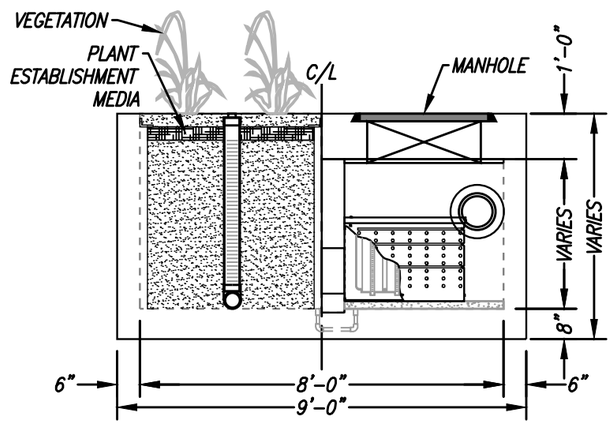
PROJECT No.:	SEQ. No.:	DATE:
7716	17115	5/17/2022
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.: 1		

SITE SPECIFIC DATA			
PROJECT NUMBER			
PROJECT NAME			
PROJECT LOCATION			
STRUCTURE ID			
TREATMENT REQUIRED			
FLOW BASED (CFS)			
0.577			
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			OFFLINE
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2	N/A	N/A	N/A
OUTLET PIPE			
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION			
SURFACE LOAD	PEDESTRIAN		
NOTES:			

* PRELIMINARY NOT FOR CONSTRUCTION



PLAN VIEW



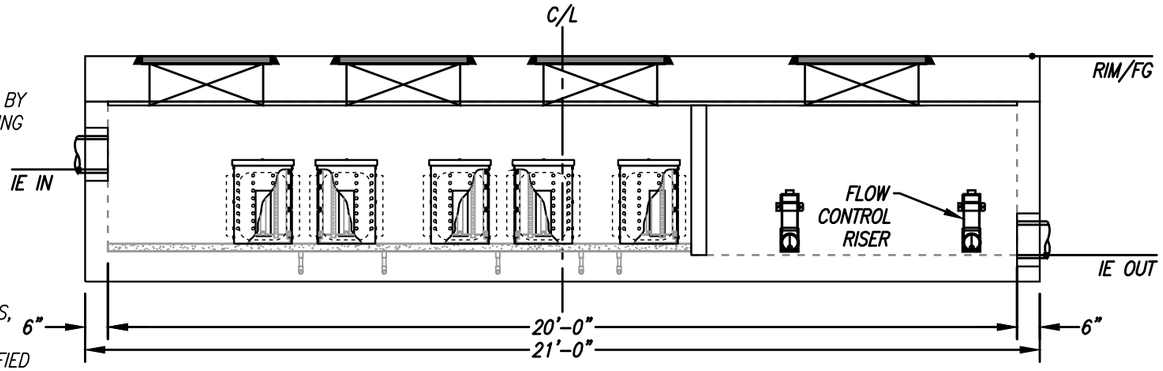
LEFT END VIEW

INSTALLATION NOTES

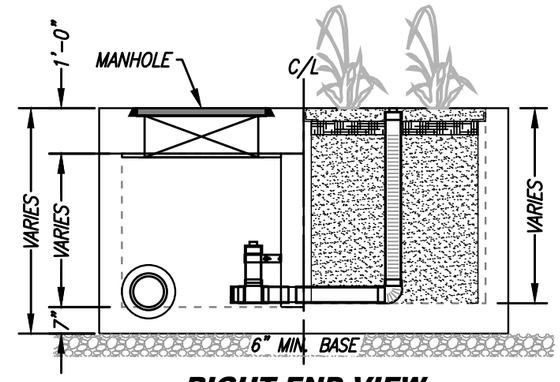
1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURERS' SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURER'S CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE FOR VERIFYING PROJECT ENGINEER'S RECOMMENDED BASE SPECIFICATIONS.
4. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE (PIPES CANNOT INTRUDE BEYOND FLUSH). INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL PIPES SHALL BE SEALED WATERTIGHT PER MANUFACTURER'S STANDARD CONNECTION DETAIL.
5. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL PIPES, RISERS, MANHOLES, AND HATCHES. CONTRACTOR TO USE GROUT AND/OR BRICKS TO MATCH COVERS WITH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
6. VEGETATION SUPPLIED AND INSTALLED BY OTHERS. ALL UNITS WITH VEGETATION MUST HAVE DRIP OR SPRAY IRRIGATION SUPPLIED AND INSTALLED BY OTHERS.
7. CONTRACTOR RESPONSIBLE FOR CONTACTING CONTECH FOR ACTIVATION OF UNIT. MANUFACTURER'S WARRANTY IS VOID WITHOUT PROPER ACTIVATION BY A CONTECH REPRESENTATIVE.

GENERAL NOTES

1. MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT CONTECH.



ELEVATION VIEW



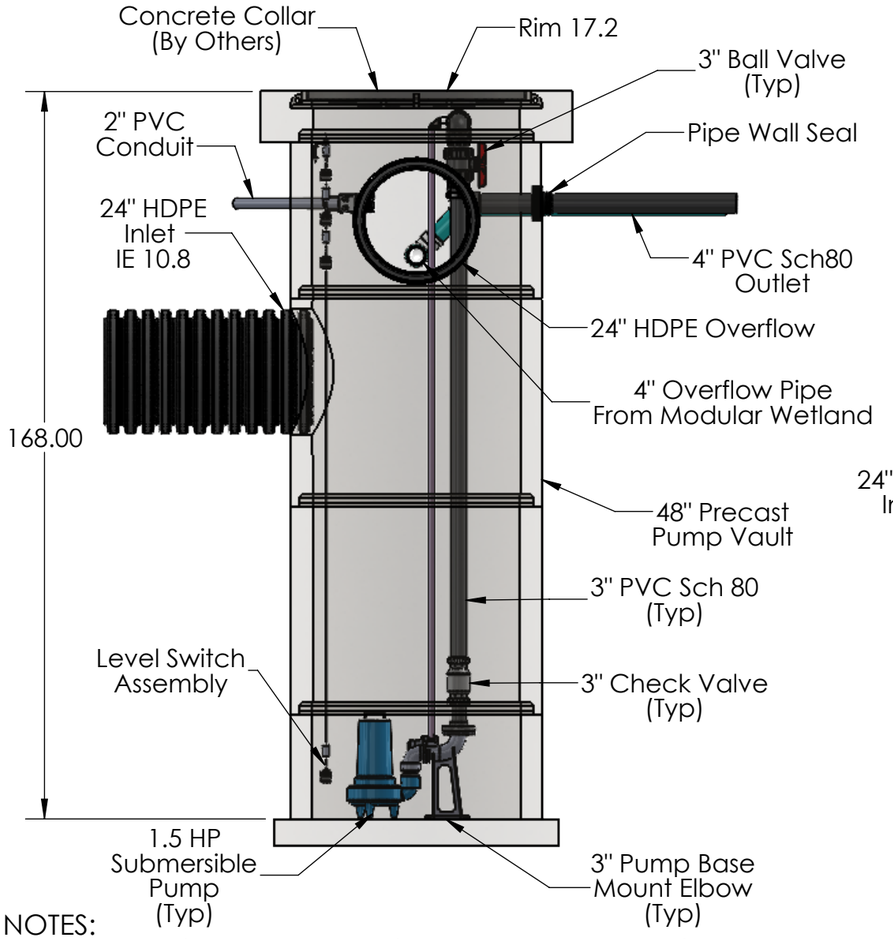
RIGHT END VIEW

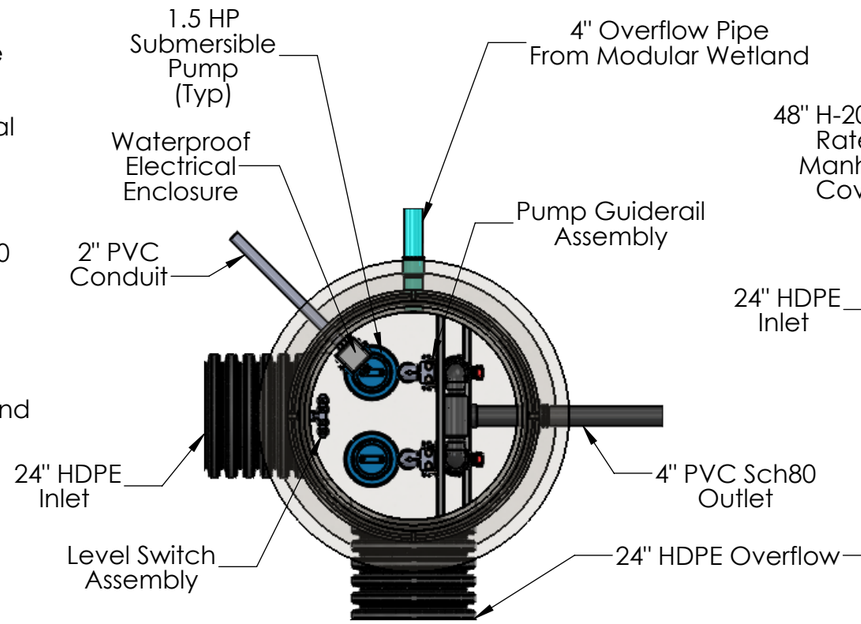
TREATMENT FLOW (CFS)	0.577
OPERATING HEAD (FT)	3.4
PRETREATMENT LOADING RATE (GPM/SF)	2.0
WETLAND MEDIA LOADING RATE (GPM/SF)	1.0

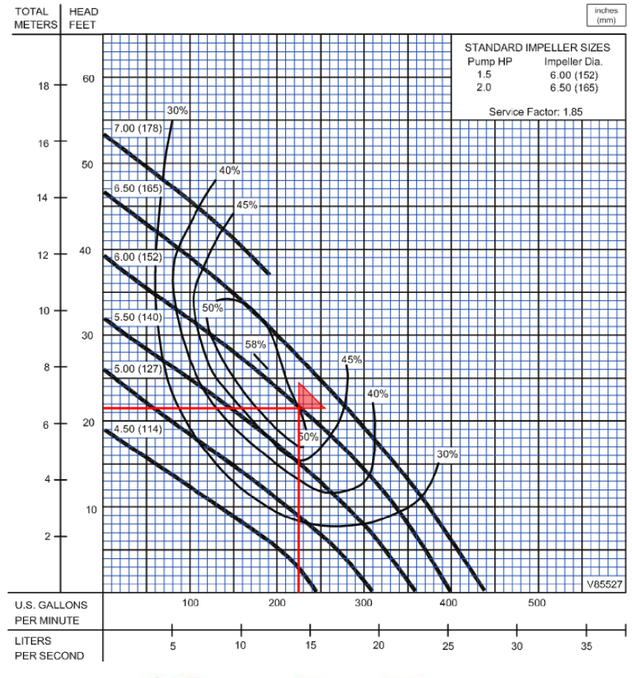
MODULAR WETLANDS
FOR PATENT INFORMATION, GO TO www.ContechES.com/IP

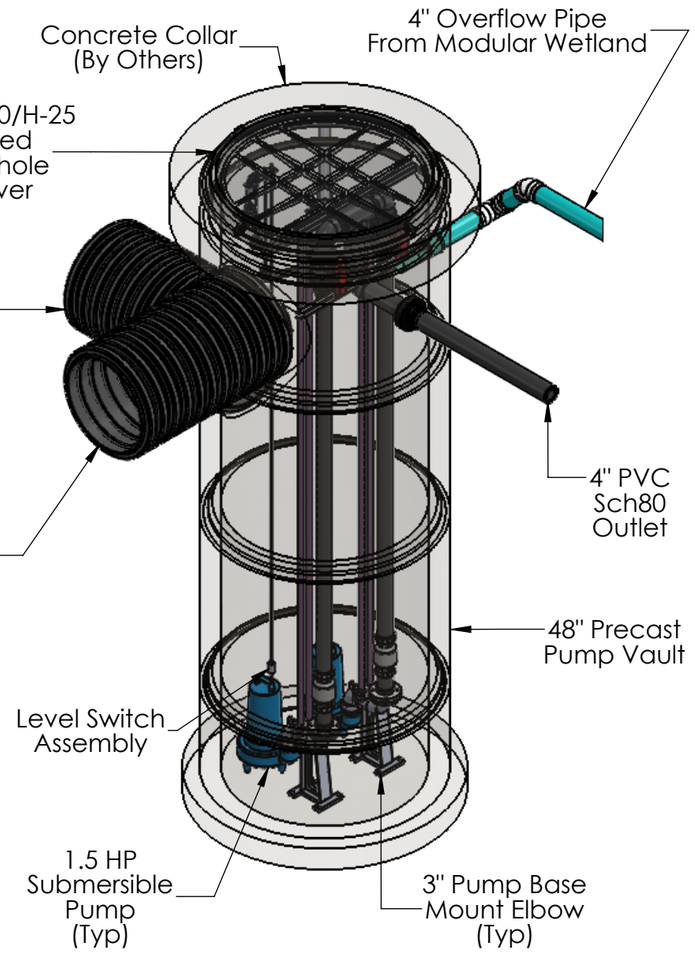
CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com

MWS-L-8-20-V
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL









NOTES:

1. All materials shown on this sheet shall be supplied by Santa Fe Water Systems, Santa Fe Springs, CA, except where noted. Pumps shall be SFWS SWP-15, 200-230v, 3 phase, 13.3A max. Substitution of any component may void warranty.
2. Locate Pump Controller as required for site conditions or Owner direction. Route power and signal cable conduit to vault from controller accordingly. Connections shall be provided by Contractor.
3. Route 4" pump system outlet pipe and 4" Overflow pipe as shown on Civil Sheets.
4. Contractor to provide concrete collar around manhole cover suitable for surface loading conditions.
5. Anti-Floatation flange to be provided on pump vault where required for groundwater conditions.
6. Pump performance requirements based on treatment capacity of downstream Modular Wetland Unit = 225 gpm.

Headloss Calculations		
Fitting	Qty / Length	Headloss
Pipe (3")	12'	1.49'
Pipe (4")	7.5'	0.24'
Check Valve	1	1.85'
90 Elbow (3")	4	5.19'
Tee	1	1.10'
Exit	1	0.61'
Elevation Head		11.13'
Total Headloss @ 225 gpm		21.62'

Santa Fe Water Systems
10244 Freeman Ave, Santa Fe Springs, CA 90670
562-777-9724 / www.SFWSystems.com

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	NAME	DATE
DRAWN	SRG	11/17/22
CHECKED	MDF	11/17/22
ENG APPR.	CKL	11/17/22
REV		

TITLE:
First Lincoln Logistics
Banning, CA
Feed Pump Station

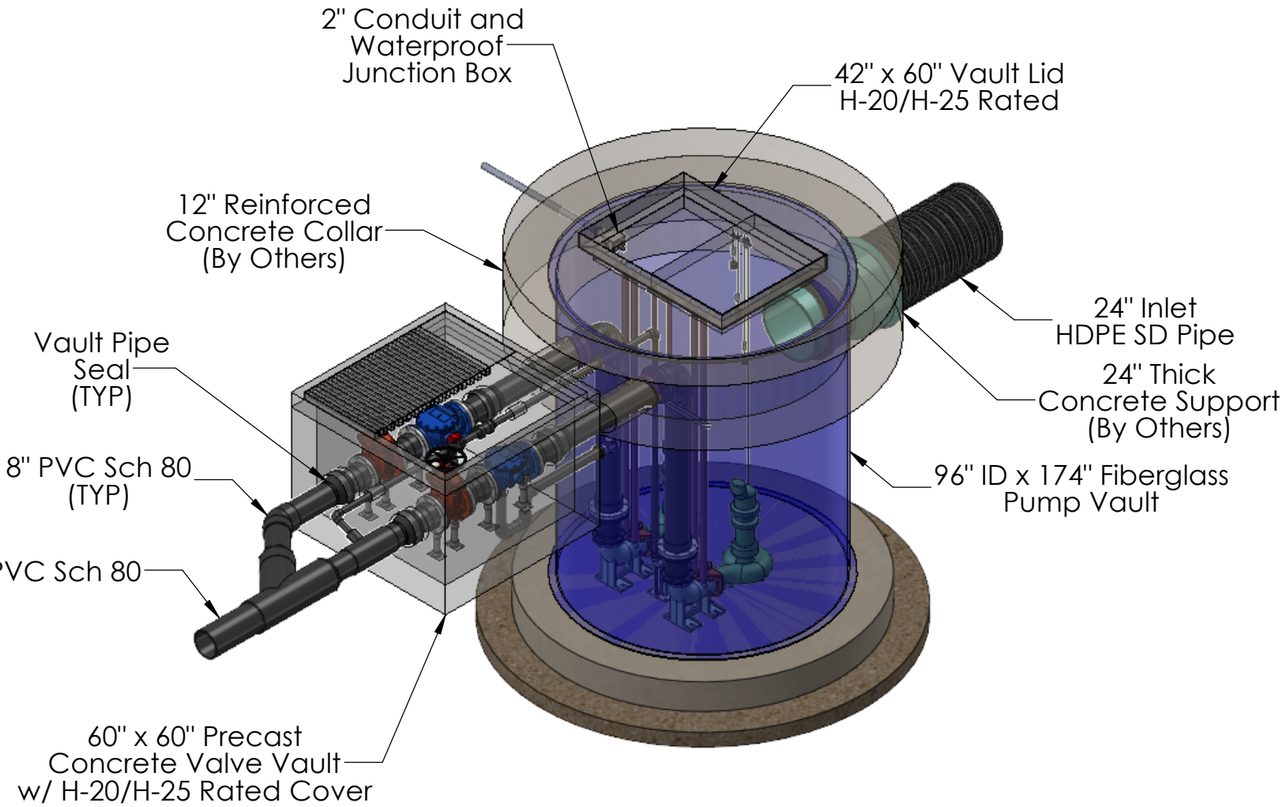
SIZE **B** SHEET1 OF 1

STORMWATER OVERFLOW and HYDROMODIFICATION PUMP STATION DETAIL

FIRST LINCOLN LOGISTICS, BANNING, CA

NOTES:

1. ALL DIMENSIONS AND ELEVATIONS SHOWN ARE NOMINAL DIMENSIONS. IT IS THE RESPONSIBILITY OF THE ON-SITE CONTRACTOR OR CUSTOMER TO VERIFY THE ACCURACY OF ANY CRITICAL DIMENSIONS OR ELEVATIONS PRIOR TO SETTING OR INSTALLING ANY EQUIPMENT.
2. ALL MATERIALS SHOWN ON THIS SHEET SHALL BE SUPPLIED BY SANTA FE WATER SYSTEMS (SFWS) AS A COMPLETE SYSTEM, EXCEPT WHERE NOTED "BY OTHERS". SUBSTITUTION OR OMISSION OF ANY COMPONENT MAY VOID WARRANTY.
3. SYSTEM COMPONENTS SHALL BE DELIVERED TO THE SITE AFTER THE HOLE HAS BEEN EXCAVATED AND SHORED. THE CONTRACTOR SHALL SUPPLY A CRANE OR RIGGING OF SUFFICIENT SIZE TO LOWER ALL PIECES INTO THE HOLE SAFELY.
4. UPON ESTABLISHMENT OF PRIOR AGREEMENT, SANTA FE WATER SYSTEMS WILL PROVIDE A REPRESENTATIVE FOR TECHNICAL ASSISTANCE ON THE DAY OF INSTALLATION TO ANSWER ANY QUESTIONS THAT MAY ARISE.
5. THE CONTRACTOR IS RESPONSIBLE FOR ALL INSTALLATION, INCLUDING, BUT NOT LIMITED TO PLUMBING AND ELECTRICAL CONNECTIONS.
6. SUBMERSIBLE PUMPS (OVERFLOW) TO BE DEMING 6DL, 5HP, 208V/3PH, 15.8 AMP, 6" DISCHARGE, 898 GPM (2CFS) @ 18.75' TDH MIN.
7. SUBMERSIBLE PUMP (HYDROMODIFICATION) TO BE SHINMAYWA 50CR2.15S-1, 0.2HP, 115V/1PH, 3.0 AMP, 2" DISCHARGE, 7.4 GPM (0.0165CFS) @ 15' TDH MIN.
8. CONTROL PANEL SHALL BE SEEWATER TRIPLEX SYSTEM, NEMA 3R.
9. MOUNT PUMP CONTROLLER IN LOCATION SPECIFIED BY OWNER. FOR LOCATIONS GREATER THAN 5 FEET FROM VAULT, CONSULT WITH SFWW TO DETERMINE NEED FOR ADDITIONAL CABLE AND/OR EQUIPMENT.
10. ALL COMPONENTS PROVIDED BY SANTA FE WINWATER SHALL BE SUITABLE FOR USE WITH OPERATIONAL AND ENVIRONMENTAL CONDITIONS.
11. EQUIPMENT DOCUMENTATION SHALL BE PROVIDED FOR REVIEW UPON ACCEPTANCE OF PURCHASE ORDER.
12. COORDINATE PIPE SIZES AND INVERT ELEVATIONS WITH CIVIL SHEETS.
13. ALL STRUCTURES TO BE H-20 INCIDENTAL TRAFFIC RATED FOR PARKING LOT SPEEDS.
14. VALVE VAULT SHALL BE EITHER PRECAST UNITS OR CAST-IN-PLACE AND CONSTRUCTED ACCORDING TO CURRENT BUILDING REGULATIONS.



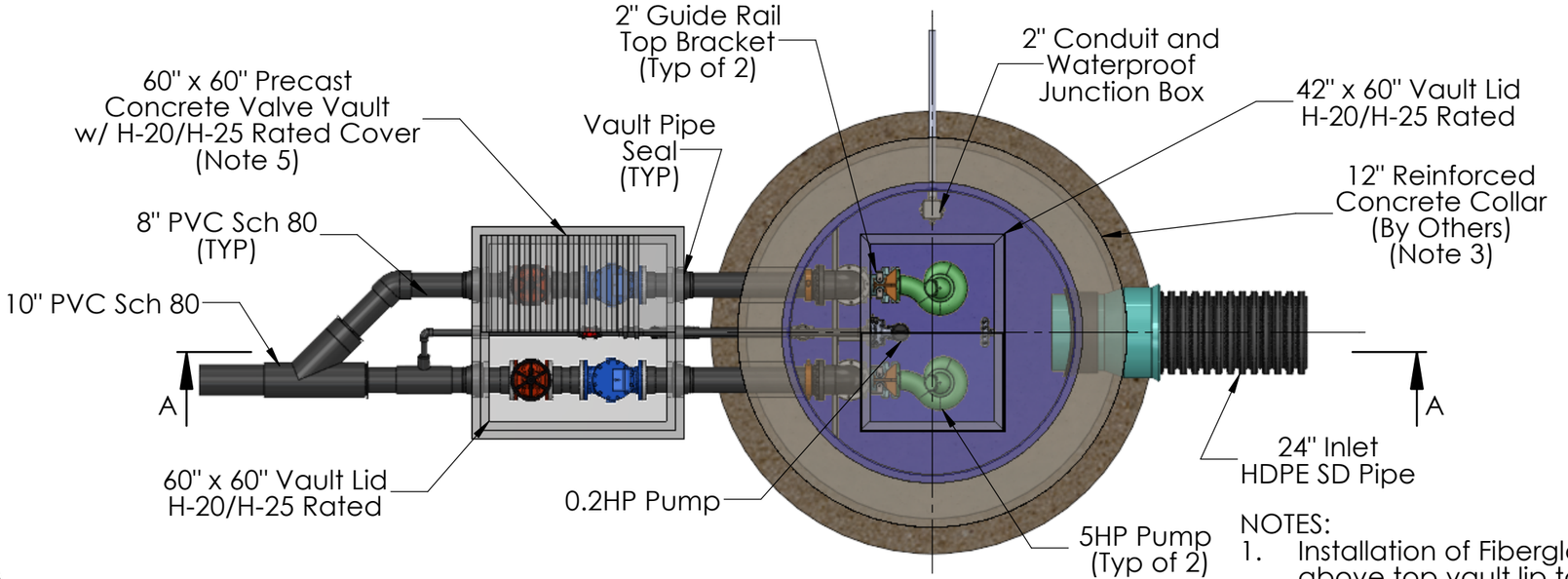
10244 Freeman Ave, Santa Fe Springs, CA 90670
562-777-9724 / www.sfwsystems.com

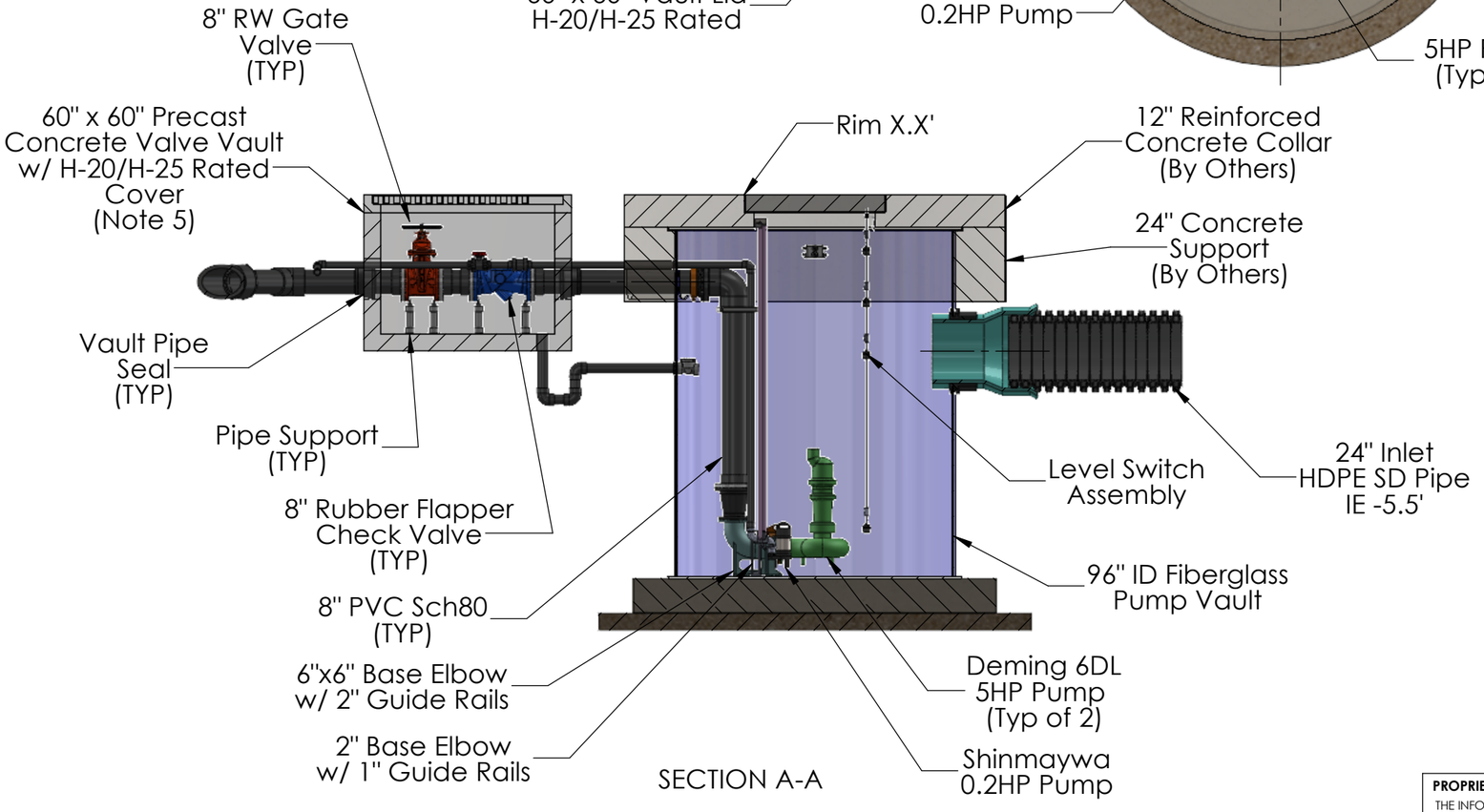
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	NAME	DATE
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CHECKED	MDF	11/17/22
ENG APPR.	CKL	11/17/22
REV		

TITLE: First Lincoln Logistics Stormwater Overflow and Hydromodification Pump Station

SIZE **B** | SHEET 1 OF 3





SECTION A-A

NOTES:

1. Installation of Fiberglass Vault requires 2" space above top vault lip to prevent loading from surface to maintain manufacturer warranty.
2. Provide backfill conforming to ASTM C-33, Paragraph 9.1. Approved materials include Pea Gravel 1/8" min to 3/4" max or Crushed Rock, washed and free-flowing 1/8" min to 1/2" max. Base may be poured concrete (6" min) or 12" min backfill matierial.
3. 12" thick reinforced concrete collar shall be placed on top of 24" concrete support to prevent loading to fiberglass basin below.
4. See Civil sheets to confirm elevations and pipe sizes prior to ordering.
5. Provide 2" drain from Valve Vault to Pump Vault (Required fittings and pipe shall be provided by SFWS)
6. Provide 12" concrete base for pump vault, extending minimum 6" past OD of base. Concrete shall be installed on 6" compacted gravel base.

10244 Freeman Ave, Santa Fe Springs, CA 90670
562-777-9724 / www.sfwsystems.com

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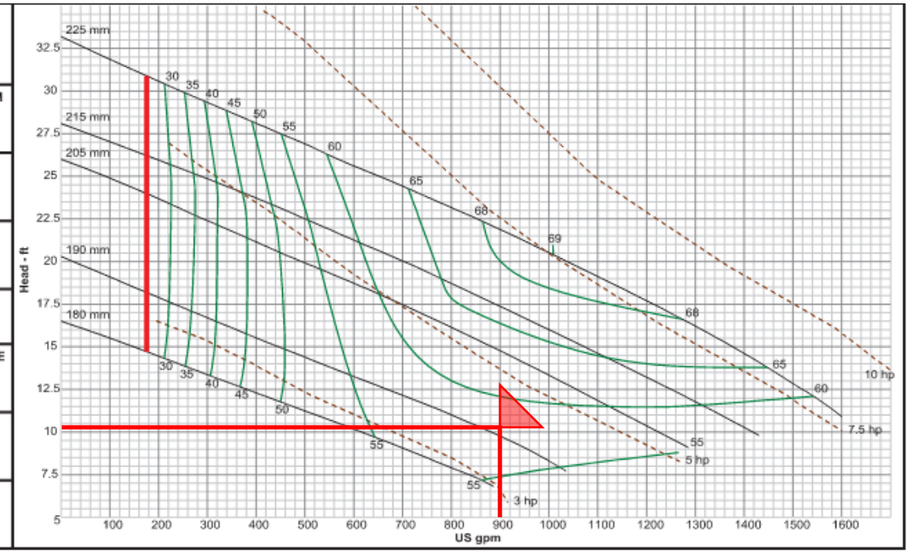
	NAME	DATE
DRAWN	CKL	11/17/22
CHECKED	MDF	11/17/22
ENG APPR.	CKL	11/17/22
REV		

TITLE: First Lincoln Logistics Stormwater Overflow and Hydromodification Pump Station

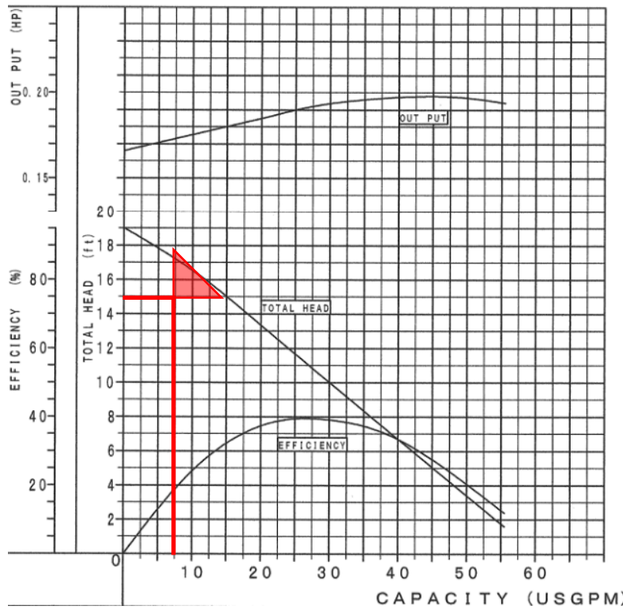
SIZE **B** | SHEET 2 OF 3

OVERFLOW PUMP

MODEL:
7365 7365N
SPEED: RPM
1150
CURVE NO.
PC4753
SIZE: 6DL CODE: 664
HERTZ: 60
MAX. SPHERE 3" (76.2 mm)
IMPELLER 043531
CASE 043542



TREATMENT PUMP



Headloss Calculations		
Fitting	Qty / Length	Headloss
Pipe (8")	16.5'	0.27'
Pipe (10")	10'	0.05'
Reduer	2	0.43'
Check Valve	1	0.52'
Gate Valve	1	0.06'
90 Elbow	2	1.76'
Wye	1	0.12'
45 Elbow	1	0.19'
Exit	1	0.25'
Elevation Head		7'
Total Headloss @ 898 gpm		10.66'

Headloss Calculations		
Fitting	Qty / Length	Headloss
Pipe (3/4")	25'	4.85'
Check Valve	1	0.47'
90 Elbow	4	1.31'
Tee	1	0.84'
Exit	1	0.47'
Elevation Head		7.00'
Total Headloss @ 7.4 gpm		14.94'

10244 Freeman Ave, Santa Fe Springs, CA 90670
562-777-9724 / www.sfwsystems.com

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF **SANTA FE WATER SYSTEMS**. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF SANTA FE WATER SYSTEMS IS PROHIBITED.

	NAME	DATE
DRAWN	CKL	11/17/22
CHECKED	MDF	11/17/22
ENG APPR.	CKL	11/17/22
REV		

TITLE: First Lincoln Logistics Stormwater Overflow and Hydromodification Pump Station

SIZE **B** | SHEET 3 OF 3

Appendix G

AGREEMENTS – CC&RS, COVENANT AND AGREEMENTS, BMP MAINTENANCE AGREEMENTS AND/OR OTHER MECHANISMS FOR ENSURING ONGOING OPERATION, MAINTENANCE, FUNDING AND TRANSFER OF REQUIREMENTS FOR THIS PROJECT-SPECIFIC WQMP

This is a Preliminary Report:

A sample agreement is included.

Agreement shall be completed and signed by the project owner and a photocopy provided in the Final WQMP

RECORDING REQUESTED BY
AND WHEN RECORDED RETURN TO:

City of Banning
City Clerk
P.O. Box 998
99 E. Ramsey Street
Banning, CA 92220

EXEMPT FROM RECORDER'S FEES PURSUANT TO GOVERNMENT CODE SECTIONS 6103 AND 27383.

Note: Highlighted fields below are to be completed as part of the Final WQMP

TPM: 38437
APN: 540-210-009 and 540-210-020

SPACE ABOVE THIS LINE FOR RECORDER'S USE

STORM WATER MANAGEMENT WQMP/BMP FACILITIES AGREEMENT NO. 2020-0X

City of Banning, Riverside County, California

THIS AGREEMENT, made and entered into this XXth day of XX, 20XX, by and between **FR CA Property Holding L.P.** hereinafter called the "Landowner", and the City of Banning, California, hereinafter called the "City".

RECITALS

WHEREAS, the Landowner is the owner of certain real property described as (Riverside County Tract Map/Parcel Map Identification Number/Address) **PM 38437** as recorded by deed in the land records of Riverside County, California, Map Book XX, Page XX, hereinafter called the "Property" more particularly described in Exhibit "A" legal description attached and made a part by this reference; and

WHEREAS, the Landowner is currently the property owner and has built on and developed the property; and

WHEREAS, the Water Quality Management Plan (WQMP) prepared for First Lincoln Logistics hereinafter called the "WQMP", which is expressly made a part hereof and is on file in the City Engineer's Office, as approved by the City, provides for storm water quality treatment within the confines of the property; and

WHEREAS, the City and the Landowner, its successors and assigns, including any homeowners association, agree that the health, safety, and welfare of the residents of the City of Banning, require that on-site storm water management/Best Management Practices (BMP) facilities (underground infiltration chambers, storm drain inlets, catch basins, filter units and appurtenances) mentioned in the project's

approved WQMP be constructed and maintained (to minimize pollutants in urban runoff) by the Landowner, its successors and assigns, including, but not limited to, any new property owner.

NOW THEREFORE, in consideration of the foregoing recitals, the mutual covenants contained herein, and the following terms and conditions, the parties hereto agree as follows:

1. The on-site storm water management/BMP facilities mentioned above shall be constructed by the Landowner, its successors and assigns, in accordance with the plans and specifications identified in the WQMP.

2. The Landowner, its successors and assigns, shall adequately maintain the storm water management/BMP facilities, including source control BMPs. This includes all pipes and channels built to convey storm water on the property, including catch basin inserts, underground detention ponds, swales and vegetation provided to control the quantity and quality of the storm water. Adequate maintenance is herein defined as good working condition so that these facilities are performing in their design functions.

3. The Landowner, its successors and assigns, shall annually inspect the storm water management/BMP facility mentioned above by March and submit an inspection report annually to the Public Works Department by April 1st of each year. The purpose of the inspection is to assure safe and proper functioning of the facilities. The inspection shall cover the storm water management BMPs listed in the WQMP such as bioretention basins, underground storage systems, bioswales, catch basins and its filter units, storm drains, etc. Deficiencies shall be noted in the inspection report.

4. The Landowner, its successors and assigns, hereby grant permission to the City, its authorized agents and employees, to enter upon the Property and to inspect the storm water management/BMP facilities whenever the City deems necessary and as required by the City's most current National Pollutant Discharge Elimination System (NPDES) Permit. The purpose of inspection is to follow up on reported deficiencies and/or to respond to citizen complaints, and meet the City's NPDES Permit issued by the State Water Resources Control Board – Colorado River Region No. 7. The City shall provide the Landowner, its successors and assigns, copies of the inspection findings and a directive to commence with the repairs if necessary.

5. In the event the Landowner, its successors and assigns, fails to maintain the storm water management/BMP facilities in good working condition acceptable to the City, the City may enter upon the Property and take whatever steps necessary to correct deficiencies identified in any inspection report and to charge the costs of such repairs to the Landowner, its successors and assigns. This provision shall not be construed to allow the City to erect any structure of permanent nature on the land of the Landowner outside of the easement for the storm water management/BMP facilities. It is expressly understood and agreed that the City is under no obligation to routinely maintain or repair said facilities, and in no event shall this Agreement be construed to impose any such obligation on the City.

6. The Landowner, its successors and assigns, will perform the work necessary to keep these facilities in good working order as appropriate. The maintenance schedule for the storm

water management/BMP facilities (including sediment removal) is outlined in the approved WQMP and the schedule will be followed. In the future, the City of Banning may adopt an annual Stormwater/NPDES Inspection Fee that would be assessed to the property owner.

7. In the event the City, pursuant to this Agreement, performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like, the Landowner, its successors and assigns, shall reimburse the City upon demand, within thirty (30) days of receipt thereof for all actual costs incurred by the City hereunder.

8. This Agreement imposes no liability of any kind whatsoever on the City and the Landowner agrees to hold the City harmless, defend and indemnify from any liability whatsoever in the event the storm water management/BMP facilities fail to operate properly.

9. This Agreement shall be recorded through the County of Riverside, retained by the City of Banning, shall constitute a covenant running with the land, and shall be binding on the Landowner, its administrators, executors, assigns, heirs, and any other successors in interests, including any homeowners association.

WITNESS the following signatures and seals:

OWNER:

By:_____

Name: Paul Loubet

Title: Entitlement Officer

ATTEST:

By:_____ (S e a l)

Name:_____

Please Print

Title:_____

Notary must attach an “All-Purpose Acknowledgement”

SEE NEXT PAGE FOR CITY OF BANNING SIGNATURES

CITY OF BANNING:

By:_____

Art Vela, P.E.
Director of Public Works, City of Banning

ATTEST:

By:_____

Sonia De La Fuente
Deputy City Clerk, City of Banning

All signatures on this Agreement on behalf of the Owner must be acknowledged before a Notary Public. In the event that the Owner is a corporation, the President/Vice President and the corporate secretary of the corporation must sign and the corporate seal must be affixed thereto.

Appendix H

PHASE 1 ENVIRONMENTAL SITE ASSESSMENT – SUMMARY OF SITE REMEDIATION CONDUCTED AND USE RESTRICTIONS

Phase 1 ESA Report



Phase I Environmental Site Assessment

Northeast Corner of W Lincoln Street and 4th Street
Banning, California 92220

November 30, 2021

First Industrial Realty Trust, Inc., First Industrial Acquisitions II, LLC,
and First Industrial, L.P.
One North Wacker Drive, Suite 4200
Chicago, IL 60606

Project Number 21-11-003

Prepared by:

Weis ENVIRONMENTAL

1938 Kellogg Avenue, Suite 116
Carlsbad, CA 92008
(760) 585-7070
www.weisenviro.com

1938 Kellogg Avenue, Suite 116, Carlsbad, CA 92008
(760) 585-7070
www.weisenviro.com

November 30, 2021

Jacob Kentnich
First Industrial Realty Trust, Inc.
One North Wacker Drive, Suite 4200
Chicago, IL 60606

Subject: Phase I Environmental Site Assessment
Northeast Corner of W Lincoln Street and 4th Street
Banning, California 92220
Project Number 21-11-003

Dear Mr. Kentnich:

Weis Environmental, LLC has completed the contracted environmental consulting services for the above-referenced project. The services were performed in accordance with our proposal and agreement fully executed by all parties. The Phase I Environmental Site Assessment has been performed in accordance with American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, ASTM Designation E1527-13 and Title 40 of the Code of Federal Regulations (40 CFR) Part 312. This assessment was also completed in accordance with the First Industrial Realty Trust Scope of Work for Phase I ESAs. We appreciate the opportunity to be of service to you on this project. Please contact us if you have any questions or comments regarding this report or if we can be of further assistance.

Sincerely,

Weis Environmental, LLC



Daniel Weis. R.E.H.S.
Environmental Manager

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FIGURES

Figure 1 Vicinity Map
Figure 2 Site Plan
Figure 3 Topographic Map

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Appendix A User Questionnaire
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1.0 INTRODUCTION

This report presents the methods and findings of a Phase I Environmental Site Assessment (ESA) of the subject property located at the northeast corner of W Lincoln Street and 4th Street and identified by Riverside County Assessor's Parcel Numbers (APNs) 540-210-009 and 540-210-020 in the City of Banning, Riverside County, California (Site). The assessment was performed in conformance with the contract/agreement for this assignment and the scope and limitations of ASTM Standard Practice E1527-13 and United States Environmental Protection Agency (EPA) Standards and Practices for All Appropriate Inquiries (AAI) as published in 40 Code of Federal Regulations (CFR) Part 312. EPA promulgated the AAI rule that became effective in November 2006 and has indicated that the ASTM E1527-13 practice is consistent with the requirements of AAI and may be used to comply with the provisions of the AAI rule. This assessment was also completed in accordance with the First Industrial Realty Trust Scope of Work for Phase I ESAs.

1.1 Purpose

The purpose of the ASTM E1527-13 practice (framework for this Phase I ESA) is to define good commercial and customary practice in the United States of America for conducting an ESA of a parcel of real estate with respect to the range of contaminants within the scope of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (Title 42 United States Code (U.S.C.) Section 9601)) and petroleum products. As such, this practice is intended to permit a user to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations on CERCLA 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. Section 9601(35)(B).

In defining a standard of good commercial and customary practice for conducting this Phase I ESA of the Site, the goal of the processes established by the ASTM E1527-13 practice is to identify, to the extent feasible, recognized environmental conditions. The term recognized environmental conditions is defined 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. In addition, controlled recognized environmental conditions, historical recognized environmental conditions and/or de minimis conditions, if identified during the completion of the assessment, are discussed herein. Definitions of these terms and other key terminology relevant to the practice are included in Section 14.0 of this report.

1.2 Scope of the Assessment

In general terms, this Phase I ESA included the acquisition of readily available/accessible and practically reviewable regulatory records and historical information, a site reconnaissance, interviews and preparation of this written report of findings. A more detailed description of the four primary components of the Phase I ESA is presented below.

Records Review - A review of Federal, State, Tribal and local standard ASTM and non-ASTM regulatory databases for a myriad of environmental identifiers including but not limited to properties with underground storage tanks (USTs), properties with leaking USTs, properties that have reported

spills/releases that did not occur from a leaking UST, businesses that utilize hazardous materials and/or generate hazardous waste and hazardous waste disposal locations. The regulatory review may also include public records requests with one or more Federal, State, Tribal and/or local agencies. A review of historical sources is also completed to help ascertain previous land uses of the property in question and in the surrounding area.

Site Reconnaissance - A property inspection and viewing of adjacent and surrounding properties for conditions that could be recognized environmental conditions.

Interviews - Interviews with present and past owners, operators and/or occupants of a property and local government officials.

Reporting - Evaluation of the information gathered during the completion of the Phase I ESA and the subsequent preparation of a written report.

1.3 Limitations and Exceptions

Concerns regarding liability under the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. 9601 et seq. (CERCLA) and analogous State laws, have been a primary driver for Phase I ESA assignments in commercial real estate transactions. While the ASTM E1527-13 practice can be used in many contexts, a familiarity with CERCLA and its potential LLPs is critical in understanding and applying the ASTM E1527-13 practice. We advise consultation with legal counsel if further inquiry or information is desired.

AAI represents the minimum level of inquiry necessary to support the LLPs. However, it is important to understand that additional inquiry ultimately may be necessary or desirable for legal as well as business reasons depending upon the outcome of this inquiry and the particular risk tolerances of a given user. For example, additional inquiry may assist a user of a Phase I ESA in determining whether he or she would have continuing obligations in the event he or she acquires a given property and may also assist the user in defining the scope of future steps to be taken to satisfy such obligations. In addition, a user may be concerned about business environmental risks or non-scope ASTM considerations that do not fall within the definition of a recognized environmental condition. In addition, this assessment did not include subsurface or other invasive exploration, unless specifically documented herein. Users are also cautioned that Federal, State, Tribal and local laws may impose environmental assessment obligations that are beyond the scope of the ASTM E1527-13 practice.

The evaluation, opinion and conclusions presented herein are based solely on visual observations and regulatory, historical and personal knowledge related information that existed at the time our assessment was completed. The use of the gathered information is exclusively for the purposes outlined in this report and only for the Site. Our firm can make no warranty, either express or implied, except that the services conducted were performed in accordance with generally accepted environmental assessment practices applicable at the time and location of the assessment and that the conclusions of the assessment have been based in part on professional judgment/experience, an interpretation of readily available data and the standard of care normally followed by similar professionals practicing in a similar locale and under similar circumstances. Any opinions presented cannot apply to Site changes of which our firm is unaware and has not had the opportunity to evaluate. In addition, this report cannot feasibly include any evaluation of undocumented activities at the Site or on adjacent or nearby properties. Lastly, a Phase I ESA meeting or exceeding this practice and completed less than 180 days prior to the date of acquisition of a given property or (for transactions not involving an acquisition) the date of the intended transaction is presumed to be valid.

1.4 Special Terms and Conditions

This Phase I ESA was prepared in accordance with the terms and conditions of the contract/agreement for the work as executed between our firm and the client. There are no other special terms and conditions established between our firm and the client pertinent to the findings of this ESA or methodology used to complete this assessment. In addition, our firm has no final or other vested interest in the Site or adjacent/surrounding properties, or in any entity that owns or occupies the Site or adjacent/surrounding properties.

1.5 Limiting Conditions and Deviations

There were no significant limiting conditions that would inhibit our ability to identify recognized environmental conditions noted during the completion of this assessment. In addition, there were no deviations from the ASTM E1527-13 standard noted during the completion of this assessment. Any limiting conditions that are not considered to be ones that would inhibit our ability to identify recognized environmental conditions at the Site are referenced in applicable sections of this report.

1.6 Data Failure and Data Gaps

No instances of data failure were encountered during the completion of this assessment. In addition, no data gaps of significance (i.e., those that would inhibit our ability to identify recognized environmental conditions) were identified during the completion of this assessment. Any data gaps that are not considered to be ones that would inhibit our ability to identify recognized environmental conditions at the Site are referenced in applicable sections of this report.

1.7 Reliance

This report has been prepared for the exclusive use of First Industrial Realty Trust, Inc., First Industrial, L.P. and First Industrial Acquisitions II, LLC (User). This report may not be relied upon by any other person or entity without the written consent of both our firm and our client. The scope of services performed for this assessment may not be appropriate to satisfy the specific needs of other users, and any use or reuse of this document would be at the sole risk of said users. Any other party seeking liability protection under CERCLA must take independent action to accomplish its objective.

2.0 SITE DESCRIPTION

2.1 Location and Legal Description

The Site is a reported 6.12 acres and is located to the northeast of the intersection of W Lincoln Street and 4th Street in the City of Banning, Riverside County, California. No physical addresses has been assigned to the Site. The Site is further identified by Riverside County APNs 540-210-009 and 540-210-020. A Vicinity Map is included as Figure 1. A Site Plan is included as Figure 2.

2.2 Site and Vicinity Characteristics

The Site and the surrounding vicinity are situated in the City of Banning that consists primarily of vacant land, commercial development and residential properties. Additional details pertaining to the Site and its adjoining properties are provided in the sections below.

2.3 Current Use of the Site

The Site is currently vacant and undeveloped. A portion of an asphalt paved road (extension of 4th Street) is present along the western Site boundary.

2.4 Description of Site Improvements

There are no habitable structures present at the Site. As stated previously, a portion of an asphalt paved road (extension of 4th Street) is present along the western Site boundary. Power poles and lines are present along the southern Site boundary. Areas of chain-link fencing are present along the southern and western Site boundaries. Some indicators of subsurface utility systems are present on the Site.

2.5 Utilities

Utilities that are reported to be present at the Site or provide service in the surrounding area are noted below along with their municipal provider where applicable.

Utility	Provider (Where Applicable)
Potable Water	City of Banning
Sewage Maintenance	City of Banning
Electrical	City of Banning
Natural Gas	SoCal Gas Company
Solid Waste Disposal	Waste Management

2.6 Description of Adjoining Properties

Adjoining properties are defined as any real property or properties, the border of which is contiguous or partially contiguous with that of the subject property of a Phase I ESA, or that would be contiguous or partially contiguous with that of a subject property but for a street, road, or other public thoroughfare separating them. To the extent feasible, our firm performed a visual inspection of adjoining properties from the Site boundaries and along public right of ways. We did not encroach on to adjoining private property during the completion of this assessment. The following table identifies the adjoining property uses:

Direction	Adjoining Property Use
North	Train tracks, then Bryant Street followed by Interstate 10.
South	W Lincoln Street, then Class A Motorhome Rentals.net LLC (494 4th Street) and Precision Material Handling Inc. (268 W Lincoln Street).
East	Pro-Line Racing (201 W Lincoln Street).
West	4th Street, then a vacant lot.

2.7 Summary Relative to Environmental Concerns

No recognized environmental conditions were noted in connection with the land use of the Site and improvements at the Site. In addition, the land uses of adjoining properties and properties in the vicinity of the Site do not represent recognized environmental conditions to the Site.

3.0 PHYSICAL SETTING

3.1 Topography

The Site is depicted on the United States Geological Survey (USGS) topographic map for the Beaumont, California 7.5-minute quadrangle. The Site is shown on the map as being situated at an elevation of approximately 2,300 feet above mean sea level. The Site and surrounding area appear to trend slightly to the southeast. There are no improvements or structures depicted on-Site on the map. Adjoining and surrounding roadways are depicted on the map. The Site as depicted on a topographic map is included as Figure 3.

3.2 Hydrology

The Site is situated within the Banning Hydrologic Subarea of the San Gorgonio Hydrologic Area of the Whitewater Hydrologic Unit. There are no known substantial hydrologic features at the Site including major storm drain inlets or obvious drainages, channels, or surface waters. A concrete lined drainage channel is present off-Site along the western Site boundary. Infiltration of precipitation can be expected at the Site due to its primarily unimproved nature. Any excess water would appear to flow as surface runoff to streets/roadways and surrounding areas of lower elevation. The Site does not appear to receive significant drainage from off-Site properties.

3.3 Geology

General geologic information pertaining to the Site is presented in the table below.

Geologic Consideration	Details
California Geomorphic Province	Peninsular Ranges.
Mapped Soils or Formation	Early Pleistocene, old alluvial fan deposits.
Description of Soils or Formation	Unconsolidated silts, sands, and clays.
Distance/Direction to Mapped Faults	No known faults are mapped on the Site.

3.4 Hydrogeology

General hydrogeologic information pertaining to the Site is presented in the table below.

Hydrogeologic Consideration	Details
Groundwater Basin or Unit	Banning Hydrologic Subarea
Beneficial Uses	Municipal, agricultural, and industrial.
Estimated Depth to Groundwater	Anticipated to be greater than 100 feet below the surface.
Estimated Flow of Groundwater	Southeast.

Hydrogeologic Consideration	Details
Known Site or Regional Groundwater Contamination Issues	None.

3.5 Oil and Gas Exploration

According to online resources provided by the California Department of Conservation, Geologic Energy Management Division (CalGEM), there are no oil, gas or geothermal wells located on the Site or its adjacent properties.

3.6 Summary Relative to Environmental Concerns

No recognized environmental conditions were noted in connection with Site physical setting considerations. In addition, physical setting considerations related to the adjoining properties and properties in the vicinity of the Site do not represent recognized environmental conditions to the Site.

4.0 USER PROVIDED INFORMATION

A representative of the User of this report was interviewed during the completion of this assessment. The questions posed during the interview are defined by the ASTM E1527-13 practice. A copy of a completed questionnaire is included in Appendix A. The User also provided our firm with any land title records and judicial records that may be available for the Site as part of the required evaluation for environmental liens and activity and use limitations (AULs) in connection with the subject property of a Phase I ESA. As stated in the ASTM E1527-13 practice, it is the responsibility of the user of the report to provide any available records pertaining to environmental liens and AULs that may exist in connection with a given property. Any land title and judicial records provided to our firm are discussed below. If such information is not discussed in the sections below, it was not provided by the user of the report.

In addition to the contact information obtained, the user of the report was also asked if they are aware of other useful documents that may exist and if so whether copies can be provided to the environmental professional within reasonable time and cost constraints. A list of typical useful documents is included in Section 10.8.1 of the ASTM E1527-13 practice and include but are not limited to environmental assessment reports, compliance audits and permits, registrations for tank and other aboveground or underground systems, safety plans, spill prevention and other facility related plans and geological/geotechnical studies and environmental governmental agency notices and/or correspondence.

4.1 Title Records

An ALTA Commitment for Title Insurance report issued by First American Title Insurance Company and dated September 29, 2021 was provided for our review. No environmental liens or AULs are referenced in the report. A copy of the title report is included in Appendix B.

4.2 Environmental Liens

The User is unaware of environmental liens in connection with the Site.

4.3 Activity and Use Limitations

The User is unaware of AULs in connection with the Site.

4.4 Specialized or Actual Knowledge or Experience

The User is unaware of specialized knowledge, actual knowledge or experience that is material to recognized environmental conditions in connection with the Site.

4.5 Commonly Known or Reasonably Ascertainable Information

The User is unaware of commonly known or reasonably ascertainable information within the local community that is material to recognized environmental conditions in connection with the Site.

4.6 Valuation Reduction for Environmental Issues

The User is unaware of information pertaining to an undervalued purchase price of the Site relative to the estimated fair market value of the Site due to the presence of contamination.

4.7 Owner, Property Manager, and Occupant Information

The Site is currently owned and managed by Stepping Stone Properties LLC. The Site is currently vacant and undeveloped land with no known occupants.

4.8 Reason for Performing Phase I ESA

The User has commissioned this Phase I ESA as part of a proposed real estate transaction (acquisition and development). The Phase I ESA is also being completed to assist the client in complying with 40 CFR Part 312.

4.9 Proceedings Involving the Site

The User is unaware of pending, threatened, or past litigation and administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the Site. The client is also unaware of notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products in connection with the Site.

4.10 Other Provided Documents

Our firm was not provided with prior environmental documents pertaining to the Site. We were provided with a geotechnical investigation pertaining to the western portion of the Site dated May 28, 2021. During the investigation, three exploratory trenches were excavated to depths of 12.5 feet. During the exploration activities, alluvial deposits were encountered to the total depth of the trenches and no groundwater was encountered. No staining, odors, debris or other suspect conditions were noted in the trench logs.

4.11 Summary Relative to Environmental Concerns

No recognized environmental conditions were noted in connection with the user provided information.

5.0 REGULATORY RECORDS REVIEW

Our firm commissioned the preparation of a regulatory database report from Environmental Risk Information Services (ERIS) as part of the regulatory records review. ERIS searches a myriad of Federal, State, and local government environmental databases during the preparation of their deliverables. Certain databases are specifically required by the ASTM E1527-13 practice and are referenced as "standard ASTM regulatory databases." Such databases are searched to at least the minimum search distance around a given property as defined in the practice. Other regulatory databases are also searched that are not specifically referenced in ASTM E1527-13. Such databases are referenced as "non-ASTM regulatory databases" and are searched as varying radii around a given property as selected by ERIS.

Descriptions of each database searched and the dates that the regulatory databases were last updated by the applicable agencies are included in the ERIS report. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of an updates. ERIS updates databases in accordance with ASTM E1527-13 which states that government information from nongovernmental sources may be considered current if the source updates the information at least every 90 days, or, for information that is updated less frequently than quarterly by the government agency, within 90 days of the date the government agency makes the information available to the public.

Our firm also reviewed unplottable sites listed in the database report by cross-referencing reasonably ascertainable information pertaining to such properties that may include facility names, street names, zip codes or other information. Unplottable sites are ones that cannot be formally mapped or geocoded due to various reasons, including limited geographic information. Any unplottable sites that we identify within the specified search radii have been evaluated as part of the preparation of this report. A copy of the regulatory database report is included in Appendix C.

5.1 Standard ASTM Regulatory Database Search

The tables below present the standard Federal, State, Tribal and local ASTM databases that were searched by ERIS including the search distances from the Site. Below the tables are descriptions of any listings for the Site that may appear in the databases. In addition, a discussion of adjoining properties or properties in the Site vicinity that are listed in one or more regulatory databases that in our professional judgment and opinion have the potential to adversely impact the Site due to current or former releases of hazardous substances and/or petroleum products that occurred at said properties is presented. This practice of discussing only properties of potential environmental concern to the Site is noted in ASTM E1527-13 which states that the environmental professional may make statements applicable to multiple properties listed in regulatory databases that are not likely to have current or former releases of hazardous substances and/or petroleum products with the potential to migrate to the a given subject property. Our professional judgment and opinions discussed herein are based on several factors including the nature of the regulatory database listings, distance of the off-Site listed properties from the Site, orientation of the listed properties relative to the Site, interpreted the direction of groundwater flow and/or regulatory case status information for the various properties as described in the databases.



The following Federal standard ASTM databases were searched:

Standard Environmental Record Source Name	ERIS Regulatory Database Identification	Search Distance From Site (Miles)
National Priorities List (NPL) Site List	NPL – Proposed NPL – Superfund Record of Decision (ROD)	1.0
Delisted NPL Site List	Deleted NPL	0.5
Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) List	CERCLIS - SEMS – SEMS Archive – ODI – IODI – CERCLIS LIENS – SEMS LIENS	0.5
CERCLIS List	CERCLIS LIENS – SEMS LIENS	Site
CERCLIS No Further Remedial Action Planned (NFRAP) Site List	CERCLIS NFRAP	0.5
Resource Conservation and Recovery Act (RCRA) Corrective Action Sites (CORRACTS) Facilities List	RCRA CORRACTS	1.0
RCRA Non-CORRACTS Treatment, Storage and Disposal (TSD) Facilities List	RCRA TSD	0.5
RCRA Generators List	RCRA LQG – RCRA SQG – RCRA CESQG – RCRA NON-GEN – BULK TERMINAL – REFN – FEMA Underground Storage Tank (UST)	0.25
Institutional Control/Engineering Control Registries	FED ENG – FED INST – FED Brownfields	0.5
Emergency Response Notification System (ERNS) List	ERNS – ERNS 1982 to 1986 – ERNS 1987 to 1989	Site

Site – The Site is not listed on any of the standard Federal ASTM regulatory databases.

Adjoining Properties – Two adjoining properties are listed on the standard Federal ASTM regulatory databases as follows:

- **Matec Instrument Companies Inc** (300 W Lincoln Street) – This south adjoining property is listed on the RCRA NON-GEN database with no reported violations. This property is not listed on databases indicative of releases of hazardous substances or petroleum products to the subsurface.
- **DT Mattson Enterprises Inc and Horizon Hobby LLC dba Pro-Line Racing** (201 W Lincoln Street) – This east adjoining property is listed on the RCRA NON-GEN database with no reported violations. This property is not listed on databases indicative of releases of hazardous substances or petroleum products to the subsurface.

Other Properties – There are 11 listings pertaining to properties in the surrounding area that are identified on the RCRA TSD (one listing), RCRA SQG (three listings) and RCRA NON-GEN (seven listings) Federal ASTM regulatory databases.

None of these properties are considered a recognized environmental condition to the Site. This opinion is based on the distance of the off-Site listed properties from the Site, orientation of the listed properties

relative to the Site, interpreted direction of groundwater flow and/or regulatory case status information for the various properties as described in the databases.

The following State, Tribal and local standard ASTM databases were searched:

Standard Environmental Record Sources Name	ERIS Regulatory Database Identification	Search Distance From Site (Miles)
Equivalent NPL	RESPONSE	1.0
Equivalent CERCLIS	ENVIROSTOR – DELISTED ENVS – HWP - HHSS	0.5
Landfill and/or Solid Waste Disposal Site Lists	SWF/LF – LDS – SWAT – SWRCB SWF	0.5
Leaking Storage Tank Lists	LUST – DELISTED LST – UST CLOSURE – CLEANUP SITES – INDIAN LUST – DELISTED ILST – RIVERSIDE LOP	0.5
Registered Storage Tank Lists	UST – AST – DELISTED TNK – CERS TANK – DELISTED CTNK – HIST TANK – INDIAN UST – DELISTED IUST – DELISTED COUNTY – RIVERSIDE UST	Site and Adjoining Properties
Institutional Control/Engineering Control Registries	LUR – HLUR - DEED	Site
Voluntary Cleanup Sites	VCP	0.5
Brownfield Sites	Not Applicable – No Database Exists	0.5

Site – The Site is not listed on any of the State, Tribal and local standard ASTM regulatory databases.

Adjoining Properties – No adjoining properties are listed on the standard State, Tribal and local standard ASTM regulatory databases.

Other Properties – There are 43 listings pertaining to properties in the surrounding area that are identified on the ENVIROSTOR (eight listings), RECYCLING (two listings), LUST (five listings), UST (two listings), HHSS (three listings), UST SWEEPS (four listings), DELISTED TNK (five listings), CERS TANK (two listings), HIST TANK (three listings), DELISTED COUNTY (two listings), RIVERSIDE LOP (five listings) and RIVERSIDE UST (two listings) State, Tribal and local standard ASTM regulatory databases.

None of these properties are considered a recognized environmental condition to the Site. This opinion is based on the distance of the off-Site listed properties from the Site, orientation of the listed properties relative to the Site, interpreted direction of groundwater flow and/or regulatory case status information for the various properties as described in the databases.

5.2 Non-ASTM Regulatory Database Search

A myriad of non-ASTM regulatory databases was searched by ERIS as noted in the regulatory database report.

Site – The Site is not listed on any of the non-ASTM regulatory databases.



Adjoining Properties – The east adjoining property located at 201 W Lincoln Street is also listed on the CERS HAZ, Riverside HWG and Riverside HZH non-ASTM regulatory databases. This business received some administrative related violations during compliance inspections conducted by the Riverside County Department of Environmental Health. None of the violations pertained to releases of hazardous substances or petroleum products to the subsurface.

Other Properties – There are 21 listings on the non-ASTM regulatory databases pertaining to multiple properties in the surrounding area that are identified on various databases including FED DRYCLEANERS (two listings), DRYCLEANERS (three listings), SCH (four listings), CERS HAZ (one listing), EMISSIONS (10 listings), RIVERSIDE HWG (two listings), RIVERSIDE HZH (two listings) and RIVERSIDE MED WST (two listings).

None of these properties are considered a recognized environmental condition to the Site. This opinion is based on the distance of the off-Site listed properties from the Site, orientation of the listed properties relative to the Site, interpreted direction of groundwater flow and/or regulatory case status information for the various properties as described in the databases. It should also be noted that off-Site properties that are listed on regulatory databases indicative of dry cleaning are situated either to the south of the Site (hydrologically downgradient) or to the north across Interstate-10 and over 500 feet away from the Site. The cleaners related businesses are not considered to be a recognized environmental condition to the Site.

5.3 Regulatory Agency File Reviews

If a property being assessed under a Phase I ESA or any of the adjoining properties are identified on one or more of the above referenced standard environmental record sources, pertinent regulatory files and/or records associated with such listings should be reviewed to assist the environmental professional in evaluating if recognized environmental conditions existing at a given subject property in connection with any listings. However, if in the environmental professional's opinion, such a review is not warranted, file reviews need not be conducted if the environmental professional provides justification for not doing so.

Agency file reviews for the Site completed during this assessment are noted below. No file reviews for adjoining properties or properties in the surrounding area were deemed warranted with the exception of research completed on the State Water Resources Control Board GeoTracker database regarding properties in the surrounding area of the Site. The agency inquiries were performed by way of on-line searches/queries of published databases and/or direct inquiries with public records clerks at one or more agencies. Both Daniel Weis and Samantha Weis of Weis Environmental conducted the agency file reviews during the completion of this assessment. Copies of regulatory agency records are included in Appendix D.

Regulatory Agency	Jurisdiction	Date of Inquiry or Request	Contact	Response or Information From Agency
United States EPA Envirofacts/ECHO/ TRIS	Federal	11/2/2021	Online https://enviro.epa.gov/ https://echo.epa.gov/facilities/facility-search https://www.epa.gov/toxics-release-inventory-tri-program	No Records Identified
California DTSC	State	11/2/2021	Online https://www.envirostor.dtsc.ca.gov/public https://hwts.dtsc.ca.gov/report_list.cfm Public Records Clerk	No Records Identified
State Water Resources Control Board/Regional Water Quality Control Board	State	11/2/2021	Online https://geotracker.waterboards.ca.gov/ https://geotracker.waterboards.ca.gov/historical_ust_facilities Public Records Clerk	No Records Identified
County of Riverside	Local	11/2/2021	Public Records Clerks	No Records Identified
City of Banning	Local	11/2/2021	Public Records Clerk	Records Identified

As shown in the table above, with the exception of the City of Banning, no records pertaining to the Site were identified with the various agencies contacted. City records included a resolution from the Planning Commission from the City of Banning approving a conditional use permit pertaining to the Site for a truck transfer and storage yard.

5.4 Summary Relative to Environmental Concerns

No recognized environmental conditions were noted in connection with the regulatory records searches. In addition, regulatory resources related to the adjoining properties and properties in the vicinity of the Site do not represent recognized environmental conditions to the Site.

6.0 HISTORICAL RESOURCE REVIEW

The objective of consulting historical sources is to develop a history of the previous uses of a property and surrounding area, in order to help identify the likelihood of past uses having led to recognized environmental conditions in connection with a given property. The goal of the historical research is to identify all obvious uses of a subject property from the present, back to the property's first developed use, or back to 1940, whichever is earlier. The environmental professional exercises professional judgment in reviewing only as many of the standard historical sources referenced in ASTM E1527-13 that are deemed necessary, are reasonably ascertainable and are likely to be useful. Historical resources reviewed during the completion of this assessment are referenced below. Copies of the historical resources are included in Appendix E.

6.1 Aerial Photographs

We reviewed historical aerial photographs from the years 1939, 1953, 1962, 1967, 1972, 1979, 1980, 1985, 1990, 1994, 1996, 2002, 2004, 2005, 2006, 2009, 2010, 2012, 2014, 2018 and 2020 provided by Environmental Risk Information Services (ERIS). The table below presents the results of the photograph review.

Photograph Year	Site Observations	Adjoining Property Observations
1938-1962	The Site is developed with commercial buildings in its northern and eastern areas. Other portions of the Site are vacant.	Adjoining properties are vacant or used for agricultural purposes. Adjoining streets/roadways and a railroad are visible.
1967-2020	The Site is vacant and undeveloped.	Adjoining properties are vacant and undeveloped or used for commercial purposes. Increased commercial development is evident over time.

Based on research completed during the completion of a cultural resources assessment of the Site, the Site was previously used by EL Robertson, a prominent fruit grower in the region, for producing dried fruit. The fruit drying operation dates back to as early as 1910 and appears to have remained in business throughout the 1940s. There are no known chemicals of concern associated with fruit drying operations, nor is there information to believe that a release of hazardous substances or petroleum products has occurred in association with former Site operations. No agricultural crop production appears to have been conducted at the Site. No recognized environmental conditions were identified with the aerial photographs/historical use of the Site.

6.2 City Directories

Our firm reviewed city directories dated ranging in date from 1971 to 2020 provided by ERIS. No city directory listings were identified for the Site. Adjoining and nearby properties are referenced as residential (personal names) or for general commercial and light-industrial purposes. None of the listings are considered a recognized environmental condition to the Site.

6.3 Fire Insurance Maps

Our firm reviewed historical fire insurance maps from 1907, 1926 and 1936 provided by ERIS. The Site and its adjoining properties are not depicted on the 1907 map. On the maps from 1926 and 1936, the Site is mapped as the EL Robertson Fruit Drying and Packing facility. The fuel source for the

facility is referenced as “wood.” Structures and other associated features of the facility depicted include a fruit packing and storage building, a residence, a steam dryer, fruit tray storage areas, fruit drying rack areas, a water heater and outbuildings used for the storage of sulfur (noted as sulphur on the maps). Railroad tracks and some structures are depicted to the north of the Site. No features that are considered to be recognized environmental conditions were noted on the maps.

6.4 Other Historical Sources

Other historical sources are referenced in the ASTM E1527-13 practice as any source or sources other than the standard historical sources referenced in the practice that are credible to a reasonable person and that identify past uses of a subject property. This category includes, but is not limited to miscellaneous maps and directories, newspaper archives, internet sites, community organizations, local libraries, historical societies, current owners or occupants of neighboring properties, or records in the files and/or personal knowledge of the property owner and/or occupants. No historical sources other than the standard sources described above were deemed necessary and useful to assist in identifying recognized environmental conditions.

6.5 Summary Relative to Environmental Concerns

No recognized environmental conditions were noted in connection with the historical resources reviewed. In addition, historical resources related to the adjoining properties and properties in the vicinity of the Site did not reveal recognized environmental conditions to the Site.

7.0 SITE RECONAISSANCE

The objective of the Site reconnaissance is to obtain information indicating the likelihood of identifying recognized environmental conditions in connection with a subject property. The Site visit for our assessment was completed on November 19, 2021, by Daniel Weis. We were unaccompanied during the reconnaissance.

7.1 Methodology and Limiting Conditions

The Site reconnaissance consisted of observing the Site on foot via various transects and walking publicly accessible areas surrounding the Site. No significant limiting conditions of the Site inspection were noted. Select photographs of the Site obtained during the Site reconnaissance are included in Appendix F.

7.2 Current General Site and Vicinity Characteristics

The Site and the surrounding vicinity are situated in the City of Banning that consists primarily of vacant land, commercial development and residential properties. The Site is currently vacant and undeveloped. A portion of an asphalt paved road (extension of 4th Street) is present along the western Site boundary. The current use of the Site and adjoining properties are not ones that are indicative of the use, treatment, storage, disposal or generation of hazardous substances or petroleum products that may have impacted the Site.

7.3 Indications of Past Site and Vicinity Uses

There are no material differences between the current and past uses of the Site, adjoining properties and the surrounding area that were visually and/or physically observed during the Site reconnaissance that pertain to recognized environmental conditions.

7.4 Site-Specific Observations

We examined the Site for the features and conditions noted in the table below.

Feature or Condition	Details
General Description of Structures	There are no habitable structures present at the Site. As stated previously, a portion of an asphalt paved road (extension of 4th Street) is present along the western Site boundary. Power poles and lines are present along the southern Site boundary. Areas of chain-link fencing are present along the southern and western Site boundaries. Some indicators of subsurface utility systems are present on the Site.
Drains and Sumps	None observed.
Heating/Cooling Systems	None observed.
Potable Water Supply	City of Banning
Roads	Access to the Site is from W Lincoln Street or 4th Street.
Septic Systems / Sewage Disposal System	City of Banning.

Feature or Condition	Details
Wastewater and Stormwater Discharges	None observed.
Wells	None observed.
Drums, USTs and ASTs	None observed.
Electrical or Hydraulic Equipment Known to Contain PCBs or Likely to Contain PCBs	None observed.
Hazardous Substances and Petroleum Products in Connection with Identified Uses	None observed.
Hazardous Substance and Petroleum Products Not Necessarily in Connection With Identified Uses	None observed.
Odors	None noted.
Pits, Ponds or Lagoons	None observed.
Pools of Liquid	None observed.
Solid Waste (Including Fill Material)	Some household trash and debris is present at the Site. Some areas of concrete rubble, scrap metal and other inert materials are also present. No staining, odors or other suspect conditions were noted.
Stained Soil or Pavement	None observed.
Stains or Corrosion	None observed.
Chemical Storage	None observed.
Stressed Vegetation	None observed.
Unidentified Substance Containers	None observed.

7.5 Summary Relative to Environmental Concerns

No recognized environmental conditions were noted in connection with the current use of the Site during the Site reconnaissance. In addition, no current uses of the adjoining properties or properties in the surrounding area that were visually and/or physically observed during the Site reconnaissance were noted as recognized environmental conditions to the Site.

8.0 INTERVIEWS

8.1 Site Owner

The Site owner is Stepping Stone Properties LLC and has been associated with the Site since 2019. The Site owner is unaware of environmental concerns in connection with the Site.

8.2 Key Site Manager

The Site owner is also considered to be the Key Site Manager. Please refer to Section 8.1 above.

8.3 Current Occupants

The Site is vacant with no known occupants.

8.4 Local Government Official

During the preparation of this assessment, public records clerks from the State of California, County of Riverside, and City of Banning were contacted by our firm regarding the Site. Agency representatives indicated that public records requests should be conducted in order to obtain information known by the agencies regarding the Site. Public records requests were completed by our firm as described in Section 5.3.

8.5 Other Parties

Interviews with other persons were not conducted during the preparation of this assessment. As stated in the ASTM E1527-13 practice, interviews with past owners, operators and occupants of a subject property who are likely to have material information regarding the potential for contamination at a given property shall be conducted to the extent that they have been identified and that the information likely to be obtained is not duplicative of information already obtained from other sources. Interviews with persons with past association with the Site were not deemed warranted during the completion of this assessment.

8.6 Summary Relative to Environmental Concerns

No recognized environmental conditions were noted in connection with the interviews completed during the assessment.

9.0 ADDITIONAL SERVICES – NON-SCOPE ASTM CONSIDERATIONS

Several non-scope ASTM considerations are referenced in the ASTM E1527-13 practice that a user of a report may wish to evaluate. Listed considerations in the practice include asbestos-containing building materials, biological agents, cultural and historic resources, ecological resources, endangered species, health and safety, indoor air quality (unrelated to releases of hazardous substances or petroleum products into the environment), industrial hygiene, lead-based paint, lead in drinking water, mold, radon, regulatory compliance and wetlands. No implication is intended by the practice as to the relative importance of inquiry into such non-scope considerations, and the list of considerations is not intended to be all-inclusive.

Asbestos and Lead-Based Paint – There are no habitable structures present at the Site. Therefore, asbestos and lead assessments were not warranted.

Landmark/Historical/Cultural Significance Review - Archeological/cultural and paleontological assessments of the Site have been completed concurrently with this Phase I ESA. The results of the studies have been provided to the client under separate cover. No significant findings were reported.

Lead in Drinking Water - According to the most recent water quality report prepared by the City of Banning, the drinking water supplied to the area is in compliance with all Federal and State regulations.

National Pollution Discharge Elimination System (NPDES) – We are unaware of current NPDES related requirements that pertain to the Site.

Radon Potential - The Site is located within United States EPA Radon Zone 2 which has predicted average indoor levels of radon between 2 and 4 picocuries per liter. Radon is not considered to be a concern at the Site.

Wetlands and Threatened/Endangered Species - A biological assessment of the Site has been completed concurrently with this Phase I ESA. The results of the study have been provided to the client under separate cover. No wetlands were noted at the Site and no significant biological findings were reported.

No other additional services were completed by our firm during the preparation of this assessment.

10.0 FINDINGS AND OPINIONS

No features and/or conditions indicating the presence or likely presence of hazardous substances and/or petroleum products at the Site that are considered to have the potential to adversely impact the Site were identified during the completion of this assessment.

11.0 CONCLUSIONS AND RECOMMENDATIONS

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM International Practice E1527-13 of the Site located at the northeast corner of W Lincoln Street and 4th Street in the City of Banning, California (Riverside County APNs 540-210-009 and 540-210-020). Any exceptions to, or deletions from, this practice are described in Section 1.5 of this report. This assessment has revealed no evidence of recognized environmental conditions, controlled recognized environmental conditions or historical recognized environmental conditions in connection with the Site. Additional assessment at the Site is not considered to be warranted at this time.

12.0 ENVIRONMENTAL PROFESSIONAL STATEMENT

I declare that, to the best of my professional knowledge and belief, I meet the definition of environmental professional as defined in Section 312.10 of 40 CFR. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Site. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312. Qualifications of personnel involved with the completion of this report are included in Appendix G.



Daniel Weis, R.E.H.S.
Environmental Manager

13.0 ASSUMPTIONS

No Phase I ESA effort can eliminate uncertainty regarding the potential for recognized environmental conditions to exist in connection with a given property. Performance of the ASTM E1527-13 practice may reduce such uncertainty but in no way should the findings and report be misconstrued as insurance or a guarantee regarding the potential for recognized environmental conditions in connection with a given property. The ASTM E1527-13 practice recognizes reasonable limits of time and cost relative to the completion of a Phase I ESA.

During the completion of this ESA, our firm relied on certain information obtained from secondary sources, including but not limited to the user of the report, government agencies, historical research business entities, environmental databases, and interviews with one or more persons. The sources obtained and/or consulted are assumed to be reliable. However, our firm cannot warranty or guarantee that the information provided by these other sources is wholly accurate or complete. Our firm is not responsible for any misrepresentations or false statements that may be provided by others or the lack of pertinent/relevant information that should have been provided/disclosed by others and we assume no responsibility for any consequence as a result of such omissions or withheld information.

Accuracy and completeness of records varies among information sources, including from governmental agencies. As a result, there is a possibility that even with the proper application of the methodologies presented in ASTM E1527-13, conditions may exist that could not be identified within the scope of this assessment or which were not reasonably identifiable from the available information. In addition, any responses received from Federal, State, Tribal, and local regulatory agency secondary sources of information after the issuance of this report may change certain findings and conclusions of this report.

Estimations and opinions regarding the potential for off-Site properties to adversely impact a given subject property is one of the key components of a Phase I ESA. In most cases, recent property-specific or adjacent-property specific measured groundwater data or other hydrogeological information is not reasonably ascertainable. In the absence of such data, reasonable assumptions regarding the depth and flow of groundwater are made based on various sources including comparisons to surface elevations, land topography and available hydrogeological on the State of California Geotracker database. In addition, estimations and opinions regarding potential impacts from off-Site locations may be based on certain assumptions that a hazardous substance or petroleum product may not migrate laterally within unsaturated soil for a substantial distance and that contaminants that have reached saturated soil and groundwater may attenuate over time and/or may decrease in concentration relative to distance from its source. While any interpretations presented herein may be effective in reducing uncertainty regarding potential impacts to a subject property from off-Site locations, in no way should the findings and report be misconstrued as insurance or a guarantee regarding the potential for such impacts to occur. Greater certainty regarding subsurface conditions at a given property can only be achieved by way of a subsurface sampling effort of one or more media.

14.0 DEFINITIONS

Definitions of key terminology relevant to the ASTM E1527-13 practice are presented below.

Recognized Environmental Condition - 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.

Controlled Recognized Environmental Condition - 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).

Data Failure - A failure to achieve the historical research objectives as outlined in the ASTM E1527-13 practice even after reviewing the standard historical sources that are reasonably ascertainable and likely to be useful. Data failure is one type of data gap.

Data Gap - A lack of or inability to obtain information required by this practice despite good faith efforts by the environmental professional to gather such information. Data gaps may result from incompleteness in any of the activities required by the ASTM E1527-13 practice, including, but not limited to site reconnaissance (for example, an inability to conduct the site visit), and interviews (for example, an inability to interview the key site manager, regulatory officials, etc.). Data gaps are only considered to be significant if they affect the ability of the environmental professional to identify recognized environmental conditions.

De Minimis Condition - 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.

Environment - (A) the navigable waters, the waters of the contiguous zone, and the ocean waters of which the natural resources are under the exclusive management authority of the United States under the Magnuson-Stevens Fishery Conservation and Management Act [16 U.S.C. §§ 1801 et seq.], and (B) any other surface water, groundwater, drinking water supply, land surface or subsurface strata, or ambient air within the United States or under the jurisdiction of the United States.

Good Faith - The absence of any intention to seek an unfair advantage or to defraud another party; an honest and sincere intention to fulfill one's obligations in the conduct or transaction concerned.

Hazardous Substance - Includes hazardous substances designated under section 311 of the Clean Water Act (CWA) or Section 102 of CERCLA, any toxic pollutant listed under Section 307(a) of the CWA, any waste that has been listed as a RCRA hazardous waste or possesses a RCRA hazardous waste characteristic, any substance that is identified as a hazardous pollutant under Section 112 of the Clean Air Act (CAA), and any imminently hazardous chemical that EPA has taken action pursuant to Section 7 of the Toxic Substances Control Act (TSCA).

Historical Recognized Environmental Condition - A past release of any hazardous substances or petroleum products that 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 in question to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).

Petroleum Exclusion – While the definition of a CERCLA hazardous substance specifically excludes petroleum products and crude oil, the EPA has determined that the petroleum exclusion applies to petroleum products such as gasoline and other fuels containing lead, benzene or other hazardous substances that are normally added during the refining process. Notwithstanding the existence of the petroleum exclusion, petroleum products are included within the scope of the ASTM E1527-13 practice for multiple reasons. Petroleum products have historically been widely used at commercial properties. In addition, other federal and state laws may impose liability for releases or spills of petroleum products.

Reasonably Ascertainable Information - Information that is (1) publicly available, (2) obtainable from its source within reasonable time and cost constraints and (3) practically reviewable.

Release or Threatened Release - Spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment (including the abandonment or discarding of barrels, containers and other closed receptacles containing any hazardous substance, or pollutant or contaminant).

15.0 REFERENCES

Sources of information consulted during the completion of our Phase I ESA are noted in the sections below.

15.1 Documents, Plans and Reports

- All Appropriate Inquiry" as necessary to satisfy the defenses available under 42 U.S.C. §§ 9607(b)(3), 9607(r)(1), and 9607(q), relying on definitions provided at 42 U.S.C. §§ 9601(35)(B); and as further explained in 40 CFR §§ 312.1 – 312.31.
- ASTM International, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process," ASTM Designation E 1527-13, Published November 2013.
- California Geological Survey, 2002, California Geomorphic Provinces Note 36, Electronic Copy, Revised December.
- California State Water Resources Control Board, Water Quality Control Plan for the Santa Ana River Basin (8), California, Published 2008.
- ERIS Database Report dated November 8, 2021.
- ERIS City Directory Report dated November 9, 2021.
- ERIS Fire Insurance Maps dated November 19, 2021.
- ERIS Historical Aerials dated November 8, 2021.
- USGS topographic map, Beaumont, California Quadrangle (2018).

15.2 Personal Communications

- Public Records Clerks – City of Banning, County of Riverside, State of California
- Designated Client Representative – Jacob Kentnich

15.3 Agencies Consulted

- California Department of Conservation, Geologic Energy Management Division (CalGEM)
- California Department of Toxic Substances Control
- California State Water Resources Control Board
- City of Banning
- County of Riverside
- United States EPA

FIGURES

FIGURE 1
VICINITY MAP

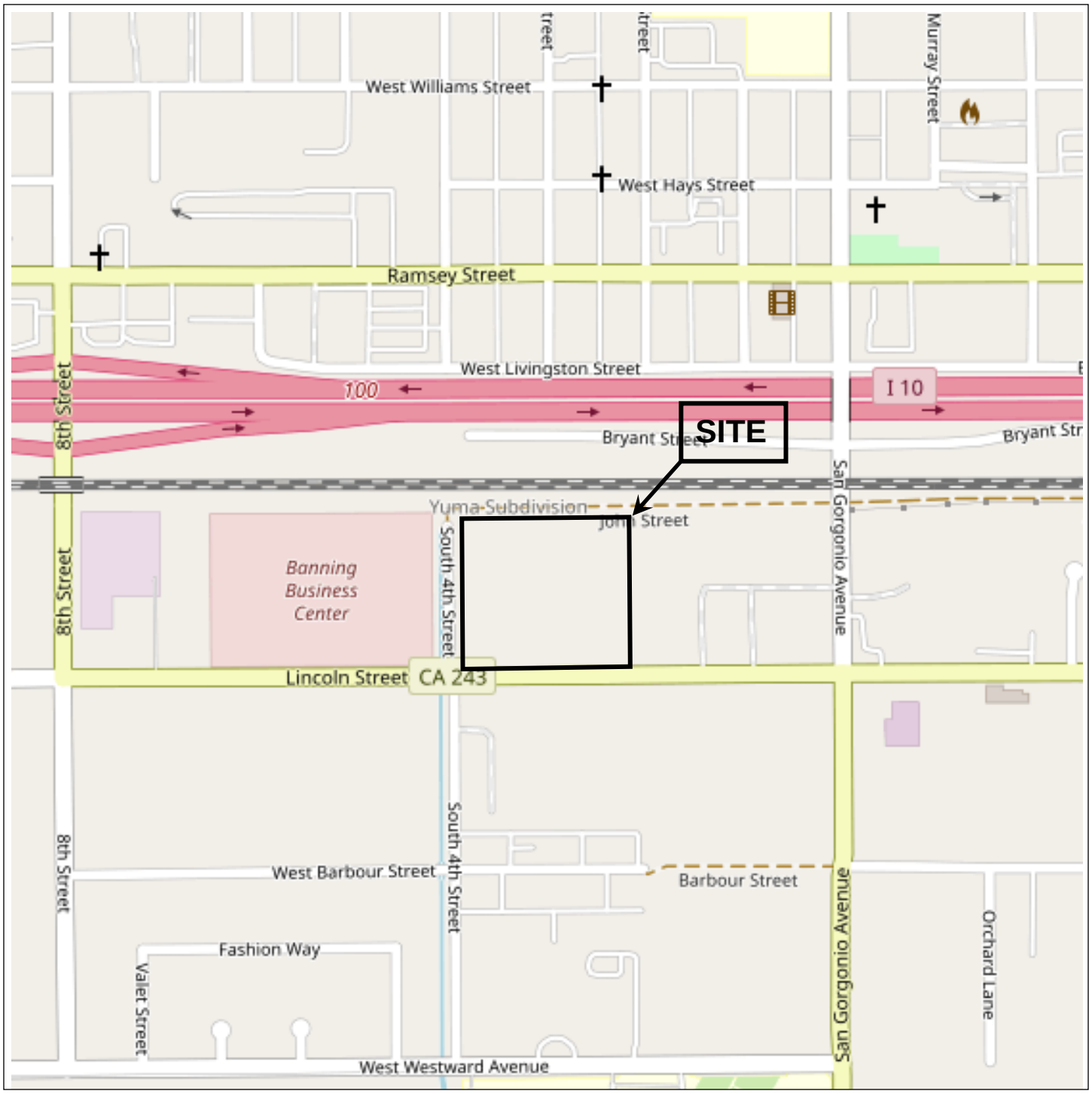


Figure 1 - Vicinity Map

Northeast Corner of W Lincoln Street and 4th Street
Banning, California

N

Prepared by:

Weis Environmental
1938 Kellogg Avenue, Suite 116
Carlsbad, CA 92008

Appendix I

PROJECT-SPECIFIC WQMP SUMMARY DATA FORM

Project-Specific WQMP Summary Data Form

Applicant Information	
Name and Title	Paul Loubet
Company	First Industrial Realty Trust Inc
Phone	310.321.3805
Email	ploubet@firstindustrial.com
Project Information	
Project Name (as shown on project application/project-specific WQMP)	First Lincoln Logistics Center
Street Address	currently unavailable
Nearest Cross Streets	Lincoln Street and 4th Street
Municipality (City or Unincorporated County)	City of Banning, CA
Zip Code	92220
Tract Number(s) and/or Assessor Parcel Number(s)	TPM 38437 (APN 540-210-009, 540-210-020)
Other (other information to help identify location of project)	

Indicate type of project.	**Priority Development Projects (Use an "X" in cell preceding project type):**	
		SF hillside residence; impervious area ≥ 10,000 sq. ft.; Slope ≥ 25%
		SF hillside residence; impervious area ≥ 10,000 sq. ft.; Slope ≥ 10% & erosive soils
	X	Commercial or Industrial ≥ 100,000 sq. ft.
		Automotive repair shop
		Retail Gasoline Outlet disturbing > 5,000 sq. ft.
		Restaurant disturbing > 5,000 sq. ft.
		Home subdivision ≥ 10 housing units
	X	Parking lot ≥ 5,000 sq. ft. or ≥ 25 parking spaces

Date Project-Specific WQMP Submitted	Preliminary Report Submitted May 2022
Size of Project Area (nearest 0.1 acre)	7.1 acres
Will the project replace more than 50% of the impervious surfaces on an existing developed site?	yes
Project Area managed with LID/Site Design BMPs (nearest 0.1 acre)	3.1
Are Treatment Control BMPs required?	Yes.
Is the project subject to onsite retention by ordinance or policy?	Yes.
Did the project meet the 100% LID/Site Design Measurable Goal?	No.
Name of the entity that will implement, operate, and maintain the post-construction BMPs	FR CA Property Holding, LP
Contact Name	Michael Goodwin
Street or Mailing Address	898 N. Pacific Coast Hwy. Suite 175
City	El Segundo, CA
Zip Code	90245
Phone	310.606.1634
Space Below for Use by City/County Staff Only	
Preceding Information Verified by (consistent with information in project-specific WQMP)	**Name:** **Date:**
Date Project-Specific WQMP Approved:	
Data Entered by	**Name:** **Date:**
Other Comments	

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APPENDIX K

HYDROLOGY REPORT

Preliminary Hydrology Report

Tentative Parcel Map No. 38437

First Lincoln Logistics Center

Banning, California

Report Date:

November 18, 2022

Originally Prepared: May 19, 2022
Updated: July 13, 2022

Prepared for:

First Industrial Acquisition II, LLC
898 N Pacific Coast Hwy., Ste. 175
El Segundo, CA 90245

JN: 2042611703.200.A005

Prepared by:

Vince Delgado Jr.

Under supervision of:

Stephen F. Crevoiserat, PE
Stantec Consulting Ltd.
735 E. Carnegie Drive, Ste. 280
San Bernardino, CA 92408



Table of Contents

1.0 PURPOSE II

2.0 PROJECT DESCRIPTION II

3.0 SITE AND METHODOLOGY IV

3.1 METHODOLOGY IV

4.0 SUMMARY AND CONCLUSIONS VI

5.0 APPENDICES VII

1.0 PURPOSE

The purpose of this report is to prepare preliminary hydrologic calculations for the proposed light industrial project to be located at the northeast corner of Lincoln and 4th Streets in the City of Banning, CA. This report is prepared at the request of First Industrial Realty, *the Client,* as a component of the submittal application for proposed Tentative Parcel Map No. 38437. The Tentative Map proposes to consolidate two (2) existing properties into a single 6.2-acre parcel.

The project is planned to construct a single 118,800 S.F industrial building which is compatible with the City's General Plan designation as "Industrial".

This preliminary study examines drainage characteristics and patterns of the local watershed in regard to distribution and management of storm water run-off. The study investigates the watershed for both pre- and post- project scenarios. The pre-project condition analyzes the property in its' current, vacant state. While the post-project condition analyzes the watershed with the proposed infrastructure improvements with the proposed structure.

This study provides mitigation volumes for underground detention. It also provides peak run-off values for pre- and post- project scenarios.

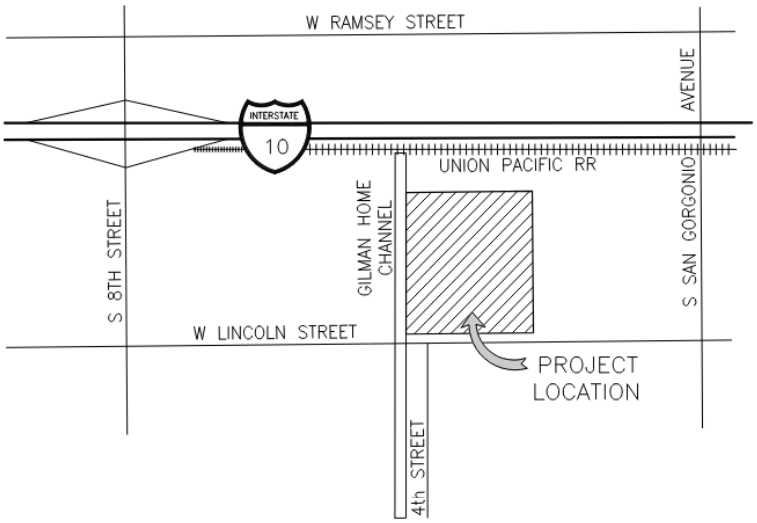
2.0 PROJECT DESCRIPTION

Located in the City of Banning, the project is within the Whitewater River Region of Riverside County. Except for a sliver portion of land next to the channel, on the most recent National Flood Insurance Rate Map the site is within Zone X (Area of Minimal Flood Hazard) per Map No. 06065C0817G. The map bears an effective date of August 28, 2008. The sliver portion is also lies within Zone X - in an area of 0.2% Annual Chance Flood Hazard or Areas of 1% annual chance flood with average depth less than one foot. Accordingly, it is concluded that the project is not located within a Special Flood Hazard Area

Flows with an off-site origin are not expected to adversely affect the site, as there is a county Master Planned flood control channel (the Gilman Home Channel) which provides storm protection from the west. And there is a Union Pacific Rail Line which provides storm protection from the north. The Gilman Home Channel captures all upstream flows from the west and channelizes the flow away from the site in a southerly pattern, constructively providing storm protection to the project site.

Hydrologically, run-off from the Site discharges onto Lincoln Street, then is conveyed by the roadbed easterly to San Gorgonio Avenue, where visual review of Google Earth suggests the surface flow is captured by catch basins. From the catch basins it is presumed that flows are channeled southerly, within a storm drain pipe system, until a confluence with Smith Creek. The total distance from the Site to Smith Creek is approximately 4,700 ft.

Surrounding land uses include vacant land (across the channel) on the west, the UPRR to the north, general commercial on the east, and industrial on the south.



VICINITY MAP
NOT TO SCALE

PREPARED BY:
Stantec
735 E. Carnegie Drive, Suite 280
San Bernardino, CA 92408
909.335.6116 stantec.com

PREPARED FOR:
First Industrial Acquisition II, LLC
898 N. Pacific Coast Hwy., Suite 175
El Segundo, CA 90245
PH: (310) 606-1634

First Lincoln Logistics
BANNING, CALIFORNIA
Tentative Parcel Map 38437

3.0 SITE AND METHODOLOGY

The Site is designed to replicate existing flow patterns and maintain existing discharge locations. Flood protection will be provided by the combination of Low Impact Development (LID) practices, a storm drain network and flow capture within an underground chamber system. The LID features include disconnected down drains and Bioretention Facilities. The proposed LID features and drainage layout is shown on the Grading Exhibit which is included **Appendix IV**.

3.1 METHODOLOGY

The site has an underlying soils classification of Hydrological Group “A”, and the vacant land is poorly covered in its’ natural condition; with little-to-no shrubs, trees, or grasses. As such, the site is modeled as a single watershed with a single discharge location. Where the discharge location is determined to be along Lincoln Street at the easterly property line. For data entry of soils conditions, Antecedent Moisture Condition I (AMC I) was implemented for 2-year analysis and Antecedent Moisture Condition II (AMC II) was implemented for 10-year and 100-year analysis.

Consistent with storm analysis of small watersheds (less that 300-acres), the Rational Method was used in determining peak discharge, and the Shortcut Synthetic Hydrograph Method was used to generate flood hydrographs. The Rational Method calculations were accomplished with the use of *CivilDesign Engineering Software (version 7.1)*. And the flood hydrographs were computed based on Plate E-2.2 of the county flood control manual.

The post-project condition is modeled such that two subareas comprise the watershed. Initial flows are collected at a point of concentration in the north dock area, then conveyed via storm pipe into the chambers. At this chamber location, the south and north subareas are combined to determine the peak flow rate.

To attenuate the post-project storm volumes, the site was analyzed for three storm events. The events examined were the 2yr-24hr & 10yr-24hr (selected based on WWR WQMP) and, the 100yr-3hr event which is selected based on local ordinance.

It is determined that the volume differential (between pre- and post- project) for the 10yr– 24hr storm event is the event that produced the largest mitigation storm volume. A summary of the results is provided in **Table 1**. From these results it is concluded that the design characteristics of the chambers shall include capacity to capture and mitigate the hydrograph volume of 31,400 C.F.

Table 1

Preliminary Storm Volume Calculations - Drainage Area A

Storm Event	Pre Project Condition	Post Project Condition	Minimum Required Volume
	CU-FT	CU-FT	CU-FT
2yr-24hr	**7,400**	**14,810**	**7,410**
10yr -24hr	**15,600**	**47,000**	**31,400**
100yr - 3hr	**38,800**	**54,000**	**15,200**

Site constraints, poor subterrain infiltration, and vertical limitations deem a need for an outflow pump with wet well. The pump shall be designed in Final Engineering to the extent that existing 2yr, 10yr, and 100yr flow rates are not exceeded. This 2yr and 10yr peak rate design criteria is set forth by the Guidance Document for the Whitewater River Region Water Quality Management Plan (WWR WQMP). The peak flow results from the Rational Method shall be a source for development of the outflow Pump curve, to the extent that outflow rates do not exceed existing condition flow rates, for any give storm. **Table 2** provides a summary of the peak flow rates.

Table 2

Preliminary Peak Run-Off Rates - Drainage Area A

Storm Event	Pre Project Condition	Post Project Condition w/o Mitigation	Peak Mitigation Target
	CFS	CFS	CFS
2yr	**3.5**	**9.0**	**5.5**
10yr	**10.7**	**18.7**	**8.0**
100yr	**19.1**	**31.4**	**12.3**

4.0 SUMMARY AND CONCLUSIONS

This preliminary report is intended for planning purposes in preparation of Tentative Parcel Map 38437. With construction of the proposed drainage system, adequate flood protection will be provided for a 100-year storm event. Existing drainage flows patterns will be maintained, and through the construction one (1) Underground Chamber, two (2) Bioretention facilities and a Bio-Treatment Modular Wetland, the project will effectively mitigate any increased run-off that may be generated by the changes to imperviousness of land cover.

LID principles will be implemented to recreate natural flow characteristics and promote natural movement of storm water run-off. Preliminary sizing of the underground detention facility does not include infiltration. As an optimization approach to detention sizing, future value engineering should consider examining the site for small volumetric gains expected to be available from the diminutive infiltration values.

Lowering the peak flow leaving the site to pre-project conditions will be accomplished by the LID principles previous described and by providing an outflow pump that de-waters the chamber at rates at-or-below existing.

Future analysis should consider conversion of the detention chambers into a subterrain bioretention. The viability should be examined as an opened bottom chamber system that treats storm water with engineered soils. The treated storm water could be collected by a secondary pipe system and then routed into the wet well.

The hydraulic calculations included in this report are completed for feasibility purposes. All storm drain pipes sizes, slotted drain lengths, and drainage inlets shall be value engineered in the Final Engineering phase of this project. Subsequent analysis shall also include the sizing of pipes outlets extending from the chamber system.

Flood protection of the building is designed for a 100-year storm event and detention facilities are designed to mitigate the increase of storm volume for a 10yr-24hr storm event.

5.0 APPENDICES

I. TENTATIVE PARCEL MAP 38437

II. HYDROLOGY MAPS

III. HYDROLOGY MODELS & HYDRAULICS

IV. PRELIMINARY GRADING PLAN

V. NOAA RAINFALL DATA

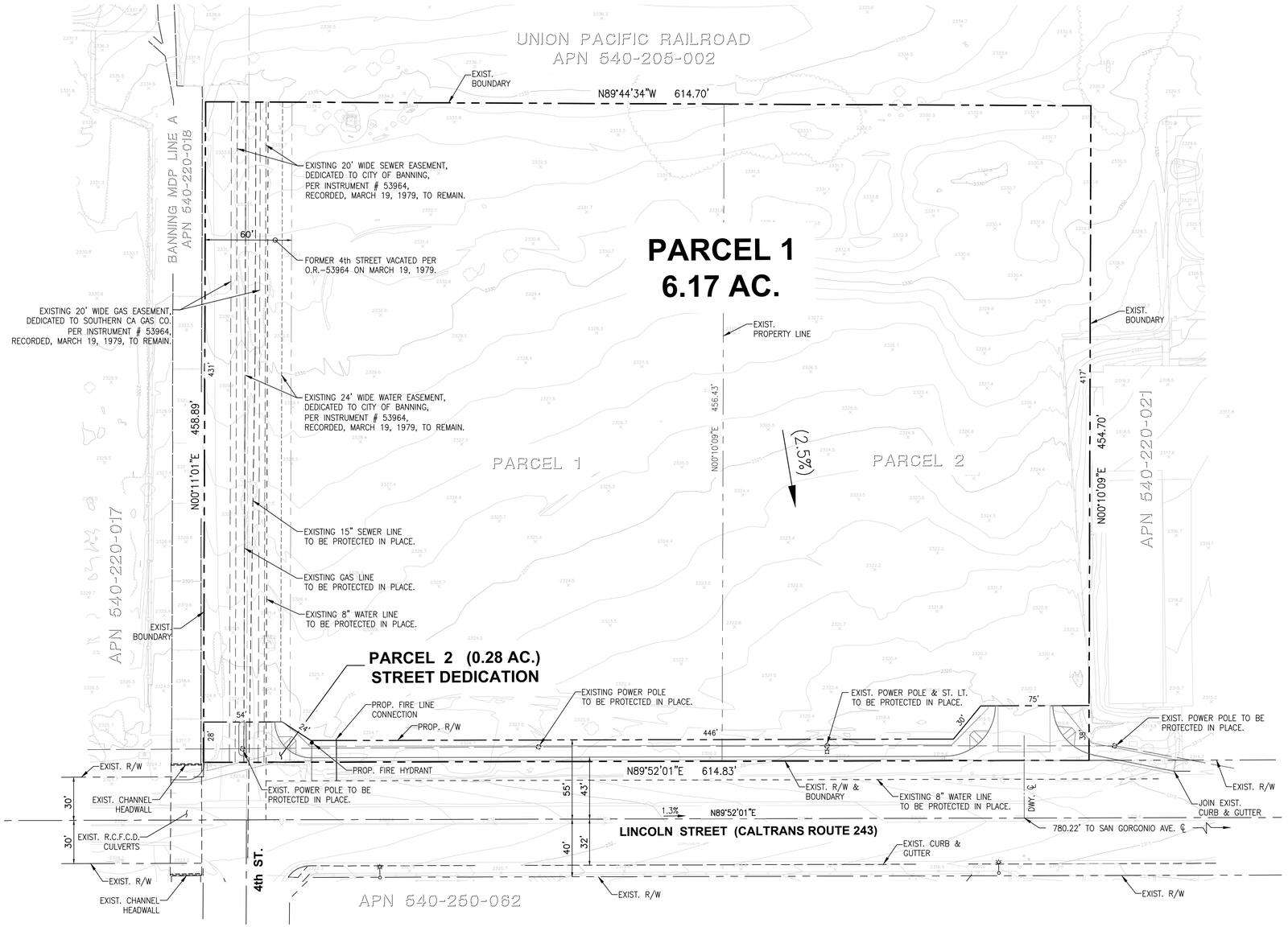
VI. SOILS INFILTRATION TESTING

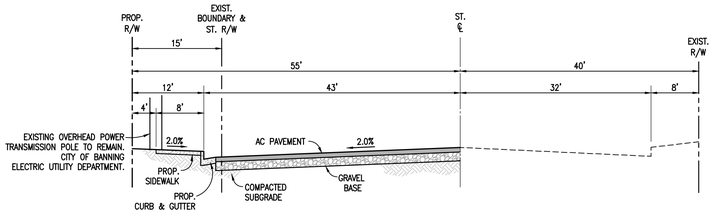
VII. NRCS SOILS REPORT

I. TENTATIVE PARCEL MAP 38256

TENTATIVE PARCEL MAP NO. 38437

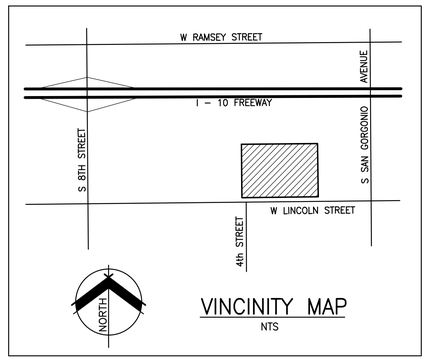
BLOCKS 220 & 232 OF AMENDED MAP OF THE BANNING LAND COMPANY, IN THE CITY OF BANNING, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 9, PAGE 44, OF MAPS, OF SAN BERNARDINO COUNTY, CALIFORNIA.





LINCOLN STREET (CALTRANS ROUTE 243)

CITY OF BANNING
ARTERIAL HIGHWAY
(CITY STD. DWG. NO. 101.1)



VINCINITY MAP
NTS

OWNER:
FR CA PROPERTY HOLDING, LP
898 N. SEPULVEDA BLVD., SUITE 175
EL SEGUNDO, CA 90245
(310) 606-1634

DEVELOPER:
FIRST INDUSTRIAL REALTY TRUST, INC.
898 N. SEPULVEDA BLVD., SUITE 175
EL SEGUNDO, CA 90245
(310) 606-1634

ENGINEER / REP.
STANTEC CONSULTING, INC.
735 E. CARNEGIE DRIVE, SUITE 280
SAN BERNARDINO, CA 92408
ATT: STEPHEN CREVOISERAT, PE.
R.C.E. # 78576
(949) 537-1300

ASSESSOR'S PARCEL NO:
ASSESSOR'S PARCEL NO: 540-210-009 & 540-210-020

ACREAGE:
TOTALS:
GROSS: 6.45 AC.
NET: 6.17 AC.

ZONING DATA:
EXISTING GENERAL PLAN & ZONE: INDUSTRIAL
PROPOSED GENERAL PLAN & ZONE: INDUSTRIAL

LAND USE:
EXISTING: VACANT
PROPOSED: (WAREHOUSE DISTRIBUTION, LIGHT INDUSTRIAL)
EXISTING SURROUNDING LAND USE: INDUSTRIAL & GENERAL COMMERCIAL

LEGAL DESCRIPTION:
BLOCKS 220 & 232 OF AMENDED MAP OF THE BANNING LAND COMPANY, IN THE CITY OF BANNING, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 9, PAGE 44, OF MAPS, OF SAN BERNARDINO COUNTY, CALIFORNIA.

BENCH MARK:
NGS BM DX3597 ELEVATION= 2364.82' NAVD88
PER NATIONAL GEODETIC SURVEY (NGS) DATA SHEET.

TOPOGRAPHY SOURCE:
ROBERT J. LUNG & ASSOCIATES, 11/10/2021

FLOOD ZONE DESIGNATION:
THE AREA OF LAND SHOWN DOES NOT LIE WITHIN A FLOOD ZONE.

GENERAL NOTES:
1. TOTAL NUMBER OF PARCELS: 2
2. THERE ARE NO KNOWN EXISTING WELLS ON THE PROPERTY OR WITHIN 200' OF THE PROJECT.
3. THERE ARE NOT EXISTING BUILDINGS ON THE PROPERTY.

LEGEND

- MAP BOUNDARY
- EXIST. PARCEL LINE
- PROPOSED R/W
- EXIST. OVERHEAD ELECTRIC LINE
- EXIST. WATER LINE
- PROP. WATER LATERAL
- EXIST. POWER POLE
- EXIST. STREET LIGHT
- FIRE HYDRANT

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

NORTH

EARTHWORK QUANTITIES:
CUT = 19,000 C.Y.
FILL = 19,000 C.Y.

REGISTERED PROFESSIONAL ENGINEER
STEPHEN F. CREVOISERAT
78576
CIVIL
STATE OF CALIFORNIA

MAY 2022

PREPARED BY:
Stantec
735 E. CARNEGIE DRIVE, SUITE 280
SAN BERNARDINO, CA 92408
909.335.6116 stantec.com

PREPARED FOR:
FIRST INDUSTRIAL REALTY TRUST
FIRST INDUSTRIAL REALTY TRUST, INC.
898 N. PACIFIC COAST HWY., SUITE 175
EL SEGUNDO, CA 90245 PH: (310) 606-1634

MARK	REVISIONS	APPR.	DATE	APPR.	DATE
		DESIGN ENG'R.		CITY ENG'R.	

DESIGNED BY: ____ DRAWN BY: ____ CHECKED BY: ____

CITY OF BANNING
APPROVED BY: _____ DATE: _____
BENCHMARK:
BM DX3470 ELEV: 2118.09 NAVD88
PER NATIONAL GEODETIC SURVEY (NGS) DATA SHEET.

TENTATIVE PARCEL MAP NO. 38437

2042611702

HORIZONTAL SCALE: 1" = 40' VERTICAL SCALE: N/A

SHEET 1 OF 1

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II. HYDROLOGY MAPS

BANNING MPD LINE A DRAINAGE BOUNDARY

FLOWS WEST OF THIS DRAINAGE BOUNDARY ENTERS THE CHANNEL

UNION PACIFIC RAILROAD

10.01 EL=2339.4 L=785

614.7'

PROJECT BOUNDARY

GILMAN HOME CHANNEL

A1 7.02

SOILS GROUP "A"

WATERSHED BOUNDARY

10.02 EL=2318.5 L=0 Q100=19.1 CFS

LINCOLN STREET

4TH ST.

HYDROLOGY LEGEND

WATERSHED BOUNDARY

MINOR DRAINAGE BOUNDARY

FLOW PATH

SUBAREADESIGNATION — A11 / 55.4

ACREAGE

NODE IDENTIFICATION — 303.33 ELEVATION / DOWN STREAM LENGTH

0 80' 160'

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Stantec

Notes

Client/Project
FIRST LINCOLN LOGISTICS
BANNING, CA

Project No.
2042611702

Title
Preliminary Hydrology Map
Pre- Project

Revision
–

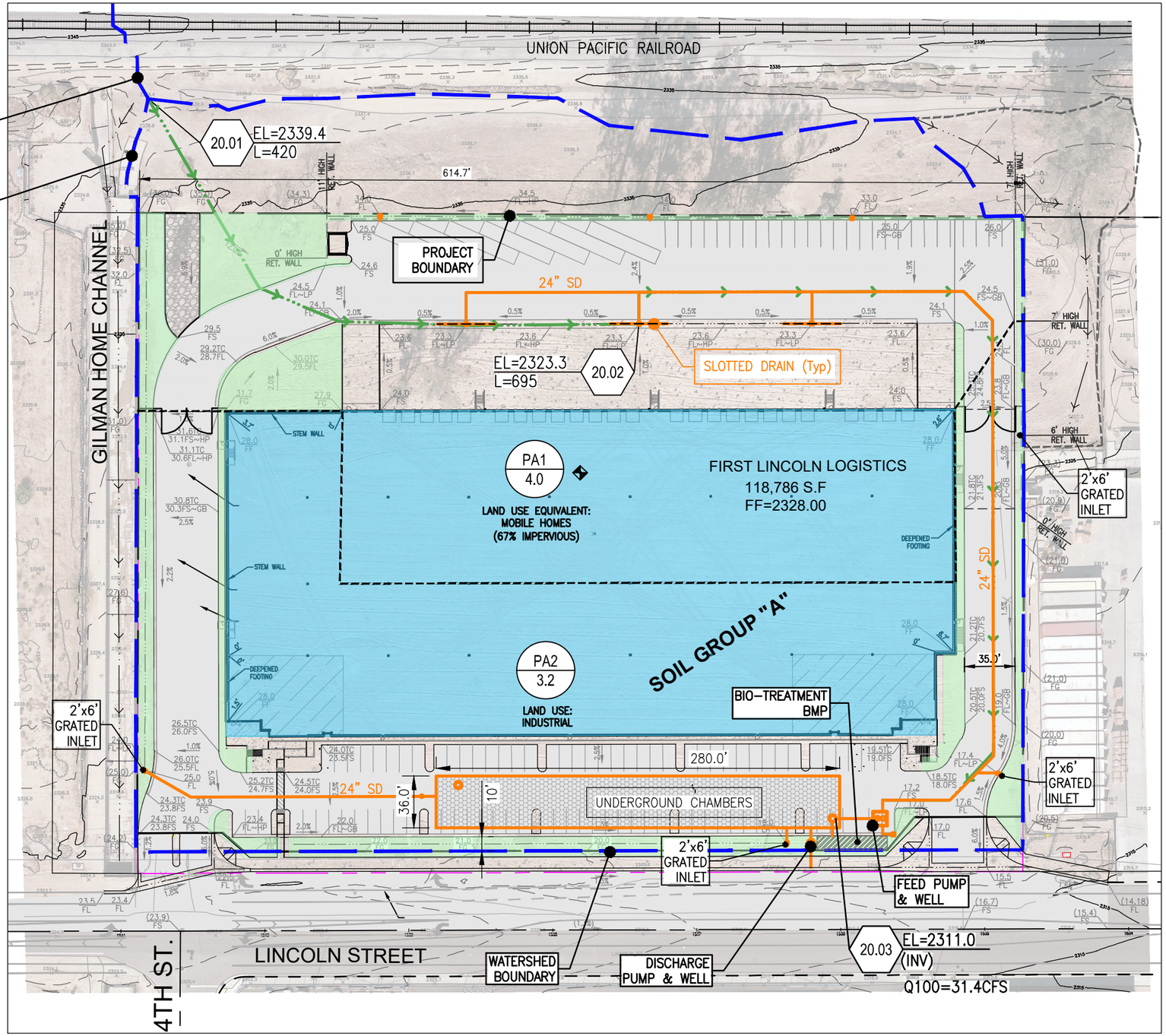
Date
2022.07.12

Reference Sheet
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Figure No.
H1

BANNING MPD DRAINAGE BOUNDARY of MPD LINE A

FLOWS WEST OF THIS DRAINAGE BOUNDARY ENTERS THE CHANNEL



ALL STORM DRAIN PIPES SIZES, SLOTTED DRAIN LENGTHS, AND DRAINAGE INLETS ARE PRELIMINARY.

TYPICAL DIMENSIONS:
SLOTTED DRAIN: L=40 FEET
STORM DRAIN: DIAMETER = 24"
DRAINAGE INLETS: DBL. GRATE (2'x6')

THE STORM DRAIN SYSTEM TO BE VALUE ENGINEERED IN FINAL CONSTRUCTION DOCUMENTS.

HYDROLOGY LEGEND

- WATERSHED BOUNDARY
- MINOR DRAINAGE BOUNDARY
- FLOW PATH
- SUBAREADESIGNATION — A11
- ACREAGE — 55.4
- NODE IDENTIFICATION — 303.33 — ELEVATION / DOWN STREAM LENGTH
- STORM DRAIN
- SLOTTED DRAIN
- UNDERGROUND CHAMBERS

0 80' 160'

Notes
1. PRELIMINARY BASIN SIZING IS SHOWN WITHOUT INFILTRATION.
2. UNDERGROUND CHAMBER CAPACITY (MIN. 31,400 C.F.).
3. CAPACITY IS SIZED TO MEET WATER QUALITY GOALS FOR 10YR 24HR STORM.
4. MAXIMUM INFILTRATION RATE OF 0.2 IN/HR TO BE ANALYZED IN FINAL ENGINEERING

Stantec

Client/Project
FIRST LINCOLN LOGISTICS
TPM 38437
BANNING, CA

Project No.
2042611702

Title
Preliminary Hydrology Map
Post- Project

Revision
–

Date
2022.11.18

Reference Sheet
–

Figure No.
H2

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III. HYDROLOGY MODELS & HYDRAULICS – RATIONAL METHOD, STORM HYDROGRAPHS, AND PRELIMINARY HYDRAULICS

Pre-project
2 year peak run-off

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
Rational Hydrology Study Date: 07/11/22 File:lin2yrprelimpre.out

---

First Lincoln Logistics; Banning, CA
pre project TPM preliminary
2yr jn:2042611703
vadjr 07.11.2022

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 6026

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 2.00 Antecedent Moisture Condition = 1

2 year, 1 hour precipitation = 0.600(In.)
100 year, 1 hour precipitation = 1.770(In.)

Storm event year = 2.0
Calculated rainfall intensity data:
1 hour intensity = 0.600(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 10.010 to Point/Station 10.020
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 785.000(Ft.)
Top (of initial area) elevation = 2339.400(Ft.)
Bottom (of initial area) elevation = 2318.500(Ft.)
Difference in elevation = 20.900(Ft.)
Slope = 0.02662 s(percent)= 2.66
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 15.746 min.
Rainfall intensity = 1.219(In/Hr) for a 2.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.407
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 1) = 47.40
Pervious area fraction = 1.000; Impervious fraction = 0.000
Initial subarea runoff = 3.475(CFS)
Total initial stream area = 7.010(Ac.)
Pervious area fraction = 1.000
End of computations, total study area = 7.01 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number = 67.0

Post Project
2yr Peak Runoff

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
Rational Hydrology Study Date: 07/12/22 File:lin2yrprelimpost.out

---

First Lincoln Logistics; Banning, CA
Post Project Preliminary Study
2yr jn:2042611702
vadjr 7.12.2022

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 6026

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 2.00 Antecedent Moisture Condition = 1

2 year, 1 hour precipitation = 0.600(In.)
100 year, 1 hour precipitation = 1.770(In.)

Storm event year = 2.0
Calculated rainfall intensity data:
1 hour intensity = 0.600(In/Hr)
Slope of intensity duration curve = 0.5000

++
Process from Point/Station 20.010 to Point/Station 20.020
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 420.000(Ft.)
Top (of initial area) elevation = 2339.400(Ft.)
Bottom (of initial area) elevation = 2323.300(Ft.)
Difference in elevation = 16.100(Ft.)
Slope = 0.03833 s(percent)= 3.83
TC = k(0.336)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 7.226 min.
Rainfall intensity = 1.729(In/Hr) for a 2.0 year storm
MOBILE HOME PARK subarea type
Runoff Coefficient = 0.720
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 1) = 16.20
Pervious area fraction = 0.250; Impervious fraction = 0.750
Initial subarea runoff = 4.980(CFS)
Total initial stream area = 4.000(Ac.)
Pervious area fraction = 0.250

++
Process from Point/Station 20.020 to Point/Station 20.030
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****

Post Project
2yr Peak Runoff

```
Upstream point/station elevation =  2317.300(Ft.)
Downstream point/station elevation =  2311.000(Ft.)
Pipe length  =   695.00(Ft.)   Manning's N = 0.014
No. of pipes = 1  Required pipe flow  =     4.980(CFS)
Nearest computed pipe diameter  =     15.00(In.)
Calculated individual pipe flow  =     4.980(CFS)
Normal flow depth in pipe =   10.84(In.)
Flow top width inside pipe =   13.43(In.)
Critical Depth =   10.86(In.)
Pipe flow velocity =      5.24(Ft/s)
Travel time through pipe =    2.21 min.
Time of concentration (TC) =     9.44 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       20.030 to Point/Station       20.030
**** SUBAREA FLOW ADDITION ****
------------------------------------------------------------------------------
COMMERCIAL subarea type
Runoff Coefficient = 0.826
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 1)  =  16.20
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =     9.44 min.
Rainfall intensity =      1.513(In/Hr) for a     2.0 year storm
Subarea runoff =      4.000(CFS) for      3.200(Ac.)
Total runoff =      8.980(CFS)      Total area =       7.200(Ac.)
End of computations, total study area =            7.20 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.183
Area averaged RI index number =  32.0
```

RCFC & WCD	SYNTHETIC UNIT HYDROGRAPH METHOD Unit Hydrograph and Effective Rain Calculation Form	Project: **First Lincoln Logistics -TPM 38437** Banning, CA	Date: 07-11-2022	Sheet 1 of 3

[1] Concentration Point	**1**	[2] Area Designation	**PreProject A**
[3] Drainage Area Sq Miles (THIS WORKSHEET in ACRES)	**7**	[4] Ultimate Discharge-CFS-HRS/IN (645*[3])	**n/a**
[5] Unit Time Minutes (SAMPLE 100% -200% of LAG)	**15**	[6] LAG Time Minutes (0.8*Tc)	**12.6**
[7] Unit Time-Percent of Lag (100*[5]/[6])	**n/a**	[8] S-Curve	**n/a**
[9] Storm Frequency & Duration (SAMPLE 100 year 3 Hour)	**2yr-24hr**	[10] Total Adjusted Storm Rain- INCHES	**2.81**
[11] Variable Loss Rate(AVG) - INCHES/HOUR	**n/a**	[12] Minimum Loss Rate (for VAR. LOSS) - IN/HR	**n/a**
[13] Constant Loss Rate - INCHES/HOUR (see note 1)	**0.597**	[14] Low Loss Rate- PERCENT	**90**

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]		[23]	[24]
	Unit time period	Time percent of LAG	Cumlative average percent of ultimate discharge	Distrib Graph percent	Unit Hydrograph CFS HRS/IN	Pattern Percent	Strom Rain IN/HR	LOSS RATE IN/HR		Effective Rain IN/HR	FLOW CFS
		[7] * [15]	(S-Graph)	[17]m-[17]m-1	([4]*[18])/100	(PL E-5.9)	60*[10]*[20]/100*[5]	Max	Low	[21]-[22]	[3]*[23]
							0.1124*[20]		[21]-(([21]*([14]/100))		[3]*[23]
1		**n/a**	**n/a**	**n/a**	**n/a**	0.2	0.022	0.597	0.020	0.002	0.0
2						0.3	0.034	0.597	0.030	0.004	0.0
3						0.3	0.034	0.597	0.030	0.004	0.0
4						0.4	0.045	0.597	0.040	0.005	0.0
5						0.3	0.034	0.597	0.030	0.004	0.0
6						0.3	0.034	0.597	0.030	0.004	0.0
7						0.3	0.034	0.597	0.030	0.004	0.0
8		**SHORTCUT METHOD**				0.4	0.045	0.597	0.040	0.005	0.0
9						0.4	0.045	0.597	0.040	0.005	0.0
10						0.4	0.045	0.597	0.040	0.005	0.0
11						0.5	0.056	0.597	0.051	0.005	0.0
12						0.5	0.056	0.597	0.051	0.005	0.0
13						0.5	0.056	0.597	0.051	0.005	0.0
14						0.5	0.056	0.597	0.051	0.005	0.0
15						0.5	0.056	0.597	0.051	0.005	0.0
16						0.6	0.067	0.597	0.061	0.006	0.0
17						0.6	0.067	0.597	0.061	0.006	0.0
18						0.7	0.079	0.597	0.071	0.008	0.1
19						0.7	0.079	0.597	0.071	0.008	0.1
20						0.8	0.090	0.597	0.081	0.009	0.1
21						0.6	0.067	0.597	0.061	0.006	0.0
22						0.7	0.079	0.597	0.071	0.008	0.1
23						0.8	0.090	0.597	0.081	0.009	0.1
24						0.8	0.090	0.597	0.081	0.009	0.1
25						0.9	0.101	0.597	0.091	0.010	0.1
26						0.9	0.101	0.597	0.091	0.010	0.1
27						1	0.112	0.597	0.101	0.011	0.1
28						1	0.112	0.597	0.101	0.011	0.1
29						1	0.112	0.597	0.101	0.011	0.1
30						1.1	0.124	0.597	0.111	0.013	0.1
31						1.2	0.135	0.597	0.121	0.014	0.1
32						1.3	0.146	0.597	0.132	0.014	0.1
33						1.5	0.169	0.597	0.152	0.017	0.1
34						1.5	0.169	0.597	0.152	0.017	0.1
35						1.6	0.180	0.597	0.162	0.018	0.1
36						1.7	0.191	0.597	0.172	0.019	0.1
37						1.9	0.214	0.597	0.192	0.022	0.2
38						2	0.225	0.597	0.202	0.023	0.2
39						2.1	0.236	0.597	0.212	0.024	0.2

RCFC & WCD	SYNTHETIC UNIT HYDROGRAPH METHOD Unit Hydrograph and Effective Rain Calculation Form	Project: **First Lincoln Logistics -TPM 38437** Banning, CA	Date: 07-11-2022	Sheet 2 of 3

[1] Concentration Point	**1**	[2] Area Designation	**PreProject A**
[3] Drainage Area Sq Miles (THIS WORKSHEET in ACRES)	**7**	[4] Ultimate Discharge-CFS-HRS/IN (645*[3])	**n/a**
[5] Unit Time Minutes (SAMPLE 100% -200% of LAG)	**15**	[6] LAG Time Minutes (0.8*Tc)	**12.6**
[7] Unit Time-Percent of Lag (100*[5]/[6])	**n/a**	[8] S-Curve	**n/a**
[9] Storm Frequency & Duration (SAMPLE 100 year 3 Hour)	**2yr-24hr**	[10] Total Adjusted Storm Rain- INCHES	**2.81**
[11] Variable Loss Rate(AVG) - INCHES/HOUR	**n/a**	[12] Minimum Loss Rate (for VAR. LOSS) - IN/HR	**n/a**
[13] Constant Loss Rate - INCHES/HOUR (see note 1)	**0.597**	[14] Low Loss Rate- PERCENT	**90**

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]		[23]	[24]
	Unit time period	Time percent of LAG	Cumlative average percent of ultimate discharge	Distrib Graph percent	Unit Hydrograph CFS HRS/IN	Pattern Percent	Strom Rain IN/HR	LOSS RATE IN/HR		Effective Rain IN/HR	FLOW CFS
		[7] * [15]	(S-Graph)	[17]m-[17]m-1	([4]*[18])/100	(PL E-5.9)	60*[10]*[20]/100*[5]	Max	Low	[21]-[22]	[3]*[23]
							0.1124*[20]		[21]-(([21]*([14]/100))		[3]*[23]
40						2.2	0.247	0.597	0.223	0.024	0.2
41						1.5	0.169	0.597	0.152	0.017	0.1
42						1.5	0.169	0.597	0.152	0.017	0.1
43						2	0.225	0.597	0.202	0.023	0.2
44						2	0.225	0.597	0.202	0.023	0.2
45						1.9	0.214	0.597	0.192	0.022	0.2
46						1.9	0.214	0.597	0.192	0.022	0.2
47						1.7	0.191	0.597	0.172	0.019	0.1
48						1.8	0.202	0.597	0.182	0.020	0.1
49						2.5	0.281	0.597	0.253	0.028	0.2
50						2.6	0.292	0.597	0.263	0.029	0.2
51						2.8	0.315	0.597	0.283	0.032	0.2
52						2.9	0.326	0.597	0.293	0.033	0.2
53						3.4	0.382	0.597	0.344	0.038	0.3
54						3.4	0.382	0.597	0.344	0.038	0.3
55						2.3	0.259	0.597	0.233	0.026	0.2
56						2.3	0.259	0.597	0.233	0.026	0.2
57						2.7	0.303	0.597	0.273	0.030	0.2
58						2.6	0.292	0.597	0.263	0.029	0.2
59						2.6	0.292	0.597	0.263	0.029	0.2
60						2.5	0.281	0.597	0.253	0.028	0.2
61						2.4	0.270	0.597	0.243	0.027	0.2
62						2.3	0.259	0.597	0.233	0.026	0.2
63						1.9	0.214	0.597	0.192	0.022	0.2
64						1.9	0.214	0.597	0.192	0.022	0.2
65						0.4	0.045	0.597	0.040	0.005	0.0
66						0.4	0.045	0.597	0.040	0.005	0.0
67						0.3	0.034	0.597	0.030	0.004	0.0
68						0.3	0.034	0.597	0.030	0.004	0.0
69						0.5	0.056	0.597	0.051	0.005	0.0
70						0.5	0.056	0.597	0.051	0.005	0.0
71						0.5	0.056	0.597	0.051	0.005	0.0
72						0.4	0.045	0.597	0.040	0.005	0.0
73						0.4	0.045	0.597	0.040	0.005	0.0
74						0.4	0.045	0.597	0.040	0.005	0.0
75						0.3	0.034	0.597	0.030	0.004	0.0
76						0.2	0.022	0.597	0.020	0.002	0.0
77						0.3	0.034	0.597	0.030	0.004	0.0
78						0.4	0.045	0.597	0.040	0.005	0.0

RCFC & WCD	SYNTHETIC UNIT HYDROGRAPH METHOD Unit Hydrograph and Effective Rain Calculation Form	Project: **First Lincoln Logistics -TPM 38437** Banning, CA	Date: 07-11-2022	Sheet 1 of 3

[1] Concentration Point	1	[2] Area Designation	PreProject A
[3] Drainage Area Sq Miles (THIS WORKSHEET in ACRES)	7	[4] Ultimate Discharge-CFS-HRS/IN (645*[3])	n/a
[5] Unit Time Minutes (SAMPLE 100% -200% of LAG)	15	[6] LAG Time Minutes (0.8*Tc)	12.6
[7] Unit Time-Percent of Lag (100*[5]/[6])	n/a	[8] S-Curve	n/a
[9] Storm Frequency & Duration (SAMPLE 100 year 3 Hour)	2yr-24hr	[10] Total Adjusted Storm Rain- INCHES	2.81
[11] Variable Loss Rate(AVG) - INCHES/HOUR	n/a	[12] Minimum Loss Rate (for VAR. LOSS) - IN/HR	n/a
[13] Constant Loss Rate - INCHES/HOUR (see note 1)	0.597	[14] Low Loss Rate- PERCENT	90

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]		[23]	[24]
	Unit time period	Time percent of LAG	Cumlative average percent of ultimate discharge	Distrib Graph percent	Unit Hydrograph CFS HRS/IN	Pattern Percent	Strom Rain IN/HR	LOSS RATE IN/HR		Effective Rain IN/HR	FLOW CFS
		[7] * [15]	(S-Graph)	[17]m-[17]m-1	([4]*[18])/100	(PL E-5.9)	60*[10]*[20]/100*[5]	Max	Low	[21]-[22]	[3]*[23]
							0.1124*[20]		[21]-(([21]*([14]/100))		[3]*[23]
79						0.3	0.034	0.597	0.030	0.004	0.0
80						0.2	0.022	0.597	0.020	0.002	0.0
81						0.3	0.034	0.597	0.030	0.004	0.0
82						0.3	0.034	0.597	0.030	0.004	0.0
83						0.3	0.034	0.597	0.030	0.004	0.0
84						0.2	0.022	0.597	0.020	0.002	0.0
85						0.3	0.034	0.597	0.030	0.004	0.0
86						0.2	0.022	0.597	0.020	0.002	0.0
87						0.3	0.034	0.597	0.030	0.004	0.0
88						0.2	0.022	0.597	0.020	0.002	0.0
89						0.3	0.034	0.597	0.030	0.004	0.0
90						0.2	0.022	0.597	0.020	0.002	0.0
91						0.2	0.022	0.597	0.020	0.002	0.0
92						0.2	0.022	0.597	0.020	0.002	0.0
93						0.2	0.022	0.597	0.020	0.002	0.0
94						0.2	0.022	0.597	0.020	0.002	0.0
95						0.2	0.022	0.597	0.020	0.002	0.0
96						0.2	0.022	0.597	0.020	0.002	0.0
						100			SUM	1.13	

Notes:

1. Fp obtained from Plate E-6.2; Loss Rate (F) from page E-8
where F=Fp if 100 percent pervious cover

Effective Rain= Sum[23] * Unit Time (HRS)
= 1.133*(15/60)= 1.133*0.25
= **0.28** **INCHES**

Flood Volume = Effective Rain * Area
= 0.28*(1/12)*7 ACRES
0.17 **ACRE-FEET**

Plate E-2.2

RCFC & WCD	SYNTHETIC UNIT HYDROGRAPH METHOD Unit Hydrograph and Effective Rain Calculation Form	Project: **First Lincoln Logistics -TPM 38437** Banning, CA	Date: 05-13-2022	Sheet 1 of 3

[1] Concentration Point	**1**	[2] Area Designation	**Post Project A**
[3] Drainage Area Sq Miles (THIS WORKSHEET in ACRES)	**7.2**	[4] Ultimate Discharge-CFS-HRS/IN (645*[3])	**n/a**
[5] Unit Time Minutes (SAMPLE 100% -200% of LAG)	**15**	[6] LAG Time Minutes (0.8*Tc)	**7.5**
[7] Unit Time-Percent of Lag (100*[5]/[6])	**n/a**	[8] S-Curve	**n/a**
[9] Storm Frequency & Duration (SAMPLE 100 year 3 Hour)	**2yr-24hr**	[10] Total Adjusted Storm Rain- INCHES	**2.81**
[11] Variable Loss Rate(AVG) - INCHES/HOUR	**n/a**	[12] Minimum Loss Rate (for VAR. LOSS) - IN/HR	**n/a**
[13] Constant Loss Rate - INCHES/HOUR (see note 1)	**0.23**	[14] Low Loss Rate- PERCENT	**80**

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]		[23]	[24]
	Unit time period	Time percent of LAG	Cumlative average percent of ultimate discharge	Distrib Graph percent	Unit Hydrograph CFS HRS/IN	Pattern Percent	Strom Rain IN/HR	LOSS RATE IN/HR		Effective Rain IN/HR	FLOW CFS
		[7] * [15]	(S-Graph)	[17]m-[17]m-1	([4]*[18])/100	(PL E-5.9)	60*[10]*[20]/100*[5]	Max	Low	[21]-[22]	[3]*[23]
							0.1124*[20]		[21]-(([21]*([14]/100))		[3]*[23]
1		**n/a**	**n/a**	**n/a**	**n/a**	0.2	0.022	0.23	0.018	0.004	0.0
2						0.3	0.034	0.23	0.027	0.007	0.0
3						0.3	0.034	0.23	0.027	0.007	0.0
4						0.4	0.045	0.23	0.036	0.009	0.1
5						0.3	0.034	0.23	0.027	0.007	0.0
6						0.3	0.034	0.23	0.027	0.007	0.0
7						0.3	0.034	0.23	0.027	0.007	0.0
8		**SHORTCUT METHOD**				0.4	0.045	0.23	0.036	0.009	0.1
9						0.4	0.045	0.23	0.036	0.009	0.1
10						0.4	0.045	0.23	0.036	0.009	0.1
11						0.5	0.056	0.23	0.045	0.011	0.1
12						0.5	0.056	0.23	0.045	0.011	0.1
13						0.5	0.056	0.23	0.045	0.011	0.1
14						0.5	0.056	0.23	0.045	0.011	0.1
15						0.5	0.056	0.23	0.045	0.011	0.1
16						0.6	0.067	0.23	0.054	0.013	0.1
17						0.6	0.067	0.23	0.054	0.013	0.1
18						0.7	0.079	0.23	0.063	0.016	0.1
19						0.7	0.079	0.23	0.063	0.016	0.1
20						0.8	0.090	0.23	0.072	0.018	0.1
21						0.6	0.067	0.23	0.054	0.013	0.1
22						0.7	0.079	0.23	0.063	0.016	0.1
23						0.8	0.090	0.23	0.072	0.018	0.1
24						0.8	0.090	0.23	0.072	0.018	0.1
25						0.9	0.101	0.23	0.081	0.020	0.1
26						0.9	0.101	0.23	0.081	0.020	0.1
27						1	0.112	0.23	0.090	0.022	0.2
28						1	0.112	0.23	0.090	0.022	0.2
29						1	0.112	0.23	0.090	0.022	0.2
30						1.1	0.124	0.23	0.099	0.025	0.2
31						1.2	0.135	0.23	0.108	0.027	0.2
32						1.3	0.146	0.23	0.117	0.029	0.2
33						1.5	0.169	0.23	0.135	0.034	0.2
34						1.5	0.169	0.23	0.135	0.034	0.2
35						1.6	0.180	0.23	0.144	0.036	0.3
36						1.7	0.191	0.23	0.153	0.038	0.3
37						1.9	0.214	0.23	0.171	0.043	0.3
38						2	0.225	0.23	0.180	0.045	0.3
39						2.1	0.236	0.23		0.006	0.0

RCFC & WCD	SYNTHETIC UNIT HYDROGRAPH METHOD Unit Hydrograph and Effective Rain Calculation Form	Project: **First Lincoln Logistics -TPM 38437** Banning, CA	Date: 05-13-2022	Sheet 2 of 3

[1] Concentration Point	**1**	[2] Area Designation	**Post Project A**
[3] Drainage Area Sq Miles (THIS WORKSHEET in ACRES)	**7.2**	[4] Ultimate Discharge-CFS-HRS/IN (645*[3])	**n/a**
[5] Unit Time Minutes (SAMPLE 100% -200% of LAG)	**15**	[6] LAG Time Minutes (0.8*Tc)	**7.5**
[7] Unit Time-Percent of Lag (100*[5]/[6])	**n/a**	[8] S-Curve	**n/a**
[9] Storm Frequency & Duration (SAMPLE 100 year 3 Hour)	**2yr-24hr**	[10] Total Adjusted Storm Rain- INCHES	**2.81**
[11] Variable Loss Rate(AVG) - INCHES/HOUR	**n/a**	[12] Minimum Loss Rate (for VAR. LOSS) - IN/HR	**n/a**
[13] Constant Loss Rate - INCHES/HOUR (see note 1)	**0.23**	[14] Low Loss Rate- PERCENT	**80**

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]		[23]	[24]
	Unit time period	Time percent of LAG	Cumlative average percent of ultimate discharge	Distrib Graph percent	Unit Hydrograph CFS HRS/IN	Pattern Percent	Strom Rain IN/HR	LOSS RATE IN/HR		Effective Rain IN/HR	FLOW CFS
		[7] * [15]	(S-Graph)	[17]m-[17]m-1	([4]*[18])/100	(PL E-5.9)	60*[10]*[20]/100*[5]	Max	Low	[21]-[22]	[3]*[23]
							0.1124*[20]		[21]-(([21]*([14]/100))		[3]*[23]
40						2.2	0.247	0.23		0.017	0.1
41						1.5	0.169	0.23	0.135	0.034	0.2
42						1.5	0.169	0.23	0.135	0.034	0.2
43						2	0.225	0.23	0.180	0.045	0.3
44						2	0.225	0.23	0.180	0.045	0.3
45						1.9	0.214	0.23	0.171	0.043	0.3
46						1.9	0.214	0.23	0.171	0.043	0.3
47						1.7	0.191	0.23	0.153	0.038	0.3
48						1.8	0.202	0.23	0.162	0.040	0.3
49						2.5	0.281	0.23		0.051	0.4
50						2.6	0.292	0.23		0.062	0.4
51						2.8	0.315	0.23		0.085	0.6
52						2.9	0.326	0.23		0.096	0.7
53						3.4	0.382	0.23		0.152	1.1
54						3.4	0.382	0.23		0.152	1.1
55						2.3	0.259	0.23		0.029	0.2
56						2.3	0.259	0.23		0.029	0.2
57						2.7	0.303	0.23		0.073	0.5
58						2.6	0.292	0.23		0.062	0.4
59						2.6	0.292	0.23		0.062	0.4
60						2.5	0.281	0.23		0.051	0.4
61						2.4	0.270	0.23		0.040	0.3
62						2.3	0.259	0.23		0.029	0.2
63						1.9	0.214	0.23	0.171	0.043	0.3
64						1.9	0.214	0.23	0.171	0.043	0.3
65						0.4	0.045	0.23	0.036	0.009	0.1
66						0.4	0.045	0.23	0.036	0.009	0.1
67						0.3	0.034	0.23	0.027	0.007	0.0
68						0.3	0.034	0.23	0.027	0.007	0.0
69						0.5	0.056	0.23	0.045	0.011	0.1
70						0.5	0.056	0.23	0.045	0.011	0.1
71						0.5	0.056	0.23	0.045	0.011	0.1
72						0.4	0.045	0.23	0.036	0.009	0.1
73						0.4	0.045	0.23	0.036	0.009	0.1
74						0.4	0.045	0.23	0.036	0.009	0.1
75						0.3	0.034	0.23	0.027	0.007	0.0
76						0.2	0.022	0.23	0.018	0.004	0.0
77						0.3	0.034	0.23	0.027	0.007	0.0
78						0.4	0.045	0.23	0.036	0.009	0.1

RCFC & WCD	SYNTHETIC UNIT HYDROGRAPH METHOD Unit Hydrograph and Effective Rain Calculation Form	Project: **First Lincoln Logistics -TPM 38437** Banning, CA	Date: 05-13-2022	Sheet 3 of 3

[1] Concentration Point	**1**	[2] Area Designation	**Post Project A**
[3] Drainage Area Sq Miles (THIS WORKSHEET in ACRES)	**7.2**	[4] Ultimate Discharge-CFS-HRS/IN (645*[3])	**n/a**
[5] Unit Time Minutes (SAMPLE 100% -200% of LAG)	**15**	[6] LAG Time Minutes (0.8*Tc)	**7.5**
[7] Unit Time-Percent of Lag (100*[5]/[6])	**n/a**	[8] S-Curve	**n/a**
[9] Storm Frequency & Duration (SAMPLE 100 year 3 Hour)	**2yr-24hr**	[10] Total Adjusted Storm Rain- INCHES	**2.81**
[11] Variable Loss Rate(AVG) - INCHES/HOUR	**n/a**	[12] Minimum Loss Rate (for VAR. LOSS) - IN/HR	**n/a**
[13] Constant Loss Rate - INCHES/HOUR (see note 1)	**0.23**	[14] Low Loss Rate- PERCENT	**80**

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]		[23]	[24]
	Unit time period	Time percent of LAG	Cumlative average percent of ultimate discharge	Distrib Graph percent	Unit Hydrograph CFS HRS/IN	Pattern Percent	Strom Rain IN/HR	LOSS RATE IN/HR		Effective Rain IN/HR	FLOW CFS
		[7] * [15]	(S-Graph)	[17]m-[17]m-1	([4]*[18])/100	(PL E-5.9)	60*[10]*[20]/100*[5]	Max	Low	[21]-[22]	[3]*[23]
							0.1124*[20]		[21]-(([21]*([14]/100))		[3]*[23]
79						0.3	0.034	0.23	0.027	0.007	0.0
80						0.2	0.022	0.23	0.018	0.004	0.0
81						0.3	0.034	0.23	0.027	0.007	0.0
82						0.3	0.034	0.23	0.027	0.007	0.0
83						0.3	0.034	0.23	0.027	0.007	0.0
84						0.2	0.022	0.23	0.018	0.004	0.0
85						0.3	0.034	0.23	0.027	0.007	0.0
86						0.2	0.022	0.23	0.018	0.004	0.0
87						0.3	0.034	0.23	0.027	0.007	0.0
88						0.2	0.022	0.23	0.018	0.004	0.0
89						0.3	0.034	0.23	0.027	0.007	0.0
90						0.2	0.022	0.23	0.018	0.004	0.0
91						0.2	0.022	0.23	0.018	0.004	0.0
92						0.2	0.022	0.23	0.018	0.004	0.0
93						0.2	0.022	0.23	0.018	0.004	0.0
94						0.2	0.022	0.23	0.018	0.004	0.0
95						0.2	0.022	0.23	0.018	0.004	0.0
96						0.2	0.022	0.23	0.018	0.004	0.0
						100			SUM	2.26	

Notes:

1. Fp obtained from Plate E-6.2; Loss Rate (F) from page E-8
where F=Fp if 100 percent pervious cover

Effective Rain= Sum[23] * Unit Time (HRS)
= 2.26*(15/60)= 2.26*0.25
= **0.56** **INCHES**

Flood Volume = Effective Rain * Area
= 0.56*(1/12)*7.2 ACRES
0.34 **ACRE-FEET**

Plate E-2.2

Pre-project
10 year peak run-off

```
            Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
      Rational Hydrology Study        Date: 07/11/22  File:lin10yrprelimpre.out
------------------------------------------------------------------------
First Lincoln Logistics; Banning, CA
pre project TPM prelimiary
10yr jn2042611703
vadjr 07.11.2022
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 6026

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =   10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation =  0.600(In.)
100 year, 1 hour precipitation =  1.770(In.)

Storm event year =  10.0
Calculated rainfall intensity data:
1 hour intensity =  1.081(In/Hr)
Slope of intensity duration curve = 0.5300


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       10.010 to Point/Station       10.020
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------
Initial area flow distance =   785.000(Ft.)
Top (of initial area) elevation =  2339.400(Ft.)
Bottom (of initial area) elevation =  2318.500(Ft.)
Difference in elevation =    20.900(Ft.)
Slope =    0.02662  s(percent)=       2.66
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   15.746 min.
Rainfall intensity =      2.197(In/Hr) for a    10.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.693
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  67.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =     10.673(CFS)
Total initial stream area =        7.010(Ac.)
Pervious area fraction = 1.000
End of computations, total study area =            7.01 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  67.0
```

Post Project
10yr Peak Runoff

```
            Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
      Rational Hydrology Study        Date: 07/12/22  File:lin10yrprelimpost.out
------------------------------------------------------------------------
First Lincoln Logistics; Banning, CA
Post Project Preliminary Study
10yr preliminary post
vadjr 7.12.2022 jn: 2042611703
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 6026

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =   10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation =  0.600(In.)
100 year, 1 hour precipitation =  1.770(In.)

Storm event year =  10.0
Calculated rainfall intensity data:
1 hour intensity =  1.081(In/Hr)
Slope of intensity duration curve = 0.5300




++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       20.010 to Point/Station       20.020
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------
Initial area flow distance =   420.000(Ft.)
Top (of initial area) elevation =  2339.400(Ft.)
Bottom (of initial area) elevation =  2323.300(Ft.)
Difference in elevation =    16.100(Ft.)
Slope =    0.03833  s(percent)=       3.83
TC = k(0.336)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    7.226 min.
Rainfall intensity =      3.320(In/Hr) for a    10.0 year storm
MOBILE HOME PARK subarea type
Runoff Coefficient = 0.796
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  32.00
Pervious area fraction =  0.250; Impervious fraction =  0.750
Initial subarea runoff =     10.577(CFS)
Total initial stream area =        4.000(Ac.)
Pervious area fraction = 0.250


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       20.020 to Point/Station       20.030
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
```

Post Project
10yr Peak Runoff

```
Upstream point/station elevation =  2317.300(Ft.)
Downstream point/station elevation =  2311.000(Ft.)
Pipe length  =   695.00(Ft.)   Manning's N = 0.014
No. of pipes = 1  Required pipe flow  =    10.577(CFS)
Nearest computed pipe diameter  =     21.00(In.)
Calculated individual pipe flow  =    10.577(CFS)
Normal flow depth in pipe =   13.64(In.)
Flow top width inside pipe =   20.04(In.)
Critical Depth =   14.55(In.)
Pipe flow velocity =      6.40(Ft/s)
Travel time through pipe =    1.81 min.
Time of concentration (TC) =     9.04 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       20.030 to Point/Station       20.030
**** SUBAREA FLOW ADDITION ****
-------------------------------------------------------------------------------
COMMERCIAL subarea type
Runoff Coefficient = 0.856
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  32.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =     9.04 min.
Rainfall intensity =      2.949(In/Hr) for a    10.0 year storm
Subarea runoff =      8.078(CFS) for      3.200(Ac.)
Total runoff =     18.654(CFS)      Total area =       7.200(Ac.)
End of computations, total study area =            7.20 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.183
Area averaged RI index number =  32.0
```

RCFC & WCD	SYNTHETIC UNIT HYDROGRAPH METHOD Unit Hydrograph and Effective Rain Calculation Form	Project: **First Lincoln Logistics -TPM 38437** Banning, CA	Date: 07-11-2022	Sheet 1 of 3

[1] Concentration Point	**1**	[2] Area Designation	**PreProject A**
[3] Drainage Area Sq Miles (THIS WORKSHEET in ACRES)	**7**	[4] Ultimate Discharge-CFS-HRS/IN (645*[3])	**n/a**
[5] Unit Time Minutes (SAMPLE 100% -200% of LAG)	**15**	[6] LAG Time Minutes (0.8*Tc)	**12.6**
[7] Unit Time-Percent of Lag (100*[5]/[6])	**n/a**	[8] S-Curve	**n/a**
[9] Storm Frequency & Duration (SAMPLE 100 year 3 Hour)	**10yr-24hr**	[10] Total Adjusted Storm Rain- INCHES	**4.45**
[11] Variable Loss Rate(AVG) - INCHES/HOUR	**n/a**	[12] Minimum Loss Rate (for VAR. LOSS) - IN/HR	**n/a**
[13] Constant Loss Rate - INCHES/HOUR (see note 1)	**0.38**	[14] Low Loss Rate- PERCENT	**90**

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]		[23]	[24]
	Unit time period	Time percent of LAG	Cumlative average percent of ultimate discharge	Distrib Graph percent	Unit Hydrograph CFS HRS/IN	Pattern Percent	Strom Rain IN/HR	LOSS RATE IN/HR		Effective Rain IN/HR	FLOW CFS
		[7] * [15]	(S-Graph)	[17]m-[17]m-1	([4]*[18])/100	(PL E-5.9)	60*[10]*[20]/100*[5]	Max	Low	[21]-[22]	[3]*[23]
							0.178*[20]		[21]-(([21]*([14]/100))		[3]*[23]
1		**n/a**	**n/a**	**n/a**	**n/a**	0.2	0.036	0.38	0.032	0.004	0.0
2						0.3	0.053	0.38	0.048	0.005	0.0
3						0.3	0.053	0.38	0.048	0.005	0.0
4						0.4	0.071	0.38	0.064	0.007	0.1
5						0.3	0.053	0.38	0.048	0.005	0.0
6						0.3	0.053	0.38	0.048	0.005	0.0
7						0.3	0.053	0.38	0.048	0.005	0.0
8		**SHORTCUT METHOD**				0.4	0.071	0.38	0.064	0.007	0.1
9						0.4	0.071	0.38	0.064	0.007	0.1
10						0.4	0.071	0.38	0.064	0.007	0.1
11						0.5	0.089	0.38	0.080	0.009	0.1
12						0.5	0.089	0.38	0.080	0.009	0.1
13						0.5	0.089	0.38	0.080	0.009	0.1
14						0.5	0.089	0.38	0.080	0.009	0.1
15						0.5	0.089	0.38	0.080	0.009	0.1
16						0.6	0.107	0.38	0.096	0.011	0.1
17						0.6	0.107	0.38	0.096	0.011	0.1
18						0.7	0.125	0.38	0.112	0.013	0.1
19						0.7	0.125	0.38	0.112	0.013	0.1
20						0.8	0.142	0.38	0.128	0.014	0.1
21						0.6	0.107	0.38	0.096	0.011	0.1
22						0.7	0.125	0.38	0.112	0.013	0.1
23						0.8	0.142	0.38	0.128	0.014	0.1
24						0.8	0.142	0.38	0.128	0.014	0.1
25						0.9	0.160	0.38	0.144	0.016	0.1
26						0.9	0.160	0.38	0.144	0.016	0.1
27						1	0.178	0.38	0.160	0.018	0.1
28						1	0.178	0.38	0.160	0.018	0.1
29						1	0.178	0.38	0.160	0.018	0.1
30						1.1	0.196	0.38	0.176	0.020	0.1
31						1.2	0.214	0.38	0.192	0.022	0.2
32						1.3	0.231	0.38	0.208	0.023	0.2
33						1.5	0.267	0.38	0.240	0.027	0.2
34						1.5	0.267	0.38	0.240	0.027	0.2
35						1.6	0.285	0.38	0.256	0.029	0.2
36						1.7	0.303	0.38	0.272	0.031	0.2
37						1.9	0.338	0.38	0.304	0.034	0.2
38						2	0.356	0.38	0.320	0.036	0.3
39						2.1	0.374	0.38	0.336	0.038	0.3

RCFC & WCD	SYNTHETIC UNIT HYDROGRAPH METHOD Unit Hydrograph and Effective Rain Calculation Form	Project:	Date: 07-11-2022	Sheet
		First Lincoln Logistics -TPM 38437		2 of 3
		Banning, CA		

[1] Concentration Point	**1**	[2] Area Designation	**PreProject A**
[3] Drainage Area Sq Miles (THIS WORKSHEET in ACRES)	**7**	[4] Ultimate Discharge-CFS-HRS/IN (645*[3])	**n/a**
[5] Unit Time Minutes (SAMPLE 100% -200% of LAG)	**15**	[6] LAG Time Minutes (0.8*Tc)	**12.6**
[7] Unit Time-Percent of Lag (100*[5]/[6])	**n/a**	[8] S-Curve	**n/a**
[9] Storm Frequency & Duration (SAMPLE 100 year 3 Hour)	**10yr-24hr**	[10] Total Adjusted Storm Rain- INCHES	**4.45**
[11] Variable Loss Rate(AVG) - INCHES/HOUR	**n/a**	[12] Minimum Loss Rate (for VAR. LOSS) - IN/HR	**n/a**
[13] Constant Loss Rate - INCHES/HOUR (see note 1)	**0.38**	[14] Low Loss Rate- PERCENT	**90**

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]		[23]	[24]
	Unit time period	Time percent of LAG	Cumlative average percent of ultimate discharge	Distrib Graph percent	Unit Hydrograph CFS HRS/IN	Pattern Percent	Strom Rain IN/HR	LOSS RATE IN/HR		Effective Rain IN/HR	FLOW CFS
		[7] * [15]	(S-Graph)	[17]m-[17]m-1	([4]*[18])/100	(PL E-5.9)	60*[10]*[20]/100*[5]	Max	Low	[21]-[22]	[3]*[23]
							0.178*[20]		[21]-(([21]*([14]/100))		[3]*[23]
40						2.2	0.392	0.38		0.012	0.1
41						1.5	0.267	0.38	0.240	0.027	0.2
42						1.5	0.267	0.38	0.240	0.027	0.2
43						2	0.356	0.38	0.320	0.036	0.3
44						2	0.356	0.38	0.320	0.036	0.3
45						1.9	0.338	0.38	0.304	0.034	0.2
46						1.9	0.338	0.38	0.304	0.034	0.2
47						1.7	0.303	0.38	0.272	0.031	0.2
48						1.8	0.320	0.38	0.288	0.032	0.2
49						2.5	0.445	0.38		0.065	0.5
50						2.6	0.463	0.38		0.083	0.6
51						2.8	0.498	0.38		0.118	0.8
52						2.9	0.516	0.38		0.136	1.0
53						3.4	0.605	0.38		0.225	1.6
54						3.4	0.605	0.38		0.225	1.6
55						2.3	0.409	0.38		0.029	0.2
56						2.3	0.409	0.38		0.029	0.2
57						2.7	0.481	0.38		0.101	0.7
58						2.6	0.463	0.38		0.083	0.6
59						2.6	0.463	0.38		0.083	0.6
60						2.5	0.445	0.38		0.065	0.5
61						2.4	0.427	0.38		0.047	0.3
62						2.3	0.409	0.38		0.029	0.2
63						1.9	0.338	0.38	0.304	0.034	0.2
64						1.9	0.338	0.38	0.304	0.034	0.2
65						0.4	0.071	0.38	0.064	0.007	0.1
66						0.4	0.071	0.38	0.064	0.007	0.1
67						0.3	0.053	0.38	0.048	0.005	0.0
68						0.3	0.053	0.38	0.048	0.005	0.0
69						0.5	0.089	0.38	0.080	0.009	0.1
70						0.5	0.089	0.38	0.080	0.009	0.1
71						0.5	0.089	0.38	0.080	0.009	0.1
72						0.4	0.071	0.38	0.064	0.007	0.1
73						0.4	0.071	0.38	0.064	0.007	0.1
74						0.4	0.071	0.38	0.064	0.007	0.1
75						0.3	0.053	0.38	0.048	0.005	0.0
76						0.2	0.036	0.38	0.032	0.004	0.0
77						0.3	0.053	0.38	0.048	0.005	0.0
78						0.4	0.071	0.38	0.064	0.007	0.1

RCFC & WCD	SYNTHETIC UNIT HYDROGRAPH METHOD Unit Hydrograph and Effective Rain Calculation Form	Project: **First Lincoln Logistics -TPM 38437** Banning, CA	Date: 07-11-2022	Sheet 3 of 3

[1] Concentration Point	**1**	[2] Area Designation	**PreProject A**
[3] Drainage Area Sq Miles (THIS WORKSHEET in ACRES)	**7**	[4] Ultimate Discharge-CFS-HRS/IN (645*[3])	**n/a**
[5] Unit Time Minutes (SAMPLE 100% -200% of LAG)	**15**	[6] LAG Time Minutes (0.8*Tc)	**12.6**
[7] Unit Time-Percent of Lag (100*[5]/[6])	**n/a**	[8] S-Curve	**n/a**
[9] Storm Frequency & Duration (SAMPLE 100 year 3 Hour)	**10yr-24hr**	[10] Total Adjusted Storm Rain- INCHES	**4.45**
[11] Variable Loss Rate(AVG) - INCHES/HOUR	**n/a**	[12] Minimum Loss Rate (for VAR. LOSS) - IN/HR	**n/a**
[13] Constant Loss Rate - INCHES/HOUR (see note 1)	**0.38**	[14] Low Loss Rate- PERCENT	**90**

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]		[23]	[24]
	Unit time period	Time percent of LAG	Cumlative average percent of ultimate discharge	Distrib Graph percent	Unit Hydrograph CFS HRS/IN	Pattern Percent	Strom Rain IN/HR	LOSS RATE IN/HR		Effective Rain IN/HR	FLOW CFS
		[7] * [15]	(S-Graph)	[17]m-[17]m-1	([4]*[18])/100	(PL E-5.9)	60*[10]*[20]/100*[5]	Max	Low	[21]-[22]	[3]*[23]
							0.178*[20]		[21]-(([21]*([14]/100))		[3]*[23]
79						0.3	0.053	0.38	0.048	0.005	0.0
80						0.2	0.036	0.38	0.032	0.004	0.0
81						0.3	0.053	0.38	0.048	0.005	0.0
82						0.3	0.053	0.38	0.048	0.005	0.0
83						0.3	0.053	0.38	0.048	0.005	0.0
84						0.2	0.036	0.38	0.032	0.004	0.0
85						0.3	0.053	0.38	0.048	0.005	0.0
86						0.2	0.036	0.38	0.032	0.004	0.0
87						0.3	0.053	0.38	0.048	0.005	0.0
88						0.2	0.036	0.38	0.032	0.004	0.0
89						0.3	0.053	0.38	0.048	0.005	0.0
90						0.2	0.036	0.38	0.032	0.004	0.0
91						0.2	0.036	0.38	0.032	0.004	0.0
92						0.2	0.036	0.38	0.032	0.004	0.0
93						0.2	0.036	0.38	0.032	0.004	0.0
94						0.2	0.036	0.38	0.032	0.004	0.0
95						0.2	0.036	0.38	0.032	0.004	0.0
96						0.2	0.036	0.38	0.032	0.004	0.0
						100			SUM	2.49	

Notes:

1. Fp obtained from Plate E-6.2; Loss Rate (F) from page E-8
where F=Fp if 100 percent pervious cover

Effective Rain= Sum[23] * Unit Time (HRS)
= 2.49*(15/60)= 2.49*0.25
= **0.62** **INCHES**

Flood Volume = Effective Rain * Area
= 0.62*(1/12)*7 ACRES
0.36 **ACRE-FEET**

Plate E-2.2

RCFC & WCD	SYNTHETIC UNIT HYDROGRAPH METHOD Unit Hydrograph and Effective Rain Calculation Form	Project: **First Lincoln Logistics -TPM 38437** Banning, CA	Date: 05-13-2022	Sheet 1 of 3

[1] Concentration Point	**1**	[2] Area Designation	**Post-Project A**
[3] Drainage Area Sq Miles (THIS WORKSHEET in ACRES)	**7.2**	[4] Ultimate Discharge-CFS-HRS/IN (645*[3])	**n/a**
[5] Unit Time Minutes (SAMPLE 100% -200% of LAG)	**15**	[6] LAG Time Minutes (0.8*Tc)	**7.2**
[7] Unit Time-Percent of Lag (100*[5]/[6])	**n/a**	[8] S-Curve	**n/a**
[9] Storm Frequency & Duration (SAMPLE 100 year 3 Hour)	**10yr-24hr**	[10] Total Adjusted Storm Rain- INCHES	**4.45**
[11] Variable Loss Rate(AVG) - INCHES/HOUR	**n/a**	[12] Minimum Loss Rate (for VAR. LOSS) - IN/HR	**n/a**
[13] Constant Loss Rate - INCHES/HOUR (see note 1)	**0.196**	[14] Low Loss Rate- PERCENT	**80**

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]		[23]	[24]
	Unit time period	Time percent of LAG	Cumlative average percent of ultimate discharge	Distrib Graph percent	Unit Hydrograph CFS HRS/IN	Pattern Percent	Strom Rain IN/HR	LOSS RATE IN/HR		Effective Rain IN/HR	FLOW CFS
		[7] * [15]	(S-Graph)	[17]m-[17]m-1	([4]*[18])/100	(PL E-5.9)	60*[10]*[20]/100*[5]	Max	Low	[21]-[22]	[3]*[23]
							0.178*[20]		[21]-(([21]*([14]/100))		[3]*[23]
1		**n/a**	**n/a**	**n/a**	**n/a**	0.2	0.036	0.196	0.029	0.007	0.1
2						0.3	0.053	0.196	0.042	0.011	0.1
3						0.3	0.053	0.196	0.042	0.011	0.1
4						0.4	0.071	0.196	0.057	0.014	0.1
5						0.3	0.053	0.196	0.042	0.011	0.1
6						0.3	0.053	0.196	0.042	0.011	0.1
7						0.3	0.053	0.196	0.042	0.011	0.1
8		**SHORTCUT METHOD**				0.4	0.071	0.196	0.057	0.014	0.1
9						0.4	0.071	0.196	0.057	0.014	0.1
10						0.4	0.071	0.196	0.057	0.014	0.1
11						0.5	0.089	0.196	0.071	0.018	0.1
12						0.5	0.089	0.196	0.071	0.018	0.1
13						0.5	0.089	0.196	0.071	0.018	0.1
14						0.5	0.089	0.196	0.071	0.018	0.1
15						0.5	0.089	0.196	0.071	0.018	0.1
16						0.6	0.107	0.196	0.086	0.021	0.2
17						0.6	0.107	0.196	0.086	0.021	0.2
18						0.7	0.125	0.196	0.100	0.025	0.2
19						0.7	0.125	0.196	0.100	0.025	0.2
20						0.8	0.142	0.196	0.114	0.028	0.2
21						0.6	0.107	0.196	0.086	0.021	0.2
22						0.7	0.125	0.196	0.100	0.025	0.2
23						0.8	0.142	0.196	0.114	0.028	0.2
24						0.8	0.142	0.196	0.114	0.028	0.2
25						0.9	0.160	0.196	0.128	0.032	0.2
26						0.9	0.160	0.196	0.128	0.032	0.2
27						1	0.178	0.196	0.142	0.036	0.3
28						1	0.178	0.196	0.142	0.036	0.3
29						1	0.178	0.196	0.142	0.036	0.3
30						1.1	0.196	0.196		0.000	0.0
31						1.2	0.214	0.196		0.018	0.1
32						1.3	0.231	0.196		0.035	0.3
33						1.5	0.267	0.196		0.071	0.5
34						1.5	0.267	0.196		0.071	0.5
35						1.6	0.285	0.196		0.089	0.6
36						1.7	0.303	0.196		0.107	0.8
37						1.9	0.338	0.196		0.142	1.0
38						2	0.356	0.196		0.160	1.2
39						2.1	0.374	0.196		0.178	1.3

RCFC & WCD	SYNTHETIC UNIT HYDROGRAPH METHOD Unit Hydrograph and Effective Rain Calculation Form	Project:	Date: 05-13-2022	Sheet
		First Lincoln Logistics -TPM 38437		2 of 3
		Banning, CA		

[1] Concentration Point	**1**	[2] Area Designation	**Post-Project A**
[3] Drainage Area Sq Miles (THIS WORKSHEET in ACRES)	**7.2**	[4] Ultimate Discharge-CFS-HRS/IN (645*[3])	**n/a**
[5] Unit Time Minutes (SAMPLE 100% -200% of LAG)	**15**	[6] LAG Time Minutes (0.8*Tc)	**7.2**
[7] Unit Time-Percent of Lag (100*[5]/[6])	**n/a**	[8] S-Curve	**n/a**
[9] Storm Frequency & Duration (SAMPLE 100 year 3 Hour)	**10yr-24hr**	[10] Total Adjusted Storm Rain- INCHES	**4.45**
[11] Variable Loss Rate(AVG) - INCHES/HOUR	**n/a**	[12] Minimum Loss Rate (for VAR. LOSS) - IN/HR	**n/a**
[13] Constant Loss Rate - INCHES/HOUR (see note 1)	**0.196**	[14] Low Loss Rate- PERCENT	**80**

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]		[23]	[24]
	Unit time period	Time percent of LAG	Cumlative average percent of ultimate discharge	Distrib Graph percent	Unit Hydrograph CFS HRS/IN	Pattern Percent	Strom Rain IN/HR	LOSS RATE IN/HR		Effective Rain IN/HR	FLOW CFS
		[7] * [15]	(S-Graph)	[17]m-[17]m-1	([4]*[18])/100	(PL E-5.9)	60*[10]*[20]/100*[5]	Max	Low	[21]-[22]	[3]*[23]
							0.178*[20]		[21]-(([21]*([14]/100))		[3]*[23]
40						2.2	0.392	0.196		0.196	1.4
41						1.5	0.267	0.196		0.071	0.5
42						1.5	0.267	0.196		0.071	0.5
43						2	0.356	0.196		0.160	1.2
44						2	0.356	0.196		0.160	1.2
45						1.9	0.338	0.196		0.142	1.0
46						1.9	0.338	0.196		0.142	1.0
47						1.7	0.303	0.196		0.107	0.8
48						1.8	0.320	0.196		0.124	0.9
49						2.5	0.445	0.196		0.249	1.8
50						2.6	0.463	0.196		0.267	1.9
51						2.8	0.498	0.196		0.302	2.2
52						2.9	0.516	0.196		0.320	2.3
53						3.4	0.605	0.196		0.409	2.9
54						3.4	0.605	0.196		0.409	2.9
55						2.3	0.409	0.196		0.213	1.5
56						2.3	0.409	0.196		0.213	1.5
57						2.7	0.481	0.196		0.285	2.1
58						2.6	0.463	0.196		0.267	1.9
59						2.6	0.463	0.196		0.267	1.9
60						2.5	0.445	0.196		0.249	1.8
61						2.4	0.427	0.196		0.231	1.7
62						2.3	0.409	0.196		0.213	1.5
63						1.9	0.338	0.196		0.142	1.0
64						1.9	0.338	0.196		0.142	1.0
65						0.4	0.071	0.196	0.057	0.014	0.1
66						0.4	0.071	0.196	0.057	0.014	0.1
67						0.3	0.053	0.196	0.042	0.011	0.1
68						0.3	0.053	0.196	0.042	0.011	0.1
69						0.5	0.089	0.196	0.071	0.018	0.1
70						0.5	0.089	0.196	0.071	0.018	0.1
71						0.5	0.089	0.196	0.071	0.018	0.1
72						0.4	0.071	0.196	0.057	0.014	0.1
73						0.4	0.071	0.196	0.057	0.014	0.1
74						0.4	0.071	0.196	0.057	0.014	0.1
75						0.3	0.053	0.196	0.042	0.011	0.1
76						0.2	0.036	0.196	0.029	0.007	0.1
77						0.3	0.053	0.196	0.042	0.011	0.1
78						0.4	0.071	0.196	0.057	0.014	0.1

RCFC & WCD	SYNTHETIC UNIT HYDROGRAPH METHOD Unit Hydrograph and Effective Rain Calculation Form	Project: **First Lincoln Logistics -TPM 38437** Banning, CA	Date: 05-13-2022	Sheet 3 of 3

[1] Concentration Point	**1**	[2] Area Designation	**Post-Project A**
[3] Drainage Area Sq Miles (THIS WORKSHEET in ACRES)	**7.2**	[4] Ultimate Discharge-CFS-HRS/IN (645*[3])	**n/a**
[5] Unit Time Minutes (SAMPLE 100% -200% of LAG)	**15**	[6] LAG Time Minutes (0.8*Tc)	**7.2**
[7] Unit Time-Percent of Lag (100*[5]/[6])	**n/a**	[8] S-Curve	**n/a**
[9] Storm Frequency & Duration (SAMPLE 100 year 3 Hour)	**10yr-24hr**	[10] Total Adjusted Storm Rain- INCHES	**4.45**
[11] Variable Loss Rate(AVG) - INCHES/HOUR	**n/a**	[12] Minimum Loss Rate (for VAR. LOSS) - IN/HR	**n/a**
[13] Constant Loss Rate - INCHES/HOUR (see note 1)	**0.196**	[14] Low Loss Rate- PERCENT	**80**

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]		[23]	[24]
	Unit time period	Time percent of LAG	Cumlative average percent of ultimate discharge	Distrib Graph percent	Unit Hydrograph CFS HRS/IN	Pattern Percent	Strom Rain IN/HR	LOSS RATE IN/HR		Effective Rain IN/HR	FLOW CFS
		[7] * [15]	(S-Graph)	[17]m-[17]m-1	([4]*[18])/100	(PL E-5.9)	60*[10]*[20]/100*[5]	Max	Low	[21]-[22]	[3]*[23]
							0.178*[20]		[21]-(([21]*([14]/100))		[3]*[23]
79						0.3	0.053	0.196	0.042	0.011	0.1
80						0.2	0.036	0.196	0.029	0.007	0.1
81						0.3	0.053	0.196	0.042	0.011	0.1
82						0.3	0.053	0.196	0.042	0.011	0.1
83						0.3	0.053	0.196	0.042	0.011	0.1
84						0.2	0.036	0.196	0.029	0.007	0.1
85						0.3	0.053	0.196	0.042	0.011	0.1
86						0.2	0.036	0.196	0.029	0.007	0.1
87						0.3	0.053	0.196	0.042	0.011	0.1
88						0.2	0.036	0.196	0.029	0.007	0.1
89						0.3	0.053	0.196	0.042	0.011	0.1
90						0.2	0.036	0.196	0.029	0.007	0.1
91						0.2	0.036	0.196	0.029	0.007	0.1
92						0.2	0.036	0.196	0.029	0.007	0.1
93						0.2	0.036	0.196	0.029	0.007	0.1
94						0.2	0.036	0.196	0.029	0.007	0.1
95						0.2	0.036	0.196	0.029	0.007	0.1
96						0.2	0.036	0.196	0.029	0.007	0.1
						100			SUM	7.20	

Notes:

1. Fp obtained from Plate E-6.2; Loss Rate (F) from page E-8
where F=Fp if 100 percent pervious cover

Effective Rain= Sum[23] * Unit Time (HRS)
= 7.2*(15/60)= 7.2*0.25
= **1.80** **INCHES**

Flood Volume = Effective Rain * Area
= 1.8*(1/12)*7.2 ACRES
1.08 **ACRE-FEET**

Plate E-2.2

Prevailing Chamber Volume

1.08 ac-ft - 0.36 ac-ft = 0.72 ac-ft = 31,400 cu.ft.

Pre-project
100 year peak run-off

```
            Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
      Rational Hydrology Study        Date: 07/11/22  File:lin100yrtpmpre.out
------------------------------------------------------------------------
First Lincoln Logistics; Banning, CA
Pre Project Preliminary Model
100yr TPM preliminary study
vadjr 07.11.2022
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 6026

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =  100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation =  0.600(In.)
100 year, 1 hour precipitation =  1.770(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity =  1.770(In/Hr)
Slope of intensity duration curve = 0.5300


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       10.010 to Point/Station       10.020
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------
Initial area flow distance =   785.000(Ft.)
Top (of initial area) elevation =  2339.400(Ft.)
Bottom (of initial area) elevation =  2318.500(Ft.)
Difference in elevation =    20.900(Ft.)
Slope =    0.02662  s(percent)=       2.66
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   15.746 min.
Rainfall intensity =      3.597(In/Hr) for a   100.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.761
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  67.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =     19.188(CFS)
Total initial stream area =        7.010(Ac.)
Pervious area fraction = 1.000
End of computations, total study area =            7.01 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  67.0
```

Post Project
100yr Peak Runoff

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
Rational Hydrology Study Date: 07/12/22 File:lin100yrtpmpost.out

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First Lincoln Logistics; Banning, CA
Post Project Preliminary Study
100 year 2042611703
vadjr 7.12.2022

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 6026

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.600(In.)
100 year, 1 hour precipitation = 1.770(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.770(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 20.010 to Point/Station 20.020
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 420.000(Ft.)
Top (of initial area) elevation = 2339.400(Ft.)
Bottom (of initial area) elevation = 2323.300(Ft.)
Difference in elevation = 16.100(Ft.)
Slope = 0.03833 s(percent)= 3.83
TC = k(0.336)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 7.226 min.
Rainfall intensity = 5.435(In/Hr) for a 100.0 year storm
MOBILE HOME PARK subarea type
Runoff Coefficient = 0.823
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 32.00
Pervious area fraction = 0.250; Impervious fraction = 0.750
Initial subarea runoff = 17.888(CFS)
Total initial stream area = 4.000(Ac.)
Pervious area fraction = 0.250

++
Process from Point/Station 20.020 to Point/Station 20.030
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****

Post Project
100yr Peak Runoff

```
Upstream point/station elevation =  2317.300(Ft.)
Downstream point/station elevation =  2311.000(Ft.)
Pipe length  =   695.00(Ft.)   Manning's N = 0.014
No. of pipes = 1  Required pipe flow  =    17.888(CFS)
Nearest computed pipe diameter  =     24.00(In.)
Calculated individual pipe flow  =    17.888(CFS)
Normal flow depth in pipe =   17.72(In.)
Flow top width inside pipe =   21.10(In.)
Critical Depth =   18.28(In.)
Pipe flow velocity =      7.20(Ft/s)
Travel time through pipe =    1.61 min.
Time of concentration (TC) =     8.84 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       20.030 to Point/Station       20.030
**** SUBAREA FLOW ADDITION ****
------------------------------------------------------------------------------
COMMERCIAL subarea type
Runoff Coefficient = 0.867
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  32.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =     8.84 min.
Rainfall intensity =      4.885(In/Hr) for a   100.0 year storm
Subarea runoff =     13.553(CFS) for      3.200(Ac.)
Total runoff =     31.442(CFS)      Total area =       7.200(Ac.)
End of computations, total study area =            7.20 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.183
Area averaged RI index number =  32.0
```

RCFC & WCD	SYNTHETIC UNIT HYDROGRAPH METHOD Unit Hydrograph and Effective Rain Calculation Form	Project: **First Lincoln Logistics -TPM 38437** Banning, CA	Date: 07-11-2022	Sheet 1 of 1

[1] Concentration Point	1	[2] Area Designation	PreProject A
[3] Drainage Area Sq Miles (THIS WORKSHEET in ACRES)	7	[4] Ultimate Discharge-CFS-HRS/IN (645*[3])	n/a
[5] Unit Time Minutes (SAMPLE 100% -200% of LAG)	10	[6] LAG Time Minutes (0.8*Tc)	12.6
[7] Unit Time-Percent of Lag (100*[5]/[6])	n/a	[8] S-Curve	n/a
[9] Storm Frequency & Duration (SAMPLE 100 year 3 Hour)	100yr-3hr	[10] Total Adjusted Storm Rain- INCHES	2.66
[11] Variable Loss Rate(AVG) - INCHES/HOUR	n/a	[12] Minimum Loss Rate (for VAR. LOSS) - IN/HR	n/a
[13] Constant Loss Rate - INCHES/HOUR (see note 1)	0.4	[14] Low Loss Rate- PERCENT	90

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]		[23]	[24]
	Unit time period	Time percent of LAG	Cumlative average percent of ultimate discharge	Distrib Graph percent	Unit Hydrograph CFS-HRS/IN	Pattern Percent	Strom Rain IN/HR	LOSS RATE IN/HR		Effective Rain IN/HR	FLOW CFS
		[7] * [15]	(S-Graph)	[17]m-[17]m-1	([4]*[18])/100	(PL E-5.9)	60*[10]*[20]/100*[5]	Max	Low	[21]-[22]	[3]*[23]
							0.1596*[20]		[21]-(([21]*([14]/100))		[3]*[23]
1		n/a	n/a	n/a	n/a	2.6	0.415	0.4		0.01	0.1
2						2.6	0.415	0.4		0.01	0.1
3						3.3	0.527	0.4		0.13	0.9
4						3.3	0.527	0.4		0.13	0.9
5						3.3	0.527	0.4		0.13	0.9
6						3.4	0.543	0.4		0.14	1.0
7						4.4	0.702	0.4		0.30	2.1
8		SHORTCUT METHOD				4.2	0.670	0.4		0.27	1.9
9						5.3	0.846	0.4		0.45	3.1
10						5.1	0.814	0.4		0.41	2.9
11						6.4	1.021	0.4		0.62	4.4
12						5.9	0.942	0.4		0.54	3.8
13						7.3	1.165	0.4		0.77	5.4
14						8.5	1.357	0.4		0.96	6.7
15						14.1	2.250	0.4		1.85	13.0
16						14.1	2.250	0.4		1.85	13.0
17						3.8	0.606	0.4		0.21	1.4
18						2.4	0.383	0.4	0.35	0.35	2.4
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											
31											
32											
33											
34											
35											
36											
						100			SUM	9.13	

Notes:

1. Fp obtained from Plate E-6.2; Loss Rate (F) from page E-8

where F=Fp if 100 percent pervious cover

Effective Rain= Sum[23] * Unit Time (HRS)

= 9.13*(10/60)= 9.13*0.1667

= **1.52** **INCHES**

Flood Volume = Effective Rain * Area

= 1.52*(1/12)*7 ACRES

0.89 **ACRE-FEET**

Plate E-2.2

RCFC & WCD	SYNTHETIC UNIT HYDROGRAPH METHOD Unit Hydrograph and Effective Rain Calculation Form	Project: **First Lincoln Logistics -TPM 38437** Banning, CA	Date: 05-13-2022	Sheet 1 of 1

[1] Concentration Point	**1**	[2] Area Designation	**Post Project A**
[3] Drainage Area Sq Miles (THIS WORKSHEET in ACRES)	**7.2**	[4] Ultimate Discharge-CFS-HRS/IN (645*[3])	**n/a**
[5] Unit Time Minutes (SAMPLE 100% -200% of LAG)	**10**	[6] LAG Time Minutes (0.8*Tc)	**9**
[7] Unit Time-Percent of Lag (100*[5]/[6])	**n/a**	[8] S-Curve	**n/a**
[9] Storm Frequency & Duration (SAMPLE 100 year 3 Hour)	**100yr-3hr**	[10] Total Adjusted Storm Rain- INCHES	**2.66**
[11] Variable Loss Rate(AVG) - INCHES/HOUR	**n/a**	[12] Minimum Loss Rate (for VAR. LOSS) - IN/HR	**n/a**
[13] Constant Loss Rate - INCHES/HOUR (see note 1)	**0.2**	[14] Low Loss Rate- PERCENT	**80**

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]		[23]	[24]
	Unit time period	Time percent of LAG	Cumlative average percent of ultimate discharge	Distrib Graph percent	Unit Hydrograph CFS-HRS/IN	Pattern Percent	Strom Rain IN/HR	LOSS RATE IN/HR		Effective Rain IN/HR	FLOW CFS
		[7] * [15]	(S-Graph)	[17]m-[17]m-1	([4]*[18])/100	(PL E-5.9)	60*[10]*[20]/100*[5]	Max	Low	[21]-[22]	[3]*[23]
							0.1596*[20]		[21]-(([21]*([14]/100))		[3]*[23]
1		**n/a**	**n/a**	**n/a**	**n/a**	2.6	0.415	0.2		0.21	1.5
2						2.6	0.415	0.2		0.21	1.5
3						3.3	0.527	0.2		0.33	2.4
4						3.3	0.527	0.2		0.33	2.4
5						3.3	0.527	0.2		0.33	2.4
6						3.4	0.543	0.2		0.34	2.5
7						4.4	0.702	0.2		0.50	3.6
8		**SHORTCUT METHOD**				4.2	0.670	0.2		0.47	3.4
9						5.3	0.846	0.2		0.65	4.7
10						5.1	0.814	0.2		0.61	4.4
11						6.4	1.021	0.2		0.82	5.9
12						5.9	0.942	0.2		0.74	5.3
13						7.3	1.165	0.2		0.97	6.9
14						8.5	1.357	0.2		1.16	8.3
15						14.1	2.250	0.2		2.05	14.8
16						14.1	2.250	0.2		2.05	14.8
17						3.8	0.606	0.2		0.41	2.9
18						2.4	0.383	0.2		0.18	1.3
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											
31											
32											
33											
34											
35											
36											
						100			SUM	12.36	

Notes:

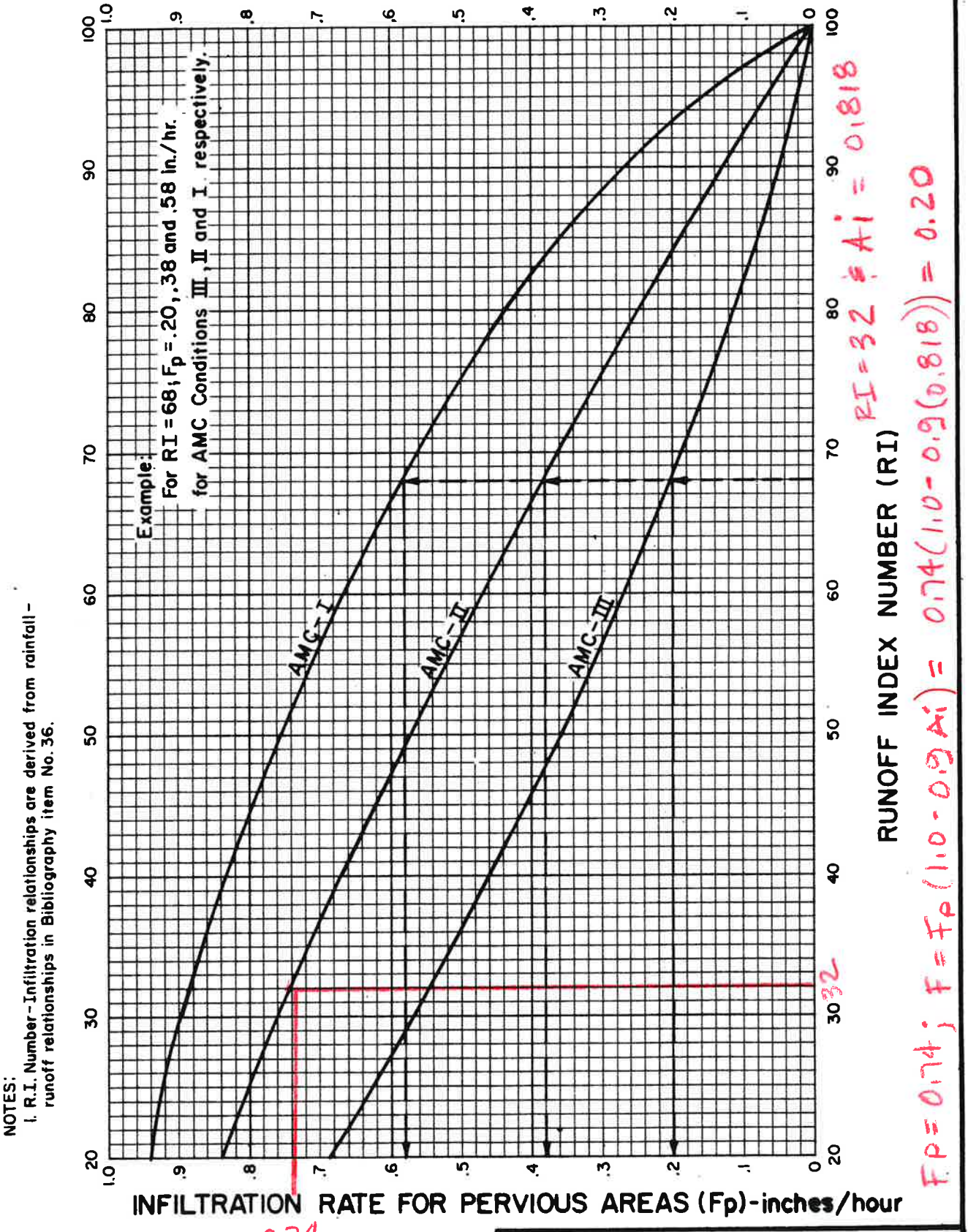
1. Fp obtained from Plate E-6.2; Loss Rate (F) from page E-8
where F=Fp if 100 percent pervious cover

Effective Rain= Sum[23] * Unit Time (HRS)
= 12.36*(10/60)= 12.36*0.1667
= **2.06** **INCHES**

Flood Volume = Effective Rain * Area
= 2.06*(1/12)*7.2 ACRES
1.24 **ACRE-FEET**

Plate E-2.2

POST PROJECT



NOTES:
1. R.I. Number-Infiltration relationships are derived from rainfall-runoff relationships in Bibliography item No. 36.

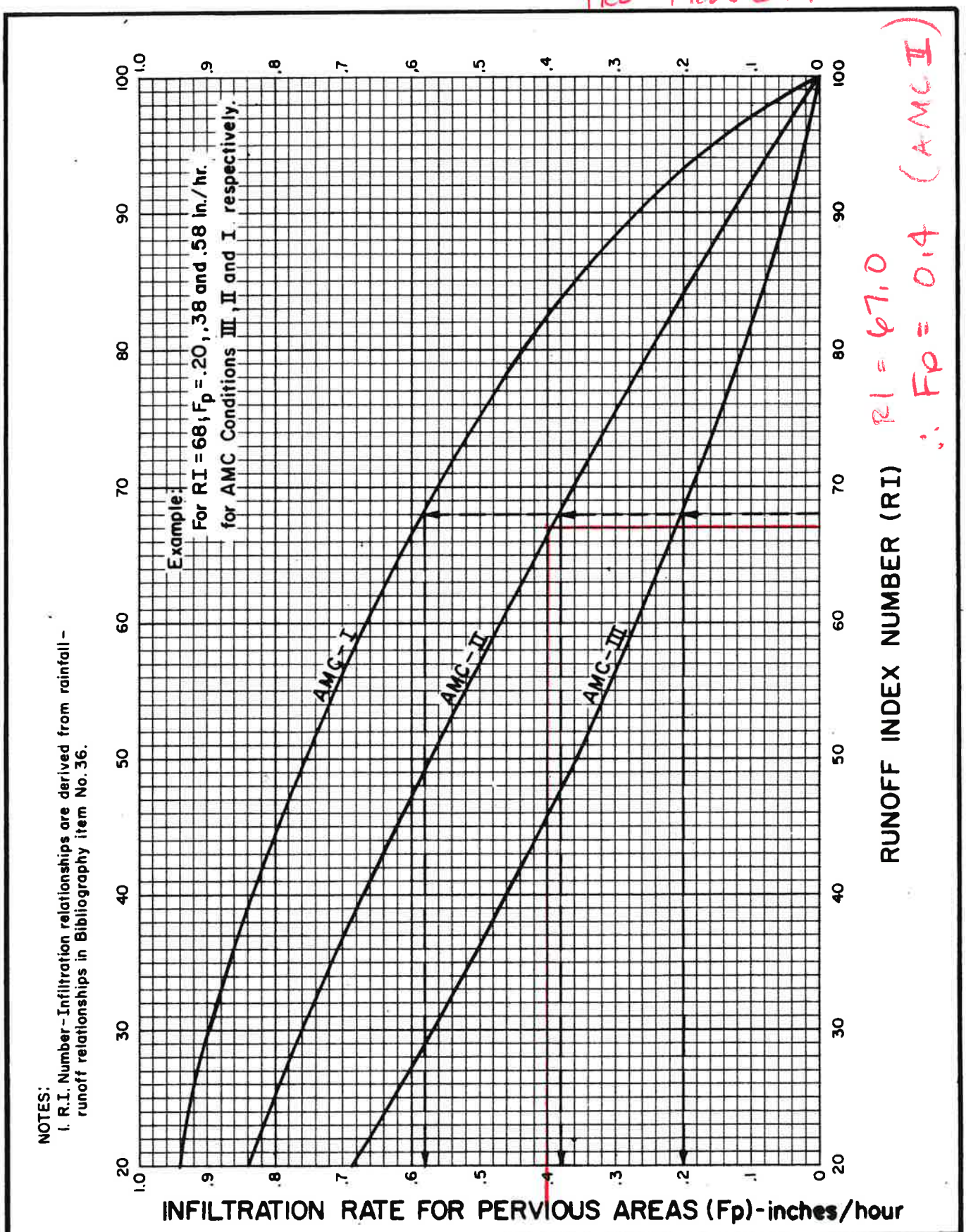
RCFC & WCD

HYDROLOGY MANUAL

INFILTRATION RATE FOR PERVIOUS AREAS VERSUS RUNOFF INDEX NUMBERS

PLATE E-6.2

PRE-PROJECT



RI = 67.0
∴ Fp = 0.4 (AMC II)

NOTES:
1. R.I. Number-Infiltration relationships are derived from rainfall-runoff relationships in Bibliography item No. 36.

RCFC & WCD

HYDROLOGY MANUAL

INFILTRATION RATE FOR PERVIOUS AREAS VERSUS RUNOFF INDEX NUMBERS

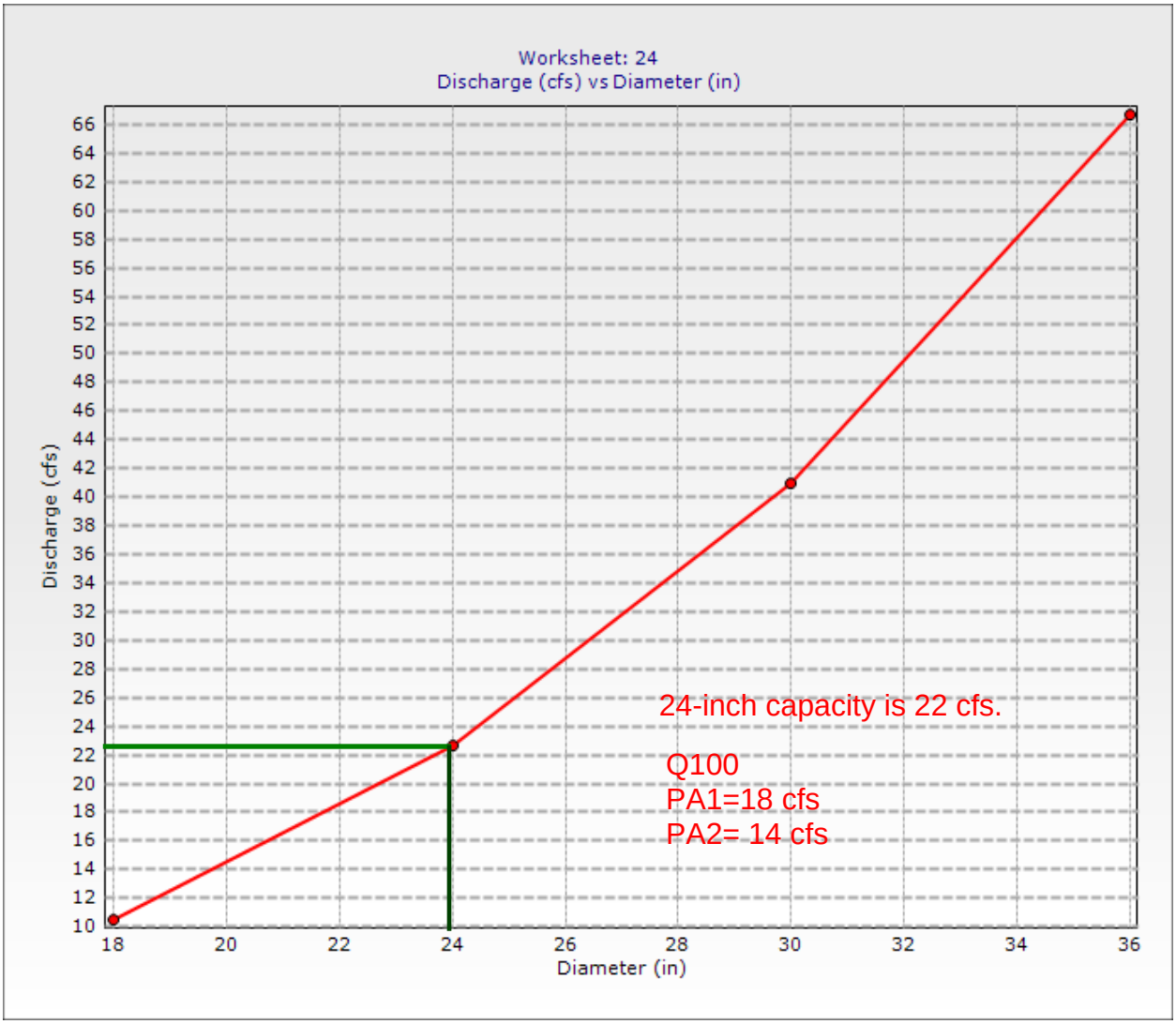
PLATE E-6.2

-Preliminary-
SUBJECT TO VALUE ENGINEERING

PreliminaryPipeCapacity

Project Description	
Friction Method	Manning Formula
Solve For	Full Flow Capacity

Input Data	
Roughness Coefficient	0.013
Channel Slope	0.010 ft/ft
Normal Depth	2.00 ft
Diameter	24.0 in
Discharge	22.62 cfs



Storm drain pipe size of 24-inches is applicable to on-site conveyance system.

-Preliminary-
SUBJECT TO VALUE ENGINEERING

Worksheet for Dock-Area-Slotted-Drain

Project Description	
Solve For	Spread

Input Data	
Discharge	18.00 cfs
Gutter Width	3.00 ft
Gutter Cross Slope	0.010 ft/ft
Road Cross Slope	0.010 ft/ft
Slot Width	0.15 ft
Slot Length	40.00 ft
Local Depression	0.0 in
Local Depression Width	0.0 in

Results	
Spread	32.05 ft
Depth	0.32 ft
Gutter Depression	0.0 in
Total Depression	0.0 in
Open Slot Area	6.0 ft²

Notes:

Based on Contech Slotted Drain.

Opening width = 1 3/4 inches.

-Preliminary-
SUBJECT TO VALUE ENGINEERING

Worksheet for Drainage-Inlets

Project Description	
Solve For	Spread

Input Data	
Discharge	14.00 cfs
Left Side Slope	0.010 H:V
Right Side Slope	0.040 H:V
Bottom Width	3.00 ft
Grate Width	2.00 ft
Grate Length	6.66 ft
Local Depression	0.0 in
Local Depression Width	0.0 in
Grate Type	P-50 mm (P-1 -7/8")
Clogging	50.0 %

Results	
Spread	3.02 ft
Depth	0.45 ft
Wetted Perimeter	3.91 ft
Top Width	3.02 ft
Open Grate Area	6.0 ft²
Active Grate Weir Length	15.32 ft

Notes:

Grating Per SPPWC Std. 305-3
Grating Catch Basin

Frame and Grate per SPPWC Std. 311-3

Single Grate
40 3/8 inches x 24 1/4 inches

Worksheet for bmp_curb_openings

Project Description	
Solve For	Curb Opening Length

Input Data		
Discharge	14.00	cfs
Slope	0.022	ft/ft
Gutter Width	1.50	ft
Gutter Cross Slope	0.083	ft/ft
Road Cross Slope	0.020	ft/ft
Roughness Coefficient	0.015	
Efficiency	100.00	%
Local Depression	0.0	in
Local Depression Width	0.0	in

Results		
Curb Opening Length	51.46	ft
Intercepted Flow	14.00	cfs
Bypass Flow	0.00	cfs
Spread	15.97	ft
Depth	0.41	ft
Flow Area	2.6	ft²
Gutter Depression	1.1	in
Total Depression	1.1	in
Velocity	5.34	ft/s
Equivalent Cross Slope	0.038	ft/ft
Length Factor	1.000	
Total Interception Length	51.46	ft

>>>>>>>>>>>>>>>

This Worksheet is added to Drainage Study to address a plan check comment on the Grading Exhibit to validate the BMP curb opening width.

>>>>>>>>>>>>>>>

Input:
Q100 peak for sub-area PA2, in its entirety, is 14 cfs.

From above:
Minimum curb opening length to capture Q100 for entire sub-area is 52 feet.

At 2' wide curb openings (10' on center) the minimum curb length is 260 feet.

From site plan, openings are planned for both west and south curbs:
(a) west curb length exceeds 260ft;
(b) south curb length exceeds 380ft.

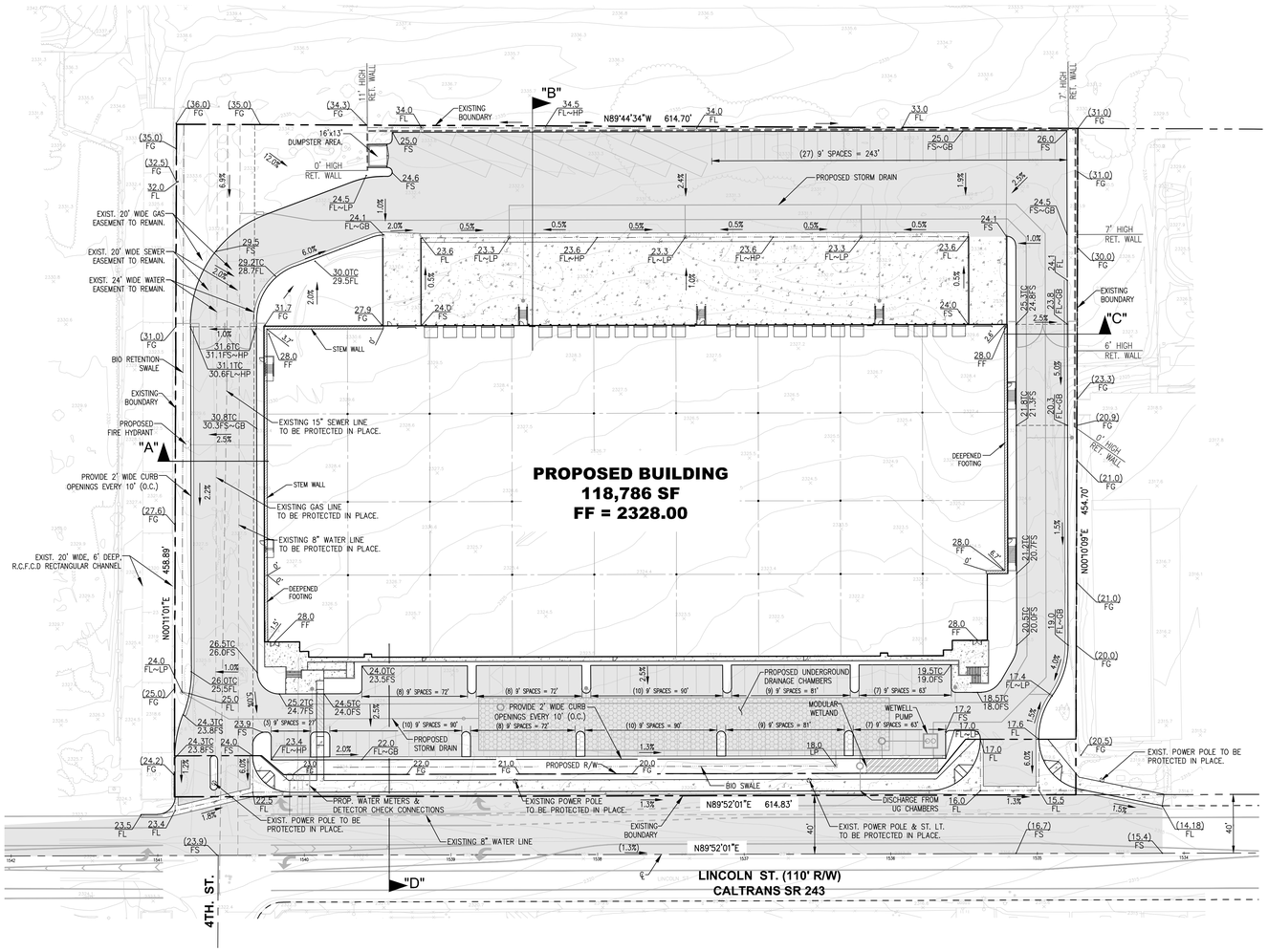
Findings:
The proposed curb openings are up-sized to 2' wide and they are calculated to to accommodate Q100 flows.
Since Qbmp is much less that Q100.

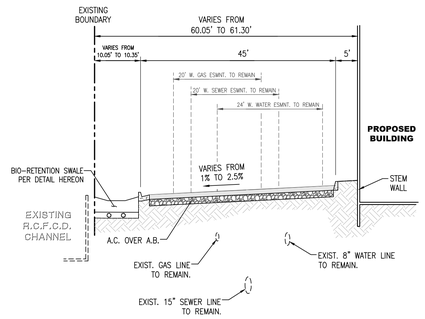
By default Qbmp can easily be accommodated.

Conclusion:
As shown on the Grading Exhibit, the 2' wide curb openings (10' O.C.) exceed minimum opening length to capture Qbmp.

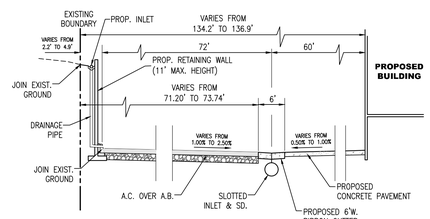
IV. PRELIMINARY GRADING PLAN

PRELIMINARY GRADING & DRAINAGE PLAN
FOR
FIRST LINCOLN LOGISTICS

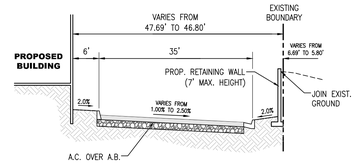




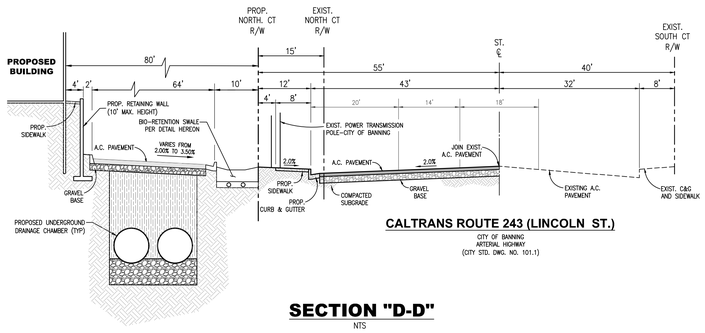
SECTION "A-A"
NTS



SECTION "B-B"
NTS

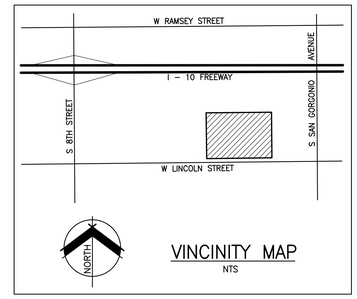


SECTION "C-C"
NTS



CALTRANS ROUTE 243 (LINCOLN ST.)
CITY OF BANNING
ARTERIAL HIGHWAY
(CITY STD. DWG. NO. 101.1)

SECTION "D-D"
NTS



VINCINITY MAP
NTS

OWNER:
FR CA PROPERTY HOLDING, L.P.
898 N. PACIFIC COAST HWY., SUITE 175
EL SEGUNDO, CA 90245
(310) 606-1634

DEVELOPER:
FIRST INDUSTRIAL REALTY TRUST, INC.
898 N. PACIFIC COAST HWY., SUITE 175
EL SEGUNDO, CA 90245
(310) 606-1634

ENGINEER / REP.
STANTEC CONSULTING, INC.
735 E. CARNEGIE DRIVE, SUITE 280
SAN BERNARDINO, CA 92408
ATT: STEPHEN CREVOISERAT, PE.
R.C.E. # 78576
(949) 537-1300

LEGAL DESCRIPTION:
BLOCKS 220 & 232 OF AMENDED MAP OF THE BANNING LAND COMPANY, IN THE CITY OF BANNING, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 9, PAGE 44, OF MAPS, OF SAN BERNARDINO COUNTY, CALIFORNIA.

ASSESSOR'S PARCEL NO:
ASSESSOR'S PARCEL NO: 540-210-009 & 540-210-020

SOILS ENGINEER:
SO CAL GEO
22885 SAVI RANCH PARKWAY, SUITE "E"
YORBA LINDA, CA 92887
(714) 685-1115

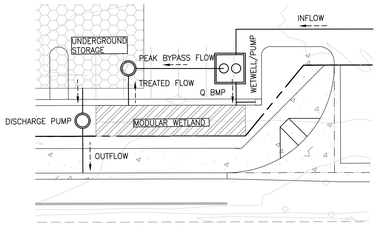
ACREAGE:
TOTALS:
GROSS: 6.45 AC.
NET: 6.17 AC.

BENCH MARK:
NGS BM DX3597 ELEVATION= 2364.82' NAVD88
PER NATIONAL GEODETIC SURVEY (NGS) DATA SHEET.

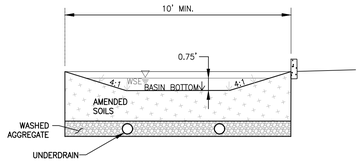
FLOOD ZONE DESIGNATION:
THE AREA OF LAND SHOWN DOES NOT LIE WITHIN A FLOOD ZONE.

LEGEND
- PROPOSED A.C. PAVEMENT
- PROPOSED P.C. CONCRETE
- PROPOSED GRAVEL
- UNDERGROUND CHAMBERS
- MODULAR WETLAND
- RETAINING WALL
- MAP BOUNDARY
- PROPOSED R/W
- EXIST. STREET ℄
- EXIST. EASEMENT
- PROPOSED STRIPING
- EXIST. POWER POLE
- EXIST. STREET LIGHT
- PROPOSED FIRE HYDRANT
- PROPOSED WQMP MANHOLE
- PROPOSED SD INLET

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.



TREATMENT BMP LAYOUT
NTS



BIO-RETENTION SWALE DETAIL
NTS

EARTHWORK QUANTITIES:
CUT = 29,000 C.Y.
FILL = 9,000 C.Y.
EXPORT = 20,000 C.Y.

PREPARED FOR:
FIRST INDUSTRIAL REALTY TRUST
FIRST INDUSTRIAL ACQUISITION II, LLC
898 N. PACIFIC COAST HWY., SUITE 175
EL SEGUNDO, CA 90245 PH: (310) 606-1634

PREPARED BY:
Stantec
735 E. CARNEGIE DRIVE, SUITE 280
SAN BERNARDINO, CA 92408
909.335.6116 stantec.com

REGISTERED PROFESSIONAL ENGINEER STEPHEN F. CREVOISERAT 78576 CIVIL STATE OF CALIFORNIA

CITY OF BANNING
RECOMMENDED FOR APPROVAL BY:
KEVIN D. SIN, RCE # 71299 EXP. DATE
SENIOR CIVIL ENGINEER
RECOMMENDED FOR APPROVAL BY:
NATHAN SMITH, RCE # EXP. DATE
ASST. PWD/CITY ENGINEER

PRELIMINARY GRADING & DRAINAGE PLAN
FOR
FIRST LINCOLN LOGISTICS
BANNING, CA

2042611702

HORIZONTAL SCALE: 1" = 100' VERTICAL SCALE: N/A

SHEET 1 OF 1

NOVEMBER 2022

DRAWING: c:\2042\active\2042611702\drawing\exhibit_files\611702c-px7005.dwg PLOTTED: 11/16/2022 7:07 PM BY: Delgado, Vince

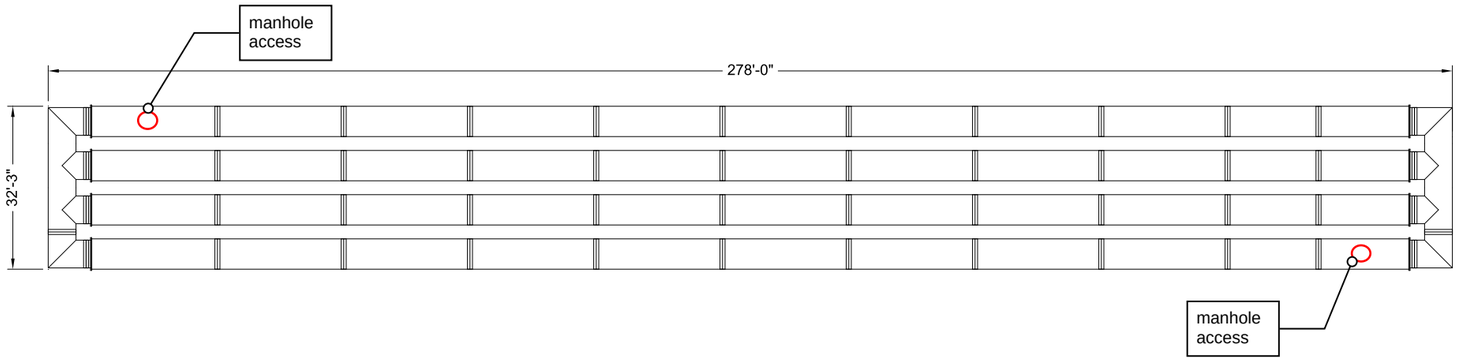
PROJECT SUMMARY

CALCULATION DETAILS
- LOADING = HS20/HS25
- APPROX. LINEAR FOOTAGE = 1,124 LF

STORAGE SUMMARY
- STORAGE VOLUME REQUIRED = N/A
- PIPE STORAGE VOLUME = 31,407 CF
- BACKFILL STORAGE VOLUME = 0 CF
- TOTAL STORAGE PROVIDED = 31,407 CF

PIPE DETAILS
- DIAMETER = 72"
- CORRUGATION = 5x1
- GAGE = 16
- COATING = ALT2
- WALL TYPE = SOLID
- BARREL SPACING = 33"

BACKFILL DETAILS
- WIDTH AT ENDS = 12"
- ABOVE PIPE = 0"
- WIDTH AT SIDES = 12"
- BELOW PIPE = 0"



NOTES

- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE. ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD PRIOR TO RELEASING FOR FABRICATION.
- ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A998.
- ALL RISERS AND STUBS ARE $2\frac{2}{3}$" x $\frac{1}{2}$" CORRUGATION AND 16 GAGE UNLESS OTHERWISE NOTED.
- RISERS TO BE FIELD TRIMMED TO GRADE.
- QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING THE SYSTEM TO EXISTING PIPE OR DRAINAGE STRUCTURES. OUR SYSTEM AS DETAILED PROVIDES NOMINAL INLET AND/OR OUTLET PIPE STUB FOR CONNECTION TO EXISTING DRAINAGE FACILITIES. IF ADDITIONAL PIPE IS NEEDED IT IS THE RESPONSIBILITY OF THE CONTRACTOR.
- BAND TYPE TO BE DETERMINED UPON FINAL DESIGN.
- THE PROJECT SUMMARY IS REFLECTIVE OF THE DYODS DESIGN, QUANTITIES ARE APPROX. AND SHOULD BE VERIFIED UPON FINAL DESIGN AND APPROVAL. FOR EXAMPLE, TOTAL EXCAVATION DOES NOT CONSIDER ALL VARIABLES SUCH AS SHORING AND ONLY ACCOUNTS FOR MATERIAL WITHIN THE ESTIMATED EXCAVATION FOOTPRINT.
- THESE DRAWINGS ARE FOR CONCEPTUAL PURPOSES AND DO NOT REFLECT ANY LOCAL PREFERENCES OR REGULATIONS. PLEASE CONTACT YOUR LOCAL CONTECH REP FOR MODIFICATIONS.

ASSEMBLY
SCALE: 1" = 30'

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DATE	REVISION DESCRIPTION	BY

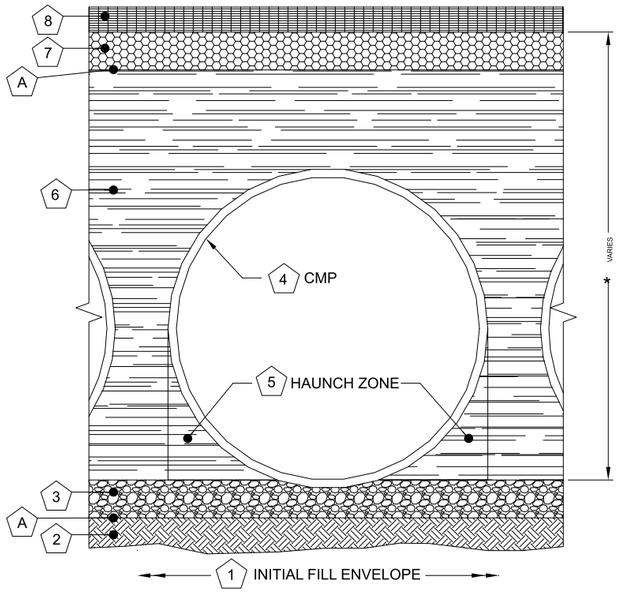
CONTECH® ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CONTECH® CMP DETENTION SYSTEMS
CONTECH **DYODS** DRAWING

DYO17115 Lincoln Logistics
Preliminary Tentative Parcel Map - Detention - 10yr- 24hr Storm
Banning, CA
DETENTION SYSTEM

PROJECT No.:	SEQ. No.:	DATE:
7716	17115	5/17/2022
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.: 1		

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	DETENTION SYSTEMS - CMP DETENTION / CMP DRAINAGE			
	Material Location	Description	Material Designation	Designation
8	Rigid or Flexible Pavement (if applicable)			
7	Road Base (if applicable)			
A	Geotextile Layer	Non-Woven Geotextile	CONTECH C-40 or C-45	Engineer Decision for consideration to prevent soil migration into varying soil types
6	Backfill	Well graded granular material which may contain small amounts of silt or clay.	AASHTO M 145- A-1, A-2, A-3	Placed in 8" +/- loose lifts and compacted to 90% Standard Proctor Per AASHTO T 99
3	Bedding Stone	Well graded granular bedding material w/maximum particle size of 3"	AASHTO M43 - 3,357,4,467, 5, 56, 57	Engineer to determine if bedding is required. Pipe may be placed on the trench bottom of a relatively loose, native suitable well graded & granular material. For Arch pipes it is recommended to be shaped to a relatively flat bottom or fine-grade the foundation to a slight v-shape. Unsuitable material should be over-excavated and re-placed with a 4"-6" layer of well graded & granular stone per the material designation. See AASHTO 26.3.8.1 / 26.5.3 Bedding info.
A	Geotextile Layer	Non-Woven Geotextile	CONTECH C-40 or C-45	Engineer Decision for consideration to prevent soil migration into varying soil types
*	*Note: Backfill using controlled low-strength material (CLSM, "flash fill" or "flowable fill") when the spacing between the pipes will not allow for placement and adequate compaction of the backfill.*			

1 MINIMUM WIDTH DEPENDS ON SITE CONDITIONS AND ENGINEERING JUDGEMENT

FOUNDATION/BEDDING PREPARATION

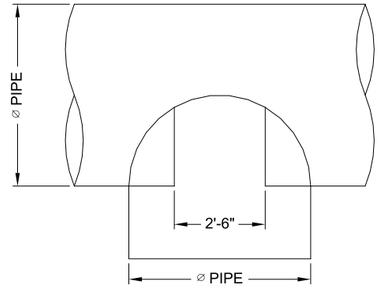
2 PRIOR TO PLACING THE BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, THEY SHALL BE REMOVED AND BROUGHT BACK TO THE GRADE WITH A FILL MATERIAL AS APPROVED BY THE ENGINEER.

5 HAUNCH ZONE MATERIAL SHALL BE PLACED AND UNIFORMALLY COMPACTED WITHOUT SOFT SPOTS.

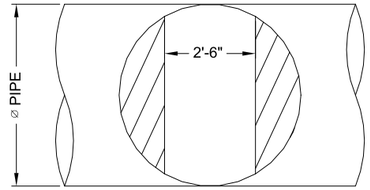
BACKFILL

WHEN PLACING THE FIRST LIFTS OF BACKFILL IT IS IMPORTANT TO MAKE SURE THAT THE BACKFILL IS PROPERLY COMPACTED UNDER AND AROUND THE PIPE HAUNCHES. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO LIFT (16") DIFFERENTIAL BETWEEN ANY OF THE PIPES AT ANY TIME DURING THE BACKFILL PROCESS. THE BACKFILL SHALL BE ADVANCED ALONG THE LENGTH OF THE DETENTION SYSTEM AT THE SAME RATE TO AVOID DIFFERENTIAL LOADING ON THE PIPE.

OTHER ALTERNATE BACKFILL MATERIAL MAY BE ALLOWED DEPENDING ON SITE SPECIFIC CONDITIONS, AS APPROVED BY SITE ENGINEER.



PLAN

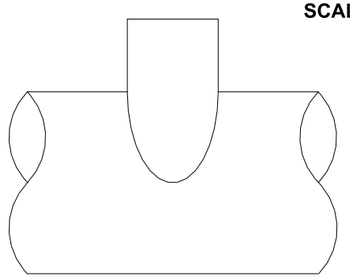


FRONT

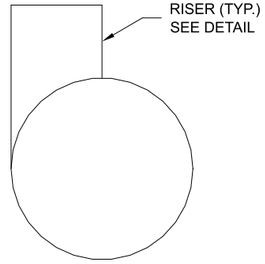
NOTE:
MANWAY DETAIL APPLICABLE FOR CMP SYSTEMS WITH DIAMETERS 48" AND LARGER. MANWAYS MAY BE REQUIRED ON SMALLER SYSTEMS DEPENDING ON ACTUAL SITE SPECIFIC CONDITIONS.

TYPICAL MANWAY DETAIL

SCALE: N.T.S.



ELEVATION

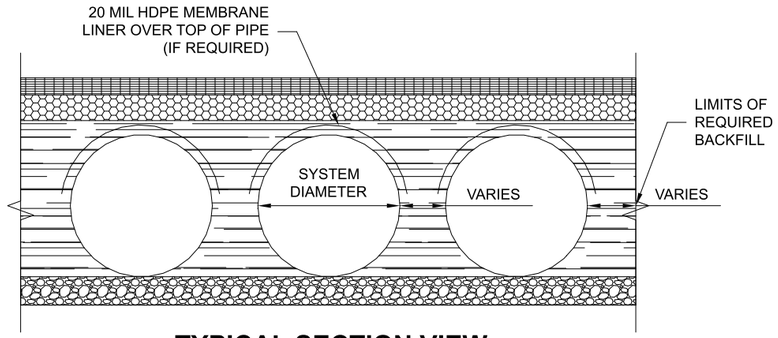


END

NOTE:
LADDERS ARE OPTIONAL AND ARE NOT REQUIRED FOR ALL SYSTEMS.

TYPICAL RISER DETAIL

SCALE: N.T.S.



TYPICAL SECTION VIEW

LINER OVER ROWS
SCALE: N.T.S.

NOTE: IF SALTING AGENTS FOR SNOW AND ICE REMOVAL ARE USED ON OR NEAR THE PROJECT, AN HDPE MEMBRANE LINER IS RECOMMENDED WITH THE SYSTEM. THE IMPERMEABLE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM A CHANGE IN THE SURROUNDING ENVIRONMENT OVER A PERIOD OF TIME. PLEASE REFER TO THE CORRUGATED METAL PIPE DETENTION DESIGN GUIDE FOR ADDITIONAL INFORMATION.

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DATE	REVISION DESCRIPTION	BY

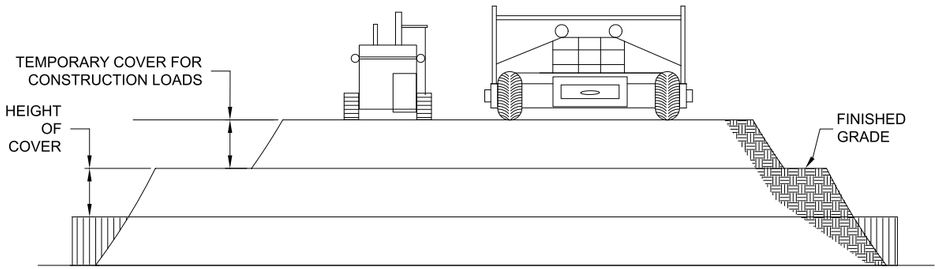
CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CONTECH CMP DETENTION SYSTEMS
CONTECH DYODS DRAWING

DYO17115 Lincoln Logistics
Preliminary Tentative Parcel Map - Detention - 10yr- 24hr Storm
Banning, CA
DETENTION SYSTEM

PROJECT No.:	SEQ. No.:	DATE:
7716	17115	5/17/2022
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.: 1		

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CONSTRUCTION LOADS

FOR TEMPORARY CONSTRUCTION VEHICLE LOADS, AN EXTRA AMOUNT OF COMPACTED COVER MAY BE REQUIRED OVER THE TOP OF THE PIPE. THE HEIGHT-OF-COVER SHALL MEET THE MINIMUM REQUIREMENTS SHOWN IN THE TABLE BELOW. THE USE OF HEAVY CONSTRUCTION EQUIPMENT NECESSITATES GREATER PROTECTION FOR THE PIPE THAN FINISHED GRADE COVER MINIMUMS FOR NORMAL HIGHWAY TRAFFIC.

PIPE SPAN, INCHES	AXLE LOADS (kips)			
	18-50	50-75	75-110	110-150
	MINIMUM COVER (FT)			
12-42	2.0	2.5	3.0	3.0
48-72	3.0	3.0	3.5	4.0
78-120	3.0	3.5	4.0	4.0
126-144	3.5	4.0	4.5	4.5

*MINIMUM COVER MAY VARY, DEPENDING ON LOCAL CONDITIONS. THE CONTRACTOR MUST PROVIDE THE ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE PIPE. MINIMUM COVER IS MEASURED FROM THE TOP OF THE PIPE TO THE TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE.

CONSTRUCTION LOADING DIAGRAM

SCALE: N.T.S.

SPECIFICATION FOR DESIGNED DETENTION SYSTEM:

SCOPE
THIS SPECIFICATION COVERS THE MANUFACTURE AND INSTALLATION OF THE DESIGNED DETENTION SYSTEM DETAILED IN THE PROJECT PLANS.

MATERIAL
THE MATERIAL SHALL CONFORM TO THE APPLICABLE REQUIREMENTS LISTED BELOW:

ALUMINIZED TYPE 2 STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-274 OR ASTM A-92.

THE GALVANIZED STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-218 OR ASTM A-929.

THE POLYMER COATED STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-246 OR ASTM A-742.

THE ALUMINUM COILS SHALL CONFORM TO THE APPLICABLE OF AASHTO M-197 OR ASTM B-744.

CONSTRUCTION LOADS
CONSTRUCTION LOADS MAY BE HIGHER THAN FINAL LOADS. FOLLOW THE MANUFACTURER'S OR NCSPA GUIDELINES.

PIPE
THE PIPE SHALL BE MANUFACTURED IN ACCORDANCE TO THE APPLICABLE REQUIREMENTS LISTED BELOW:

ALUMINIZED TYPE 2: AASHTO M-36 OR ASTM A-760

GALVANIZED: AASHTO M-36 OR ASTM A-760

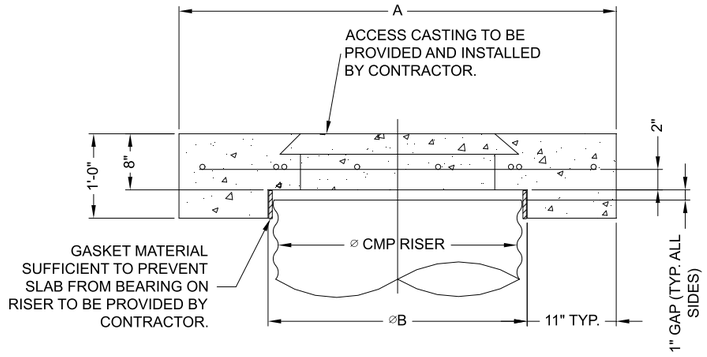
APPLICABLE POLYMER COATED: AASHTO M-245 OR ASTM A-762

ALUMINUM: AASHTO M-196 OR ASTM B-745

APPLICABLE
HANDLING AND ASSEMBLY
SHALL BE IN ACCORDANCE WITH NCSP'S (NATIONAL CORRUGATED STEEL PIPE ASSOCIATION) FOR ALUMINIZED TYPE 2, GALVANIZED OR POLYMER COATED STEEL. SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR ALUMINUM PIPE.
REQUIREMENTS
INSTALLATION
SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 26, DIVISION II DIVISION II OR ASTM A-798 (FOR ALUMINIZED TYPE 2, GALVANIZED OR POLYMER COATED STEEL) OR ASTM B-788 (FOR ALUMINUM PIPE) AND IN CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. IF THERE ARE ANY INCONSISTENCIES OR CONFLICTS THE CONTRACTOR SHOULD DISCUSS AND RESOLVE WITH THE SITE ENGINEER.

IT IS ALWAYS THE RESPONSIBILITY OF THE CONTRACTOR TO FOLLOW OSHA GUIDELINES FOR SAFE PRACTICES.

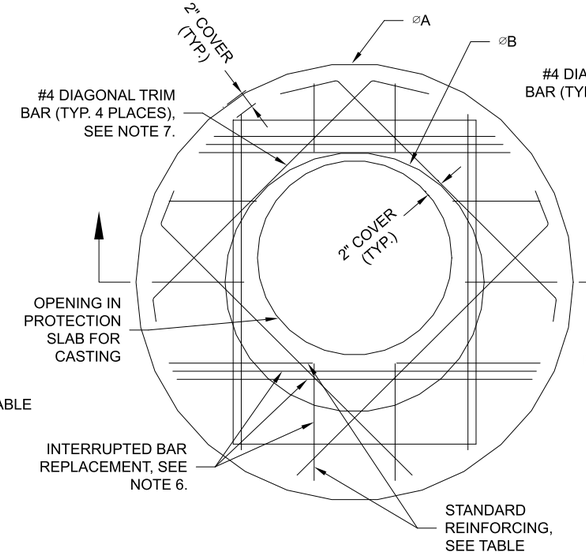
NOTE:
THESE DRAWINGS ARE FOR CONCEPTUAL PURPOSES AND DO NOT REFLECT ANY LOCAL PREFERENCES OR REGULATIONS. PLEASE CONTACT YOUR LOCAL CONTECH REP FOR MODIFICATIONS.



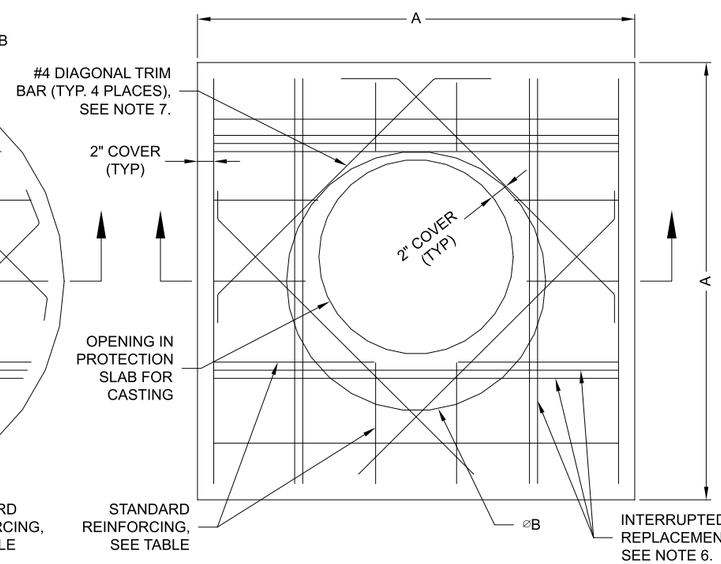
SECTION VIEW

REINFORCING TABLE				
⌀ CMP RISER	A	⌀ B	REINFORCING	**BEARING PRESSURE (PSF)
24"	⌀ 4' 4'X4'	26"	#5 @ 12" OCEW #5 @ 12" OCEW	2,410 1,780
30"	⌀ 4'-6" 4'-6" X 4'-6"	32"	#5 @ 12" OCEW #5 @ 12" OCEW	2,120 1,530
36"	⌀ 5' 5' X 5'	38"	#5 @ 10" OCEW #5 @ 10" OCEW	1,890 1,350
42"	⌀ 5'-6" 5'-6" X 5'-6"	44"	#5 @ 10" OCEW #5 @ 9" OCEW	1,720 1,210
48"	⌀ 6' 6' X 6'	50"	#5 @ 9" OCEW #5 @ 8" OCEW	1,600 1,100

** ASSUMED SOIL BEARING CAPACITY



ROUND OPTION PLAN VIEW



SQUARE OPTION PLAN VIEW

NOTES:

1. DESIGN IN ACCORDANCE WITH AASHTO, 17th EDITION.
2. DESIGN LOAD HS25.
3. EARTH COVER = 1' MAX.
4. CONCRETE STRENGTH = 3,500 psi
5. REINFORCING STEEL = ASTM A615, GRADE 60.
6. PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS EQUAL TO THE BARS INTERRUPTED, HALF EACH SIDE. ADDITIONAL BARS TO BE IN THE SAME PLANE.
7. TRIM OPENING WITH DIAGONAL #4 BARS, EXTEND BARS A MINIMUM OF 12" BEYOND OPENING, BEND BARS AS REQUIRED TO MAINTAIN BAR COVER.
8. PROTECTION SLAB AND ALL MATERIALS TO BE PROVIDED AND INSTALLED BY CONTRACTOR.
9. DETAIL DESIGN BY DELTA ENGINEERING, BINGHAMTON, NY.

MANHOLE CAP DETAIL

SCALE: N.T.S.

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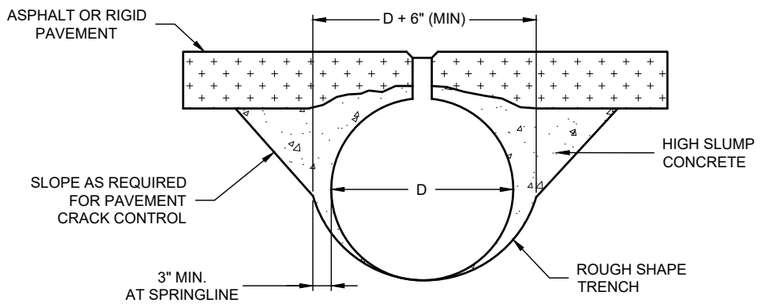
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CONTECH CMP DETENTION SYSTEMS
CONTECH DYODS DRAWING

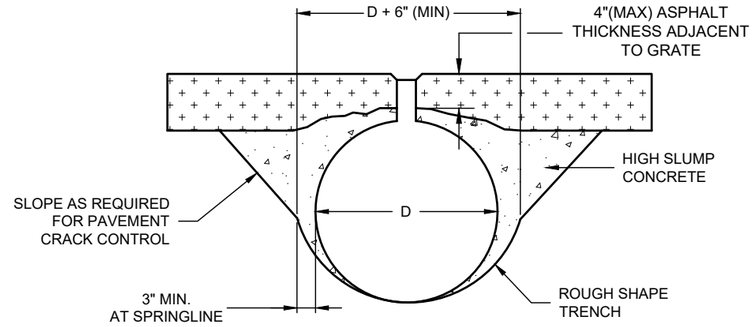
DYO17115 Lincoln Logistics
Preliminary Tentative Parcel Map - Detention - 10yr- 24hr Storm
Banning, CA
DETENTION SYSTEM

PROJECT No.:	SEQ. No.:	DATE:
7716	17115	5/17/2022
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.: 1		

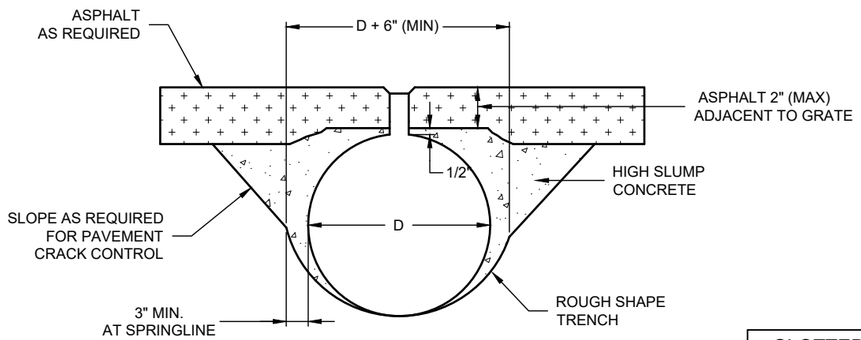
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2 1/2" AND DEEPER GRATES
ASPHALT OR RIGID PAVEMENT



6" AND DEEPER GRATES
ASPHALT PAVEMENT



2 1/2" GRATE DEPTH
ASPHALT PAVEMENT

REQUIREMENTS:

1 EITHER 2-1/2" OR 6" DEEP GRATING IS ACCEPTABLE FOR STANDARD HIGHWAY (H10, H20, H25 & HL93) LOADS USING THE GAGES IN THE TABLE TO THE RIGHT. HIGH SLUMP CONCRETE BACKFILL IS REQUIRED WITH THE ENVELOPE EXTENDING A MINIMUM OF 3 INCHES BEYOND THE SPRINGLINE, AS SHOWN ABOVE. THE HIGH SLUMP CONCRETE MUST PROVIDE A MINIMUM OF 750 PSI COMPRESSIVE STRENGTH.

2 FOR INSTALLATION SUBJECTED TO OCCASIONAL LIGHT VEHICLE (LESS THAN H10) LOADS, SELECTED GRANULAR BACKFILL MAY BE USED. HOWEVER, THE SLOTTED DRAIN MUST BE SET IN A TRENCH WIDE ENOUGH TO PROPERLY HAUNCH THE PIPE (TYPICALLY D + 36"). THE GRANULAR BACKFILL MUST BE CLEAN, NON-PLASTIC, WELL GRADED MATERIAL, COMPACTED TO 95% STANDARD PROCTOR DENSITY.

3 DURING INSTALLATION, RECESS THE TOP OF THE GRATE 1/4" BELOW THE FINISHED GRADE OF THE PAVEMENT.

4 PAVEMENT DESIGNS BY OTHERS. FOR REINFORCED CONCRETE PAVEMENTS, CONTINUE THE REINFORCEMENT OVER THE SLOTTED DRAIN. FOR UNREINFORCED CONCRETE PAVEMENTS, MINIMUM SHRINKAGE STEEL IS RECOMMENDED.

5 HEAVIER WHEEL LOADS REQUIRE THE USE OF MINIMUM 6" DEEP GRATING AND TYPICALLY A LARGER HIGH SLUMP CONCRETE EMBEDMENT ZONE. (SEE AIRCRAFT & HEAVY LOADING DETAIL).

SLOTTED DRAIN CORRUGATED STEEL PIPE
MINIMUM GAGE REQUIREMENTS
FOR HIGHWAY LOADS

SLOTTED DRAIN CSP	2 1/2" GRATE		6" GRATE	
DIA, D (IN.)	ASPHALT PAVEMENT	CONCRETE PAVEMENT	ASPHALT PAVEMENT	CONCRETE PAVEMENT
12 - 36	16GA			

NOTES:
1. INSTALLATION MUST CONFORM TO STANDARD INSTALLATION DETAILS USING A 750 PSI MINIMUM HIGH SLUMP CONCRETE BACKFILL.
2. REQUIRES A REINFORCED CONCRETE PAVEMENT OR A DEEPER GRATE.

BACKFILL DETAIL FOR HIGHWAY LOADING

NOT TO SCALE

I:\CORPORATE\MARKET\DRAINAGE SOLUTIONS\ACAD DATA\DRAINAGE DETAILS\SLOTTED DRAIN\DWG\0-GRID DETAIL UPDATES\0-SLOTTED DRAIN DETAIL GRID.DWG 11/11/2021 4:23 PM

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CONTECH PIPE SOLUTIONS
CONTECH **CONTRACT** DRAWING

SLOTTED DRAIN
BACKFILL DETAIL FOR HIGHWAY LOADING

PROJECT No.:	SEQ. No.:	DATE: 11/10/2021
DESIGNED:	DRAWN:	
CHECKED:	APPROVED: ----	
SHEET NO.: 3 OF 6		

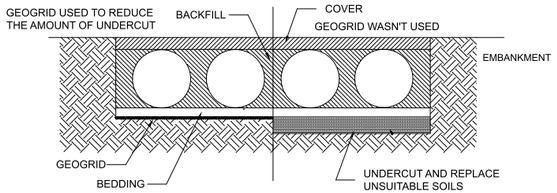
CMP DETENTION INSTALLATION GUIDE

PROPER INSTALLATION OF A FLEXIBLE UNDERGROUND DETENTION SYSTEM WILL ENSURE LONG-TERM PERFORMANCE. THE CONFIGURATION OF THESE SYSTEMS OFTEN REQUIRES SPECIAL CONSTRUCTION PRACTICES THAT DIFFER FROM CONVENTIONAL FLEXIBLE PIPE CONSTRUCTION. CONTECH ENGINEERED SOLUTIONS STRONGLY SUGGESTS SCHEDULING A PRE-CONSTRUCTION MEETING WITH YOUR LOCAL SALES ENGINEER TO DETERMINE IF ADDITIONAL MEASURES, NOT COVERED IN THIS GUIDE, ARE APPROPRIATE FOR YOUR SITE.

FOUNDATION

CONSTRUCT A FOUNDATION THAT CAN SUPPORT THE DESIGN LOADING APPLIED BY THE PIPE AND ADJACENT BACKFILL WEIGHT AS WELL AS MAINTAIN ITS INTEGRITY DURING CONSTRUCTION.

IF SOFT OR UNSUITABLE SOILS ARE ENCOUNTERED, REMOVE THE POOR SOILS DOWN TO A SUITABLE DEPTH AND THEN BUILD UP TO THE APPROPRIATE ELEVATION WITH A COMPETENT BACKFILL MATERIAL. THE STRUCTURAL FILL MATERIAL GRADATION SHOULD NOT ALLOW THE MIGRATION OF FINES, WHICH CAN CAUSE SETTLEMENT OF THE DETENTION SYSTEM OR PAVEMENT ABOVE. IF THE STRUCTURAL FILL MATERIAL IS NOT COMPATIBLE WITH THE UNDERLYING SOILS AN ENGINEERING FABRIC SHOULD BE USED AS A SEPARATOR. IN SOME CASES, USING A STIFF REINFORCING GEOGRID REDUCES OVER EXCAVATION AND REPLACEMENT FILL QUANTITIES.

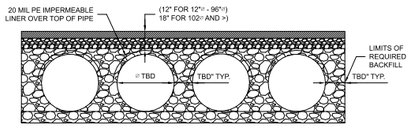


GRADE THE FOUNDATION SUBGRADE TO A UNIFORM OR SLIGHTLY SLOPING GRADE. IF THE SUBGRADE IS CLAY OR RELATIVELY NON-POROUS AND THE CONSTRUCTION SEQUENCE WILL LAST FOR AN EXTENDED PERIOD OF TIME, IT IS BEST TO SLOPE THE GRADE TO ONE END OF THE SYSTEM. THIS WILL ALLOW EXCESS WATER TO DRAIN QUICKLY, PREVENTING SATURATION OF THE SUBGRADE.

GEOMEMBRANE BARRIER

A SITE'S RESISTIVITY MAY CHANGE OVER TIME WHEN VARIOUS TYPES OF SALTING AGENTS ARE USED, SUCH AS ROAD SALTS FOR DEICING AGENTS. IF SALTING AGENTS ARE USED ON OR NEAR THE PROJECT SITE, A GEOMEMBRANE BARRIER IS RECOMMENDED WITH THE SYSTEM. THE GEOMEMBRANE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM THE USE OF SUCH AGENTS INCLUDING PREMATURE CORROSION AND REDUCED ACTUAL SERVICE LIFE.

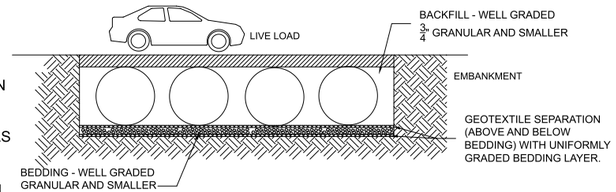
THE PROJECT'S ENGINEER OF RECORD IS TO EVALUATE WHETHER SALTING AGENTS WILL BE USED ON OR NEAR THE PROJECT SITE, AND USE HIS/HER BEST JUDGEMENT TO DETERMINE IF ANY ADDITIONAL PROTECTIVE MEASURES ARE REQUIRED. BELOW IS A TYPICAL DETAIL SHOWING THE PLACEMENT OF A GEOMEMBRANE BARRIER FOR PROJECTS WHERE SALTING AGENTS ARE USED ON OR NEAR THE PROJECT SITE.



IN-SITU TRENCH WALL

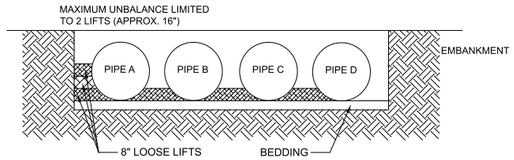
IF EXCAVATION IS REQUIRED, THE TRENCH WALL NEEDS TO BE CAPABLE OF SUPPORTING THE LOAD THAT THE PIPE SHEDS AS THE SYSTEM IS LOADED. IF SOILS ARE NOT CAPABLE OF SUPPORTING THESE LOADS, THE PIPE CAN DEFLECT. PERFORM A SIMPLE SOIL PRESSURE CHECK USING THE APPLIED LOADS TO DETERMINE THE LIMITS OF EXCAVATION BEYOND THE SPRING LINE OF THE OUTER MOST PIPES.

IN MOST CASES THE REQUIREMENTS FOR A SAFE WORK ENVIRONMENT AND PROPER BACKFILL PLACEMENT AND COMPACTION TAKE CARE OF THIS CONCERN.



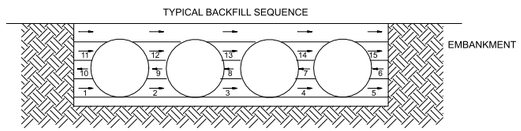
BACKFILL PLACEMENT

MATERIAL SHALL BE WORKED INTO THE PIPE HAUNCHES BY MEANS OF SHOVEL-SLICING, RODDING, AIR TAMPER, VIBRATORY ROD, OR OTHER EFFECTIVE METHODS.

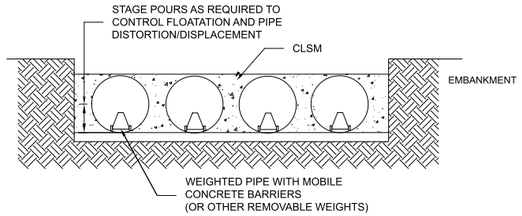


IF AASHTO T99 PROCEDURES ARE DETERMINED INFEASIBLE BY THE GEOTECHNICAL ENGINEER OF RECORD, COMPACTION IS CONSIDERED ADEQUATE WHEN NO FURTHER YIELDING OF THE MATERIAL IS OBSERVED UNDER THE COMPACTOR, OR UNDER FOOT, AND THE GEOTECHNICAL ENGINEER OF RECORD (OR REPRESENTATIVE THEREOF) IS SATISFIED WITH THE LEVEL OF COMPACTION.

FOR LARGE SYSTEMS, CONVEYOR SYSTEMS, BACKHOES WITH LONG REACHES OR DRAGLINES WITH STONE BUCKETS MAY BE USED TO PLACE BACKFILL. ONCE MINIMUM COVER FOR CONSTRUCTION LOADING ACROSS THE ENTIRE WIDTH OF THE SYSTEM IS REACHED, ADVANCE THE EQUIPMENT TO THE END OF THE RECENTLY PLACED FILL, AND BEGIN THE SEQUENCE AGAIN UNTIL THE SYSTEM IS COMPLETELY BACKFILLED. THIS TYPE OF CONSTRUCTION SEQUENCE PROVIDES ROOM FOR STOCKPILED BACKFILL DIRECTLY BEHIND THE BACKHOE, AS WELL AS THE MOVEMENT OF CONSTRUCTION TRAFFIC. MATERIAL STOCKPILES ON TOP OF THE BACKFILLED DETENTION SYSTEM SHOULD BE LIMITED TO 8- TO 10-FEET HIGH AND MUST PROVIDE BALANCED LOADING ACROSS ALL BARRELS. TO DETERMINE THE PROPER COVER OVER THE PIPES TO ALLOW THE MOVEMENT OF CONSTRUCTION EQUIPMENT SEE TABLE 1, OR CONTACT YOUR LOCAL CONTECH SALES ENGINEER.



WHEN FLOWABLE FILL IS USED, YOU MUST PREVENT PIPE FLOATATION. TYPICALLY, SMALL LIFTS ARE PLACED BETWEEN THE PIPES AND THEN ALLOWED TO SET-UP PRIOR TO THE PLACEMENT OF THE NEXT LIFT. THE ALLOWABLE THICKNESS OF THE CLSM LIFT IS A FUNCTION OF A PROPER BALANCE BETWEEN THE UPLIFT FORCE OF THE CLSM, THE OPPOSING WEIGHT OF THE PIPE, AND THE EFFECT OF OTHER RESTRAINING MEASURES. THE PIPE CAN CARRY LIMITED FLUID PRESSURE WITHOUT PIPE DISTORTION OR DISPLACEMENT, WHICH ALSO AFFECTS THE CLSM LIFT THICKNESS. YOUR LOCAL CONTECH SALES ENGINEER CAN HELP DETERMINE THE PROPER LIFT THICKNESS.

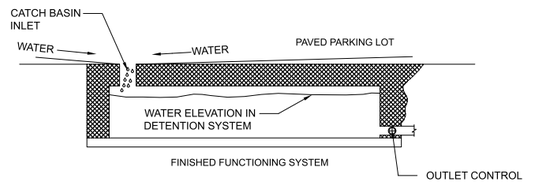


CONSTRUCTION LOADING

TYPICALLY, THE MINIMUM COVER SPECIFIED FOR A PROJECT ASSUMES H-20 LIVE LOAD. BECAUSE CONSTRUCTION LOADS OFTEN EXCEED DESIGN LIVE LOADS, INCREASED TEMPORARY MINIMUM COVER REQUIREMENTS ARE NECESSARY. SINCE CONSTRUCTION EQUIPMENT VARIES FROM JOB TO JOB, IT IS BEST TO ADDRESS EQUIPMENT SPECIFIC MINIMUM COVER REQUIREMENTS WITH YOUR LOCAL CONTECH SALES ENGINEER DURING YOUR PRE-CONSTRUCTION MEETING.

ADDITIONAL CONSIDERATIONS

BECAUSE MOST SYSTEMS ARE CONSTRUCTED BELOW-GRADE, RAINFALL CAN RAPIDLY FILL THE EXCAVATION; POTENTIALLY CAUSING FLOATATION AND MOVEMENT OF THE PREVIOUSLY PLACED PIPES. TO HELP MITIGATE POTENTIAL PROBLEMS, IT IS BEST TO START THE INSTALLATION AT THE DOWNSTREAM END WITH THE OUTLET ALREADY CONSTRUCTED TO ALLOW A ROUTE FOR THE WATER TO ESCAPE. TEMPORARY DIVERSION MEASURES MAY BE REQUIRED FOR HIGH FLOWS DUE TO THE RESTRICTED NATURE OF THE OUTLET PIPE.



CMP DETENTION SYSTEM INSPECTION AND MAINTENANCE

UNDERGROUND STORMWATER DETENTION AND INFILTRATION SYSTEMS MUST BE INSPECTED AND MAINTAINED AT REGULAR INTERVALS FOR PURPOSES OF PERFORMANCE AND LONGEVITY.

INSPECTION

INSPECTION IS THE KEY TO EFFECTIVE MAINTENANCE OF CMP DETENTION SYSTEMS AND IS EASILY PERFORMED. CONTECH RECOMMENDS ONGOING, ANNUAL INSPECTIONS. SITES WITH HIGH TRASH LOAD OR SMALL OUTLET CONTROL ORIFICES MAY NEED MORE FREQUENT INSPECTIONS. THE RATE AT WHICH THE SYSTEM COLLECTS POLLUTANTS WILL DEPEND MORE ON SITE SPECIFIC ACTIVITIES RATHER THAN THE SIZE OR CONFIGURATION OF THE SYSTEM.

INSPECTIONS SHOULD BE PERFORMED MORE OFTEN IN EQUIPMENT WASHDOWN AREAS, IN CLIMATES WHERE SANDING AND/OR SALTING OPERATIONS TAKE PLACE, AND IN OTHER VARIOUS INSTANCES IN WHICH ONE WOULD EXPECT HIGHER ACCUMULATIONS OF SEDIMENT OR ABRASIVE/ CORROSIVE CONDITIONS. A RECORD OF EACH INSPECTION IS TO BE MAINTAINED FOR THE LIFE OF THE SYSTEM

MAINTENANCE

CMP DETENTION SYSTEMS SHOULD BE CLEANED WHEN AN INSPECTION REVEALS ACCUMULATED SEDIMENT OR TRASH IS CLOGGING THE DISCHARGE ORIFICE.

ACCUMULATED SEDIMENT AND TRASH CAN TYPICALLY BE EVACUATED THROUGH THE MANHOLE OVER THE OUTLET ORIFICE. IF MAINTENANCE IS NOT PERFORMED AS RECOMMENDED, SEDIMENT AND TRASH MAY ACCUMULATE IN FRONT OF THE OUTLET ORIFICE. MANHOLE COVERS SHOULD BE SECURELY SEATED FOLLOWING CLEANING ACTIVITIES. CONTECH SUGGESTS THAT ALL SYSTEMS BE DESIGNED WITH AN ACCESS/INSPECTION MANHOLE SITUATED AT OR NEAR THE INLET AND THE OUTLET ORIFICE. SHOULD IT BE NECESSARY TO GET INSIDE THE SYSTEM TO PERFORM MAINTENANCE ACTIVITIES, ALL APPROPRIATE PRECAUTIONS REGARDING CONFINED SPACE ENTRY AND OSHA REGULATIONS SHOULD BE FOLLOWED.

ANNUAL INSPECTIONS ARE BEST PRACTICE FOR ALL UNDERGROUND SYSTEMS. DURING THIS INSPECTION, IF EVIDENCE OF SALTING/DE-ICING AGENTS IS OBSERVED WITHIN THE SYSTEM, IT IS BEST PRACTICE FOR THE SYSTEM TO BE RINSED, INCLUDING ABOVE THE SPRING LINE SOON AFTER THE SPRING THAW AS PART OF THE MAINTENANCE PROGRAM FOR THE SYSTEM.

MAINTAINING AN UNDERGROUND DETENTION OR INFILTRATION SYSTEM IS EASIEST WHEN THERE IS NO FLOW ENTERING THE SYSTEM. FOR THIS REASON, IT IS A GOOD IDEA TO SCHEDULE THE CLEANOUT DURING DRY WEATHER.

THE FOREGOING INSPECTION AND MAINTENANCE EFFORTS HELP ENSURE UNDERGROUND PIPE SYSTEMS USED FOR STORMWATER STORAGE CONTINUE TO FUNCTION AS INTENDED BY IDENTIFYING RECOMMENDED REGULAR INSPECTION AND MAINTENANCE PRACTICES. INSPECTION AND MAINTENANCE RELATED TO THE STRUCTURAL INTEGRITY OF THE PIPE OR THE SOUNDNESS OF PIPE JOINT CONNECTIONS IS BEYOND THE SCOPE OF THIS GUIDE.

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CONTECH CMP DETENTION SYSTEMS

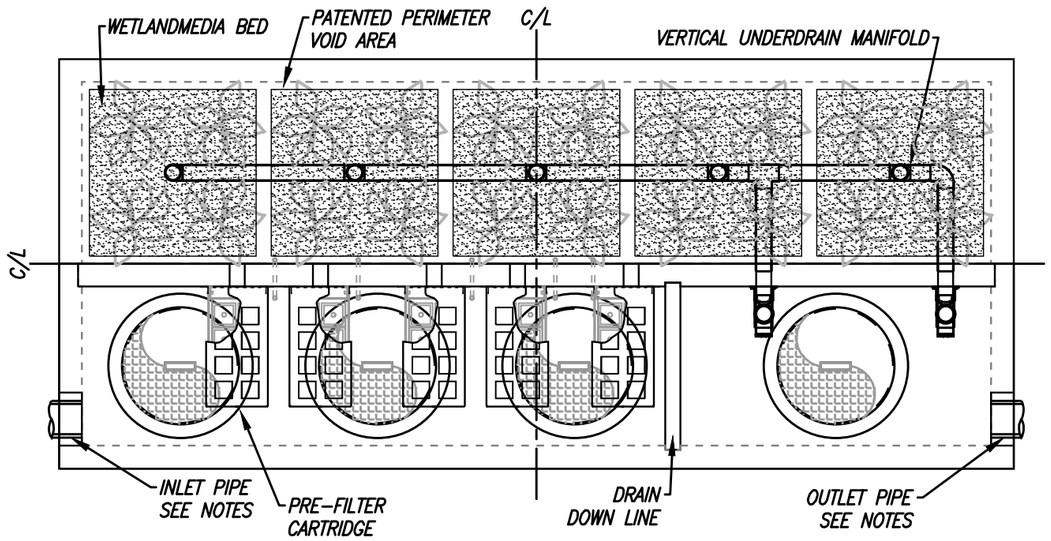
CONTECH **DYODS** DRAWING

DYO17115 Lincoln Logistics
Preliminary Tentative Parcel Map - Detention - 10yr- 24hr Storm
Banning, CA
DETENTION SYSTEM

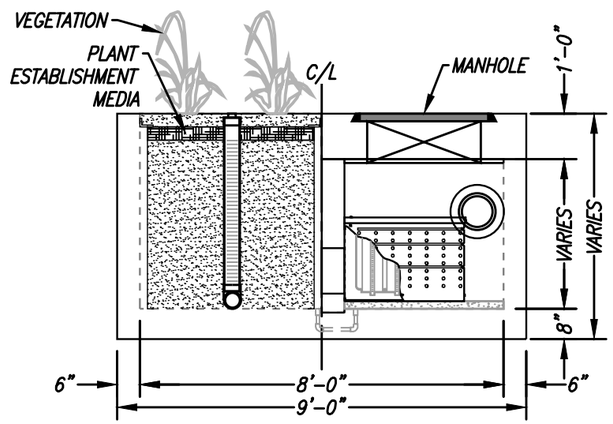
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7716	17115	5/17/2022
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.: 1		

SITE SPECIFIC DATA			
PROJECT NUMBER			
PROJECT NAME			
PROJECT LOCATION			
STRUCTURE ID			
TREATMENT REQUIRED			
FLOW BASED (CFS)			
0.577			
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			OFFLINE
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2	N/A	N/A	N/A
OUTLET PIPE			
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION			
SURFACE LOAD	PEDESTRIAN		
NOTES:			

* PRELIMINARY NOT FOR CONSTRUCTION



PLAN VIEW



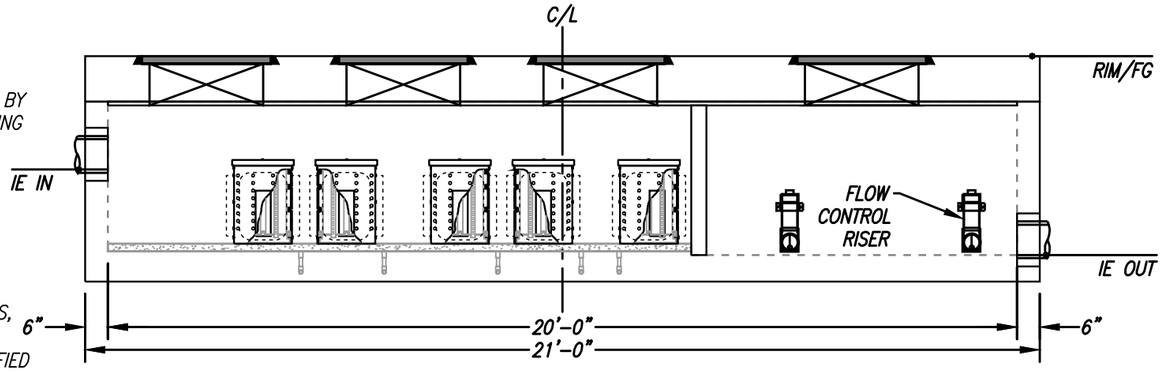
LEFT END VIEW

INSTALLATION NOTES

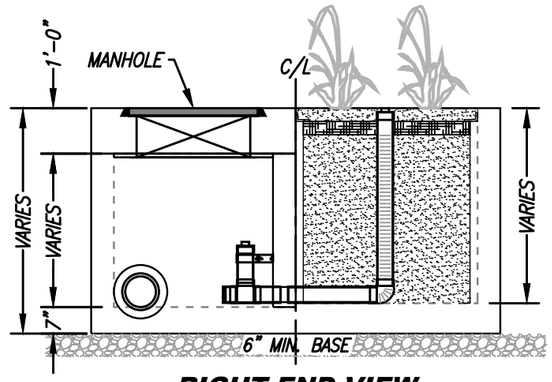
1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURERS' SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURER'S CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE FOR VERIFYING PROJECT ENGINEER'S RECOMMENDED BASE SPECIFICATIONS.
4. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE (PIPES CANNOT INTRUDE BEYOND FLUSH). INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL PIPES SHALL BE SEALED WATERTIGHT PER MANUFACTURER'S STANDARD CONNECTION DETAIL.
5. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL PIPES, RISERS, MANHOLES, AND HATCHES. CONTRACTOR TO USE GROUT AND/OR BRICKS TO MATCH COVERS WITH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
6. VEGETATION SUPPLIED AND INSTALLED BY OTHERS. ALL UNITS WITH VEGETATION MUST HAVE DRIP OR SPRAY IRRIGATION SUPPLIED AND INSTALLED BY OTHERS.
7. CONTRACTOR RESPONSIBLE FOR CONTACTING CONTECH FOR ACTIVATION OF UNIT. MANUFACTURER'S WARRANTY IS VOID WITHOUT PROPER ACTIVATION BY A CONTECH REPRESENTATIVE.

GENERAL NOTES

1. MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT CONTECH.



ELEVATION VIEW



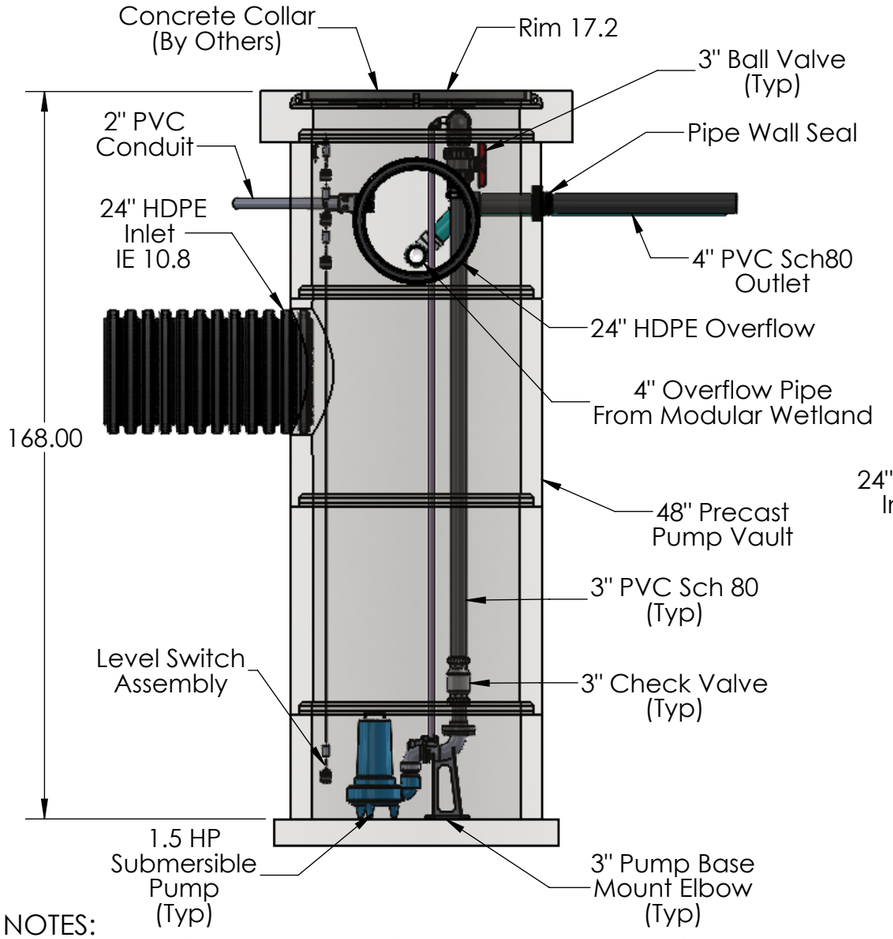
RIGHT END VIEW

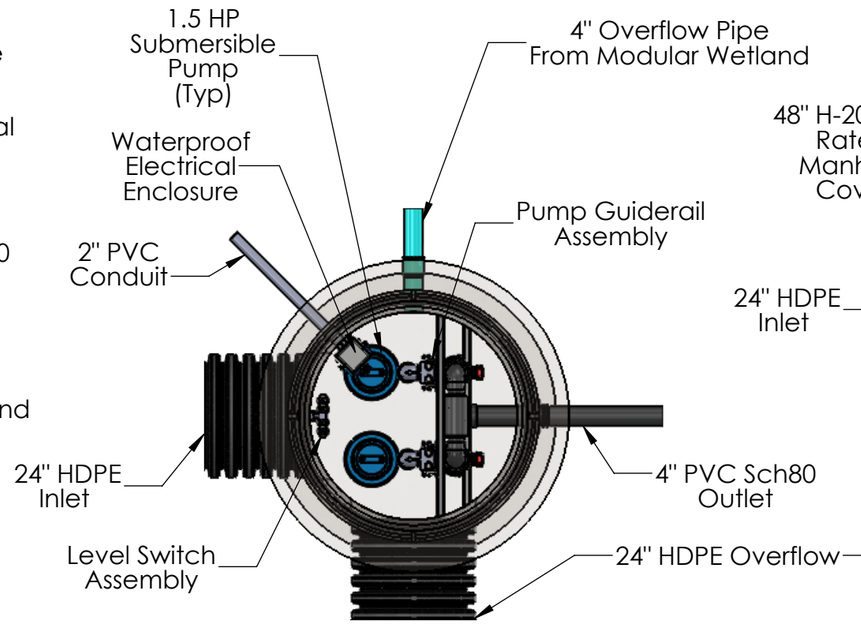
TREATMENT FLOW (CFS)	0.577
OPERATING HEAD (FT)	3.4
PRETREATMENT LOADING RATE (GPM/SF)	2.0
WETLAND MEDIA LOADING RATE (GPM/SF)	1.0

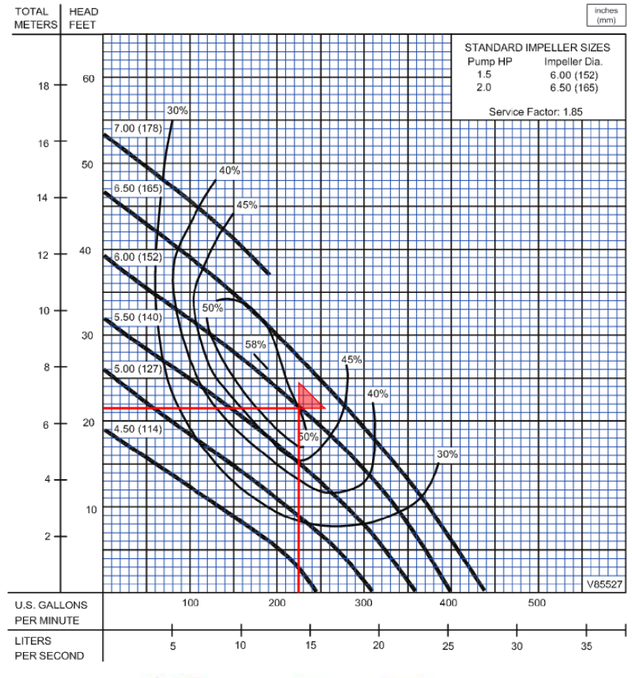
MODULAR WETLANDS
FOR PATENT INFORMATION, GO TO www.ContechES.com/IP

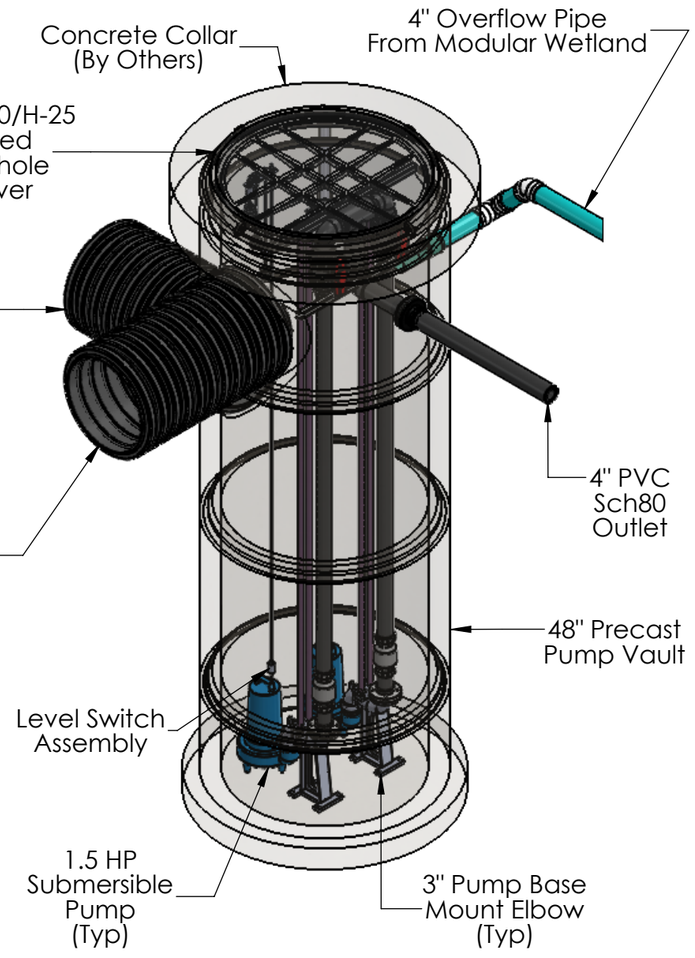
CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com

MWS-L-8-20-V
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL









NOTES:

1. All materials shown on this sheet shall be supplied by Santa Fe Water Systems, Santa Fe Springs, CA, except where noted. Pumps shall be SFWS SWP-15, 200-230v, 3 phase, 13.3A max. Substitution of any component may void warranty.
2. Locate Pump Controller as required for site conditions or Owner direction. Route power and signal cable conduit to vault from controller accordingly. Connections shall be provided by Contractor.
3. Route 4" pump system outlet pipe and 4" Overflow pipe as shown on Civil Sheets.
4. Contractor to provide concrete collar around manhole cover suitable for surface loading conditions.
5. Anti-Floatation flange to be provided on pump vault where required for groundwater conditions.
6. Pump performance requirements based on treatment capacity of downstream Modular Wetland Unit = 225 gpm.

Headloss Calculations		
Fitting	Qty / Length	Headloss
Pipe (3")	12'	1.49'
Pipe (4")	7.5'	0.24'
Check Valve	1	1.85'
90 Elbow (3")	4	5.19'
Tee	1	1.10'
Exit	1	0.61'
Elevation Head		11.13'
Total Headloss @ 225 gpm		21.62'

Santa Fe Water Systems
10244 Freeman Ave, Santa Fe Springs, CA 90670
562-777-9724 / www.SFWSystems.com

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	NAME	DATE
DRAWN	SRG	11/17/22
CHECKED	MDF	11/17/22
ENG APPR.	CKL	11/17/22
REV		

TITLE:
First Lincoln Logistics
Banning, CA
Feed Pump Station

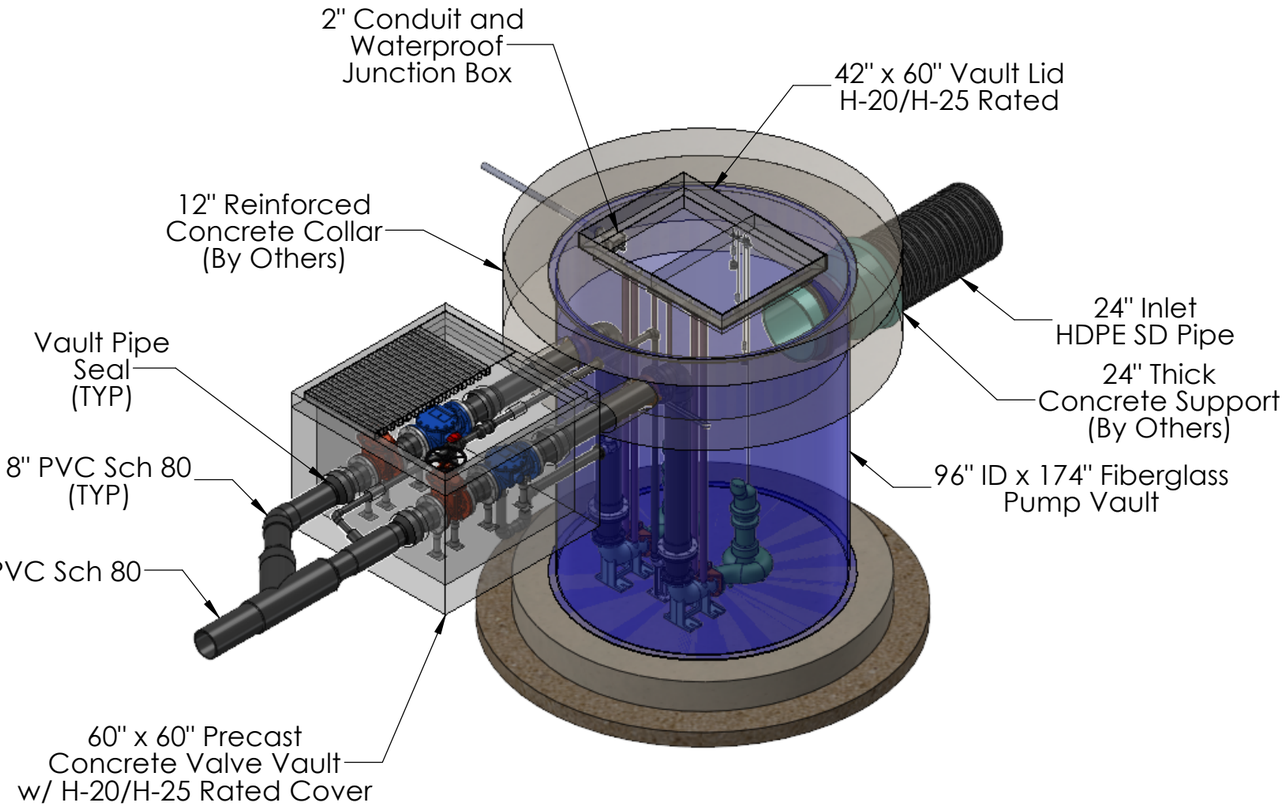
SIZE **B** SHEET1 OF 1

STORMWATER OVERFLOW and HYDROMODIFICATION PUMP STATION DETAIL

FIRST LINCOLN LOGISTICS, BANNING, CA

NOTES:

1. ALL DIMENSIONS AND ELEVATIONS SHOWN ARE NOMINAL DIMENSIONS. IT IS THE RESPONSIBILITY OF THE ON-SITE CONTRACTOR OR CUSTOMER TO VERIFY THE ACCURACY OF ANY CRITICAL DIMENSIONS OR ELEVATIONS PRIOR TO SETTING OR INSTALLING ANY EQUIPMENT.
2. ALL MATERIALS SHOWN ON THIS SHEET SHALL BE SUPPLIED BY SANTA FE WATER SYSTEMS (SFWS) AS A COMPLETE SYSTEM, EXCEPT WHERE NOTED "BY OTHERS". SUBSTITUTION OR OMISSION OF ANY COMPONENT MAY VOID WARRANTY.
3. SYSTEM COMPONENTS SHALL BE DELIVERED TO THE SITE AFTER THE HOLE HAS BEEN EXCAVATED AND SHORED. THE CONTRACTOR SHALL SUPPLY A CRANE OR RIGGING OF SUFFICIENT SIZE TO LOWER ALL PIECES INTO THE HOLE SAFELY.
4. UPON ESTABLISHMENT OF PRIOR AGREEMENT, SANTA FE WATER SYSTEMS WILL PROVIDE A REPRESENTATIVE FOR TECHNICAL ASSISTANCE ON THE DAY OF INSTALLATION TO ANSWER ANY QUESTIONS THAT MAY ARISE.
5. THE CONTRACTOR IS RESPONSIBLE FOR ALL INSTALLATION, INCLUDING, BUT NOT LIMITED TO PLUMBING AND ELECTRICAL CONNECTIONS.
6. SUBMERSIBLE PUMPS (OVERFLOW) TO BE DEMING 6DL, 5HP, 208V/3PH, 15.8 AMP, 6" DISCHARGE, 898 GPM (2CFS) @ 18.75' TDH MIN.
7. SUBMERSIBLE PUMP (HYDROMODIFICATION) TO BE SHINMAYWA 50CR2.15S-1, 0.2HP, 115V/1PH, 3.0 AMP, 2" DISCHARGE, 7.4 GPM (0.0165CFS) @ 15' TDH MIN.
8. CONTROL PANEL SHALL BE SEEWATER TRIPLEX SYSTEM, NEMA 3R.
9. MOUNT PUMP CONTROLLER IN LOCATION SPECIFIED BY OWNER. FOR LOCATIONS GREATER THAN 5 FEET FROM VAULT, CONSULT WITH SFWW TO DETERMINE NEED FOR ADDITIONAL CABLE AND/OR EQUIPMENT.
10. ALL COMPONENTS PROVIDED BY SANTA FE WINWATER SHALL BE SUITABLE FOR USE WITH OPERATIONAL AND ENVIRONMENTAL CONDITIONS.
11. EQUIPMENT DOCUMENTATION SHALL BE PROVIDED FOR REVIEW UPON ACCEPTANCE OF PURCHASE ORDER.
12. COORDINATE PIPE SIZES AND INVERT ELEVATIONS WITH CIVIL SHEETS.
13. ALL STRUCTURES TO BE H-20 INCIDENTAL TRAFFIC RATED FOR PARKING LOT SPEEDS.
14. VALVE VAULT SHALL BE EITHER PRECAST UNITS OR CAST-IN-PLACE AND CONSTRUCTED ACCORDING TO CURRENT BUILDING REGULATIONS.



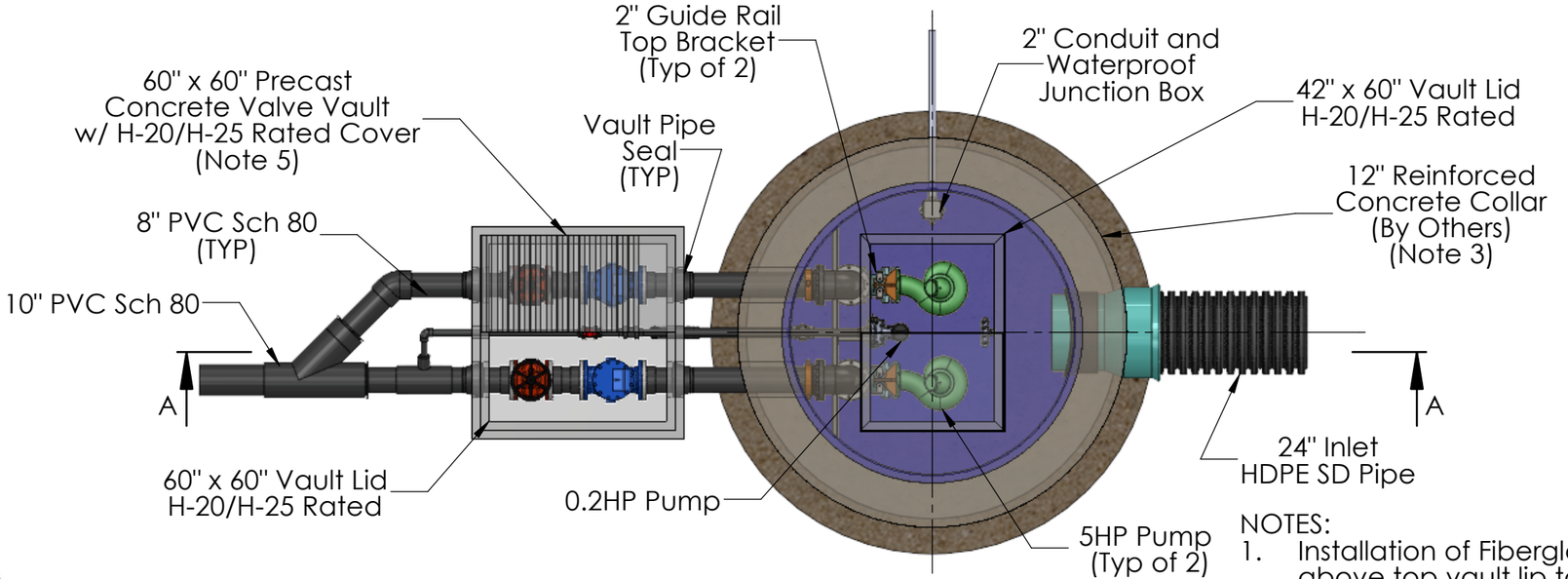
10244 Freeman Ave, Santa Fe Springs, CA 90670
562-777-9724 / www.sfwsystems.com

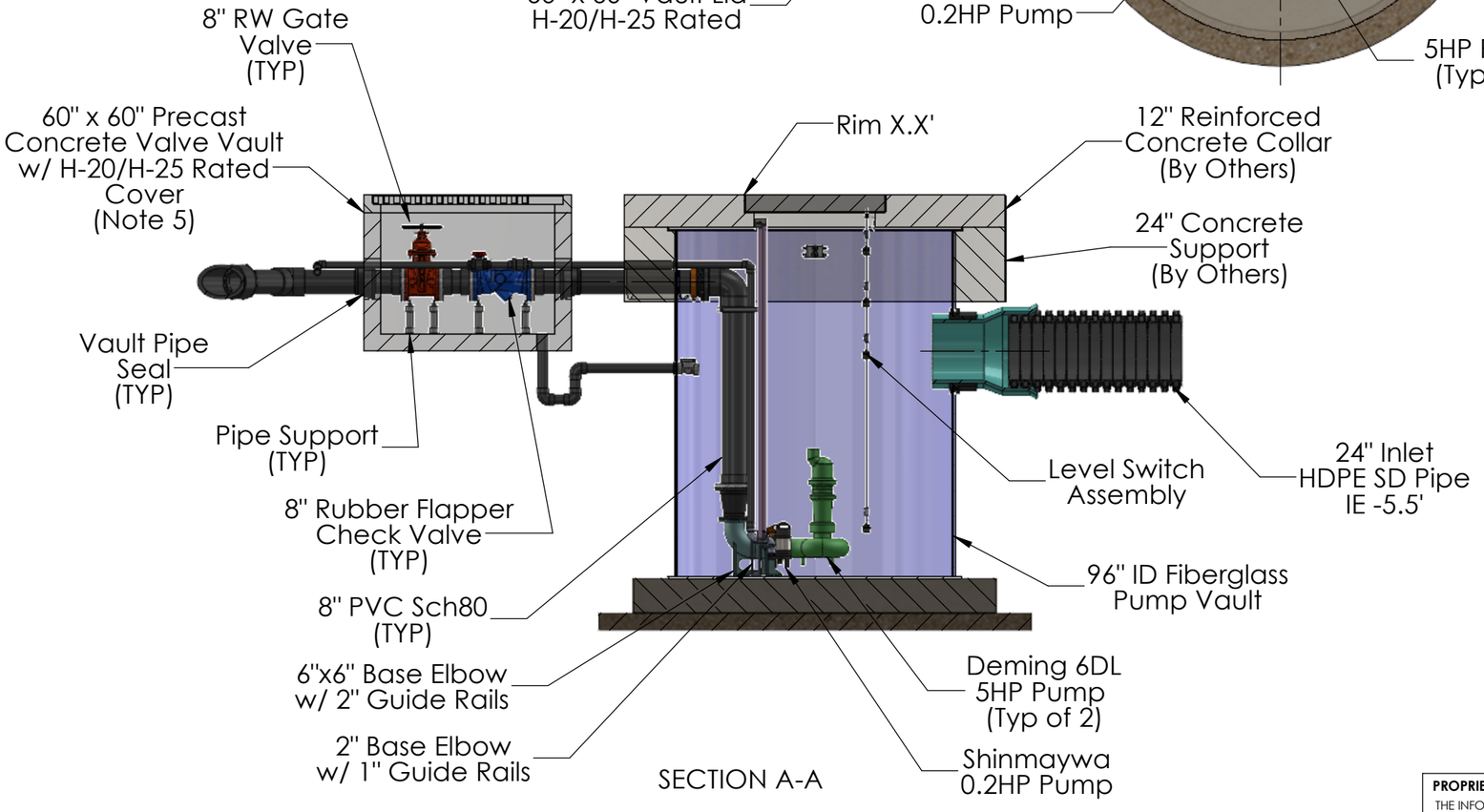
PROPRIETARY AND CONFIDENTIAL
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	NAME	DATE
DRAWN	CKL	11/17/22
CHECKED	MDF	11/17/22
ENG APPR.	CKL	11/17/22
REV		

TITLE: First Lincoln Logistics Stormwater Overflow and Hydromodification Pump Station

SIZE **B** | SHEET 1 OF 3





SECTION A-A

NOTES:

1. Installation of Fiberglass Vault requires 2" space above top vault lip to prevent loading from surface to maintain manufacturer warranty.
2. Provide backfill conforming to ASTM C-33, Paragraph 9.1. Approved materials include Pea Gravel 1/8" min to 3/4" max or Crushed Rock, washed and free-flowing 1/8" min to 1/2" max. Base may be poured concrete (6" min) or 12" min backfill matierial.
3. 12" thick reinforced concrete collar shall be placed on top of 24" concrete support to prevent loading to fiberglass basin below.
4. See Civil sheets to confirm elevations and pipe sizes prior to ordering.
5. Provide 2" drain from Valve Vault to Pump Vault (Required fittings and pipe shall be provided by SFWS)
6. Provide 12" concrete base for pump vault, extending minimum 6" past OD of base. Concrete shall be installed on 6" compacted gravel base.

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562-777-9724 / www.sfwsystems.com

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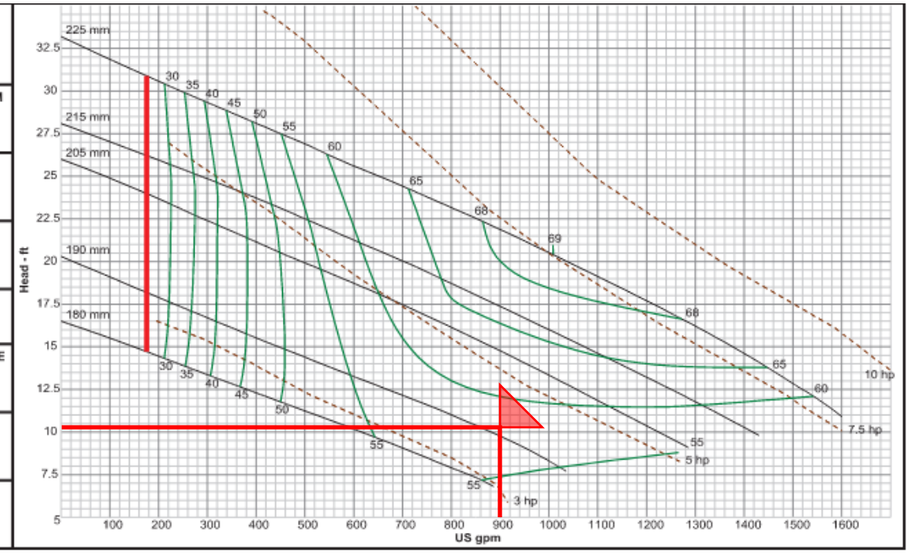
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DRAWN	CKL	11/17/22
CHECKED	MDF	11/17/22
ENG APPR.	CKL	11/17/22
REV		

TITLE: First Lincoln Logistics Stormwater Overflow and Hydromodification Pump Station

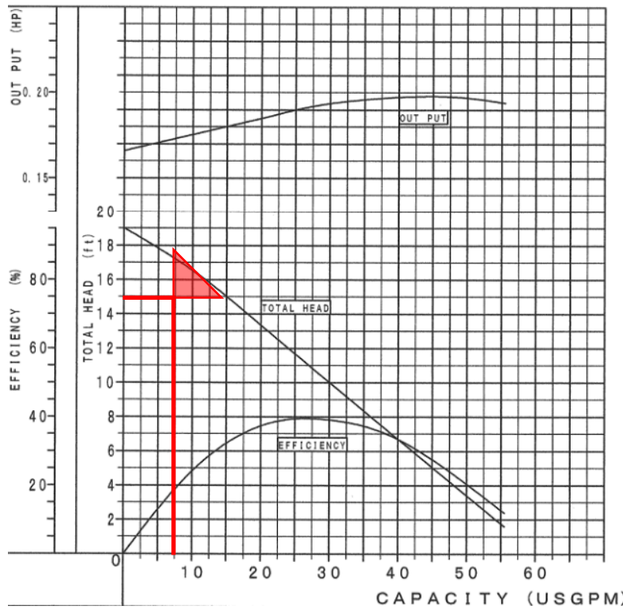
SIZE **B** | SHEET 2 OF 3

OVERFLOW PUMP

MODEL:
7365 7365N
SPEED: RPM
1150
CURVE NO.
PC4753
SIZE: 6DL CODE: 664
HERTZ: 60
MAX. SPHERE 3" (76.2 mm)
IMPELLER 043531
CASE 043542



TREATMENT PUMP



Headloss Calculations		
Fitting	Qty / Length	Headloss
Pipe (8")	16.5'	0.27'
Pipe (10")	10'	0.05'
Reduer	2	0.43'
Check Valve	1	0.52'
Gate Valve	1	0.06'
90 Elbow	2	1.76'
Wye	1	0.12'
45 Elbow	1	0.19'
Exit	1	0.25'
Elevation Head		7'
Total Headloss @ 898 gpm		10.66'

Headloss Calculations		
Fitting	Qty / Length	Headloss
Pipe (3/4")	25'	4.85'
Check Valve	1	0.47'
90 Elbow	4	1.31'
Tee	1	0.84'
Exit	1	0.47'
Elevation Head		7.00'
Total Headloss @ 7.4 gpm		14.94'

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	NAME	DATE
DRAWN	CKL	11/17/22
CHECKED	MDF	11/17/22
ENG APPR.	CKL	11/17/22
REV		

TITLE: First Lincoln Logistics Stormwater Overflow and Hydromodification Pump Station

SIZE **B** | SHEET 3 OF 3

V. NOAA RAINFALL DATA

NOAA Atlas 14, Volume 6, Version 2
Location name: Banning, California, USA*
Latitude: 33.9224°, Longitude: -116.88°
Elevation: 2322.49 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

rainfall depth

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.121 (0.101-0.147)	0.155 (0.129-0.188)	0.205 (0.170-0.249)	0.251 (0.206-0.308)	0.322 (0.256-0.409)	0.385 (0.299-0.499)	0.456 (0.346-0.608)	0.540 (0.398-0.739)	0.670 (0.473-0.957)	0.786 (0.536-1.16)
10-min	0.174 (0.145-0.210)	0.222 (0.184-0.269)	0.293 (0.244-0.357)	0.359 (0.296-0.441)	0.461 (0.367-0.586)	0.551 (0.429-0.716)	0.654 (0.496-0.871)	0.774 (0.570-1.06)	0.960 (0.678-1.37)	1.13 (0.769-1.67)
15-min	0.210 (0.175-0.255)	0.268 (0.223-0.325)	0.355 (0.294-0.432)	0.434 (0.357-0.533)	0.558 (0.444-0.709)	0.667 (0.519-0.866)	0.791 (0.600-1.05)	0.936 (0.690-1.28)	1.16 (0.820-1.66)	1.36 (0.929-2.02)
30-min	0.313 (0.261-0.379)	0.399 (0.332-0.485)	0.528 (0.439-0.643)	0.647 (0.532-0.794)	0.831 (0.661-1.06)	0.993 (0.773-1.29)	1.18 (0.894-1.57)	1.39 (1.03-1.91)	1.73 (1.22-2.47)	2.03 (1.38-3.01)
60-min	0.470 (0.391-0.570)	0.600 (0.499-0.728)	0.794 (0.659-0.966)	0.972 (0.800-1.19)	1.25 (0.993-1.59)	1.49 (1.16-1.94)	1.77 (1.34-2.36)	2.09 (1.54-2.87)	2.60 (1.84-3.71)	3.05 (2.08-4.51)
2-hr	0.675 (0.562-0.818)	0.852 (0.709-1.03)	1.11 (0.918-1.35)	1.33 (1.10-1.63)	1.67 (1.33-2.12)	1.95 (1.52-2.53)	2.26 (1.72-3.01)	2.61 (1.92-3.57)	3.12 (2.21-4.47)	3.57 (2.43-5.28)
3-hr	0.830 (0.691-1.01)	1.05 (0.870-1.27)	1.35 (1.12-1.64)	1.61 (1.33-1.98)	1.99 (1.59-2.53)	2.31 (1.80-3.00)	2.66 (2.02-3.54)	3.03 (2.24-4.16)	3.59 (2.54-5.13)	4.05 (2.76-6.00)
6-hr	1.19 (0.991-1.44)	1.50 (1.25-1.82)	1.92 (1.60-2.34)	2.28 (1.88-2.80)	2.80 (2.23-3.55)	3.21 (2.50-4.17)	3.65 (2.77-4.86)	4.13 (3.04-5.65)	4.80 (3.39-6.86)	5.35 (3.65-7.92)
12-hr	1.63 (1.36-1.97)	2.08 (1.73-2.53)	2.69 (2.23-3.28)	3.20 (2.64-3.93)	3.92 (3.12-4.98)	4.49 (3.49-5.83)	5.08 (3.86-6.76)	5.71 (4.21-7.82)	6.58 (4.65-9.41)	7.28 (4.97-10.8)
24-hr	2.15 (1.90-2.48)	2.81 (2.49-3.25)	3.71 (3.27-4.29)	4.45 (3.89-5.19)	5.48 (4.64-6.61)	6.30 (5.23-7.75)	7.15 (5.79-9.00)	8.04 (6.34-10.4)	9.28 (7.03-12.5)	10.3 (7.52-14.3)
2-day	2.60 (2.30-2.99)	3.49 (3.09-4.03)	4.72 (4.16-5.46)	5.76 (5.04-6.72)	7.25 (6.14-8.73)	8.44 (7.01-10.4)	9.71 (7.87-12.2)	11.1 (8.73-14.3)	13.0 (9.85-17.5)	14.6 (10.7-20.3)
3-day	2.79 (2.47-3.21)	3.80 (3.36-4.38)	5.21 (4.60-6.03)	6.43 (5.63-7.50)	8.21 (6.95-9.89)	9.66 (8.02-11.9)	11.2 (9.10-14.1)	12.9 (10.2-16.7)	15.4 (11.7-20.7)	17.5 (12.8-24.3)
4-day	3.01 (2.66-3.47)	4.12 (3.64-4.75)	5.68 (5.01-6.57)	7.04 (6.16-8.21)	9.02 (7.64-10.9)	10.7 (8.85-13.1)	12.4 (10.1-15.6)	14.4 (11.3-18.6)	17.2 (13.0-23.2)	19.6 (14.3-27.2)
7-day	3.48 (3.08-4.01)	4.74 (4.19-5.47)	6.52 (5.75-7.55)	8.07 (7.06-9.41)	10.3 (8.74-12.4)	12.2 (10.1-15.0)	14.2 (11.5-17.9)	16.4 (12.9-21.2)	19.6 (14.8-26.3)	22.2 (16.3-30.9)
10-day	3.79 (3.36-4.37)	5.15 (4.56-5.95)	7.07 (6.23-8.18)	8.73 (7.64-10.2)	11.2 (9.45-13.4)	13.1 (10.9-16.2)	15.3 (12.4-19.2)	17.6 (13.9-22.8)	21.0 (15.9-28.3)	23.8 (17.5-33.2)
20-day	4.70 (4.16-5.41)	6.40 (5.66-7.39)	8.79 (7.75-10.2)	10.8 (9.49-12.7)	13.8 (11.7-16.7)	16.3 (13.5-20.0)	18.9 (15.3-23.8)	21.8 (17.2-28.2)	25.9 (19.6-34.9)	29.3 (21.5-40.8)
30-day	5.53 (4.89-6.37)	7.55 (6.68-8.72)	10.4 (9.15-12.0)	12.8 (11.2-14.9)	16.3 (13.8-19.7)	19.2 (15.9-23.6)	22.3 (18.0-28.0)	25.6 (20.2-33.1)	30.4 (23.0-40.9)	34.3 (25.1-47.8)
45-day	6.60 (5.85-7.61)	9.04 (7.99-10.4)	12.4 (11.0-14.4)	15.3 (13.4-17.9)	19.5 (16.5-23.5)	22.9 (19.0-28.1)	26.5 (21.5-33.3)	30.4 (24.0-39.3)	35.9 (27.2-48.4)	40.5 (29.7-56.4)
60-day	7.64 (6.76-8.81)	10.4 (9.24-12.1)	14.3 (12.6-16.6)	17.6 (15.4-20.6)	22.4 (19.0-27.0)	26.2 (21.8-32.3)	30.3 (24.6-38.2)	34.7 (27.4-44.9)	41.0 (31.0-55.2)	46.1 (33.8-64.2)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical

NOAA Atlas 14, Volume 6, Version 2
Location name: Banning, California, USA*
Latitude: 33.9224°, Longitude: -116.88°
Elevation: 2322.49 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**1.45** (1.21-1.76)	**1.86** (1.55-2.26)	**2.46** (2.04-2.99)	**3.01** (2.47-3.70)	**3.86** (3.07-4.91)	**4.62** (3.59-5.99)	**5.47** (4.15-7.30)	**6.48** (4.78-8.87)	**8.04** (5.68-11.5)	**9.43** (6.43-14.0)
10-min	**1.04** (0.870-1.26)	**1.33** (1.10-1.61)	**1.76** (1.46-2.14)	**2.15** (1.78-2.65)	**2.77** (2.20-3.52)	**3.31** (2.57-4.30)	**3.92** (2.98-5.23)	**4.64** (3.42-6.36)	**5.76** (4.07-8.23)	**6.76** (4.61-10.0)
15-min	**0.840** (0.700-1.02)	**1.07** (0.892-1.30)	**1.42** (1.18-1.73)	**1.74** (1.43-2.13)	**2.23** (1.78-2.84)	**2.67** (2.08-3.46)	**3.16** (2.40-4.21)	**3.74** (2.76-5.12)	**4.64** (3.28-6.64)	**5.45** (3.72-8.07)
30-min	**0.626** (0.522-0.758)	**0.798** (0.664-0.970)	**1.06** (0.878-1.29)	**1.29** (1.06-1.59)	**1.66** (1.32-2.11)	**1.99** (1.55-2.58)	**2.36** (1.79-3.14)	**2.79** (2.05-3.82)	**3.46** (2.44-4.94)	**4.06** (2.77-6.01)
60-min	**0.470** (0.391-0.570)	**0.600** (0.499-0.728)	**0.794** (0.659-0.966)	**0.972** (0.800-1.19)	**1.25** (0.993-1.59)	**1.49** (1.16-1.94)	**1.77** (1.34-2.36)	**2.09** (1.54-2.87)	**2.60** (1.84-3.71)	**3.05** (2.08-4.51)
2-hr	**0.338** (0.281-0.409)	**0.426** (0.354-0.518)	**0.554** (0.459-0.674)	**0.666** (0.548-0.817)	**0.833** (0.662-1.06)	**0.974** (0.758-1.26)	**1.13** (0.858-1.50)	**1.30** (0.961-1.79)	**1.56** (1.10-2.23)	**1.78** (1.22-2.64)
3-hr	**0.276** (0.230-0.335)	**0.348** (0.290-0.422)	**0.449** (0.372-0.546)	**0.536** (0.441-0.658)	**0.664** (0.528-0.843)	**0.770** (0.599-0.999)	**0.884** (0.671-1.18)	**1.01** (0.745-1.38)	**1.19** (0.844-1.71)	**1.35** (0.920-2.00)
6-hr	**0.199** (0.165-0.241)	**0.250** (0.208-0.304)	**0.321** (0.267-0.391)	**0.381** (0.314-0.468)	**0.467** (0.372-0.594)	**0.537** (0.418-0.696)	**0.610** (0.463-0.812)	**0.689** (0.508-0.944)	**0.802** (0.566-1.15)	**0.893** (0.609-1.32)
12-hr	**0.135** (0.112-0.164)	**0.173** (0.144-0.210)	**0.223** (0.185-0.272)	**0.266** (0.219-0.326)	**0.325** (0.259-0.413)	**0.372** (0.290-0.483)	**0.422** (0.320-0.561)	**0.474** (0.349-0.649)	**0.546** (0.386-0.781)	**0.604** (0.412-0.895)
24-hr	**0.090** (0.079-0.103)	**0.117** (0.104-0.135)	**0.154** (0.136-0.179)	**0.185** (0.162-0.216)	**0.229** (0.194-0.275)	**0.262** (0.218-0.323)	**0.298** (0.241-0.375)	**0.335** (0.264-0.433)	**0.387** (0.293-0.521)	**0.428** (0.313-0.596)
2-day	**0.054** (0.048-0.062)	**0.073** (0.064-0.084)	**0.098** (0.087-0.114)	**0.120** (0.105-0.140)	**0.151** (0.128-0.182)	**0.176** (0.146-0.216)	**0.202** (0.164-0.255)	**0.231** (0.182-0.298)	**0.271** (0.205-0.365)	**0.304** (0.222-0.423)
3-day	**0.039** (0.034-0.045)	**0.053** (0.047-0.061)	**0.072** (0.064-0.084)	**0.089** (0.078-0.104)	**0.114** (0.097-0.137)	**0.134** (0.111-0.165)	**0.156** (0.126-0.196)	**0.180** (0.142-0.232)	**0.214** (0.162-0.288)	**0.242** (0.178-0.338)
4-day	**0.031** (0.028-0.036)	**0.043** (0.038-0.049)	**0.059** (0.052-0.068)	**0.073** (0.064-0.086)	**0.094** (0.080-0.113)	**0.111** (0.092-0.137)	**0.129** (0.105-0.163)	**0.150** (0.118-0.194)	**0.179** (0.136-0.241)	**0.204** (0.149-0.284)
7-day	**0.021** (0.018-0.024)	**0.028** (0.025-0.033)	**0.039** (0.034-0.045)	**0.048** (0.042-0.056)	**0.061** (0.052-0.074)	**0.072** (0.060-0.089)	**0.084** (0.068-0.106)	**0.097** (0.077-0.126)	**0.116** (0.088-0.157)	**0.132** (0.097-0.184)
10-day	**0.016** (0.014-0.018)	**0.021** (0.019-0.025)	**0.029** (0.026-0.034)	**0.036** (0.032-0.042)	**0.046** (0.039-0.056)	**0.055** (0.045-0.067)	**0.064** (0.052-0.080)	**0.073** (0.058-0.095)	**0.088** (0.066-0.118)	**0.099** (0.073-0.138)
20-day	**0.010** (0.009-0.011)	**0.013** (0.012-0.015)	**0.018** (0.016-0.021)	**0.023** (0.020-0.026)	**0.029** (0.024-0.035)	**0.034** (0.028-0.042)	**0.039** (0.032-0.050)	**0.045** (0.036-0.059)	**0.054** (0.041-0.073)	**0.061** (0.045-0.085)
30-day	**0.008** (0.007-0.009)	**0.010** (0.009-0.012)	**0.014** (0.013-0.017)	**0.018** (0.016-0.021)	**0.023** (0.019-0.027)	**0.027** (0.022-0.033)	**0.031** (0.025-0.039)	**0.036** (0.028-0.046)	**0.042** (0.032-0.057)	**0.048** (0.035-0.066)
45-day	**0.006** (0.005-0.007)	**0.008** (0.007-0.010)	**0.011** (0.010-0.013)	**0.014** (0.012-0.017)	**0.018** (0.015-0.022)	**0.021** (0.018-0.026)	**0.025** (0.020-0.031)	**0.028** (0.022-0.036)	**0.033** (0.025-0.045)	**0.037** (0.027-0.052)
60-day	**0.005** (0.005-0.006)	**0.007** (0.006-0.008)	**0.010** (0.009-0.012)	**0.012** (0.011-0.014)	**0.016** (0.013-0.019)	**0.018** (0.015-0.022)	**0.021** (0.017-0.027)	**0.024** (0.019-0.031)	**0.028** (0.022-0.038)	**0.032** (0.023-0.045)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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PF graphical

VI. SOILS INFILTRATION TESTING

December 17, 2021

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

First Industrial Realty Trust, Inc.
898 N. Pacific Coast Highway. Suite 175
El Segundo, CA 90245

Attention: Mr. Matt Pioli
Investment Officer

Project No.: **21G271-2**

Subject: **Results of Infiltration Testing**
Proposed Warehouse
NEC Lincoln Avenue and 4th Street
Banning, California

Reference: Geotechnical Investigation, Proposed Warehouse, NEC Lincoln Avenue and 4th Street, Banning, California, prepared for First Industrial Realty Trust, Inc., by Southern California Geotechnical, Inc. (SCG), SCG Project No. 21G271-1, dated December 17, 2021.

Mr. Pioli:

In accordance with your request, we have conducted infiltration testing at the subject site. We are pleased to present this report summarizing the results of the infiltration testing and our design recommendations.

Scope of Services

The scope of services performed for this project was in general accordance with our Proposal No. 21P476, dated November 4, 2021. The scope of services included site reconnaissance, subsurface exploration, field testing, and engineering analysis to determine the infiltration rates of the onsite soils. The infiltration testing was performed in general accordance with the guidelines published in Riverside County – Low Impact Development BMP Design Handbook – Section 2.3 of Appendix A, prepared for the Riverside County Department of Environmental Health (RCDEH), dated December, 2013.

Site and Project Description

The subject site is located at the northeast corner of Lincoln Street and 4th Street in Banning, California. The site is bounded to the north by a railroad easement, to the west by Gilman Home Storm Channel, to the south by Lincoln Street, and to the east by an existing commercial/industrial building. The general location of the site is illustrated on the Site Location Map, enclosed as Plate 1 in this report.

The site is comprised to two (2) contiguous parcels totaling 6.23± acres in size. The site is currently vacant and undeveloped and appears to have been recently disced, or tilled, and cleared of heavy vegetation. Several large trees are located along the northern boundary of the site.

Ground surface cover for currently consists of exposed soil with negligible native grass and weed growth.

Topographic information was included in the conceptual site plan provided by Stantec. Based on the review of this plan, the overall site topography slopes downward to the south to southeast at a gradient of approximately 2½ percent. There is up to 16± feet of elevation differential across the subject site. The site appears to be 4 to 7± feet higher in elevation than the adjacent commercial lot located to the southeast. A descending slope, separates the project site from the adjacent commercial property.

Proposed Development

SCG was provided with a preliminary site plan which was prepared by Stantec. Based on the site plan, the site will be developed with one (1) warehouse. The warehouse will be located in the central area of the site and will be 118,786± ft² in size. Dock-high doors will be constructed along a portion of the northern building wall. The building is assumed to be surrounded by asphaltic concrete pavements in the parking and drive areas, Portland cement concrete pavements in the truck court areas, and limited areas of concrete flatwork and landscape planters.

We understand that the proposed development will include on-site storm water infiltration. The type, location and depth of the infiltration system was not available at the time of our investigation. Based on our experience with similar projects in the vicinity of the subject site, the infiltration system is expected to consist of one (1) below-grade chamber system, located in the northern area of the site. The bottom of the infiltration system is expected to be 10± feet below the existing site grades.

Concurrent Study

SCG concurrently conducted a geotechnical investigation at the subject site, which is referenced above. As part of this study, five (5) borings were advanced to depths of 20 to 50± feet below existing site grades. Two of these borings were used as a part of a liquefaction evaluation. Artificial fill soils were encountered at the ground surface at all of the boring locations, extending to depths of 2½ to 5½± feet below the existing site grades. The fill soils generally consist of medium dense silty fine sands with varying medium to coarse sand and fine gravel content. These materials possess pinhole porosity with some fine root fibers. Native alluvium was encountered beneath the fill soils at all of the boring locations. The near-surface alluvium generally consists of medium dense silty fine sands, clayey fine sands and fine sandy silts with varying medium to coarse sand, fine gravel and varying clay content, extending to depths of 20 to 32± feet. The near-surface alluvium possesses pinhole porosity and some Calcareous nodules and veining. Below these materials, Boring Nos. B-1 and B-4 encountered older alluvium, extending to at least the maximum depth explored of 50± feet. The older alluvium generally consists of medium dense to very dense fine to coarse sands with varying silt and fine to coarse gravel content.

Groundwater

Free water was not encountered during the drilling of any of the borings. Based on the lack of any water within the borings, and the moisture contents of the recovered soil samples, the static

groundwater table is considered to have existed at a depth in excess of 50± feet at the time of the subsurface exploration.

As a part of our research, we reviewed available groundwater data in order to determine groundwater levels for the site. Water level data was obtained from the California Department of Water Resources Water Data Library website, https://wdl.water.ca.gov/waterdatalibrary/. The nearest monitoring well on record is located 1,500± feet southeast of the site. Water level readings within this monitoring well indicate a groundwater level of 500± feet below the ground surface in December 2005.

Subsurface Exploration

Scope of Exploration

The subsurface exploration conducted for the infiltration testing consisted of two (2) infiltration test borings, advanced to a depth of 10± feet below the existing site grades. The infiltration borings were advanced using a truck-mounted drilling rig, equipped with 8-inch-diameter hollow stem augers and were logged during drilling by a member of our staff. The approximate locations of the infiltration test borings (identified as I-1 and I-2) are indicated on the Infiltration Test Location Plan, enclosed as Plate 2 of this report.

Geotechnical Conditions

Artificial fills soils were encountered at the ground surface at both of the infiltration test locations, extending to a depth of 6± feet below the existing site grades. The artificial fill soils consist of silty fine sands with varying medium to coarse sand content. Native alluvium was encountered at the artificial fill soils at both of the infiltration test locations, extending to at least the maximum explored depth of 10± feet below existing site grades. The alluvial soils consist of medium dense clayey fine sands as well as very stiff fine sandy clays, with varying medium to coarse sands and silt content. The Boring Logs, which illustrate the conditions encountered at the infiltration test locations, are presented in this report.

Infiltration Testing

As previously mentioned, the infiltration testing was performed in general accordance with the Riverside County guidelines: Riverside County – Low Impact Development BMP Design Handbook – Section 2.3 of Appendix A.

Pre-soaking

In accordance with the county infiltration standards both of the infiltration test borings were pre-soaked prior to the infiltration testing. The pre-soaking process consisted of filling the test borings by inverting a full 5-gallon bottle of clear water supported over each hole so that the water level reaches a level of at least 5 times the hole's radius above the gravel at the bottom of each hole. The pre-soaking was completed after all of the water had percolated through each test hole or after 15 hours since initiating the pre-soak. Based on the results of the pre-soaking process, different infiltration procedures were used during the infiltration testing at the infiltration boring locations.

Infiltration Testing

Following the pre-soaking process of the infiltration test borings, SCG performed the infiltration testing. Each test hole was filled with water to a depth of at least 5 times the hole's radius above the gravel at the bottom of each test hole, and less than or equal to the water level used during the pre-soaking process. In accordance with the Riverside County guidelines, since "sandy soils" were encountered at the bottom of the infiltration borings (when two-consecutive measurements show that 6 inches of water seep away in less than 25 minutes), these tests were run for an additional hour with measurements taken at 10-minute intervals. After each reading, the borings were refilled to the correct water level above the gravel at the bottom of each test hole. The water level readings are presented on the spreadsheets enclosed with this report. The infiltration rates for each of the timed intervals are also tabulated on the spreadsheets.

The infiltration rates from the test are tabulated in inches per hour. In accordance with the typically accepted practice, it is recommended that the most conservative reading from the latter part of the infiltration tests be used as the design infiltration rate. The rates are summarized below:

Infiltration Test No.	Depth (feet)	Soil Description	Infiltration Rate (inches/hour)
I-1	10	Clayey fine to medium Sand, little coarse Sand, little Silt	0.8
I-2	10	Clayey fine Sand to fine Sandy Clay, trace to little medium to coarse Sand, little Silt	0.2

Design Recommendations

Two (2) infiltration tests were performed at the subject site. As note above, the calculated infiltration rates at the infiltration test locations range from 0.2 to 0.8 inches per hour. **Based on the results of infiltration testing, we recommend an infiltration rate of 0.5 inches per hour to be used for the design of the proposed infiltration system located in the northern region of the subject site, if the bottom of the infiltration system extends to 10± feet below the existing site grades.**

We recommend that a representative from the geotechnical engineer be on-site during the construction of the proposed infiltration system to identify the soil classification at the base of the infiltration basin. It should be confirmed that the soils at the base of the proposed infiltration system corresponds with those presented in this report to ensure that the performance of the system will be consistent with the rates reported herein.

The design of the storm water infiltration system should be performed by the project civil engineer, in accordance with the City of Banning and/or County of Riverside guidelines. It is recommended that the system be constructed so as to facilitate removal of silt and clay, or other deleterious materials from any water that may enter the systems. The presence of such materials would decrease the effective infiltration rates. **It is recommended that the project civil**

engineer apply an appropriate factor of safety. The infiltration rates recommended above is based on the assumption that only clean water will be introduced to the subsurface profile. Any fines, debris, or organic materials could significantly impact the infiltration rate. It should be noted that the recommended infiltration rates are based on infiltration testing at two (2) discrete locations and that the overall infiltration rates of the proposed infiltration system could vary considerably.

Infiltration Rate Considerations

The infiltration rates presented herein was determined in accordance with the Riverside County guidelines and are considered valid only for the time and place of the actual test. Varying subsurface conditions will exist in other areas of the site, which could alter the recommended infiltration rates presented above. The infiltration rates will decline over time between maintenance cycles as silt or clay particles accumulate on the BMP surface. The infiltration rate is highly dependent upon a number of factors, including density, silt and clay content, grainsize distribution throughout the range of particle sizes, and particle shape. Small changes in these factors can cause large changes in the infiltration rates.

Infiltration rates are based on unsaturated flow. As water is introduced into soils by infiltration, the soils become saturated and the wetting front advances from the unsaturated zone to the saturated zone. Once the soils become saturated, infiltration rates become zero, and water can only move through soils by hydraulic conductivity at a rate determined by pressure head and soil permeability. Changes in soil moisture content will affect the infiltration rate. Infiltration rates should be expected to decrease until the soils become saturated. Soil permeability values will then govern groundwater movement. Permeability values may be on the order of 10 to 20 times less than infiltration rates. The system designer should incorporate adequate factors of safety and allow for overflow design into appropriate traditional storm drain systems, which would transport storm water off-site.

Construction Considerations

The infiltration rates presented in this report are specific to the tested locations and tested depths. Infiltration rates can be significantly reduced if the soils are exposed to excessive disturbance or compaction during construction. Compaction of the soils at the bottom of the infiltration system can significantly reduce the infiltration ability of the chamber system. Therefore, the subgrade soils within proposed infiltration system areas should not be over-excavated, undercut or compacted in any significant manner. **It is recommended that a note to this effect be added to the project plans and/or specifications.**

We recommend that a representative from the geotechnical engineer be on-site during the construction of the proposed infiltration systems to identify the soil classification at the base of each system. It should be confirmed that the soils at the base of the proposed infiltration system correspond with those presented in this report to ensure that the performance of the system will be consistent with the rates reported herein.

We recommend that scrapers and other rubber-tired heavy equipment not be operated on the basin bottom, or at levels lower than 2 feet above the bottom of the system, particularly within

basins. As such, the bottom 24 inches of the infiltration system should be excavated with non-rubber-tired equipment, such as excavators.

Location of Infiltration Systems

The use of on-site storm water infiltration systems carries a risk of creating adverse geotechnical conditions. Increasing the moisture content of the soil can cause the soil to lose internal shear strength and increase its compressibility, resulting in a change in the designed engineering properties. Overlying structures and pavements in the infiltration area could potentially be damaged due to saturation of the subgrade soils. **The proposed infiltration system for this site should be located at least 25 feet away from any structures, including retaining walls**. Even with this provision of locating the infiltration system at least 25 feet from the building(s), it is possible that infiltrating water into the subsurface soils could have an adverse effect on the proposed or existing structures. It should also be noted that utility trenches which happen to collect storm water can also serve as conduits to transmit storm water toward the structure, depending on the slope of the utility trench. Therefore, consideration should also be given to the proposed locations of underground utilities which may pass near the proposed infiltration system.

The infiltration system designer should also give special consideration to the effect that the proposed infiltration system may have on nearby subterranean structures, open excavations, or descending slopes. In particular, infiltration systems should not be located near the crest of descending slopes, particularly where the slopes are comprised of granular soils. Such systems will require specialized design and analysis to evaluate the potential for slope instability, piping failures and other phenomena that typically apply to earthen dam design. This type of analysis is beyond the scope of this infiltration test report, but these factors should be considered by the infiltration system designer when locating the infiltration systems.

General Comments

This report has been prepared as an instrument of service for use by the client in order to aid in the evaluation of this property and to assist the architects and engineers in the design and preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, structural engineer, and/or civil engineer. The design of the proposed storm water infiltration system is the responsibility of the civil engineer. The role of the geotechnical engineer is limited to determination of infiltration rate only. By using the design infiltration rate contained herein, the civil engineer agrees to indemnify, defend, and hold harmless the geotechnical engineer for all aspects of the design and performance of the proposed storm water infiltration system. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur.

The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between boring locations and testing depths. If the conditions encountered during construction vary significantly from those detailed herein, we

should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted. The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

Closure

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

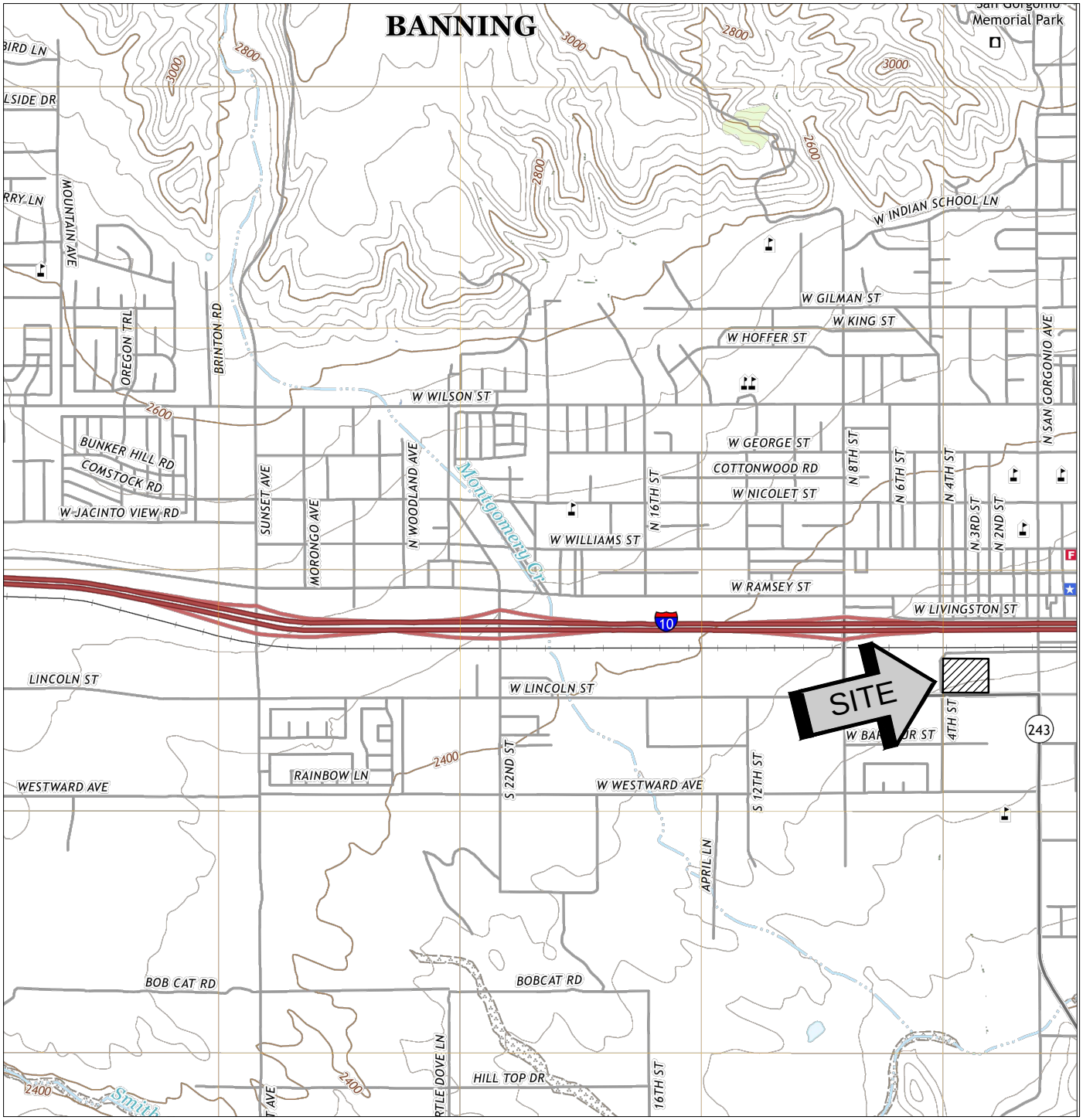
Pablo Montes Jr.
Staff Engineer

Robert G. Trazo, GE 2655
Principal Engineer



Distribution: (1) Addressee

Enclosures: Plate 1 - Site Location Map
Plate 2 - Boring Location Plan
Boring Log Legend and Logs (4 pages)
Infiltration Test Results Spreadsheets (2 pages)
Grain Size Distribution Graphs (2 pages)



SOURCE: USGS TOPOGRAPHIC MAP OF THE BEAUMONT QUADRANGLE, RIVERSIDE COUNTY, CALIFORNIA, 2018

SITE LOCATION MAP

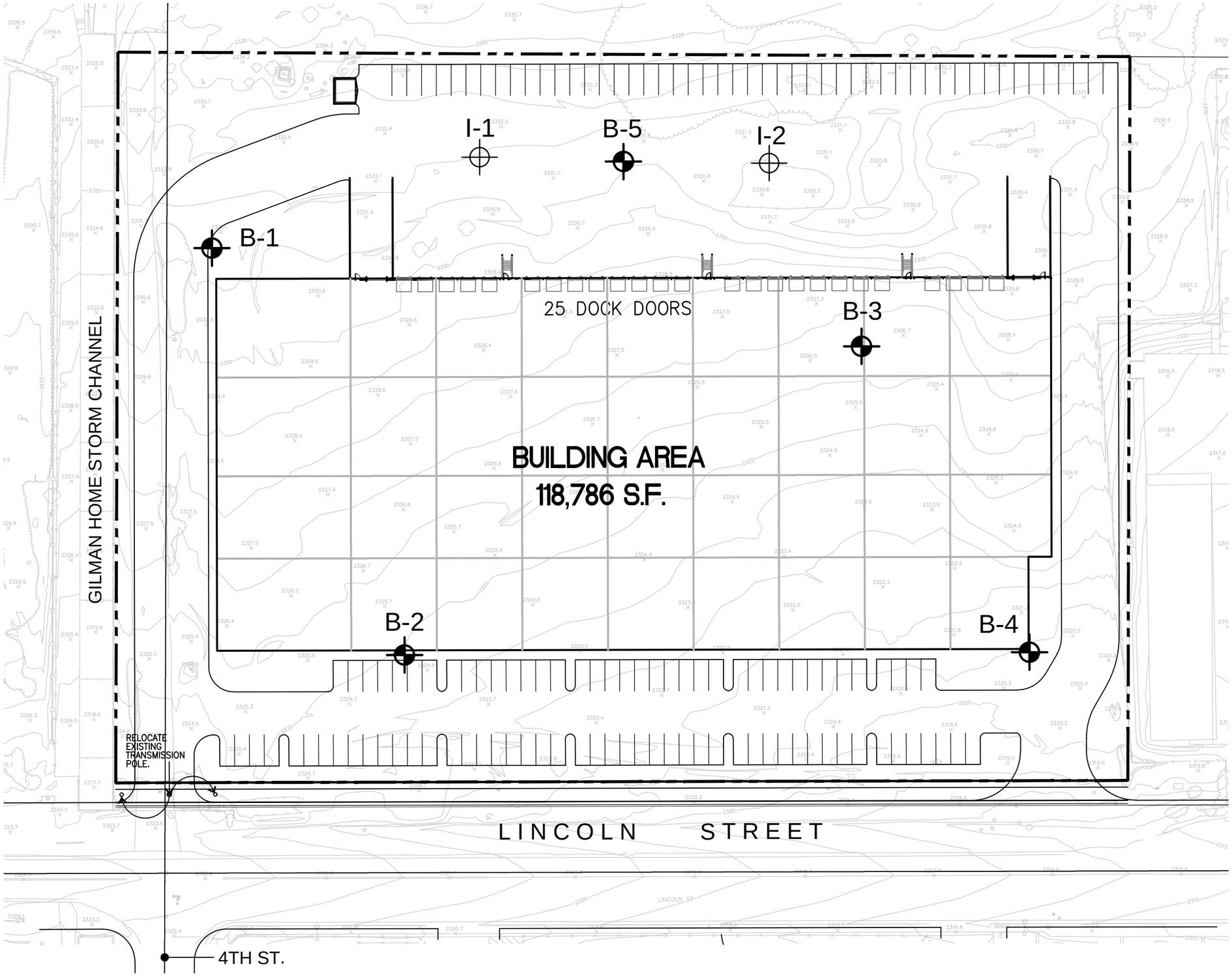
PROPOSED WAREHOUSE

BANNING, CALIFORNIA

SCALE: 1" = 2000'	
DRAWN: PM CHKD: RGT	
SCG PROJECT 21G271-2	
PLATE 1	

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



GEOTECHNICAL LEGEND

- APPROXIMATE INFILTRATION TEST LOCATION
- APPROXIMATE BORING LOCATION (SCG PROJECT NO. 21G271-1)

NOTE: BASE SITE PLAN PREPARED BY STANTEC.

INFILTRATION TEST LOCATION PLAN

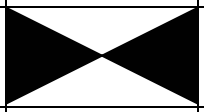
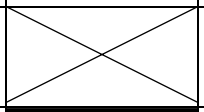
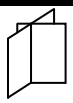
PROPOSED WAREHOUSE

BANNING, CALIFORNIA

SCALE: 1" = 60'	
DRAWN: PM CHKD: RGT	
SCG PROJECT 21G271-2	
PLATE 2	

SOUTHERN CALIFORNIA GEOTECHNICAL

BORING LOG LEGEND

SAMPLE TYPE	GRAPHICAL SYMBOL	SAMPLE DESCRIPTION
AUGER		SAMPLE COLLECTED FROM AUGER CUTTINGS, NO FIELD MEASUREMENT OF SOIL STRENGTH. (DISTURBED)
CORE		ROCK CORE SAMPLE: TYPICALLY TAKEN WITH A DIAMOND-TIPPED CORE BARREL. TYPICALLY USED ONLY IN HIGHLY CONSOLIDATED BEDROCK.
GRAB		SOIL SAMPLE TAKEN WITH NO SPECIALIZED EQUIPMENT, SUCH AS FROM A STOCKPILE OR THE GROUND SURFACE. (DISTURBED)
CS		CALIFORNIA SAMPLER: 2-1/2 INCH I.D. SPLIT BARREL SAMPLER, LINED WITH 1-INCH HIGH BRASS RINGS. DRIVEN WITH SPT HAMMER. (RELATIVELY UNDISTURBED)
NSR		NO RECOVERY: THE SAMPLING ATTEMPT DID NOT RESULT IN RECOVERY OF ANY SIGNIFICANT SOIL OR ROCK MATERIAL.
SPT		STANDARD PENETRATION TEST: SAMPLER IS A 1.4 INCH INSIDE DIAMETER SPLIT BARREL, DRIVEN 18 INCHES WITH THE SPT HAMMER. (DISTURBED)
SH		SHELBY TUBE: TAKEN WITH A THIN WALL SAMPLE TUBE, PUSHED INTO THE SOIL AND THEN EXTRACTED. (UNDISTURBED)
VANE		VANE SHEAR TEST: SOIL STRENGTH OBTAINED USING A 4 BLADED SHEAR DEVICE. TYPICALLY USED IN SOFT CLAYS-NO SAMPLE RECOVERED.

COLUMN DESCRIPTIONS

DEPTH: Distance in feet below the ground surface.

SAMPLE: Sample Type as depicted above.

BLOW COUNT: Number of blows required to advance the sampler 12 inches using a 140 lb hammer with a 30-inch drop. 50/3" indicates penetration refusal (>50 blows) at 3 inches. WH indicates that the weight of the hammer was sufficient to push the sampler 6 inches or more.

POCKET PEN.: Approximate shear strength of a cohesive soil sample as measured by pocket penetrometer.

GRAPHIC LOG: Graphic Soil Symbol as depicted on the following page.

DRY DENSITY: Dry density of an undisturbed or relatively undisturbed sample in lbs/ft^3.

MOISTURE CONTENT: Moisture content of a soil sample, expressed as a percentage of the dry weight.

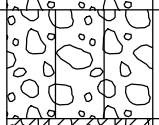
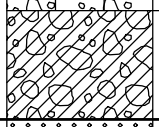
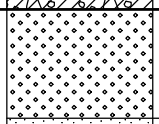
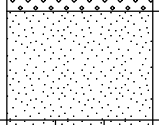
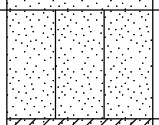
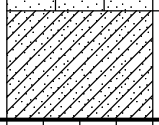
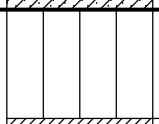
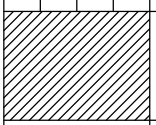
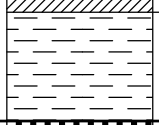
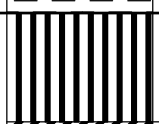
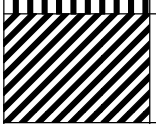
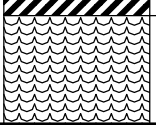
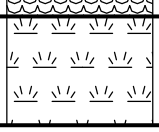
LIQUID LIMIT: The moisture content above which a soil behaves as a liquid.

PLASTIC LIMIT: The moisture content above which a soil behaves as a plastic.

PASSING #200 SIEVE: The percentage of the sample finer than the #200 standard sieve.

UNCONFINED SHEAR: The shear strength of a cohesive soil sample, as measured in the unconfined state.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-1

JOB NO.: 21G271-2
PROJECT: Proposed Warehouse
LOCATION: Banning California

DRILLING DATE: 11/9/21
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Oscar Sandoval

WATER DEPTH: Dry
CAVE DEPTH: N/A
READING TAKEN: @ Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
5		25			FILL: Light Brown Silty fine Sand, trace medium to coarse Sand, medium dense-damp		4					
					ALLUVIUM: Light Brown Clayey fine to medium Sand, little coarse Sand, little Silt, trace Calcareous veining, little fine roots, medium dense-damp							
10		20					6			28		
					Boring Terminated at 10'							

TBL 21G271-2.GPJ SOCALGEO.GDT 12/17/21

TEST BORING LOG

PLATE B-1

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-2

JOB NO.: 21G271-2
PROJECT: Proposed Warehouse
LOCATION: Banning California

DRILLING DATE: 11/9/21
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Oscar Sandoval

WATER DEPTH: Dry
CAVE DEPTH: N/A
READING TAKEN: @ Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
5		22			FILL: Light Gray Brown Silty fine Sand, little medium to coarse Sand, medium dense-damp		3					
10		21			ALLUVIUM: Light Brown Clayey fine Sand to fine Sandy Clay, trace to little medium to coarse Sand, little Silt, medium dense to very stiff-damp		4			51		
					Boring Terminated at 10'							

TBL 21G271-2.GPJ SOCALGEO.GDT 12/17/21

TEST BORING LOG **PLATE B-2**

INFILTRATION CALCULATIONS

Project Name	Proposed Warehouse
Project Location	Banning, CA
Project Number	21G171-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	10.15	(ft)

Infiltration Test Hole	I-1

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	7:45 AM	25.00	19.00	23.04	YES	SANDY SOILS
	Final	8:10 AM		20.92			
2	Initial	8:10 AM	25.00	19.00	23.16	YES	SANDY SOILS
	Final	8:35 AM		20.93			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	8:35 AM	10.00	7.20	0.28	2.81	1.13
	Final	8:45 AM		7.48			
2	Initial	8:45 AM	10.00	7.20	0.21	2.85	0.84
	Final	8:55 AM		7.41			
3	Initial	8:55 AM	10.00	7.20	0.20	2.85	0.80
	Final	9:05 AM		7.40			
4	Initial	9:05 AM	10.00	7.20	0.19	2.86	0.75
	Final	9:15 AM		7.39			
5	Initial	9:15 AM	10.00	7.20	0.20	2.85	0.80
	Final	9:25 AM		7.40			
6	Initial	9:25 AM	10.00	7.20	0.20	2.85	0.80
	Final	9:35 AM		7.40			
7	Initial	9:25 AM	10.00	7.20	0.19	2.86	0.75
	Final	9:35 AM		7.39			
8	Initial	9:25 AM	10.00	7.20	0.20	2.85	0.80
	Final	9:35 AM		7.40			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed Warehouse
Project Location	Banning, CA
Project Number	21G171-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	10.10	(ft)

Infiltration Test Hole: I-2

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	10:00 AM	25.00	19.00	23.04	YES	SANDY SOILS
	Final	10:25 AM		20.92			
2	Initial	10:25 AM	25.00	19.00	23.16	YES	SANDY SOILS
	Final	10:50 AM		20.93			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	10:50 AM	10.00	7.10	0.15	2.93	0.58
	Final	11:00 AM		7.25			
2	Initial	11:00 AM	10.00	7.10	0.10	2.95	0.39
	Final	11:10 AM		7.20			
3	Initial	11:10 AM	10.00	7.10	0.08	2.96	0.31
	Final	11:20 AM		7.18			
4	Initial	11:20 AM	10.00	7.20	0.08	2.86	0.32
	Final	11:30 AM		7.28			
5	Initial	11:30 AM	10.00	7.10	0.07	2.97	0.27
	Final	11:40 AM		7.17			
6	Initial	11:50 AM	10.00	7.10	0.06	2.97	0.23
	Final	12:00 PM		7.16			
7	Initial	12:00 PM	10.00	7.10	0.06	2.97	0.23
	Final	12:10 PM		7.16			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

Grain Size Distribution

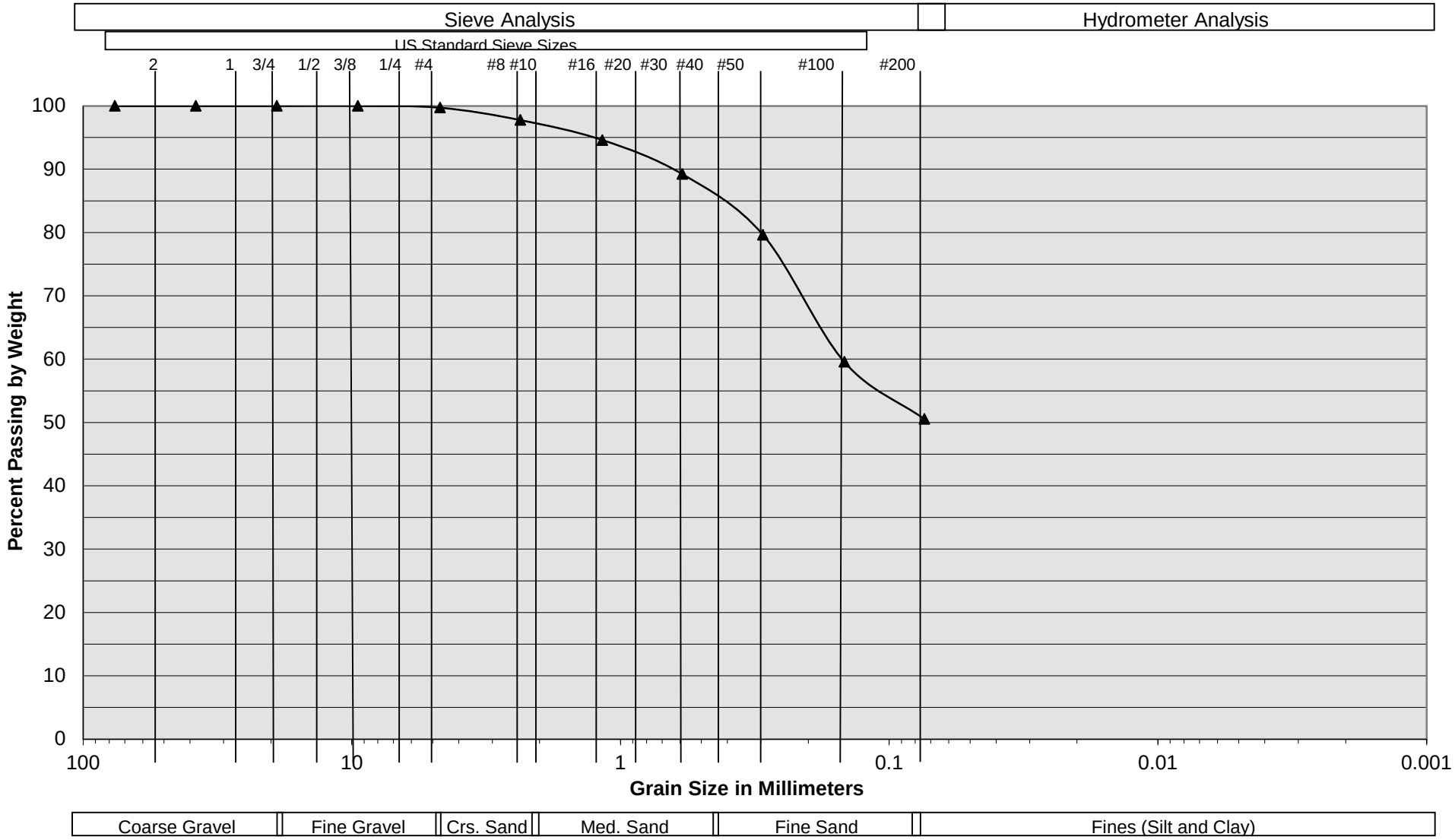


Sample Description	I-1 @ 8½'
Soil Classification	Light Brown Clayey fine to medium Sand, little coarse Sand, little Silt

Proposed Warehouse
Banning, California
Project No. 21G271-2
PLATE C- 1

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Grain Size Distribution



Sample Description	I-2 @ 8½'
Soil Classification	Light Brown Clayey fine Sand to fine Sandy Clay, trace to little medium to coarse Sand, little Silt

Proposed Warehouse
Banning, California
Project No. 21G271-2
PLATE C- 2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

VII. NRCS SOILS REPORT

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Western Riverside Area, California



December 14, 2021

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map (First Lincoln Logistics)



Map Scale: 1:1,480 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Western Riverside Area, California
Survey Area Data: Version 14, Sep 13, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 1, 2018—Jun 30, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend (First Lincoln Logistics)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
GmD	Gorgonio gravelly loamy fine sand, 2 to 15 percent slop es	8.3	100.0%
Totals for Area of Interest		**8.3**	**100.0%**

Map Unit Descriptions (First Lincoln Logistics)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Western Riverside Area, California

GmD—Gorgonio gravelly loamy fine sand, 2 to 15 percent slop es

Map Unit Setting

National map unit symbol: hcvg
Elevation: 20 to 3,000 feet
Mean annual precipitation: 10 to 25 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 250 to 310 days
Farmland classification: Not prime farmland

Map Unit Composition

Gorgonio and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gorgonio

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 15 inches: gravelly loamy fine sand
H2 - 15 to 60 inches: stratified gravelly loamy sand to gravelly loamy fine sand

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: R019XD035CA - SANDY (1975)
Hydric soil rating: No

Minor Components

Soboba

Percent of map unit: 5 percent
Hydric soil rating: No

Hanford

Percent of map unit: 5 percent
Hydric soil rating: No

Tujunga

Percent of map unit: 4 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 1 percent
Hydric soil rating: No

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Erosion Factors

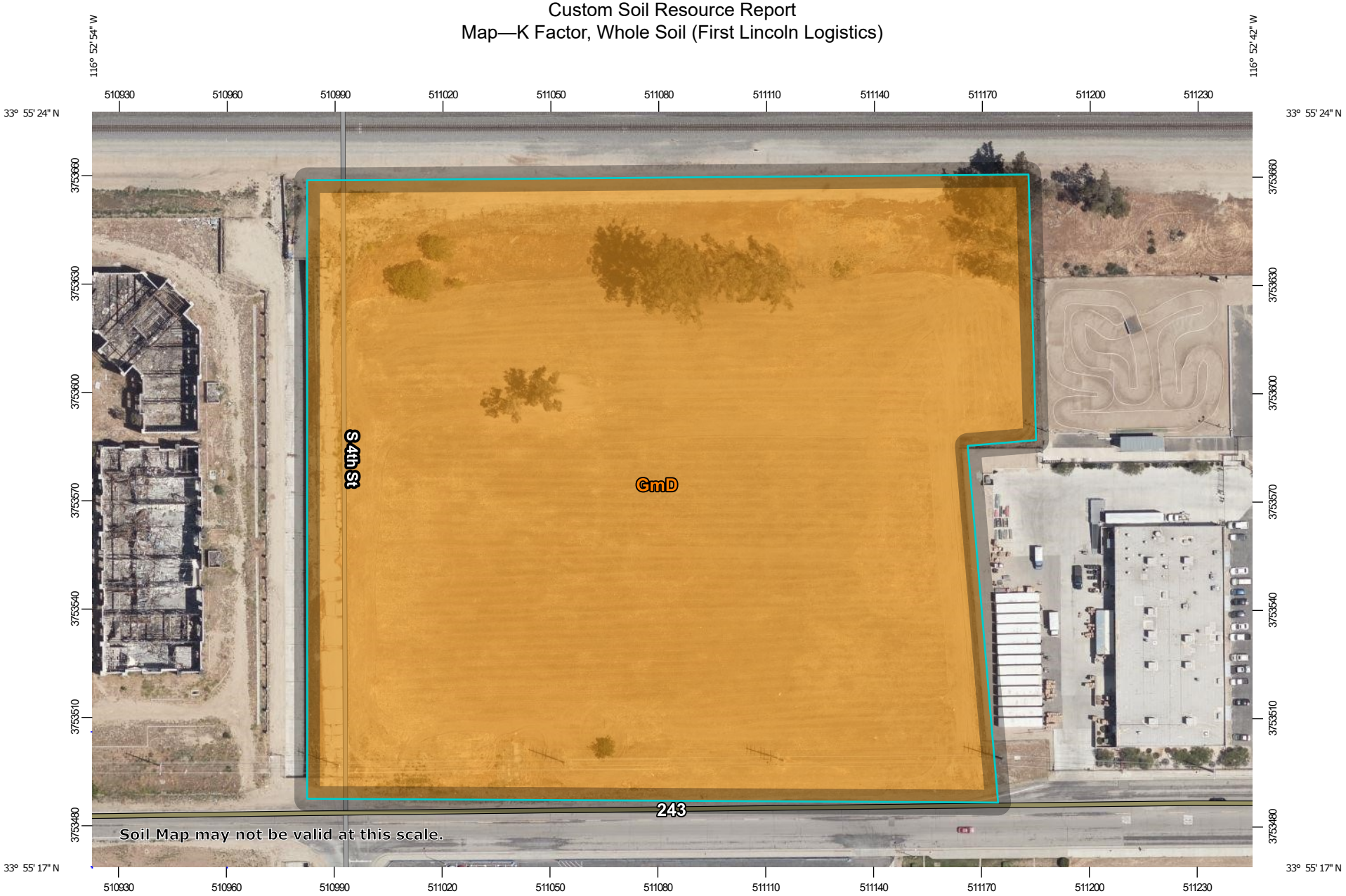
Soil Erosion Factors are soil properties and interpretations used in evaluating the soil for potential erosion. Example soil erosion factors can include K factor for the whole soil or on a rock free basis, T factor, wind erodibility group and wind erodibility index.

K Factor, Whole Soil (First Lincoln Logistics)

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Factor K does not apply to organic horizons and is not reported for those layers.



Map Scale: 1:1,480 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 20 40 80 120

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Lines

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Points

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

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Survey Area Data: Version 14, Sep 13, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 1, 2018—Jun 30, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—K Factor, Whole Soil (First Lincoln Logistics)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
GmD	Gorgonio gravelly loamy fine sand, 2 to 15 percent slop es	.10	8.3	100.0%
Totals for Area of Interest			**8.3**	**100.0%**

Rating Options—K Factor, Whole Soil (First Lincoln Logistics)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group (First Lincoln Logistics)

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

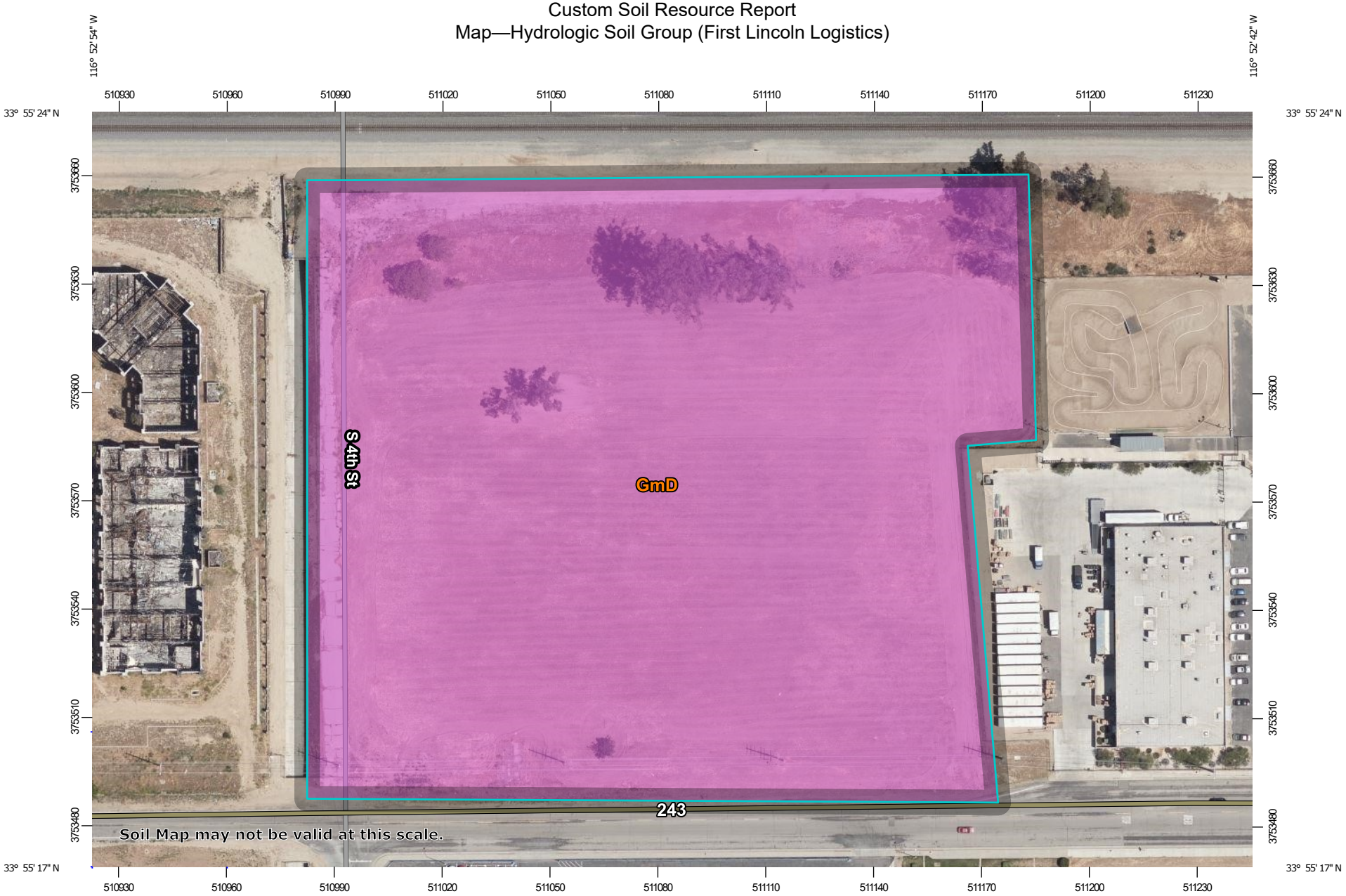
Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.



Map Scale: 1:1,480 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 20 40 80 120

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

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Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

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Survey Area Data: Version 14, Sep 13, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 1, 2018—Jun 30, 2018

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Table—Hydrologic Soil Group (First Lincoln Logistics)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
GmD	Gorgonio gravelly loamy fine sand, 2 to 15 percent slop es	A	8.3	100.0%
Totals for Area of Interest			**8.3**	**100.0%**

Rating Options—Hydrologic Soil Group (First Lincoln Logistics)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

References

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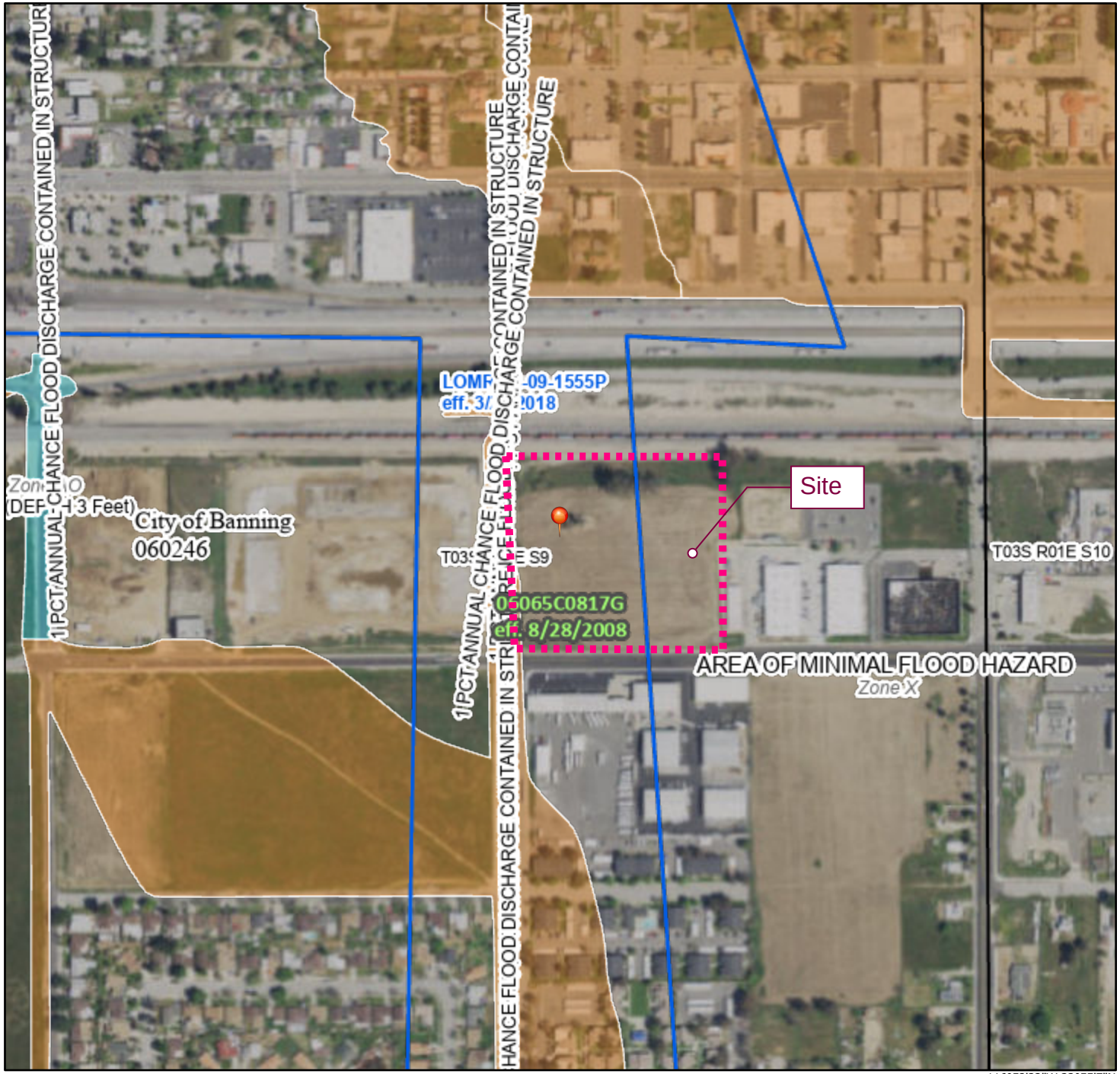
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National Flood Hazard Layer FIRMette

FEMA

116°53'9"W 33°55'37"N



116°52'32"W 33°55'7"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 5/18/2022 at 7:05 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

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APPENDIX L

NOISE AND VIBRATION ANALYSIS

CARLSBAD
CLOVIS
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

MEMORANDUM

DATE: October 19, 2022

TO: Michael Goodwin, Principal, First Industrial, L.P.

FROM: Jason Lui, Associate/Senior Noise Specialist

SUBJECT: Noise and Vibration Impact Analysis for the First Lincoln Industrial Project in Banning, California (LSA Project No. FRT2201)

INTRODUCTION

This noise and vibration impact analysis has been prepared to evaluate the potential noise and vibration impacts and reduction measures associated with the First Lincoln Industrial Project (project) in Banning, California. This report is intended to satisfy the City of Banning's (City) requirements and the California Environmental Quality Act for a project-specific noise and vibration impact analysis by examining the impacts of the proposed uses on the project site and evaluating the reduction measures that the project requires. All references cited in this memorandum are included in Attachment A.

Project Location

The approximately 6.45-acre project site is on the northeast corner of 4th Street and Lincoln Street/State Route 243, south of Interstate 10 (I-10), in Banning, Riverside County and consists of two parcels (Assessor's Parcel Numbers 0540-210-009 and -020). The project is in Compatibility Zone D (Primary Traffic Patterns and Runway Buffer Area) of the Banning Municipal Airport] *Riverside County Airport Land Use Compatibility Plan* (ALUC 2004). Figure 1 shows the project location (all figures are in Attachment B).

Project Description

The proposed project would construct a 118,786-square-foot industrial warehouse building, of which 10,000 square feet would be designated office space across two levels. The project would include 25 freight truck loading docks and employee and trailer parking. Figure 2 shows the site plan. It is expected that construction of the project would start in mid-2023 and be completed in the spring of 2024, resulting in a total construction duration of approximately 10 months.

CHARACTERISTICS OF SOUND

Sound is increasing to such disagreeable levels in the environment that it can threaten quality of life. Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is generally an annoyance, while loudness can affect the ability to hear. Pitch is the number of complete vibrations, or cycles per second, of a wave resulting in the tone's range from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment and is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effect on adjacent sensitive land uses.

Measurement of Sound

Sound intensity is measured through the A-weighted scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level deemphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies. Decibels (dB), unlike the linear scale (e.g., inches or pounds), are measured on a logarithmic scale, which is a scale based on powers of 10.

For example, 10 decibels is 10 times more intense than 0 dB, 20 dB is 100 times more intense than 0 dB, and 30 dB is 1,000 times more intense than 0 dB. Thirty decibels (30 dB) represents 1,000 times as much acoustic energy as 0 dB. The decibel scale increases as the square of the change, representing the sound pressure energy. A sound as soft as human breathing is about 10 times greater than 0 dB. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. A 10 dB increase in sound level is perceived by the human ear as only a doubling of the loudness of the sound. Ambient sounds generally range from 30 dB (very quiet) to 100 dB (very loud).

Sound levels generate from a source, and their decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. For a single point source, sound levels decrease approximately 6 dB for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by stationary equipment. If noise is produced by a line source (e.g., highway traffic or railroad operations), the sound decreases 3 dB for each doubling of distance in a hard site environment; however, line source noise in a relatively flat environment with absorptive vegetation decreases 4.5 dB for each doubling of distance.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. The equivalent continuous sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq} and community noise equivalent level (CNEL) or the day-night average noise level (L_{dn}) based on A-weighted decibels (dBA). CNEL is the time-varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours), and a 10 dBA weighting factor applied to noises occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale but without the adjustment for events occurring during the evening hours. CNEL and L_{dn} are within 1 dBA of each other and are normally interchangeable.

Other noise rating scales of importance when assessing the annoyance factor include the maximum noise level (L_{max}), which is the highest exponential time-averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis for short-term noise impacts are specified in terms of maximum levels denoted by L_{max}, which reflects peak operating conditions and addresses the annoying aspects of intermittent noise. It is often used together with another noise scale, or noise standards in terms of percentile noise levels, in noise ordinances for enforcement purposes. For example, the L_{10} noise level represents the noise level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half the time the noise level exceeds this level, and half the time, it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the background noise level during a monitoring period. For a relatively constant noise source, the L_{eq} and L_{50} are approximately the same.

Noise impacts can be described in three categories. The first category includes audible impacts that refer to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3 dB or greater because this level has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1 dB and 3 dB. This range of noise levels has been found to be noticeable only in laboratory environments. The last category includes changes in noise levels of less than 1 dB, which are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered potentially significant.

Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear, even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by the feeling of pain in the ear (the threshold of pain). A sound level of 160–165 dBA will result in dizziness or loss of equilibrium. The ambient or background noise problem is widespread and generally more concentrated in urban areas than in outlying, less developed area. Table A lists definitions of acoustical terms and Table B shows common sound levels and their sources.

FUNDAMENTALS OF VIBRATION

Vibration refers to ground-borne noise and perceptible motion. Ground-borne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors, where the motion may be discernible, but without the effects associated with the shaking of a building there is less adverse reaction. Vibration energy propagates from a source through intervening soil and rock layers to the foundations of nearby buildings. The vibration then propagates from the foundation throughout the remainder of the structure. Building vibration may be perceived by occupants as the motion of building surfaces, the rattling of items on shelves or hanging on walls, or a low-frequency rumbling noise. The rumbling noise is caused by the vibration of walls, floors, and ceilings that radiate sound waves. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by 10 vibration velocity decibels (VdB) or less.

Table A: Definitions of Acoustical Terms

Term	Definition
Decibel, dB	A unit of noise level that denotes the ratio between two quantities that are proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in 1 second (i.e., number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low- and very high-frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. (All sound levels in this report are A-weighted unless reported otherwise.)
L_2, L_8, L_{50}, L_{90}	The fast A-weighted noise levels that are equaled or exceeded by a fluctuating sound level 2 percent, 8 percent, 50 percent, and 90 percent of a stated time period.
Equivalent Continuous Noise Level, L_{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time-varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 5 dB to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 dB to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L_{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 dB to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
L_{max}, L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter during a designated time interval using fast-time averaging.
Ambient Noise Level	The all-encompassing noise associated with a given environment at a specified time; usually a composite of sound from many sources from many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends on its amplitude, duration, frequency, time of occurrence, and tonal or informational content, as well as the prevailing ambient noise level.

Source: *Handbook of Acoustical Measurements and Noise Control* (Harris 1991).

Table B: Common Sound Levels and Their Noise Sources

Noise Source	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Evaluations
Near Jet Engine	140	Deafening	128 times as loud
Civil Defense Siren	130	Threshold of Pain	64 times as loud
Hard Rock Band	120	Threshold of Feeling	32 times as loud
Accelerating Motorcycle a Few Feet Away	110	Very Loud	16 times as loud
Pile Driver; Noisy Urban Street/Heavy City Traffic	100	Very Loud	8 times as loud
Ambulance Siren; Food Blender	95	Very Loud	—
Garbage Disposal	90	Very Loud	4 times as loud
Freight Cars; Living Room Music	85	Loud	—
Pneumatic Drill; Vacuum Cleaner	80	Loud	2 times as loud
Busy Restaurant	75	Moderately Loud	—
Near-Freeway Auto Traffic	70	Moderately Loud	Reference Level
Average Office	60	Quiet	½ as loud
Suburban Street	55	Quiet	—
Light Traffic; Soft Radio Music in Apartment	50	Quiet	¼ as loud
Large Transformer	45	Quiet	—
Average Residence without Stereo Playing	40	Faint	⅛ as loud
Soft Whisper	30	Faint	—
Rustling Leaves	20	Very Faint	—
Human Breathing	10	Very Faint	Threshold of Hearing
—	0	Very Faint	—

Source: Compiled by LSA (2004).

This is an order of magnitude below the damage threshold for normal buildings. Typical sources of ground-borne vibration are construction activities (e.g., blasting, pile driving, and operating heavy-duty earthmoving equipment), steel-wheeled trains, and occasional traffic on rough roads. Ground-borne vibration and noise from these sources are usually localized to areas within approximately 100 feet from the vibration source, although there are examples of ground-borne vibration causing interference out to distances greater than 200 feet (see the Federal Transit Administration's [FTA] 2018 *Transit Noise and Vibration Impact Assessment Manual*). When roadways are smooth, vibration from traffic, even heavy trucks, is rarely perceptible. It is assumed for most projects that the roadway surface will be smooth enough that ground-borne vibration from street traffic will not exceed the impact criteria; however, both construction of a project and freight train operations on railroad tracks could result in ground-borne vibration that may be perceptible and annoying.

Ground-borne noise is not likely to be a problem because noise arriving via the normal airborne path will usually be greater than ground-borne noise. Ground-borne vibration has the potential to disturb people and damage buildings. Although it is very rare for train-induced ground-borne vibration to cause cosmetic building damage, it is not uncommon for heavy duty construction processes (e.g., blasting and pile driving) to cause vibration of sufficient amplitudes to damage nearby buildings (FTA 2018). Ground-borne vibration is usually measured in terms of vibration velocity, either the root-mean-square (RMS) velocity or peak particle velocity (PPV). The RMS is best for characterizing human response to building vibration, and PPV is used to characterize potential for

damage. Decibel notation acts to compress the range of numbers required to describe vibration. Vibration velocity level in decibels is defined as:

$$L_v = 20 \log_{10} [V/V_{ref}]$$

where Lv is the VdB, "V" is the RMS velocity amplitude, and "Vref" is the reference velocity amplitude, or 1×10^{-6} inches/second (in/sec) used in the United States.

REGULATORY SETTING

Federal Guidelines

Federal Transit Administration

Vibration standards included in the *FTA Transit Noise and Vibration Impact Assessment Manual* (FTA 2018) were used in this analysis because the City of Banning does not have vibration standards. Table C provides the criteria for assessing the potential for interference or annoyance from vibration levels in a building, while Table D lists the potential vibration building damage criteria associated with construction activities.

Table C: Interpretation of Vibration Criteria for Detailed Analysis

Land Use	Max L_v (VdB)[1]	Description of Use
Workshop	90	Vibration that is distinctly felt. Appropriate for workshops and similar areas not as sensitive to vibration.
Office	84	Vibration that can be felt. Appropriate for offices and similar areas not as sensitive to vibration.
Residential Day	78	Vibration that is barely felt. Adequate for computer equipment and low-power optical microscopes (up to 20X).
Residential Night and Operating Rooms	72	Vibration is not felt, but ground-borne noise may be audible inside quiet rooms. Suitable for medium-power microscopes (100X) and other equipment of low sensitivity.

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).
[1] As measured in 1/3-octave bands of frequency over the frequency range 8 to 80 Hz.
FTA = Federal Transit Administration
Hz = hertz
L_v = vibration velocity in decibels
Max = maximum
VdB = vibration velocity decibels

Table D: Construction Vibration Damage Criteria

Building Category	PPV (in/sec)	Approximate L_V (VdB)[1]
Reinforced concrete, steel, or timber (no plaster)	0.50	102
Engineered concrete and masonry (no plaster)	0.30	98
Non-engineered timber and masonry buildings	0.20	94
Buildings extremely susceptible to vibration damage	0.12	90

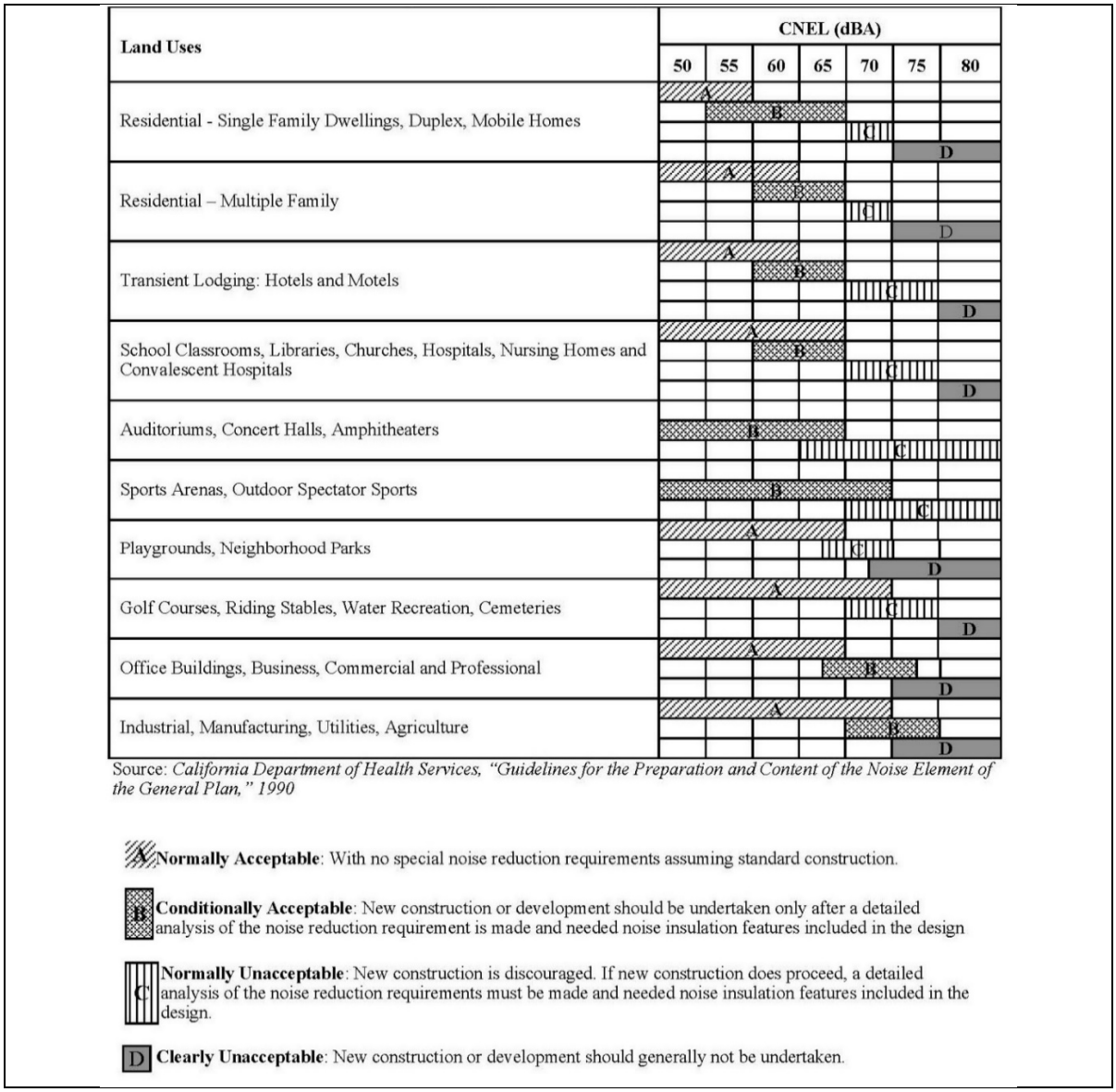
Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).
[1] RMS vibration velocity in decibels (VdB) is 1 µin/sec.
µin/sec = microinches per second
FTA = Federal Transit Administration
in/sec = inches per second
L_v = vibration velocity in decibels
PPV = peak particle velocity
RMS = root-mean-square
VdB = vibration velocity decibels

Local Regulations

City of Banning

General Plan Noise Element. Chapter V, Environmental Hazards, of the City's General Plan contains the Noise Element that has established allowable exterior ambient noise levels for various land uses, and contains policies and actions required to meet the City's noise-related goals. The allowable exterior ambient noise levels for each land use are summarized in the City's land use compatibility categories for community noise environments, as shown in Table E. Applicable goals, policies, and programs for the development project are listed below.

Table E: Land Use Compatibility for Community Noise Environments



Source: *California Department of Health Services, "Guidelines for the Preparation and Content of the Noise Element of the General Plan," 1990*

Goal: A noise environment that complements the community's residential character and its land uses.

- **Policy 1:** The City shall protect noise sensitive land uses, including residential neighborhoods, schools, hospitals, libraries, churches, resorts, and community open space, from potentially significant sources of community noise.
    - **Program 1.A:** The City shall require building setbacks, the installation of wall and window insulation, soundwalls, earthen berms, and/or other mitigation measures in areas exceeding the City's noise limit standards for private development projects as they occur.
    - **Program 1.B**: The City shall maintain and enforce its Noise Control Ordinances that establish community-wide noise standards and identify measures designed to resolve noise complaints.
    - **Program 1.C:** The City shall use the development review process to assure the use of buffers between sensitive receptors and incompatible land uses.
    - **Program 1.D:** The City shall require that commercial compactors, loading zones, and large trash bins be located at a sufficient distance from residential properties to reduce noise impacts to its acceptable standard.
- **Policy 2:** The relationship between land use designations in the Land Use Element and changes in the circulation pattern of the City, as well as individual developments, shall be monitored and mitigated.
    - **Program 2.A:** The City shall develop guidelines and minimal criteria requirements for noise analyses for proposed development projects. Studies shall evaluate project impacts and the effectiveness of proposed mitigation measures.
- **Policy 6:** All development proposals within the noise impact area of the Interstate and the railroad shall mitigate both noise levels and vibration to acceptable levels through the preparation of focused studies and analysis in the development review and environmental review process.
- **Policy 8:** The City shall impose and integrate special design features into proposed development that minimize impacts associated with the operation of air conditioning and heating equipment, onsite traffic, and use of parking, loading and trash storage facilities.

Municipal Code. Sections 8.44.070 and 8.44.080 of the City's Municipal Code have established exterior maximum noise levels for residential and non-residential (commercial and industrial) uses. Table F shows the City's exterior maximum noise levels.

Table F: City of Banning Maximum Noise Level Standards

Zone Use	Time	Base Ambient Noise Level (dBA)	L_{25}[1] (15 min)	L_8[2] (5 min)	L_2[3] (1 min)	L_{max}[4]
Residential	10:00 PM to 7:00 AM	45	50	55	60	65
	7:00 AM to 10:00 PM	55	60	65	70	75
Industrial and Commercial	Anytime	75	--	--	--	--

Source: Municipal Code (City of Banning, 2021).
[1] The exterior noise standard for a cumulative period of 15 minutes in any hour.
[2] The exterior noise standard for a cumulative period of 5 minutes in any hour.
[3] The exterior noise standard for a cumulative period of 1 minute in any hour.
[4] The exterior maximum nose level that is not permitted.
dBA = A-weighted decibel
L_{max} = maximum instantaneous noise level
min = minute/minutes

Section 8.44.090(E) of the City's Municipal Code permits construction activities to exceed the maximum noise levels between the hours of 7:00 a.m. and 6:00 p.m., as shown in Table F. However, the City prohibits construction activities to exceed 55 dBA for more than 15 minutes per hour as measured in the interior of the nearest occupied residence or school.

Section 8.44.090(E) of the City's Municipal Code prohibits the operation of any machinery, equipment, device, pump, fan, compressor, air conditioning apparatus, or similar mechanical device that would cause the noise level at the property line of the property upon which the equipment or machinery is operated to exceed the base ambient noise level by 5 dBA.

EXISTING SETTING

Land Uses in the Project Vicinity

Land uses surrounding the project site include:

- **North:** Residential and commercial uses
- **East:** Industrial uses
- **Southeast:** Residential uses
- **South:** Industrial and residential uses
- **Southwest:** Residential uses
- **West:** Vacant land and industrial uses

Overview of the Existing Noise Environment

The primary existing noise sources in the project area are transportation facilities. Traffic on I-10, Lincoln Street, and other local streets contribute to the ambient noise levels in the project vicinity. The Union Pacific Railroad (UPRR) line, which also carries Amtrak trains, is immediately north of the project. Both freight and passenger train operations contribute to the existing noise environment. Other sources of noise in the project area include industrial activity and aircraft noise from Banning Municipal Airport.

Ambient Noise Measurements

Short-Term Noise Measurements

Short-term (20-minute) noise level measurements were conducted on September 13, 2022, using a Larson Davis Model 831 Type 1 sound level meter. Table G shows the results of the short-term noise level measurements along with a description of the measurement locations and noise sources that occurred during the measurement. As shown in Table G, the measured average noise levels in the project area range from 60.8 to 65.3 dBA L_{eq}, and the instantaneous maximum noise levels range from 67.3 to 78.9 dBA L_{max}. Short-term noise level measurement survey sheets are provided in Attachment C. Figure 3 shows the short-term monitoring locations.

Table G: Short-Term Ambient Noise Level Measurements

Monitor No.	Location	Start Time	Noise Level (dBA)			Noise Source(s)
			L_{eq}	L_{max}	L_{min}	
ST-1	Located in the northeast corner of the project site border a warehouse facility.	11:15 a.m.	60.8	67.3	55.6	Traffic on I-10. Faint traffic on Lincoln Street. Faint HVAC noise from nearby warehouse.
ST-2	Located north of the building entrance on 300 W Lincoln Street, Banning, 92220.	11:43 a.m.	65.3	78.9	55.2	Traffic Lincoln Street.

Source: Compiled by LSA Associates, Inc. (2022).

dBA = A-weighted decibel
HVAC = heating, ventilation and air conditioning
I-10 = Interstate 10
L_{eq} = equivalent continuous sound level
L_{max} = maximum measured sound level
L_{min} = minimum measured sound level

Long-Term Noise Measurements

Four long-term (24-hour) noise level measurements were conducted from September 13, 2022, to September 14, 2022, using Larson Davis Spark 706RC dosimeters. Table H summarizes the results of the long-term noise level measurements along with a description of the measurement locations and noise sources that occurred during the measurements. As shown in Table H, the daytime noise levels ranged from 55.6 to 69.7 dBA $L_{eq,}$ and nighttime noise levels ranged from 53.8 to 67.8 dBA L_{eq}. Also, the daytime maximum instantaneous noise level ranged from 67.0 to 86.9 dBA and the nighttime instantaneous noise level ranged from 66.3 to 84.4 dBA. Also, the calculated CNEL levels at LT-1, LT-2, LT-3, and LT-4 were 73.4 dBA, 69.8 dBA, 63.1 dBA, and 71.4 dBA, respectively. Long-term noise level measurement survey sheets along with the detailed hourly L_{eq}, L_{max}, and minimum measured sound level (L_{min}) results are provided in Attachment C. Figure 3 shows the long-term monitoring locations.

Existing Aircraft Noise

The nearest airport to the project site is Banning Municipal Airport, which is 1.2 miles east of the project site. Based on the *Riverside County Airport Land Use Compatibility Plan* (ALUC 2004) and the General Plan Noise Element, the project site is within ALUC's Compatibility Zone D and within the 55 CNEL airport noise contour. Industrial uses are normally acceptable up to 70 dBA CNEL based on the City's Land Use Compatibility for Community Noise Environments shown in Table E. In addition, there are no private airstrips within the vicinity of the project site. Therefore, the proposed

Table H: Long-Term Ambient Noise Monitoring Results

Monitor No.	Location	Noise Level (dBA)					Noise Sources
		Daytime		Nighttime		CNEL	
		L_{eq}	L_{max}	L_{eq}	L_{max}		
LT-1	Located in an alleyway behind 69 South 3rd Street, Banning. On a powerline pole.	65.1–69.7	76.0–80.6	64.1–67.8	71.5–79.9	73.4	Light traffic noise along Livingston Street.
LT-2	Located at the southeast corner of the project site near a powerline pole adjacent to Lincoln Street.	62.0–69.0	81.1–86.9	57.4–66.0	77.7–84.4	69.8	Traffic noise along Lincoln Street.
LT-3	Located just south of 380 4th Street, Banning. On a pole adjacent to Barbour Avenue.	55.6–60.5	67.0–74.4	53.8–58.5	66.3–75.1	63.1	Traffic on Barbour Avenue.
LT-4	Located in front of 545 South San Gorgonio Avenue, Banning. Just past the sidewalk near the northeast power pole.	64.7–68.9	77.1–84.0	60.9–67.0	71.8–82.5	71.4	Traffic on South San Gorgonio Avenue.

Source: Compiled by LSA (2022).
Note: Long-term (24-hour) noise level measurements were conducted from September 13, 2022, to September 14, 2022.
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = foot/feet
L_{eq} = equivalent continuous sound level
L_{max} = maximum instantaneous noise level

project would not expose people working in the project area to excessive noise levels, and this topic is not further discussed.

Existing Train Noise

The UPRR line, which also carries Amtrak trains, is immediately north of the project site. The train crossing data from the Federal Railroad Administration Office of Safety Analysis show that there are a total of 34 freight and passenger trains per day. Noise generated from train operations would be captured in the long-term noise level measurement at LT-1 and LT-2.

Existing Traffic Noise

The Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (1977; FHWA RD-77-108) was used to evaluate highway traffic-related noise conditions along roadway segments in the project vicinity. This model requires various parameters, including traffic volumes, vehicle mix, vehicle speed, and roadway geometry to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The resultant noise levels are weighted and summed over 24-hour periods to determine the CNEL values. The existing average daily traffic (ADT) volumes were obtained from the Rancho San Gorgonio Specific Plan Traffic Impact Analysis (Kunzman Associates, Inc. 2016). The standard vehicle mix for Southern California roadways was used for traffic on these roadway segments. Table I provides the existing traffic noise levels in the project vicinity. These noise levels represent the worst-case scenario, which assumes that no shielding is provided between the traffic and the location where the noise contours are drawn. Attachment D provides the specific assumptions used in developing these noise levels and model printouts.

Table I: Existing Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 dBA CNEL (feet)	Centerline to 65 dBA CNEL (feet)	Centerline to 60 dBA CNEL (feet)	CNEL (dBA) 50 feet from Centerline of Outermost Lane
Lincoln Street Between 8th Street and San Gorgonio Avenue	9,000	< 50	75	155	65.1
8th Street North of Lincoln Street	7,900	< 50	< 50	95	61.8

Source: Compiled by LSA (2022).
Note: Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.
ADT = average daily traffic dBA = A-weighted decibels
CNEL = Community Noise Equivalent Level

IMPACTS

Short-Term Construction Noise Impacts

Two types of short-term noise impacts would occur during project construction. The first type would be from construction crew commutes and the transport of construction equipment and materials to the project site and would incrementally raise noise levels on roadways leading to the site. The pieces of construction equipment for construction activities would move on site, would remain for the duration of each construction phase, and would not add to the daily traffic volume in the project vicinity. Although there would be a relatively high single-event noise exposure potential causing intermittent noise nuisance (passing trucks at 50 feet would generate up to a maximum of 84 dBA), the effect on longer-term ambient noise levels would be small because the number of daily construction-related vehicle trips is small compared to existing daily traffic volume on Lincoln Street and 8th Street. The building construction phase would generate the most trips out of all of the construction phases, at 164 trips per day based on the California Emissions Estimator Model (CalEEMod) (Version 2020.4.0) results contained in Attachment B of the *First Lincoln Industrial Project Air Quality, Greenhouse Gas Emissions, and Energy Impact Analysis Memorandum* (LSA 2022). Roadways that would be used to access the project site are Lincoln Street and 8th Street. Based on Table I, Lincoln Street and 8th Street have estimated existing daily traffic volumes of 9,000 and 7,900, respectively, near the project site. Based on the information above, construction-related traffic would increase noise by up to 0.1 dBA. A noise level increase of less than 3 dBA would not be perceptible to the human ear in an outdoor environment. Therefore, no short-term, construction-related impacts associated with worker commutes and transport of construction equipment and material to the project site would occur and no noise reduction measures would be required.

The second type of short-term noise impact is related noise generated from construction activities. Construction is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. The proposed project anticipates site preparation, grading, building construction, paving, and architectural coating phases of construction. These various sequential phases change the character of the noise generated on a project site. Therefore, the noise levels vary as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table J lists the L_{max} recommended for noise impact assessments for typical construction equipment included in the

Table J: Typical Construction Equipment Noise Levels

Equipment Description	Acoustical Usage Factor[1] (%)	Maximum Noise Level (L_{max}) at 50 feet[2]
Backhoe	40	80
Compactor (ground)	20	80
Compressor	40	80
Crane	16	85
Dozer	40	85
Dump Truck	40	84
Excavator	40	85
Flatbed Truck	40	84
Man Lift (Forklift)	20	85
Front-End Loader	40	80
Generator	50	82
Grader	40	85
Jackhammer	20	85
Pavement Scarifier	20	85
Paver	50	85
Pickup Truck	40	55
Pneumatic Tools	50	85
Pump	50	77
Rock Drill	20	85
Roller	20	85
Scraper	40	85
Tractor	40	84
Welder	40	73

Source: Table 9.1, *FHWA Highway Construction Noise Handbook* (FHWA 2006).

Note: The noise levels reported in this table are rounded to the nearest whole number.

[1] Usage factor is the percentage of time during a construction noise operation that a piece of construction equipment is operating at full power.

[2] Maximum noise levels were developed based on Specification 721.560 from the CA/T program to be consistent with the City of Boston, Massachusetts, Noise Code for the "Big Dig" project.

CA/T = Central Artery/Tunnel
L_{max} = maximum instantaneous noise level
FHWA = Federal Highway Administration

FHWA *Highway Construction Noise Handbook* (2006), based on a distance of 50 feet between the equipment and a noise receptor.

Table K lists the anticipated construction equipment for each construction phase based on the CalEEMod (Version 2020.4.0) results contained in Attachment B of the *First Lincoln Industrial Project Air Quality, Greenhouse Gas Emissions, and Energy Impact Analysis Memorandum* (LSA 2022). Table K shows the combined noise level at 50 feet (ft) from all of the equipment in each phase as well as the L_{eq} noise level for each equipment at 50 ft based on the quantity, reference instantaneous maximum (L_{max}) noise level at 50 ft, and the acoustical usage factor. As shown in Table K, construction noise levels would reach up to 87.6 L_{eq} at a distance of 50 ft.

Table K: Summary of Construction Phase, Equipment, and Noise Levels

Construction Phase	Construction Equipment	Quantity	Reference Noise Level at 50 ft (dBA L_{max})	Acoustical Usage Factor[1] (%)	Noise Level at 50 ft (dBA L_{eq})	Combined Noise Level at 50 ft (dBA L_{eq})
Site Preparation	Bulldozers	3	85	40	85.8	87.3
	Front-End Loaders	4	80	40	82.0	
Grading	Excavator	1	85	40	81.0	87.0
	Grader	1	85	40	81.0	
	Bulldozer	1	85	40	81.0	
	Front-End Loaders	3	80	40	80.8	
Building Construction	Crane	1	85	16	77.0	86.5
	Forklifts	3	85	20	82.8	
	Generator	1	82	50	79.0	
	Front-End Loaders	3	80	40	80.8	
	Welders	1	73	40	69.0	
Paving	Pavers	2	85	50	85.0	87.6
	Paving Equipment	2	85	20	81.0	
	Rollers	2	85	20	81.0	
Architectural Coating	Air Compressors	1	80	40	76.0	76.0

Source: Compiled by LSA (2022).

[1] The acoustical usage factor is the percentage of time during a construction noise operation that a piece of construction equipment operates at full power.

dBA = A-weighted decibels
L_{eq} = equivalent continuous sound level
ft = foot/feet
L_{max} = maximum instantaneous noise level

Table L shows the calculated interior noise levels generated from project construction activities during the noisiest construction phase at the closest residential buildings surrounding the project site. The interior noise level was calculated based on the calculated exterior construction noise level and an exterior-to-interior noise reduction of 20 dBA (FHWA 2011). As shown in Table L, the closest residential buildings surrounding the project site would be exposed to interior construction noise levels of up to 45.5 dBA L_{eq}. This noise level would not exceed the City's construction noise standard of 55 dBA for more than 15 minutes per hour. Additionally, compliance with the City's permitted hours of construction pursuant to Section 8.44.090(E) of the City's Municipal Code would ensure construction noise would not be generated during the more sensitive nighttime hours. Therefore, no construction noise impacts would occur, and no noise reduction measures are required.

Table L: Construction Noise Level

Land Use	Direction	Reference Noise Level at 50 ft (dBA L_{eq})	Distance[1] (ft)	Distance Attenuation (dBA)	Noise Level (dBA L_{eq})	
					Exterior	Interior[4]
Residence (69 South 3rd Street)	North	87.6	635	22.1	65.5	45.5
Residence (545 South San Gorgonio Avenue)	Southeast	87.6	885	25.0	62.6[2]	42.6
Residence (Windscape Village)	South	87.6	680	22.7	64.9[3]	44.9
Residence (430 Barbour Avenue)	Southwest	87.6	850	24.6	63.0[2]	43.0

Source: Compiled by LSA (2022).

1 Distance from the active construction area near the center of the project site to the building structure.

2 Construction noise level would be lower when factoring in partial shielding from the existing intervene industrial buildings south of the project site.

3 Construction noise level would be lower when factoring in shielding from the existing intervene industrial buildings south of the project site.

4 The interior noise level was calculated based on the calculated exterior construction noise level and an exterior-to-interior noise reduction of 20 dBA (FHWA 2011).

dBA = A-weighted decibels

L_{eq} = equivalent continuous sound level

ft = foot/feet

Short-Term Construction Vibration Impacts

This construction vibration impact analysis discusses the level of human annoyance using vibration levels in VdB and assesses the potential for building damage using vibration levels in PPV (in/sec). Vibration levels calculated in RMS velocity are best for characterizing human response to building vibration, whereas vibration levels in PPV are best for characterizing damage potential.

Table M shows the reference vibration levels at a distance of 25 ft for each type of standard construction equipment from the *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018). Project construction is expected to require the use of large bulldozers and loaded trucks, which would generate ground-borne vibration levels of up to 87 VdB (0.089 PPV [in/sec]) and 86 VdB (0.076 PPV [in/sec]), respectively, when measured at 25 ft.

The greatest vibration levels are anticipated to occur during the site preparation and grading phase. All other phases are expected to result in lower vibration levels. The distance to the nearest buildings for vibration impact analysis is measured between the nearest off-site buildings and the project boundary (assuming the construction equipment would be used at or near the project boundary) because vibration impacts normally occur within the buildings.

The formula for vibration transmission is provided below:

$$L_vdB\ (D) = L_vdB\ (25\ ft) - 30\ Log\ (D/25)$$

$$PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$$

Table M: Vibration Source Amplitudes for Construction Equipment

Table 1: Equipment	Table 2: Reference PPV/L_V at 25 ft	
	Table 3: PPV (in/sec)	Table 4: L_V (VdB)[1]
Pile Driver (Impact), Typical	0.644	104
Pile Driver (Sonic), Typical	0.170	93
Vibratory Roller	0.210	94
Hoe Ram	0.089	87
Large Bulldozer[2]	**0.089**	**87**
Caisson Drilling	0.089	87
Loaded Trucks[2]	**0.076**	**86**
Jackhammer	0.035	79
Small Bulldozer	0.003	58

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).
[1] RMS vibration velocity in decibels (VdB) is 1 µin/sec.
[2] The equipment shown in **bold** is expected to be used on site.
µin/sec = microinches per second
ft = foot/feet
FTA = Federal Transit Administration
in/sec = inches per second
L_V = vibration velocity in decibels
PPV = peak particle velocity
RMS = root-mean-square
VdB = vibration velocity decibels

Table N lists the projected vibration levels from various construction equipment expected to be used on the project site in the active construction area to the nearest buildings in the project vicinity. As shown in Table N, the closest industrial and residential building east and north of the project site approximately 160 ft and 635 ft from the active project construction area near the center of the project and would experience a vibration level of up to 63 VdB and 45 VdB, respectively. These vibration levels would not result in community annoyance because they would not exceed the FTA community annoyance threshold of 84 VdB for uses that are not as sensitive to vibration and 78 VdB for daytime residences. Other building structures that surround the project site would experience lower vibration levels because they are farther away.

Similarly, Table O lists the projected vibration levels from various construction equipment expected to be used on the project site at the project construction boundary to the nearest buildings in the project vicinity. As shown in Table O, the industrial and residential buildings to the east and north of the project site are approximately 115 ft and 560 ft from the project construction boundary and would experience a vibration level of up to 0.001 PPV (in/sec) and 0.009 PPV (in/sec), respectively. These vibration levels would not result in building damage because industrial and residential building would be constructed equivalent to or better than non-engineered timber and masonry and vibration levels would not exceed the FTA vibration damage threshold of 0.20 PPV (in/sec). Other building structures that surround the project site would experience lower vibration levels because they are farther away and would be constructed equivalent to or better than non-engineered timber and masonry. Therefore, no construction vibration impacts would occur during project construction. No vibration reduction measures are required.

Table N: Potential Construction Vibration Annoyance

Land Use	Direction	Equipment/ Activity	Reference Vibration Level (VdB) at 25 ft	Distance to Structure (ft)[1]	Vibration Level (VdB)
Residence (69 South 3rd Street)	North	Large bulldozers	87	635	45
		Loaded trucks	86	635	44
Industrial (201 West Lincoln Street)	East	Large bulldozers	87	160	63
		Loaded trucks	86	160	62
Residence (545 South San Gorgonio Avenue)	Southeast	Large bulldozers	87	885	41
		Loaded trucks	86	885	40
Industrial (368 West Lincoln Street)	South	Large bulldozers	87	175	62
		Loaded trucks	86	175	61
Residence (Windscape Village)	South	Large bulldozers	87	680	44
		Loaded trucks	86	680	43
Residence (430 Barbour Avenue)	Southwest	Large bulldozers	87	850	41
		Loaded trucks	86	850	40
Industrial (679 West Lincoln Street)	West	Large bulldozers	87	940	40
		Loaded trucks	86	940	39

Source: Compiled by LSA (2022).
Note: The FTA-recommended annoyance threshold of 84 VdB for offices (and other similar areas) and 78 VdB for residential homes was used to assess potential construction vibration annoyance.
[1] Distance from the active construction area near the center of the project site to the building structure.
ft = foot/feet
VdB = vibration velocity decibels
FTA = Federal Transit Administration

Table O: Potential Construction Vibration Damage

Land Use	Direction	Equipment/ Activity	Reference Vibration Level at 25 ft	Distance to Structure (ft)[1]	Vibration Level
			PPV (in/sec)		PPV (in/sec)
Residence (69 South 3rd Street)	North	Large bulldozers	0.089	560	0.001
		Loaded trucks	0.076	560	0.001
Industrial (201 West Lincoln Street)	East	Large bulldozers	0.089	115	0.009
		Loaded trucks	0.076	115	0.008
Residence (545 South San Gorgonio Avenue)	Southeast	Large bulldozers	0.089	795	0.000
		Loaded trucks	0.076	795	0.000
Industrial (368 West Lincoln Street)	South	Large bulldozers	0.089	90	0.013
		Loaded trucks	0.076	90	0.011
Residence (Windscape Village)	South	Large bulldozers	0.089	595	0.001
		Loaded trucks	0.076	595	0.001
Residence (430 Barbour Avenue)	Southwest	Large bulldozers	0.089	755	0.001
		Loaded trucks	0.076	755	0.000
Industrial (679 West Lincoln Street)	West	Large bulldozers	0.089	855	0.000
		Loaded trucks	0.076	855	0.000

Source: Compiled by LSA (2022).
Note: The FTA-recommended building damage threshold is 0.20 PPV [in/sec]) at the receiving non-engineered timber and masonry building.
[1] Distance from the project construction boundary to the building structure.
ft = foot/feet
FTA = Federal Transit Administration
in/sec = inches per second
PPV = peak particle velocity
VdB = vibration velocity decibels

Long-Term Traffic Noise Impacts

The *FHWA Highway Traffic Noise Prediction Model* (1977; FHWA RD-77-108) was used to evaluate highway traffic-related noise conditions along roadway segments in the project vicinity. This model requires various parameters, including traffic volumes, vehicle mix, vehicle speed, and roadway geometry to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The resultant noise levels are weighted and summed over 24-hour periods to determine the CNEL values. The existing and future 2035 ADT volumes were obtained from the *Rancho San Gorgonio Specific Plan Traffic Impact Analysis* (Kunzman Associates, Inc. 2016). The standard vehicle mix for Southern California roadways was used for traffic on these roadway segments under the without project scenario. Under the with project scenario, the projected traffic volumes include the project-related traffic volumes from the from the *Proposed Traffic Study Scope of Work for First Lincoln Logistics Warehouse on Lincoln Street at 4th Street in the City of Banning Memorandum* (Stantec 2022) and the adjusted vehicle mix based on the proposed project's vehicle mix. Table P shows the existing traffic noise levels without and with the project along roadways in the project vicinity. Table Q shows the future (2035) traffic noise levels without and with the project along roadways in the project vicinity. These noise levels represent the worst-case scenario, which assumes that no shielding is provided between the traffic and the location where the noise contours are drawn. Attachment D provides the specific assumptions used in developing these noise levels and model printouts.

Tables P and Q show that project-related traffic would increase noise by up to 1.1 dBA. Noise level increases less than 3 dBA would not be perceptible to the human ear in an outdoor environment. Therefore, no traffic noise impacts from project-related traffic on off-site sensitive receptors would occur. No noise reduction measures are required.

Long-Term Stationary Noise Impacts

Delivery trucks/truck loading and unloading activities, automobile and truck parking activities, and heating, ventilation, and air conditioning (HVAC) equipment associated with the project would potentially affect the existing off-site sensitive land uses. The following provides a detailed noise analysis and discussion of each stationary noise source.

Truck Delivery and Truck Loading and Unloading Activities

Truck delivery and truck loading/unloading activities for the proposed project would take place on the north side of the proposed warehouse building, as Figure 2 shows. These activities would take place both during daytime and nighttime hours. Noise levels generated from these activities include truck movement, docking at loading dock doors, backup alarms, air brakes, idling, and loading and unloading activities. These activities would result in a maximum noise similar to noise readings from truck delivery and truck loading and unloading activities for other projects, which would generate a noise level of 75 dBA L_{max} at 50 feet based on measurements conducted by LSA. Although a typical truck-unloading process takes an average of 15–20 minutes, this maximum noise level occurs in a much shorter period of time (less than 5 minutes). It is estimated that there would be up to 4 truck deliveries and truck loading/unloading activities during daytime hours and up to 3 truck deliveries and truck loading/unloading activities during nighttime hours based on the project trip generation from the *Proposed Traffic Study Scope of Work for First Lincoln Logistics Warehouse on Lincoln Street at 4th Street in the City of Banning Memorandum* (Stantec 2022). With each truck generating the maximum noise level for a cumulative period of 5 minutes in any hour, trucks during daytime hours would

Table P: Existing Traffic Noise Levels Without and With Project

Roadway Segment	Without Project Traffic Conditions					With Project Traffic Conditions					
	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase from Without Project Conditions (dBA)
Lincoln Street Between 8th Street and San Gorgonio Avenue	9,000	< 50	75	155	65.1	9,203	< 50	84	174	65.9	0.8
8th Street North of Lincoln Street	7,900	< 50	< 50	95	61.8	8,103	< 50	56	112	62.9	1.1

Source: Compiled by LSA (2022).

Note: Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.

ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = feet

Table Q: Future (2035) Traffic Noise Levels Without and With Project

Roadway Segment	Without Project Traffic Conditions					With Project Traffic Conditions					
	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase from Without Project Conditions (dBA)
Lincoln Street Between 8th Street and San Gorgonio Avenue	15,100	< 50	103	218	67.4	15,303	56	110	234	67.8	0.4
8th Street North of Lincoln Street	9,300	< 50	< 50	105	62.5	9,503	< 50	60	121	63.4	0.9

Source: Compiled by LSA (2022).

Note: Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.

ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = feet

generate the maximum noise level for a cumulative period of 20 minutes in any hour and trucks during nighttime hours would generate the maximum noise level for a cumulative period of 15 minutes in any hour, which would be 70.2 dBA L_{eq} and 69.0 dBA L_{eq} at 50 ft, respectively.

The proposed industrial building would shield the residential property lines to the southeast, south, and southwest and the industrial property line to the south from truck delivery and truck loading/unloading activities. The noise level reduction calculation provided by the proposed industrial building is provided in Attachment E.

Parking Lot Activity

The proposed project would include surface parking for automobiles and trucks. Noise generated from parking lot activities would include noise generated by vehicles traveling at slow speeds, engine start-up noise, car door slams, car horns, car alarms, and tire squeals. Representative parking activities would generate approximately 60 to 70 dBA L_{max} at 50 feet based on measurements conducted by LSA. It is estimated that there would be parking activities for up to 18 automobiles and 4 trucks during daytime hours and 5 automobiles and 3 trucks during nighttime hours based on the project trip generation from the *Proposed Traffic Study Scope of Work for First Lincoln Logistics Warehouse on Lincoln Street at 4th Street in the City of Banning Memorandum* (Stantec 2022). It is estimated that automobile parking activities would generate the maximum noise level for a cumulative period of 5 minutes in any hour during daytime hours and the maximum noise level for a cumulative period of 2 minutes in any hour during nighttime hours based on the number of automobiles during daytime and nighttime hours, which would be 59.2 dBA L_{eq} and 55.2 dBA L_{eq} at 50 ft, respectively. Also, it is estimated that truck parking activities would generate the maximum noise level for a cumulative period of 1 minute in any hour during daytime and nighttime hours based on the number of trucks during daytime and nighttime hours, which would be 52.2 dBA L_{eq} at 50 ft.

The proposed industrial building would shield the residential property lines to the southeast, south, and southwest and the industrial property line to the south from truck parking activities. The noise level reduction calculation provided by the proposed industrial building is provided in Attachment E.

Heating, Ventilation, and Air Conditioning Equipment

The proposed project would include up to two rooftop HVAC units with parapets at the southwest and southeast corners of the building for the office portion of the warehouse (a total of four rooftop HVAC units). The HVAC equipment could operate 24 hours per day. Each rooftop HVAC unit would generate a noise level of 56.4 dBA L_{eq} at a distance of 50 ft. Each group of two HVAC units operating simultaneously at each location would generate a noise level of 59.4 dBA L_{eq} at a distance of 50 ft.

Stationary Noise Impacts Summary

Tables R and S shows the daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) individual stationary noise source, respectively, from truck delivery and truck loading and unloading activities, automobile and truck parking activities, and rooftop HVAC equipment at the residential and industrial use areas as well as the distance attenuation, noise reduction from shielding, and the combined stationary noise level at each property line.

Table R: Daytime Stationary Noise Levels

Land Use	Direction	Noise Source	Reference Noise Level at 50 ft (dBA L_{max})	Reference Noise Level at 50 ft (dBA L_{eq})	Distance from Source to Receptor (ft)	Distance Attenuation (dBA)	Shielding[2] (dBA)	Noise Level (dBA L_{max})	Noise Level (dBA L_{eq})	Combined Noise Level (dBA L_{eq})
Residence (69 South 3rd Street)	North	Truck Delivery[1]	75	70.2	670	22.5	0	52.5	47.7	48.5
		Auto Parking Activities	70	59.2	600	21.6	0	48.4	37.6	
		Truck Parking Activities	70	52.2	595	21.5	0	48.5	30.7	
		HVAC (southwest)	--	59.4	925	25.3	0	--	34.1	
		HVAC (southeast)	--	59.4	925	25.3	0	--	34.1	
Industrial (201 West Lincoln Street)	East	Truck Delivery[1]	75	70.2	125	8.0	0	67.0	62.2	63.1
		Auto Parking Activities	70	59.2	85	4.6	0	65.4	54.6	
		Truck Parking Activities	70	52.2	335	16.5	0	53.5	35.7	
		HVAC (southwest)	--	59.4	570	21.1	0	--	38.3	
		HVAC (southeast)	--	59.4	145	9.2	0	--	50.2	
Residence (545 South San Gorgonio Avenue)	Southeast	Truck Delivery[1]	75	70.2	1,005	26.1	17	31.9	27.1	39.0
		Auto Parking Activities	70	59.2	830	24.4	0	45.6	34.8	
		Truck Parking Activities	70	52.2	1,225	27.8	16	26.2	8.4	
		HVAC (southwest)	--	59.4	1,220	27.7	0	--	31.7	
		HVAC (southeast)	--	59.4	870	24.8	0	--	34.6	
Industrial (368 West Lincoln Street)	South	Truck Delivery[1]	75	70.2	385	17.7	17	40.3	35.5	56.5
		Auto Parking Activities	70	59.2	85	4.6	0	65.4	54.6	
		Truck Parking Activities	70	52.2	490	19.8	16	34.2	16.4	
		HVAC (southwest)	--	59.4	170	10.6	0	--	48.8	
		HVAC (southeast)	--	59.4	170	10.6	0	--	48.8	
Residence (Windscape Village)	South	Truck Delivery[1]	75	70.2	855	24.7	17	33.3	28.5	42.5
		Auto Parking Activities	70	59.2	565	21.1	0	48.9	38.1	
		Truck Parking Activities	70	52.2	645	22.2	16	28.2	10.4	
		HVAC (southwest)	--	59.4	645	22.2	0	--	37.2	
		HVAC (southeast)	--	59.4	645	22.2	0	--	37.2	
Residence (430 Barbour Avenue)	Southwest	Truck Delivery[1]	75	70.2	1,050	26.4	17	31.6	26.8	39.9
		Auto Parking Activities	70	59.2	740	23.4	0	46.6	35.8	
		Truck Parking Activities	70	52.2	1,165	27.3	16	26.7	8.9	
		HVAC (southwest)	--	59.4	825	24.3	0	--	35.1	
		HVAC (southeast)	--	59.4	970	25.8	0	--	33.6	

Table R: Daytime Stationary Noise Levels

Land Use	Direction	Noise Source	Reference Noise Level at 50 ft (dBA L_{max})	Reference Noise Level at 50 ft (dBA L_{eq})	Distance from Source to Receptor (ft)	Distance Attenuation (dBA)	Shielding[2] (dBA)	Noise Level (dBA L_{max})	Noise Level (dBA L_{eq})	Combined Noise Level (dBA L_{eq})
Industrial (679 West Lincoln Street)	West	Truck Delivery[1]	75	70.2	925	25.3	0	49.7	44.9	45.9
		Auto Parking Activities	70	59.2	845	24.6	0	45.4	34.6	
		Truck Parking Activities	70	52.2	940	25.5	0	44.5	26.7	
		HVAC (southwest)	--	59.4	845	24.6	0	--	34.8	
		HVAC (southeast)	--	59.4	1,270	28.1	0	--	31.3	

Source: Compiled by LSA Associates, Inc. (2022).

[1] Truck delivery and truck loading and unloading activities.

[2] The calculated noise reduction from the proposed 45 ft high warehouse buildings is provided in Attachment E.

dBA = A-weighted decibels

ft = feet

HVAC = heating, ventilation, and air conditioning

L_{eq} = equivalent continuous sound level

L_{max} = maximum instantaneous noise level

Table S: Nighttime Stationary Noise Levels

Land Use	Direction	Noise Source	Reference Noise Level at 50 ft (dBA L_{max})	Reference Noise Level at 50 ft (dBA L_{eq})	Distance from Source to Receptor (ft)	Distance Attenuation (dBA)	Shielding[2] (dBA)	Noise Level (dBA L_{max})	Noise Level (dBA L_{eq})	Combined Noise Level (dBA L_{eq})
Residence (69 South 3rd Street)	North	Truck Delivery[1]	75	69.0	670	22.5	0	52.5	46.5	47.3
		Auto Parking Activities	70	55.2	600	21.6	0	48.4	33.6	
		Truck Parking Activities	70	52.2	595	21.5	0	48.5	30.7	
		HVAC (southwest)	--	59.4	925	25.3	0	--	34.1	
		HVAC (southeast)	--	59.4	925	25.3	0	--	34.1	
Industrial (201 West Lincoln Street)	East	Truck Delivery[1]	75	69.0	125	8.0	0	67.0	61.0	61.7
		Auto Parking Activities	70	55.2	85	4.6	0	65.4	50.6	
		Truck Parking Activities	70	52.2	335	16.5	0	53.5	35.7	
		HVAC (southwest)	--	59.4	570	21.1	0	--	38.3	
		HVAC (southeast)	--	59.4	145	9.2	0	--	50.2	
Residence (545 South San Gorgonio Avenue)	Southeast	Truck Delivery[1]	75	69.0	1,005	26.1	17	31.9	25.9	37.8
		Auto Parking Activities	70	55.2	830	24.4	0	45.6	30.8	
		Truck Parking Activities	70	52.2	1,225	27.8	16	26.2	8.4	
		HVAC (southwest)	--	59.4	1,220	27.7	0	--	31.7	
		HVAC (southeast)	--	59.4	870	24.8	0	--	34.6	
Industrial (368 West Lincoln Street)	South	Truck Delivery[1]	75	69.0	385	17.7	17	40.3	34.3	54.3
		Auto Parking Activities	70	55.2	85	4.6	0	65.4	50.6	
		Truck Parking Activities	70	52.2	490	19.8	16	34.2	16.4	
		HVAC (southwest)	--	59.4	170	10.6	0	--	48.8	
		HVAC (southeast)	--	59.4	170	10.6	0	--	48.8	
Residence (Windscape Village)	South	Truck Delivery[1]	75	69.0	855	24.7	17	33.3	27.3	41.3
		Auto Parking Activities	70	55.2	565	21.1	0	48.9	34.1	
		Truck Parking Activities	70	52.2	645	22.2	16	28.2	10.4	
		HVAC (southwest)	--	59.4	645	22.2	0	--	37.2	
		HVAC (southeast)	--	59.4	645	22.2	0	--	37.2	
Residence (430 Barbour Avenue)	Southwest	Truck Delivery[1]	75	69.0	1,050	26.4	17	31.6	25.6	38.7
		Auto Parking Activities	70	55.2	740	23.4	0	46.6	31.8	
		Truck Parking Activities	70	52.2	1,165	27.3	16	26.7	8.9	
		HVAC (southwest)	--	59.4	825	24.3	0	--	35.1	
		HVAC (southeast)	--	59.4	970	25.8	0	--	33.6	

Table S: Nighttime Stationary Noise Levels

Land Use	Direction	Noise Source	Reference Noise Level at 50 ft (dBA L_{max})	Reference Noise Level at 50 ft (dBA L_{eq})	Distance from Source to Receptor (ft)	Distance Attenuation (dBA)	Shielding[2] (dBA)	Noise Level (dBA L_{max})	Noise Level (dBA L_{eq})	Combined Noise Level (dBA L_{eq})
Industrial (679 West Lincoln Street)	West	Truck Delivery[1]	75	69.0	925	25.3	0	49.7	43.7	44.7
		Auto Parking Activities	70	55.2	845	24.6	0	45.4	30.6	
		Truck Parking Activities	70	52.2	940	25.5	0	44.5	26.7	
		HVAC (southwest)	--	59.4	845	24.6	0	--	34.8	
		HVAC (southeast)	--	59.4	1,270	28.1	0	--	31.3	

Source: Compiled by LSA Associates, Inc. (2022).

[1] Truck delivery and truck loading and unloading activities.

[2] The calculated noise reduction from the proposed 45 ft high warehouse buildings is provided in Attachment E.

dBA = A-weighted decibels

ft = feet

HVAC = heating, ventilation, and air conditioning

L_{eq} = equivalent continuous sound level

L_{max} = maximum instantaneous noise level

Daytime Noise Levels. Table R shows that the closest residential property line to the north, southeast, south, and southwest would have a combined daytime stationary noise level of 48.5, 39.0, 42.5, and 39.9 dBA L_{eq}, respectively. Maximum instantaneous noise levels at the closest residential property line to the north, southeast, south, and southwest would reach 52.5, 45.6, 48.9, and 46.6 dBA L_{max}, respectively. These noise levels would not exceed the City's exterior daytime 30-minute (L_{50}) and instantaneous maximum (L_{max}) noise standards of 55 dBA and 75 dBA, respectively, for residential land uses.

In addition, Table R shows that the combined stationary daytime noise levels are 63.1, 56.5, and 45.9 dBA L_{eq} at the closest industrial property line to the east, south, and west, respectively. Maximum instantaneous noise levels at the closest residential property line to the north, southeast, and south would reach 67.0, 65.4, and 49.7 dBA L_{max}, respectively. These noise levels would not exceed the City's exterior daytime anytime noise standard of 75 dBA for industrial uses.

Nighttime Noise Levels. Table S shows that the closest residential property line to the north, southeast, south, and southwest would have a combined nighttime stationary noise level of 47.3, 37.7, 41.3, and 38.7 dBA L_{eq}, respectively. The nighttime maximum instantaneous noise level at the closest residential property line to the north, southeast, south, and southwest would be the same noise levels during the daytime. These noise levels would not exceed the City's exterior nighttime 30-minute (L_{50}) and instantaneous maximum (L_{max}) noise standards of 45 dBA and 65 dBA, respectively, for residential land uses except for the residences to the north. Although noise levels at the closest residential property line to the north would exceed the City's exterior nighttime 30-minute (L_{50}) noise standard of 45 dBA, the lowest nighttime ambient noise level in this area represented by LT-1 is 64.1 dBA L_{eq} and would increase ambient noise levels by 0.1 dBA. A noise level increase of less than 3 dBA would not be perceptible to the human ear in an outdoor environment. It should be noted that nighttime noise levels generated from the operations of the project would be masked by traffic noise on I-10.

In addition, Table S shows that the combined stationary nighttime noise levels are 61.7, 54.3, and 44.7 dBA L_{eq} at the closest industrial property line to the east, south, and west, respectively. The nighttime maximum instantaneous noise level at the closest industrial property line to the north, southeast, and south would be the same noise levels during the daytime. These noise levels would not exceed the City's exterior daytime anytime noise standard of 75 dBA for industrial uses. Therefore, no noise impacts from project operations would occur. No noise reduction measures are required.

Long-Term Vibration Impacts

The proposed project would not generate vibration. In addition, vibration levels generated from project-related traffic on the adjacent roadways (Lincoln Street and 8th Street) are unusual for on-road vehicles because the rubber tires and suspension systems of on-road vehicles provide vibration isolation. Therefore, no vibration impacts from project-related operations would occur, and no vibration reduction measures are required.

MINIMIZATION MEASURES

The following measure would minimize construction noise:

- The construction contractor shall limit construction activities to between the hours of 7:00 a.m. and 6:00 p.m. pursuant to Section 8.44.090(E) of the City's Municipal Code.

REDUCTION MEASURES

Short-Term Construction Noise Impacts

No noise reduction measures are required.

Short-Term Construction Vibration Impacts

No vibration reduction measures are required.

Aircraft Noise Impacts

No noise reduction measures are required.

Traffic Noise Impacts

No noise reduction measures are required.

Long-Term Stationary Noise Impacts

No noise reduction measures are required.

Long-Term Vibration Impacts

No vibration reduction measures are required.

Attachments: A: References
B: Figures 1–3
C: Noise Monitoring Survey Sheets
D: FHWA Traffic Noise Model Printouts
E: Noise Reduction Calculations

ATTACHMENT A

REFERENCES

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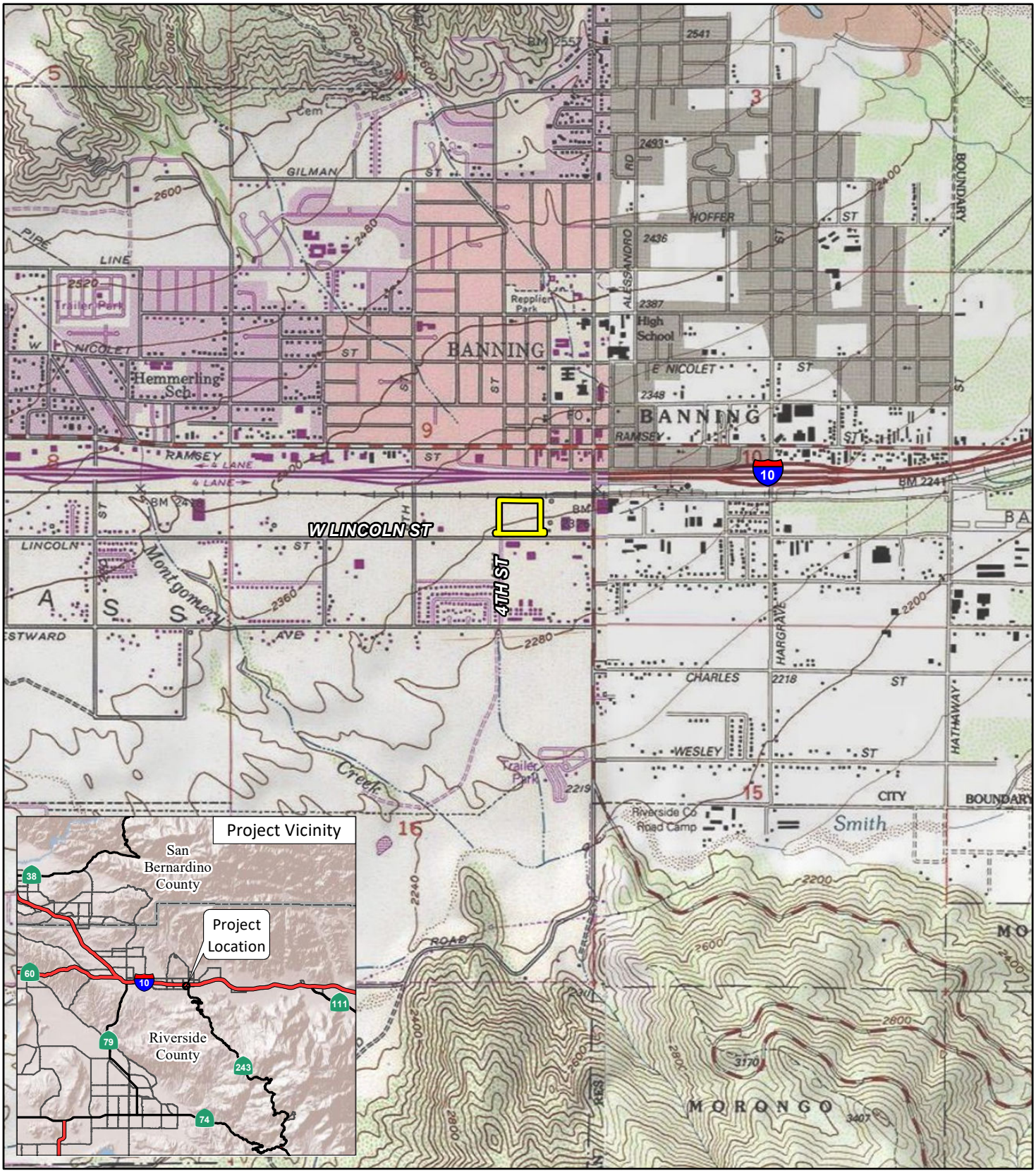
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ATTACHMENT B

FIGURES

Figure 1: Regional and Project Location
Figure 2: Site Plan
Figure 3: Noise Monitoring Locations



LSA

LEGEND

Project Location

FIGURE 1

N

0 1000 2000

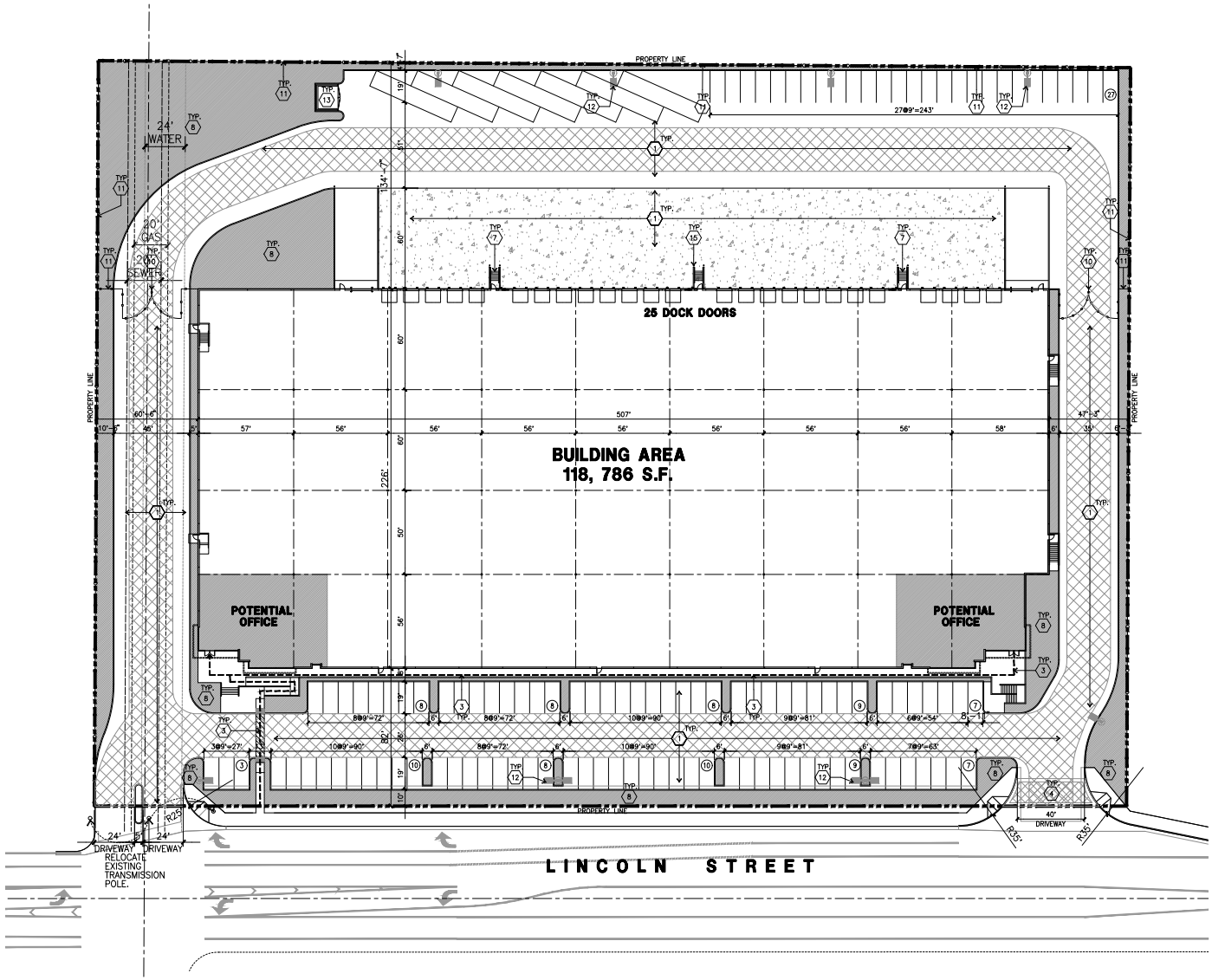
FEET

SOURCE: USGS 7.5' Quad - *Beaumont* (1988) and *Cabazon* (1988), CA

I:\FRT2201\GIS\MXD\ProjectLocation.mxd (4/6/2022)

First Lincoln Industrial Project

Regional and Project Location



LSA

FIGURE 2

N

0 40 80

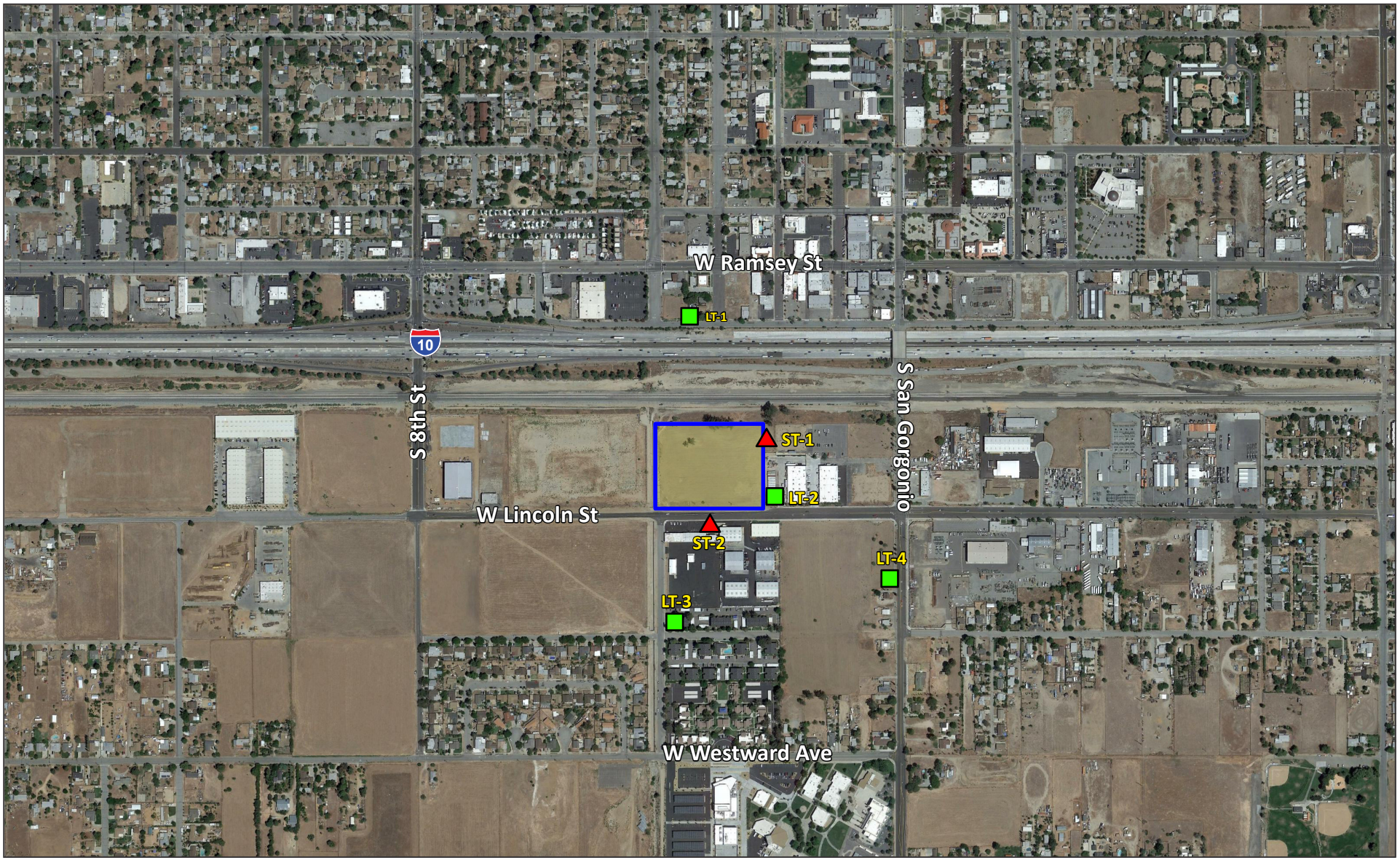
FEET

Source: HPA Architecture

First Lincoln Industrial Project

Site Plan

I:\FRT2201\G\Site Plan.ai (10/27/2022)



LSA

FIGURE 3

LEGEND

- Project Site Boundary
- ST-1 - Short-term Noise Monitoring Location
- LT-1 - Long-term Noise Monitoring Location

0 100 200

FEET

SOURCE: Google Earth 2022

First Lincoln Industrial Project

Noise Monitoring Locations

I:\FRT2201\ G\Noise_Locs.ai (9/20/2022)

ATTACHMENT C

NOISE MONITORING SURVEY SHEETS

Noise Measurement Survey

Project Number: FRT2201 Test Personnel: Kevin Nguyendo

Project Name: First Lincoln Industrial Equipment: Larson Davis 831

Site Number: ST-1 Date: 9/13/22 Time: From 11:15 a.m. To 11:35 a.m.

Site Location: Located in the northeast corner of the project site. Near the boundary of the warehouse facility.

Primary Noise Sources: Traffic on I-10 freeway. Faint traffic on Lincoln Street. Faint HVAC noise coming from the warehouse east of the project site.

Measurement Results

	dBA
Leq	60.8
Lmax	67.3
Lmin	55.6
Lpeak	110.7
L2	65.1
L8	63.2
L25	61.6
L50	60.2
SEL	--

Atmospheric Conditions:

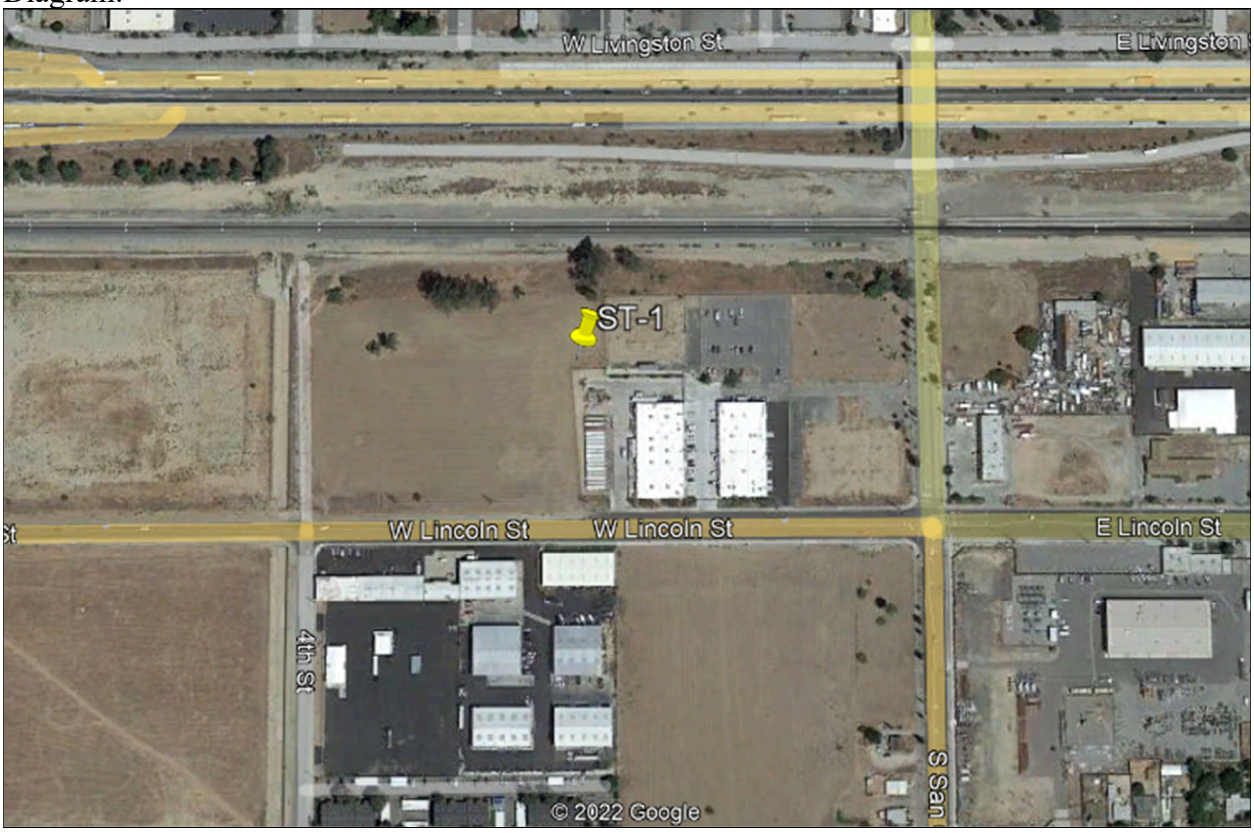
Maximum Wind Velocity (mph)	12.2
Average Wind Velocity (mph)	7.7
Temperature (F)	81.2
Relative Humidity (%)	53.0
Comments:	

Comments:

Traffic Description:

Roadway	# Lanes	Speeds	NB/EB Counts			SB/WB Counts		
			Auto	MT	HT	Auto	MT	HT

Diagram:



Location Photo:



Noise Measurement Survey

Project Number: FRT2201 Test Personnel: Kevin Nguyendo

Project Name: First Lincoln Warehouse Equipment: Larson Davis 831

Site Number: ST-2 Date: 9/13/22 Time: From 11:43 a.m. To 12:03 a.m.

Site Location: Located north of the building entrance on 300 West Lincoln Street, Banning, CA.

Primary Noise Sources: Traffic on Lincoln Street.

Measurement Results

	dBA
Leq	65.3
Lmax	78.9
Lmin	55.2
Lpeak	110.5
L2	73.9
L8	68.7
L25	64.8
L50	61.9
SEL	--

Atmospheric Conditions:

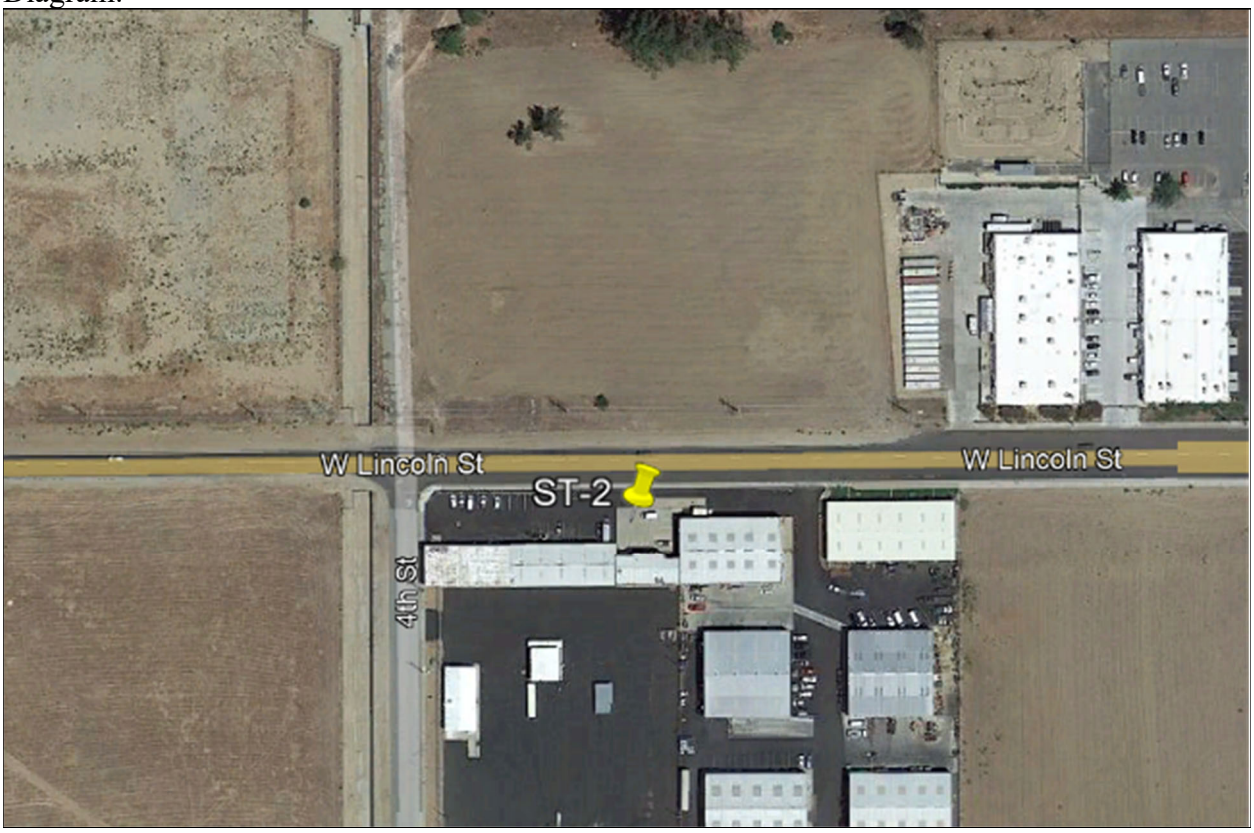
Maximum Wind Velocity (mph)	12.7
Average Wind Velocity (mph)	6.9
Temperature (F)	82.6
Relative Humidity (%)	56.8
Comments:	

Comments: Pedestrian playing music on a boombox 8 minutes into measurement. Helicopter flew by and some of the noise was filtered out.

Traffic Description:

Roadway	# Lanes	Speeds	NB/EB Counts			SB/WB Counts		
			Auto	MT	HT	Auto	MT	HT

Diagram:



Location Photo:



Noise Measurement Survey – 24 HR

Project Number: FRT2201
Project Name: First Lincoln Industrial

Test Personnel: Kevin Nguyendo
Equipment: Spark 706RC (SN:905)

Site Number: LT-1 Date: 9/13/22

Time: From 12:00 p.m. To 12:00 p.m.

Site Location: Located in an alleyway behind 69 South 3rd Street, Banning, CA. On a powerline pole.

Primary Noise Sources: Traffic on I-10 freeway and light traffic on Livingston Street.

Comments:

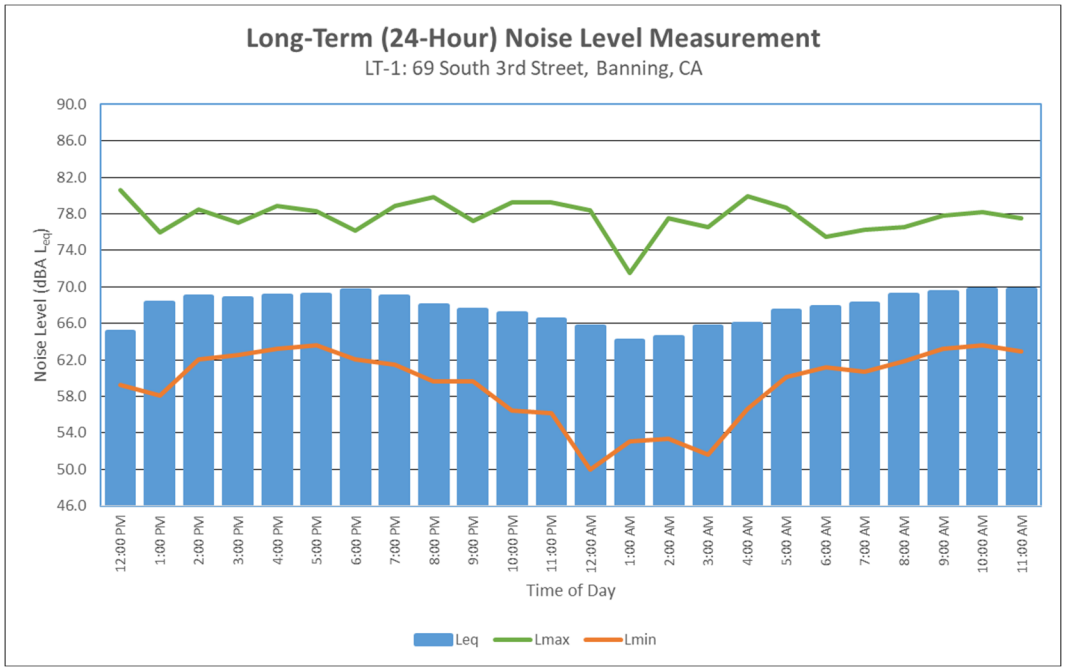
Photo:



Long-Term (24-Hour) Noise Level Measurement Results at LT-1

Start Time	Date	Noise Level (dBA)		
		L_{eq}	L_{max}	L_{min}
12:00 PM	9/13/22	65.1	80.6	59.3
1:00 PM	9/13/22	68.2	76.0	58.1
2:00 PM	9/13/22	69.0	78.5	62.1
3:00 PM	9/13/22	68.8	77.0	62.5
4:00 PM	9/13/22	69.0	78.9	63.2
5:00 PM	9/13/22	69.1	78.3	63.6
6:00 PM	9/13/22	69.6	76.2	62.1
7:00 PM	9/13/22	68.9	78.9	61.5
8:00 PM	9/13/22	68.0	79.8	59.6
9:00 PM	9/13/22	67.5	77.2	59.6
10:00 PM	9/13/22	67.1	79.3	56.5
11:00 PM	9/13/22	66.4	79.3	56.2
12:00 AM	9/14/22	65.6	78.4	50.0
1:00 AM	9/14/22	64.1	71.5	53.1
2:00 AM	9/14/22	64.5	77.5	53.4
3:00 AM	9/14/22	65.6	76.6	51.6
4:00 AM	9/14/22	65.9	79.9	56.6
5:00 AM	9/14/22	67.3	78.7	60.1
6:00 AM	9/14/22	67.8	75.5	61.2
7:00 AM	9/14/22	68.2	76.3	60.7
8:00 AM	9/14/22	69.1	76.6	61.9
9:00 AM	9/14/22	69.4	77.8	63.2
10:00 AM	9/14/22	69.7	78.2	63.6
11:00 AM	9/14/22	69.7	77.5	62.9

Source: Compiled by LSA Associates, Inc. (2022).
dBA = A-weighted decibel
L_{eq} = equivalent continuous sound level
L_{max} = maximum instantaneous noise level
L_{min} = minimum measured sound level



Noise Measurement Survey – 24 HR

Project Number: FRT2201
Project Name: First Lincoln Industrial

Test Personnel: Kevin Nguyendo
Equipment: Spark 706RC (SN:908)

Site Number: LT-2 Date: 9/13/22

Time: From 12:00 p.m. To 12:00 p.m.

Site Location: Located at the southeast corner of the project site near a powerline pole adjacent to Lincoln Street.

Primary Noise Sources: Traffic on Lincoln Street.

Comments:

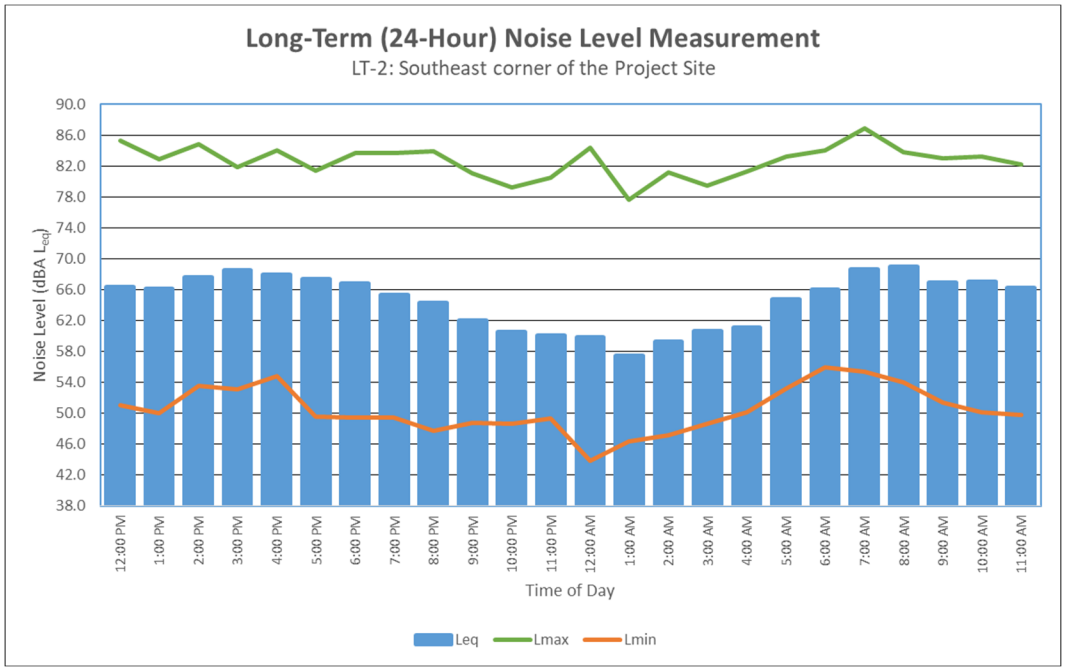
Photo:



Long-Term (24-Hour) Noise Level Measurement Results at LT-2

Start Time	Date	Noise Level (dBA)		
		L_{eq}	L_{max}	L_{min}
12:00 PM	9/13/22	66.4	85.3	51.0
1:00 PM	9/13/22	66.1	82.9	50.0
2:00 PM	9/13/22	67.6	84.8	53.6
3:00 PM	9/13/22	68.5	81.9	53.1
4:00 PM	9/13/22	68.0	84.1	54.8
5:00 PM	9/13/22	67.4	81.4	49.6
6:00 PM	9/13/22	66.8	83.7	49.4
7:00 PM	9/13/22	65.3	83.7	49.4
8:00 PM	9/13/22	64.3	83.9	47.7
9:00 PM	9/13/22	62.0	81.1	48.8
10:00 PM	9/13/22	60.5	79.2	48.6
11:00 PM	9/13/22	60.1	80.5	49.3
12:00 AM	9/14/22	59.8	84.4	43.9
1:00 AM	9/14/22	57.4	77.7	46.4
2:00 AM	9/14/22	59.2	81.2	47.2
3:00 AM	9/14/22	60.7	79.5	48.6
4:00 AM	9/14/22	61.1	81.3	50.1
5:00 AM	9/14/22	64.7	83.2	53.2
6:00 AM	9/14/22	66.0	84.0	55.9
7:00 AM	9/14/22	68.6	86.9	55.4
8:00 AM	9/14/22	69.0	83.8	54.0
9:00 AM	9/14/22	66.9	83.0	51.4
10:00 AM	9/14/22	67.0	83.2	50.1
11:00 AM	9/14/22	66.2	82.2	49.8

Source: Compiled by LSA Associates, Inc. (2022).
dBA = A-weighted decibel
L_{eq} = equivalent continuous sound level
L_{max} = maximum instantaneous noise level
L_{min} = minimum measured sound level



Noise Measurement Survey – 24 HR

Project Number: FRT2201
Project Name: First Lincoln Industrial

Test Personnel: Kevin Nguyendo
Equipment: Spark 706RC (SN:907)

Site Number: LT-3 Date: 9/13/22

Time: From 12:00 p.m. To 12:00 p.m.

Site Location: Located just south of 380 4th Street, Banning, CA. On a pole adjacent to Barbour Avenue.

Primary Noise Sources: Traffic on Barbour Avenue.

Comments:

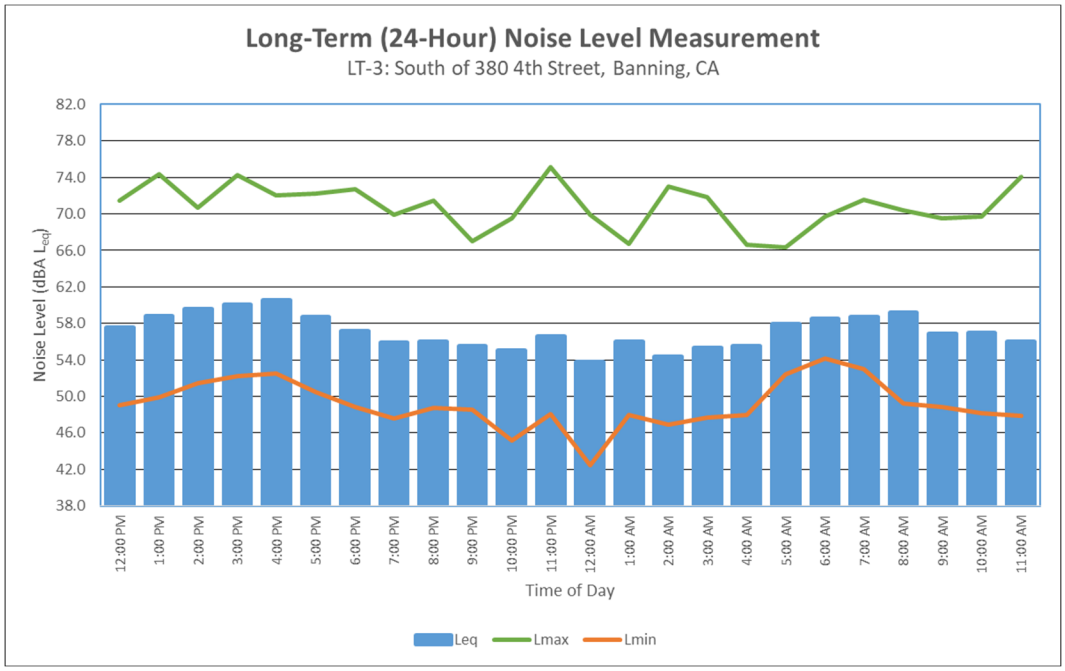
Photo:



Long-Term (24-Hour) Noise Level Measurement Results at LT-3

Start Time	Date	Noise Level (dBA)		
		L_{eq}	L_{max}	L_{min}
12:00 PM	9/13/22	57.5	71.5	49.0
1:00 PM	9/13/22	58.8	74.4	49.9
2:00 PM	9/13/22	59.6	70.7	51.5
3:00 PM	9/13/22	60.0	74.3	52.2
4:00 PM	9/13/22	60.5	72.0	52.5
5:00 PM	9/13/22	58.7	72.2	50.5
6:00 PM	9/13/22	57.1	72.7	48.8
7:00 PM	9/13/22	55.9	69.9	47.6
8:00 PM	9/13/22	56.0	71.5	48.7
9:00 PM	9/13/22	55.6	67.0	48.6
10:00 PM	9/13/22	55.0	69.5	45.2
11:00 PM	9/13/22	56.5	75.1	48.1
12:00 AM	9/14/22	53.8	69.9	42.5
1:00 AM	9/14/22	56.0	66.7	48.0
2:00 AM	9/14/22	54.4	73.0	46.9
3:00 AM	9/14/22	55.4	71.8	47.7
4:00 AM	9/14/22	55.5	66.6	48.0
5:00 AM	9/14/22	57.9	66.3	52.4
6:00 AM	9/14/22	58.5	69.7	54.2
7:00 AM	9/14/22	58.7	71.6	53.0
8:00 AM	9/14/22	59.2	70.4	49.2
9:00 AM	9/14/22	56.8	69.5	48.8
10:00 AM	9/14/22	57.0	69.7	48.2
11:00 AM	9/14/22	56.0	74.1	47.9

Source: Compiled by LSA Associates, Inc. (2022).
dBA = A-weighted decibel
L_{eq} = equivalent continuous sound level
L_{max} = maximum instantaneous noise level
L_{min} = minimum measured sound level



Noise Measurement Survey – 24 HR

Project Number: FRT2201
Project Name: First Lincoln Industrial

Test Personnel: Kevin Nguyendo
Equipment: Spark 706RC (SN:906)

Site Number: LT-4 Date: 9/13/22

Time: From 12:00 p.m. To 12:00 p.m.

Site Location: Located in front of 545 South San Gorgonio Avenue, Banning, CA.
Just past the sidewalk near the northeast power pole.

Primary Noise Sources: Traffic on South San Gorgonio Avenue.

Comments:

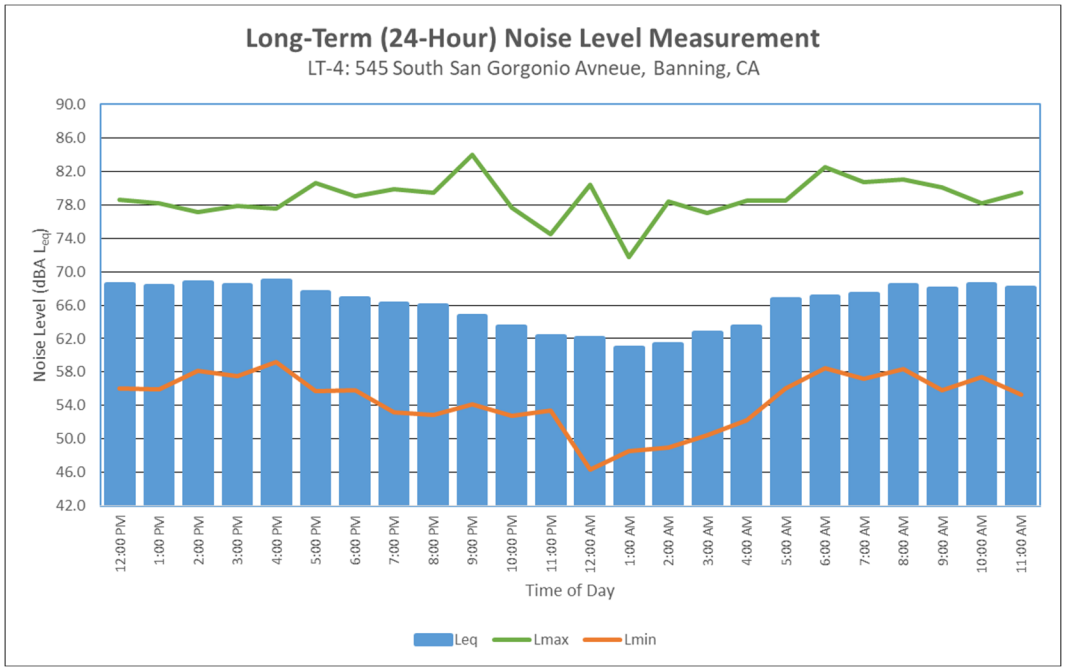
Photo:



Long-Term (24-Hour) Noise Level Measurement Results at LT-4

Start Time	Date	Noise Level (dBA)		
		L_{eq}	L_{max}	L_{min}
12:00 PM	9/13/22	68.5	78.6	56.0
1:00 PM	9/13/22	68.2	78.2	55.9
2:00 PM	9/13/22	68.7	77.1	58.2
3:00 PM	9/13/22	68.4	77.9	57.5
4:00 PM	9/13/22	68.9	77.5	59.2
5:00 PM	9/13/22	67.5	80.6	55.7
6:00 PM	9/13/22	66.8	79.0	55.8
7:00 PM	9/13/22	66.2	79.9	53.2
8:00 PM	9/13/22	65.9	79.5	52.9
9:00 PM	9/13/22	64.7	84.0	54.1
10:00 PM	9/13/22	63.5	77.7	52.8
11:00 PM	9/13/22	62.3	74.5	53.4
12:00 AM	9/14/22	62.0	80.4	46.3
1:00 AM	9/14/22	60.9	71.8	48.6
2:00 AM	9/14/22	61.3	78.4	49.0
3:00 AM	9/14/22	62.7	77.0	50.5
4:00 AM	9/14/22	63.4	78.5	52.2
5:00 AM	9/14/22	66.7	78.5	56.0
6:00 AM	9/14/22	67.0	82.5	58.5
7:00 AM	9/14/22	67.3	80.7	57.2
8:00 AM	9/14/22	68.4	81.0	58.4
9:00 AM	9/14/22	67.9	80.1	55.8
10:00 AM	9/14/22	68.5	78.2	57.4
11:00 AM	9/14/22	68.1	79.4	55.3

Source: Compiled by LSA Associates, Inc. (2022).
dBA = A-weighted decibel
L_{eq} = equivalent continuous sound level
L_{max} = maximum instantaneous noise level
L_{min} = minimum measured sound level



ATTACHMENT D

FHWA HIGHWAY TRAFFIC NOISE MODEL PRINTOUTS

TABLE Existing No Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/19/2022
ROADWAY SEGMENT: Lincoln Street Between 8th Street and San Gorgonio Avenue
NOTES: First Lincoln Industrial - Existing No Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	74.41	12.39	9.20
M-TRUCKS	3.05	0.18	0.37
H-TRUCKS	0.35	0.01	0.04

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.12

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	75.2	155.4	331.6

TABLE Existing No Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/19/2022
ROADWAY SEGMENT: 8th Street North of Lincoln Street
NOTES: First Lincoln Industrial - Existing No Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 7900 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	74.41	12.39	9.20
M-TRUCKS	3.05	0.18	0.37
H-TRUCKS	0.35	0.01	0.04

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 61.77

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	94.9	199.3

TABLE Existing with Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/19/2022
ROADWAY SEGMENT: Lincoln Street Between 8th Street and San Gorgonio Avenue
NOTES: First Lincoln Industrial - Existing with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9203 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	73.88	12.30	9.14
M-TRUCKS	2.99	0.17	0.36
H-TRUCKS	1.01	0.03	0.12

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.88

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	83.6	174.2	372.4

TABLE Existing with Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/19/2022
ROADWAY SEGMENT: 8th Street North of Lincoln Street
NOTES: First Lincoln Industrial - Existing with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8103 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	73.80	12.29	9.13
M-TRUCKS	2.97	0.17	0.36
H-TRUCKS	1.10	0.04	0.14

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.91

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	56.2	112.0	236.9

TABLE 2035 No Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/19/2022
ROADWAY SEGMENT: Lincoln Street Between 8th Street and San Gorgonio Avenue
NOTES: First Lincoln Industrial - 2035 No Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15100 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	74.41	12.39	9.20
M-TRUCKS	3.05	0.18	0.37
H-TRUCKS	0.35	0.01	0.04

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.37

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	103.5	218.1	467.5

TABLE 2035 No Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/19/2022
ROADWAY SEGMENT: 8th Street North of Lincoln Street
NOTES: First Lincoln Industrial - 2035 No Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9300 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	74.41	12.39	9.20
M-TRUCKS	3.05	0.18	0.37
H-TRUCKS	0.35	0.01	0.04

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.48

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	105.2	221.9

TABLE 2035 With Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/19/2022
ROADWAY SEGMENT: Lincoln Street Between 8th Street and San Gorgonio Avenue
NOTES: First Lincoln Industrial - 2035 With Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15303 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	74.09	12.34	9.16
M-TRUCKS	3.01	0.18	0.37
H-TRUCKS	0.74	0.03	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.82

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
55.5	110.5	233.5	500.9

TABLE 2035 With Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/19/2022
ROADWAY SEGMENT: 8th Street North of Lincoln Street
NOTES: First Lincoln Industrial - 2035 With Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9503 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	73.89	12.30	9.14
M-TRUCKS	2.99	0.18	0.36
H-TRUCKS	0.99	0.03	0.12

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.43

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	60.0	120.9	256.4

ATTACHMENT E

NOISE REDUCTION CALCULATIONS

Noise Reduction Calculation for Stationary Noise Sources

Activity	Land Use	Direction	Wall Height (ft)	Wall Base Elevation	Recepter Base Elevation	Receptor Height (ft)	Source Base Elevation	Source Height (ft)	Source to Barrier Distance (ft)	Receptor to Source Distance (ft)	Receptor to Barrier Distance (ft)	d1	d2	d3	delta	N	Noise Reduction	Noise Reduction Applied to Noise Analysis
Truck Delivery and Loading/Loading Activities	Residential	Southeast	45	0	0	5	0	5	60	1,005	945	1005	945.8462	72.11103	12.95721	12.67759	17.1	17
Truck Delivery and Loading/Loading Activities	Industrial	South	45	0	0	5	0	5	60	385	325	385	327.4523	72.11103	14.56331	14.24903	17.1	17
Truck Delivery and Loading/Loading Activities	Residential	South	45	0	0	5	0	5	60	855	795	855	796.0057	72.11103	13.11668	12.83362	17.1	17
Truck Delivery and Loading/Loading Activities	Residential	Southwest	45	0	0	5	0	5	60	1,050	990	1050	990.8078	72.11103	12.91878	12.63999	17.1	17
Truck Parking Activities	Residential	Southeast	45	0	0	5	0	5	100	1,225	1,125	1225	1125.711	107.7033	8.414183	8.232604	16.7	16
Truck Parking Activities	Industrial	South	45	0	0	5	0	5	100	490	390	490	392.0459	107.7033	9.749212	9.538823	17.0	16
Truck Parking Activities	Residential	South	45	0	0	5	0	5	100	970	870	970	870.9191	107.7033	8.622351	8.43628	16.7	16
Truck Parking Activities	Residential	Southwest	45	0	0	5	0	5	100	1,165	1,065	1165	1065.751	107.7033	8.454205	8.271763	16.7	16

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APPENDIX M

TRAFFIC ANALYSIS

First Lincoln Logistics Project – Traffic Analysis - DRAFT

City of Banning

November 11, 2022

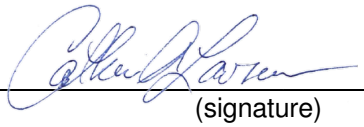
Prepared for:

First Industrial Realty Trust, Inc.

Prepared by:

Stantec Consulting Services Inc.

This document entitled First Lincoln Logistics Project – Traffic Analysis - DRAFT was prepared by Stantec Consulting Services Inc. (“Stantec”) for the account of First Industrial Realty Trust, Inc. (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.

Prepared by 
(signature)

Cathy Lawrence, PE

Reviewed by 
(signature)

Daryl Zerfass, PE, PTP

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2.0 EXISTING ROADWAY CONDITIONS....1

3.0 TRUCK TURNING....2

4.0 QUEUE ANALYSIS....2

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APPENDIX D WRCOG VMT TOOL RESULTS....D.1

1.0 INTRODUCTION

The proposed First Lincoln Logistics land use development (Project) is located on the north side of Lincoln Street at Fourth Street in the City of Banning. Lincoln Street (State Route 243) is on the State Highway System (SHS); therefore, Caltrans is a responsible agency for reviewing the potential impacts of the proposed Project. Caltrans has reviewed the preliminary Project improvements and provided a letter summarizing their comments. In the letter by Rosa Clark dated October 11, 2022, Caltrans requested a site access evaluation which includes truck turning templates, lane assignment geometry, queue analysis, and vehicle miles traveled (VMT) calculations. Stantec Consulting Services Inc. (Stantec) has prepared a traffic evaluation of the proposed Project in anticipation of obtaining a Caltrans Encroachment Permit to allow construction of certain roadway improvements along the project frontage. This report summarizes the results of the site access evaluation requested by Caltrans.

1.1 PROJECT DESCRIPTION

The Project is located on the northeast corner of Lincoln Street, a portion of State Route 243, and the terminus of Fourth Street and consists of a 118,786-square-foot warehouse building with associated truck docks and parking for trailers and office users. The Project site would be accessed by two driveways located on Lincoln Street, one opposite Fourth Street (creating a fourth leg of the intersection) and the other at the eastern boundary of the site. The Project site is currently vacant, and the proposed site plan is included in **Appendix A**.

The Project would dedicate right of way along the Project frontage to Caltrans to widen and improve the north side of Lincoln Street to its ultimate width. With the widening of the roadway on the north side along the Project frontage, an eastbound left-turn pocket and a westbound right-turn lane at the Project driveway opposite Fourth Street would be provided. At the east Project driveway, a two-way left-turn lane would be provided for eastbound inbound vehicles, and a wide westbound through lane would provide a defacto right-turn lane into the driveway. A conceptual striping plan showing these improvements is provided in **Appendix B**.

2.0 EXISTING ROADWAY CONDITIONS

Lincoln Street (SR 243) is currently a two-lane undivided arterial roadway in the vicinity of the Project site. The south side of Lincoln Street is improved with curb, gutter, and sidewalks from Fourth Street to east of San Gorgonio Street, and the north side is generally improved from east of the Project site to Florida Street. Sidewalks are not provided continuously on the north side of Lincoln Street between Fourth Street and Florida Street and are not present along the Project frontage. The sections of Lincoln Street to the

west of the Project site and east of Florida Street are unimproved. The posted speed limit on Lincoln Street is 40 mph. There are no bicycle facilities on Lincoln Street in the vicinity. Lincoln Street is identified as a Truck Route by the City of Banning.

3.0 TRUCK TURNING

The west driveway would be 53 feet wide with a 24-foot inbound lane, a 24-foot outbound lane, and a 5-foot median island to protect an existing high voltage power pole. The west curb radius would be 12 feet, and the east curb radius would be 25 feet. The east driveway would have no median island and would be 40 feet wide with 35-foot radius curbs.

Truck turning paths at the driveways are shown on the Project striping plan (**Appendix B**). An STAA design vehicle was used for the truck turning templates, and the striping plan shows that trucks can make the eastbound left turns into both driveways. Outbound trucks making a right turn would exit from the east driveway since a right turn out of the west driveway would encroach on the eastbound left-turn pocket. As such, the west driveway would be signed to prohibit right-turns by trucks.

4.0 QUEUE ANALYSIS

The Project would provide a 150-foot-long eastbound left-turn pocket into the west driveway and an approximately 200-foot-long 18-foot-wide two-way left-turn lane at the east driveway.

Table C-1 in **Appendix C** summarizes the trip generation for the proposed Project. The Project would generate a total of 203 trips daily. Of the daily trips, approximately 71 would be truck trips and 132 would be passenger vehicles trips. During the AM peak hour, the Project would generate a total of 20 trips consisting of 2 truck trips (1 inbound and 1 outbound) and 18 passenger vehicles trips (14 inbound and 4 outbound). During the PM peak hour, the Project would generate a total of 21 trips of which 4 would be truck trips (2 inbound and 2 outbound) and 17 would be passenger vehicles trips (4 inbound and 13 outbound).

During the AM peak hour, approximately 1 truck and 14 passenger vehicles would enter the site. Based on the location of the Project site in relation to the City and Interstate 10 to the north, approximately 60 percent of the vehicles are expected to originate from the west; therefore, 1 truck and 8 passenger vehicles would enter the site via a left turn during the AM peak hour. Therefore, the arrival rate of vehicles from west of the site during the AM peak hour is approximately 1 vehicle every 6.7 minutes. During the peak five minutes of the AM peak hour, the arrival rate is conservatively estimated to be twice the hourly average, or 1 vehicle every 3.4 minutes. These inbound vehicles would be divided between the two driveways, and the left-turn pocket at the west driveway and the two-way left-turn center lane at the east

driveway would accommodate the estimated AM peak hour traffic since the west turn pocket can accommodate up to 6-7 passenger vehicles (or 2 trucks) at a time. The east two-way left-turn lane can accommodate up to 9-10 passenger vehicles (or 2 trucks) at a time.

During the PM peak hour, 2 trucks and 4 passenger vehicles would enter the site. With 60 percent of the vehicles originating from the west, 1 truck and 2 passenger vehicles would enter the site via a left turn during the PM peak hour. The arrival rate of vehicles from west of the site during the PM peak hour is 1 vehicle every 20 minutes. During the peak five minutes of the PM peak hour, the arrival rate is conservatively estimated to be 1 vehicle every 10 minutes. With two driveways for the vehicles to enter, the left-turn pocket at the west driveway and the two-way left-turn center lane at the east driveway would accommodate the estimated PM peak hour traffic.

5.0 VMT ANALYSIS

The City of Banning has identified the Western Riverside Council of Governments (WRCOG) as the region for VMT analysis purposes[1]. WRCOG uses an online tool to evaluate whether proposed development projects would generate VMT impacts. The WRCOG data is based on the Riverside County Transportation Model (RIVCOM) travel demand forecasting model.

Certain projects may be screened out of SB 743-related VMT analysis requirements due to a presumption of less than significant impact. If the project passes the screening criteria specified by the City of Banning, no additional analysis is required, and the project is presumed to have a less than significant transportation impact.

Development projects in the City that satisfy one or more of the following properties are presumed to have a less than significant VMT impact:

1. Project is located within one-half mile of a Transit Priority Area or a High-Quality Transit Corridor as defined by the Governor's Office of Planning and Research (OPR), is consistent with the City's General Plan and zoning, has a floor area ratio (FAR) greater than 0.75, provides less parking than or equal to the City's Municipal Code requirements, and does not replace any affordable housing units with moderate- or high-income residential units.

2. Residential, office, industrial, or mixed-use project is located in an area with low VMT and which incorporate similar features.

3. Local-serving retail project with less than 50,000 square feet.

[1] City of Banning. Traffic Impact Analysis Guidelines for Local Transportation Analysis and Vehicle Miles Traveled Analysis. September 2021.

4. Redevelopment project that results in equal or a net reduction in VMT.
5. Local park, daycare center, student housing on or adjacent to a college campus, local-serving gas station, bank, and K-12 public school project.
6. Institutional/government and public service project such as a police station, fire station, community center, or refuse station.
7. Project has 100 percent affordable housing units.
8. Project generates fewer than 500 daily vehicle trips (for projects requiring a General Plan Amendment (GPA)) and fewer than 1,000 daily trips (for projects that do not require a GPA).

The Project does not require a GPA and generates less than 1,000 daily trips, and, therefore, satisfies the above screening criteria (#8). A VMT analysis is not required by the City.

The average VMT per employee for the WRCOG region is 26.3 vehicle-miles as obtained from RIVCOM and shown in Section 5.3.1 of the City of Banning Traffic Impact Analysis Guidelines

The WRCOG online VMT tool specifies that the average VMT per employee for the Project site is 23.0 vehicle-miles (**Appendix D**).

6.0 CONCLUSIONS

The Project is located on Lincoln Street (SR 243) northeast of the terminus of Fourth Street and consists of a 118,786-square-foot warehouse building. The Project site would be accessed by two driveways located on Lincoln Street, one opposite Fourth Street (creating a fourth leg of the intersection) and the other at the eastern boundary of the site. The Project would dedicate right of way to Caltrans along the Project frontage and widen and improve the north side of Lincoln Street to its ultimate width. An eastbound left-turn pocket would be provided at the west driveway, and a two-way left-turn lane would be provided at the east driveway.

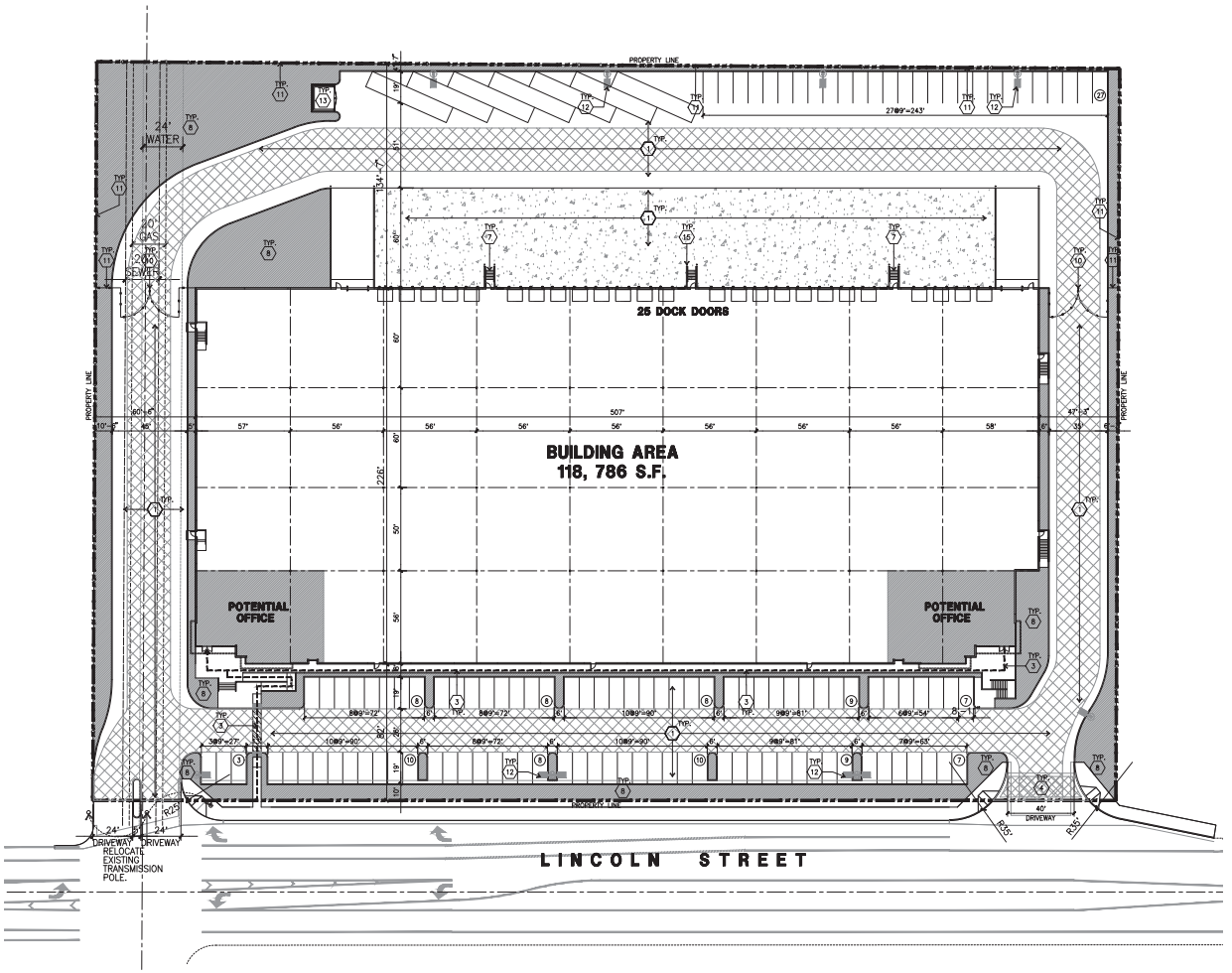
The striping plan illustrates that both driveways can accommodate an inbound Interstate STAA design vehicle. Westbound trucks would exit from the east driveway since a right turn out of the west driveway would encroach on the eastbound left-turn pocket.

During the peak five minutes of the AM peak hour, the vehicle arrival rate from west of the Project site is conservatively estimated to be 1 vehicle every 3.4 minutes. During the peak five minutes of the PM peak hour, the arrival rate is conservatively estimated to be 1 vehicle every 10 minutes. With two driveways for Project vehicles to enter, the left-turn pocket at the west driveway and the two-way left-turn center lane at the east driveway would accommodate the estimated peak hour traffic.

A VMT evaluation demonstrates that the Project would be screened out of SB 743-related VMT analysis requirements due to a presumption of less than significant impact based on the City of Banning's impact analysis criteria. The amount of VMT per employee for the Project site would be approximately 23.0 VMT per employee according to the WRCOG online VMT tool.



Appendix A PROJECT SITE PLAN



OVERALL SITE PLAN
scale: 1" = 30'-0"

SCALE: 1" = 30'-0"
0 30' 60' 80'
TRUE NORTH

SITE PLAN KEYNOTES

1. HEAVY BROOM FINISH CONC. PAVEMENT.
2. FUTURE MONUMENT SIGN
3. CONCRETE WALKWAY
4. DRIVEWAY APRONS TO BE CONSTRUCTED PER "L" DRAWINGS.
5. 5'-6"X5'-6"X4" MIN. THICK CONCRETE EXTERIOR LANDING PAD TYP. AT ALL EXTERIOR MAN DOORS TO LANDSCAPED AREAS. FINISH TO BE MEDIUM BROOM FINISH. SLOPE TO BE 1/4" - 1/2" MAX. PROVIDE WALK TO PUBLIC WAY OR DRIVE WAY W/ 1:20 MAX. AS REQ. BY CITY INSPECTOR.
6. PROVIDE METAL, MANUAL OPERATED GATES W/ KNOX-PAD LOCK PER FIRE DEPARTMENT STANDARDS PER DRIVEWAY.
7. EXTERIOR CONC. STAIR.
8. LANDSCAPE. SEE "L" DWGS.
9. CONCRETE TILT-UP SCREEN WALL
10. 8'H METAL SWING GATE.
11. 8'H WROUGHT IRON FENCE.
12. SITE LIGHT POLE (APPROXIMATE LOCATION.)
13. COVERED TRASH ENCLOSURE
14. PRE-CAST CONC. WHEEL STOP
15. CONC. FILLED GUARD POST "6 DIA. U.N.O. 42" H.

SITE LEGEND

- LANDSCAPED AREA
- SITE PAVING - SEE "C" DRWGS. FOR THICKNESS
- CONCRETE PAVING SEE "C" DRWGS. FOR THICKNESS
- STANDARD PARKING STALL (9' X 19')
- HANDICAP PARKING STALL (9' X 19')
- 26' FIRE LANE.
- LIGHT STANDARD
- EXISTING PUBLIC FIRE HYDRANT
- PRIVATE FIRE HYDRANT- APPROXIMATE LOCATION
- PROPERTY LINE
- PATH OF TRAVEL

SITE PLAN GENERAL NOTES

1. THE SOILS REPORT PREPARED BY _____ SHOULD BE A PART OF THESE CONTRACT DOCUMENTS.
2. IF SOILS ARE EXPANSIVE IN NATURE, USE STEEL REINFORCING FOR ALL SITE CONCRETE.
3. ALL DIMENSIONS ARE TO THE FACE OF CONCRETE WALL, FACE OF CONCRETE CURB OR GRID LINE U.N.O.
4. SEE "C" PLANS FOR ALL CONCRETE CURBS, GUTTERS AND SWALES.
5. THE ENTIRE PROJECT SHALL BE PERMANENTLY MAINTAINED WITH AN AUTOMATIC IRRIGATION SYSTEM, PRIOR TO INSTALLATION & AT LEAST 60 DAYS BEFORE BLDG. COMPLETION.
6. SEE "C" DRAWINGS FOR POINT OF CONNECTIONS TO OFF-SITE UTILITIES. CONTRACTOR SHALL VERIFY ACTUAL UTILITY CONTRACTOR SHALL VERIFY ACTUAL UTILITY LOCATIONS.
7. PROVIDE POSITIVE DRAINAGE AWAY FROM BLDG. SEE "C" DRAWINGS.
8. CONTRACTOR TO REFER TO "C" DRAWINGS FOR ALL HORIZONTAL CONTROL DIMENSIONS. SITE PLANS ARE FOR GUIDANCE AND STARTING LAYOUT POINTS.
9. SEE "C" DRAWINGS FOR FINISH GRADE ELEVATIONS.
10. CONCRETE SIDEWALKS TO BE A MINIMUM OF 4" THICK W/ TOOLED JOINTS AT 6' O.C. EXPANSION/CONSTRUCTION JOINTS SHALL BE A MAXIMUM 12' EA. WAY W/ 1:20 MAX. SLOPE. EXPANSION JOINTS TO HAVE COMPRESSIVE EXPANSION FILLER MATERIAL OF 1/4". SEE "L" DRAWINGS FOR FINISH.
11. PROVIDE TWO FIRE HYDRANT ON THE SITE. FINAL LOCATION WILL DETERMINATE IN DURING SUBMITTAL.
12. PAINT CURBS AND PROVIDE SIGNS TO INFORM OF FIRE LANES AS REQUIRED BY FIRE DEPARTMENT.
13. CONSTRUCTION DOCUMENTS PERTAINING TO THE LANDSCAPE AND IRRIGATION OF THE ENTIRE PROJECT SITE SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT AND APPROVED BY PUBLIC FACILITIES DEVELOPMENT PRIOR TO ISSUANCE OF BUILDING PERMITS.
14. PRIOR TO FINAL CITY INSPECTION, THE LANDSCAPE ARCHITECT SHALL SUBMIT A CERTIFICATE OF COMPLETION TO PUBLIC FACILITIES DEVELOPMENT.
15. NOT USED
16. ALL LANDSCAPE AND IRRIGATION DESIGNS SHALL MEET CURRENT CITY STANDARDS AS LISTED IN GUIDELINES OR AS OBTAINED FROM PUBLIC FACILITIES DEVELOPMENT.
17. NOT USED.
18. LANDSCAPED AREAS SHALL BE DELINEATED WITH A MINIMUM SIX INCHES (6") HIGH CURB
19. APPROVED CONCEPTUAL LANDSCAPE PLAN PRIOR TO GRADING PERMIT

PROPERTY OWNER

FIRST INDUSTRIAL REALTY TRUST
898 N. PACIFIC COAST HIGHWAY SUITE 175
EL SEGUNDO, CA 90245
TEL: (310) 414-5400
CONTACT: MICHAEL GOODWIN
MGOODWIN@FIRSTINDUSTRIAL.COM

APPLICANT

FIRST INDUSTRIAL REALTY TRUST
898 N. PACIFIC COAST HIGHWAY SUITE 175
EL SEGUNDO, CA 90245
TEL: (310) 414-5400
CONTACT: MICHAEL GOODWIN
MGOODWIN@FIRSTINDUSTRIAL.COM

APPLICANT'S REPRESENTATIVE

HPA, INC.
18831 BARDEEN AVE SUITE 100
IRVINE CA 92612
TEL: 949-862-2116
ATTN: RUBEN CHOI

LEGAL DESCRIPTION

BLOCKS 220 & 232 OF AMENDED MAP OF THE BANNING LAND COMPANY, IN THE CITY OF BANNING, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS PER MAP RECORDED IN THE BOOK 9, PAGE 44, OF MAPS, OF SAN BERNARDINO COUNTY, CALIFORNIA

PROJECT ADDRESS

TBD

ASSESSOR'S PARCEL NUMBER

540-210-009 & 540-210-020

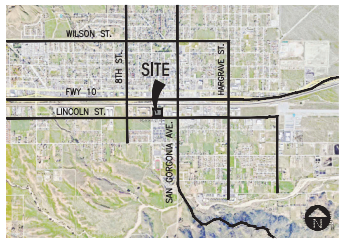
ZONING

ZONING DESIGNATION - INDUSTRIAL

PROJECT DATA

LOT AREA	
BUILDING AREA	
PARKING REQUIRED	
PARKING PROVIDED	
AUTO PARKING RATIO	
LOADING SPACES	

VICINITY MAP



HPA architecture
hpa, inc.
18831 bardeen avenue, - ste. #100
irvine, ca
92612
tel: 949•863•1770
fax: 949•863•0851
email: hpa@hparchs.com

LICENSED ARCHITECT — No. C-29431 — 3-31-23 RENEWAL DATE — STATE OF CALIFORNIA

Owner:

FIRST INDUSTRIAL REALTY TRUST

898 N PACIFIC COAST HWY, Suite 750
El Segundo, CA 90245

tel: 310-414-5400

Project:

FIRST INDUSTRIAL LINCOLN

FIRST INDUSTRIAL WAY
BANNING, CA

Consultants:

CIVIL	STANTEC
STRUCTURAL	-
MECHANICAL	-
PLUMBING	-
ELECTRICAL	-
LANDSCAPE	SPLA
FIRE PROTECTION	-
SOILS ENGINEER	-

Title: OVERALL SITE PLAN

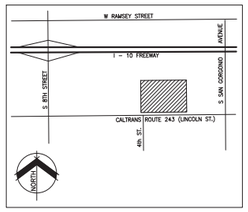
Project Number: 21654
Drawn by: RC
Date: 10/26/2022
Revision:

Sheet:

DAB-A1.1

Appendix B STRIPING PLAN

CONCEPTUAL STRIPING EXHIBIT
FOR
CALTRANS ROUTE 243 (LINCOLN ST.)
FIRST LINCOLN LOGISTICS

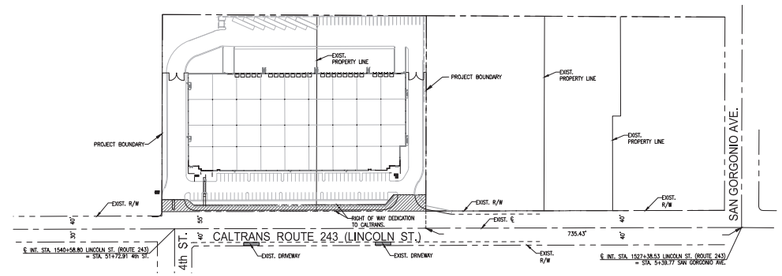


VICINITY MAP
N.T.S.

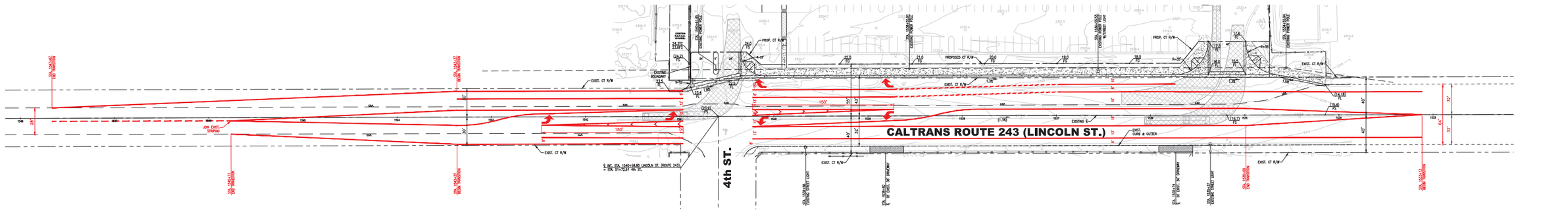
OWNER:
FR CA PROPERTY HOLDING, LP
898 N. SEPULVEDA BLVD., SUITE 175
EL SEGUNDO, CA 90245
(310) 606-1634

DEVELOPER:
FIRST INDUSTRIAL REALTY TRUST, INC.
898 N. SEPULVEDA BLVD., SUITE 175
EL SEGUNDO, CA 90245
(310) 606-1634

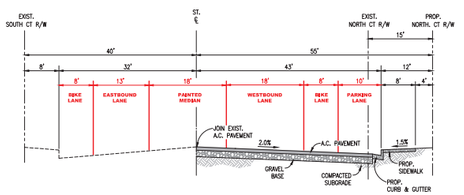
ENGINEER / REP.
STANTEC CONSULTING, INC.
735 E. CARNEGIE DRIVE, SUITE 280
SAN BERNARDINO, CA 92408
ATT: STEPHEN CREVOSERAT, PE.
R.C.E. # 78576
(949) 537-1300



LOCATION MAP
1" = 100'



PLAN VIEW
1" = 30'



CALTRANS ROUTE 243 (LINCOLN ST.)
CITY OF BANNING
ARTERIAL HIGHWAY
(CITY STD. DWG. NO. 101.1)

LEGEND
- PROPOSED A.C. PAVEMENT
- PROPOSED P.C. CONCRETE
- PROPOSED R/W DEDICATION
- PROJECT BOUNDARY
- PROPOSED R/W
- EXIST. R/W
- EXIST. STREET ℄
- PROPOSED STRIPING
- EXIST. CURB & GUTTER
- EXIST. EDGE OF PAVEMENT

NORTH

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

OCTOBER, 2022

PREPARED BY:
Stantec
735 E. CARNEGIE DRIVE, SUITE 280
SAN BERNARDINO, CA 92408
909.335.6116 stantec.com

PREPARED FOR:
FIRST INDUSTRIAL
REALTY TRUST
FIRST INDUSTRIAL ACQUISITION II, LLC
898 N. PACIFIC COAST HWY., SUITE 175
EL SEGUNDO, CA 90245 PH: (310) 606-1634

CONCEPTUAL STRIPING EXHIBIT
FOR
CALTRANS ROUTE 243 (LINCOLN AVE.)
FIRST LINCOLN LOGISTICS
BANNING, CA

2042611702

SHEET 1 OF 1

DRAWING: x:\2041\active\2042611702\drawing\exhibit_Zone1\2611702-ex-STRIP.dwg PLOTTED: 10/21/2022 8:10 AM BY: Sabu, Victor

Appendix C PROJECT TRIP GENERATION

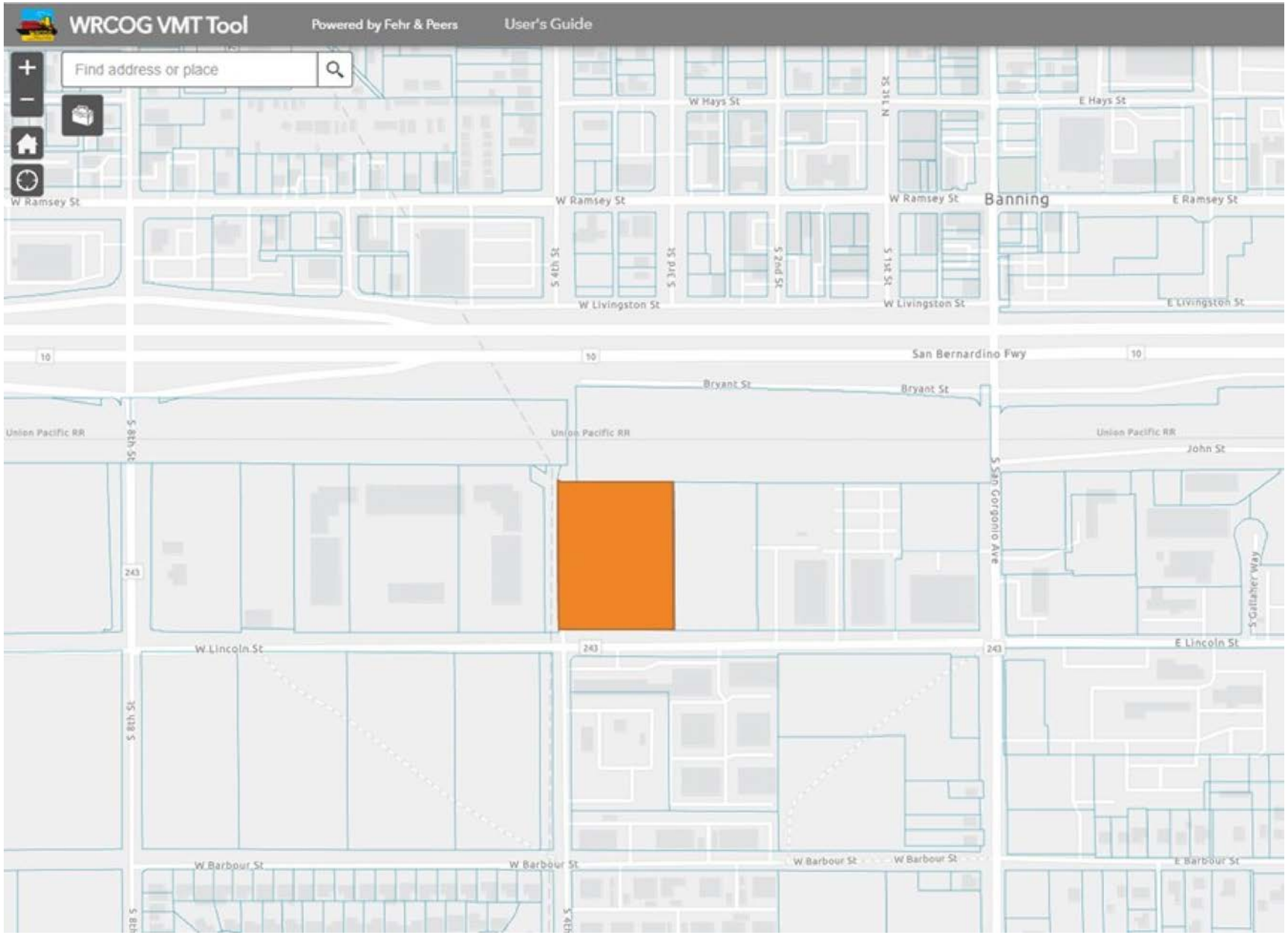
Table C-1 Project Trip Generation Summary

Land Use	Amount	AM Peak Hour			PM Peak Hour			ADT
		In	Out	Total	In	Out	Total	
Logistics Center								
Total Driveway Trips	118.79 TSF	15	5	20	6	15	21	203
Truck trips	--	1	1	2	2	2	4	71
Auto Trips[2]	--	14	4	18	4	13	17	132
Trip Rates								
Warehousing[1]	TSF	--	--	--	--	--	--	--
Total Vehicles	--	0.13	0.04	0.17	0.05	0.13	0.18	1.71
Trucks	--	0.01	0.01	0.02	0.016	0.014	0.03	0.60

Source:
[1] Warehousing – ITE Trip Generation, 11th Edition Category 150
[2] Total driveway trips less truck trips

ADT = Average daily traffic
TSF = 1,000 square feet

Appendix D WRCOG VMT TOOL RESULTS


WRCOG VMT Tool
Powered by Fehr & Peers
User's Guide
Find address or place
W Hays St
E Hays St
N 1st St
W Ramsey St
Banning
E Ramsey St
S 4th St
S 3rd St
S 2nd St
S 1st St
W Livingston St
E Livingston St
10
San Bernardino Fwy
Bryant St
Union Pacific RR
S 8th St
S San Gorgonio Ave
John St
243
W Lincoln St
E Lincoln St
S Gilchrist Way
W Barbour St
E Barbour St

OBJECTID	1
Assessor Parcel Number (APN)	540210009
Traffic Analysis Zone (TAZ)	13
Community Region	BANNING
Inside a Transit Priority Area (TPA)	No
TAZ VMT	23
Jurisdiction VMT	23
% Difference	0.32%
VMT Metric	PA VMT Per Worker
Threshold	23
Community Regions have different thresholds (1=Yes, 0=No)	0
Note	Screening results are based on location of parcel centroids. If results are desired considering the full parcel, please refer to the associated map layers to visually review parcel and TAZ boundary relationship.
SHAPE_Length	592.4465402042989
SHAPE_Area	21558.022097778976

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APPENDIX N

TRANSPORTATION SCOPING AGREEMENT

Stantec

Memo

To:	Kevin Sin City of Banning Public Works Department - Engineering 99 E. Ramsey Street Banning, CA 92220	From:	Cathy Lawrence Stantec 38 Technology Drive, Suite 200 Irvine, CA 92618
File:	2042611703	Date:	May 6, 2022

Reference: Proposed Traffic Study Scope of Work for First Lincoln Logistics Warehouse on Lincoln Street at 4th Street in the City of Banning

The First Lincoln Logistics Warehouse (Project) is proposed for a site within the City of Banning on an approximately 6.23-acre site on the north side of Lincoln Street east of 4th Street. Stantec Consulting Services Inc. (Stantec) is pleased to provide you with the following trip generation summary for submittal with the City's Traffic Impact Analysis (TIA) Scoping Form (attached). The trip generation estimate demonstrates that the Project is screened from a Local Transportation Analysis (LTA) and Vehicle Miles Traveled (VMT) Analysis. The justification for the screening of the Project from the LTA and the VMT Analysis is based on the criteria outlined in the City of Banning Traffic Impact Analysis Guidelines for Local Transportation Analysis and Vehicle Miles Traveled Analysis (September 2021).

LOCAL TRANSPORTATION ANALYSIS

1. Project Location: The First Lincoln Logistics Center is located on an approximately 6.23-acre site on the north side of Lincoln Street east of 4th Street. The location of the Project is illustrated in Figure 1.

2. Project Description: The Project would consist of one 118,786 square foot warehouse building and associated truck docks, trailer, and office parking. The building would be used for general warehouse distribution and would be accessed by two proposed driveways located on Lincoln Street.

3. Trip Generation: Trip generation for the Project was determined based on Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition rates for Warehousing (Category 150). The total driveway trip generation and truck trip generation were determined from the ITE rates. A passenger car equivalent (PCE) factor of 3.0 was applied to the truck trips based on a conservative assumption that the trucks would consist of four or more axles. Trip generation is summarized in Table 1 (attached) and shows that the Project would generate 24 PCE trips during the AM peak hour, 29 PCE trips during the PM peak hour, and 345 PCE trips daily. Therefore, the Project is screened out from needing an LTA since it generates less than 50 peak hour (PCE) trips.

   Please note that there are several ITE "warehouse" categories that apply to different types of operations. Other warehouse categories apply to sizeable distribution centers (i.e. greater than 200,000 square feet) for large deliveries to retail locations and other warehouses, Amazon-type fulfillment centers for direct deliveries of smaller packages to ecommerce customers, or FedEx/UPS-type freight forwarding facilities that include truck maintenance, wash, and fueling activities; therefore, the Warehousing category, which applies to general warehouse facilities, is the most appropriate for the proposed Project. Furthermore, the City's Amazon type high-cube fulfillment center warehouse facilities trip rates do not apply to the general warehouse Project.

Reference: **Proposed Traffic Study Scope of Work for First Lincoln Logistics Warehouse on Lincoln Street at 4th Street in the City of Banning**

VEHICLE MILES TRAVELED

1. Vehicle Miles Traveled: The City of Banning Vehicle Miles Traveled Analysis Guidelines identifies that certain types of development, such as development within a low VMT generating area or development that generates very low volumes of traffic, can generally be presumed to have less than significant impacts. The City's guidelines indicate that projects that do not require a General Plan Amendment and generate less than 1,000 daily vehicle trips, including warehouse projects up to 574,712 square feet, can be exempt from a detailed VMT analysis. Therefore, the proposed Project is screened out from needing a detailed VMT analysis and is presumed to have a less than significant impact.

In summary, a detailed local transportation analysis and VMT analysis are not required for the proposed First Lincoln Logistics Warehouse consistent with the City of Banning Traffic Impact Analysis Guidelines. A completed TIA scoping form is attached for reference.

Stantec Consulting Services Inc.

Cathy Lawrence PE
Transportation Engineer

Phone: 949 923 6064
Cathy.Lawrence@stantec.com

Attachment: Table 1 Project Trip Generation Summary
Figure 1 Project Location
Proposed site plan
TIA Scoping Form

c. Daryl Zerfass, Stantec

Reference: **Proposed Traffic Study Scope of Work for First Lincoln Logistics Warehouse on Lincoln Street at 4th Street in the City of Banning**

Table 1 Project Trip Generation Summary

Land Use	Amount	AM Peak Hour			PM Peak Hour			ADT
		In	Out	Total	In	Out	Total	
Logistics Center								
Total Driveway Trips	118.79 TSF	15	5	20	6	15	21	203
Truck trips		1	1	2	2	2	4	71
Truck PCE trips (3.0 PCE)[2]		*3*	*3*	*6*	*6*	*6*	*12*	*213*
Auto Trips[3]		*14*	*4*	*18*	*4*	*13*	*17*	*132*
Total Auto + Truck PCE trips		**17**	**7**	**24**	**10**	**19**	**29**	**345**
Trip Rates								
Warehousing[1]	TSF							
Total Vehicles		0.13	0.04	0.17	0.05	0.13	0.18	1.71
Trucks		0.01	0.01	0.02	0.016	0.014	0.03	0.60

Source:
[1] Warehousing – ITE Trip Generation, 11th Edition Category 150
[2] City of Banning Traffic Impact Analysis Guidelines for Local Transportation Analysis and Vehicle Miles Traveled Analysis, September 2021 – 4 or more axle trucks
[3] Total driveway trips less truck trips

ADT = Average daily traffic
TSF = 1,000 square feet
PCE = Passenger car equivalents

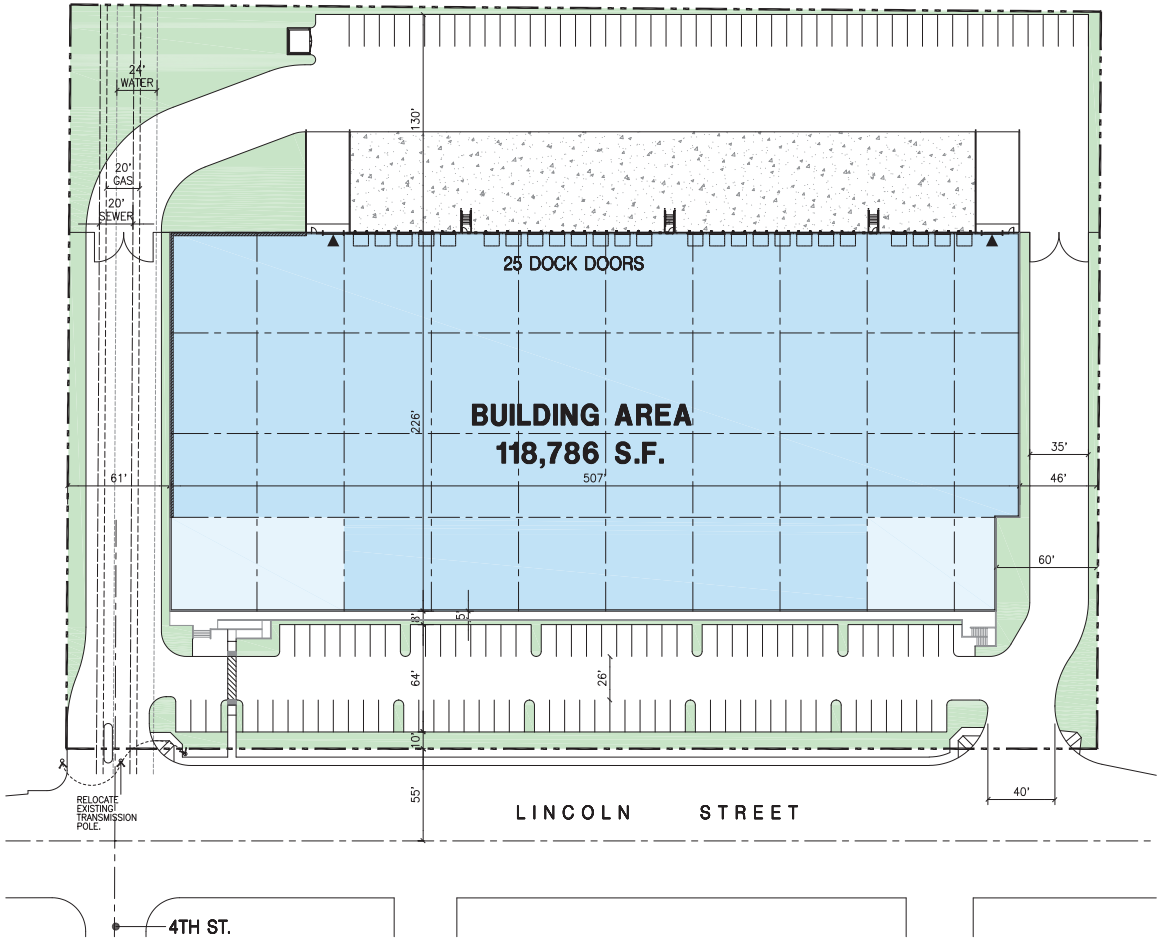


\\us0328-ppfss01\workgroup\2042\active\204261702\drawing\exhibit_files\traffic\scope-fig_1.dwg

N

Figure 1
Project Location

CAUTION: IF THIS SHEET IS NOT 30"X42", IT IS A REDUCED PRINT

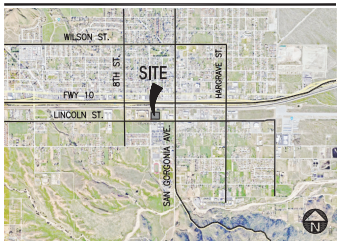


Note: This is a conceptual plan. It is based on preliminary information which is not fully verified and may be incomplete. It is meant as a comparative aid in examining alternate development strategies and any quantities indicated are subject to revision as more reliable information becomes available.

north

1" = 30'
0 30 60 90

Aerial Map



Tabulation

SITE AREA	
In s.f.	271,594 s.f.
In acres	6.23 ac
BUILDING AREA	
Office - 1st floor	5,000 s.f.
Office - 2nd floor	5,000 s.f.
Warehouse	108,786 s.f.
TOTAL	118,786 s.f.
COVERAGE	43.7%
AUTO PARKING REQUIRED	
Office: 2,001-7,500 s.f. @ 1/250 s.f.	40 stalls
Whse: over 20K @ 22 stalls + 1/2,000 s.f.	76 stalls
TOTAL	116 stalls
AUTO PARKING PROVIDED	
Standard (9' x 19')	138 stalls
ZONING ORDINANCE FOR CITY	
Zoning Designation - Industria	
MAXIMUM BUILDING HEIGHT ALLOWED	
Height - 50'	
MAXIMUM BUILDING COVERAGE	
Coverage - 60%	
LANDSCAPE REQUIREMENT	
Percentage - to be verifie	
SETBACKS	
Front - 10'	
Interiror side - 0'	
Street side - 10'	
Rear - 0'. If adjacent to R zone - 10'	

Legend

- POTENTIAL OFFICE W/ 2ND FLOOR
- WAREHOUSE
- ▼ DRIVE THRU DOOR

Conceptual Site Plan

NC Lincoln St. and 4th St.

Banning, CA

HPA architecture
18831 Bardeen Ave. - Ste. #100
Irvine, CA 92612
(949) 863-1770
www.hparchs.com

FIRST INDUSTRIAL REALTY TRUST

March 22, 2022 / Job #21654

Scheme 9

TIA SCOPING FORM

This completed Scoping Form must be submitted to City staff for review before initiation of the TIA:

Project Identification:

Case Number:	PAC 21-17
Related Cases:	N/A
SP No.	N/A
EIR No.	N/A
GPA No.	N/A
CZ No.	N/A
Project Name:	First Lincoln Logistics Warehouse
Project Opening Year:	2024
Project Description:	118,786 square foot warehouse building

	Consultant	Developer
Name:	Stantec Consulting Services Inc.	First Industrial Realty Trust, Inc.
Address:	38 Technology Drive, Suite 200 Irvine CA 92618	898 N. Sepulveda Blvd. Suite 175 El Segundo CA 90245
Telephone:	949-923-6064	909-230-3892
Fax/Email:	Cathy.Lawrence@Stantec.com	ploubet@firstindustrial.com

Trip Generation Information:

Source of Trip Generation Data: ITE 11th Edition, Category 150 (Warehousing)

Current General Plan Land Use	Proposed General Plan Land Use
Industrial	Warehouse
Current Zoning	**Proposed Zoning**
Light Industrial (LI)	Light Industrial (LI)

	Existing Trip Generation			Proposed Trip Generation		
	In	Out	Total	In	Out	Total
AM Peak Hour:	Nom.	Nom.	Nom.	17 (PCE)	7 (PCE)	24 (PCE)
PM Peak Hour:	Nom.	Nom.	Nom.	10 (PCE)	19 (PCE)	29 (PCE)

Trip Internalization: __ Yes X No _____ Percentage (if Yes)

Pass-By Allowance: __ Yes X No _____ Percentage (if Yes)

Diverted Trips Allowance: __ Yes X No _____ Percentage (if Yes)

Potential Screening Checks:

Is your project screened from a Local Transportation Analysis (LTA), pursuant to the criteria in Section 2.1 of the guidelines?

X Yes __ No

LTA Screening Justification:
The proposed 118,786 square foot warehouse is consistent with the General Plan Land Use/ Zoning and generates less than 50 peak hour (PCE) trips during the AM and PM peak hours.

Is your project screened from a VMT analysis, as per the criteria in Section 2.2 of the guidelines?

X Yes __ No

VMT Screening Justification:
The proposed 118,786 square foot warehouse does not require a General Plan Amendment and generates less than 1,000 daily vehicle trips.

Level of Service Analysis Scoping:

Project Trip Distribution Percentages (Attach exhibit for detailed distribution):

North	South	East	West
N/A	N/A	N/A	N/A

- Attach list of Approved and Pending Projects that need to be considered (provided by City staff and adjacent jurisdictions)
- Attach list of study intersections/roadway segments
- Attach site plan
- Note other specific items to be addressed:
  a. Site access
  b. On-site circulation
  c. Parking
  d. Consistency with Plans supporting Bikes/Peds/Transit
  e. Other __N/A_____
- Date of Traffic Counts ___N/A_____
- Attach proposed analysis scenarios (years plus proposed forecasting approach)
- Attach proposed phasing approach (if the project is phased)

Vehicle Miles Traveled Analysis Scoping:

For projects that are not screened, identify the following:

- Travel Demand Forecasting Model Used: __N/A_____
- Attach WRCOG Screening VMT Assessment output or describe why it is not appropriate for use
- Attach proposed Model Land Use Inputs and Assumed Conversion Factors (attach)

Any other specific issues to be addressed in the LTA or VMT analysis, apart from those stated in the Guidelines?

___N/A_____

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APPENDIX O

MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MONITORING AND REPORTING PROGRAM
FIRST LINCOLN INDUSTRIAL PROJECT

This Mitigation Monitoring and Reporting Program has been prepared for use in implementing mitigation for the:

First Lincoln Industrial Project
DR 22-7003, TPM 22-4001, ENV 22-1504

The program has been prepared in compliance with State law and the Mitigated Negative Declaration (MND) prepared for the project by the City of Banning (City).

The California Environmental Quality Act (CEQA) requires adoption of a reporting or monitoring program for those measures placed on a project to mitigate or avoid significant effects on the environment (Public Resource Code Section 21081.6). The law states the reporting or monitoring program shall be designed to ensure compliance during project implementation.

The monitoring program contains the following elements:

1) The mitigation measures are recorded with the action and procedure necessary to ensure compliance. In some instances, one action may be used to verify implementation of several mitigation measures.
2) A procedure for compliance and verification has been outlined for each action necessary. This procedure designates who will take action, what action will be taken and when, and to whom and when compliance will be reported.
3) The program has been designed to be flexible. As monitoring progresses, changes to compliance procedures may be necessary based upon recommendations by those responsible for the program. As changes are made, new monitoring compliance procedures and records will be developed and incorporated into the program.

This Mitigation Monitoring and Reporting Program includes mitigation identified in the MND.

MITIGATION MONITORING AND RESPONSIBILITIES

As the Lead Agency, the City is responsible for ensuring full compliance with the mitigation measures adopted for the proposed project. The City will monitor and report on all mitigation activities. Mitigation measures will be implemented at different stages of development throughout the project site. In this regard, the responsibilities for implementation have been assigned to the Applicant, Contractor, or a combination thereof. If, during the course of project implementation, any of the mitigation measures identified herein cannot be successfully implemented, the City shall be immediately informed, and the City will then inform any affected responsible agencies. The City, in conjunction with any affected responsible agencies, will then determine if modification to the project is required and/or whether alternative mitigation is appropriate.

STANDARD CONDITIONS

Standard Conditions are presented in instances where the proposed project would not create a significant impact but would be required to adhere to regulatory requirements in order to ensure impacts do not become significant. Standard Conditions outline compliance with various federal, State, and/or local acts, laws, rules, regulations, municipal codes, policies, etc.

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MITIGATION MONITORING AND REPORTING PROGRAM CHECKLIST

Project Name: First Lincoln Industrial Project **Applicant:** **First Industrial Realty Trust, Inc.**

Date: **February 24, 2023**

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
Biological Resources					
MITIGATION MEASURE BIO-1: Within 30 days prior to the commencement of ground disturbance activities, a pre-construction burrowing owl survey shall be conducted by a qualified biologist. The results of the single one-day survey shall be submitted to the City for review prior to commencement of any ground disturbance activities on the project site. If burrowing owl are not detected during the pre-construction survey, no further mitigation is required. If burrowing owl are detected during the pre-construction survey or during construction activities at the project site, a burrowing owl protection and relocation plan shall be prepared by a qualified biologist and submitted to the California Department of Fish and Wildlife (CDFW) and United States Fish and Wildlife Service (USFWS) for review and approval. The applicant shall submit evidence to the City that required and applicable provisions of the burrowing owl protection and relocation program have been satisfied prior to the start of any on-site ground disturbance activity.	City of Banning Community Development Director or designee.	Within 30 days prior to ground disturbance activities and during construction.	Evidence to the City the required pre-construction survey has been completed and, if necessary, the CDFW and USFWS are sent written notification and a burrowing owl protection and relocation plan is prepared and applicable provisions of the burrowing owl protection and relocation program have been satisfied.		Issuance of a stop work order.
MITIGATION MEASURE BIO-2: Site preparation activities (ground disturbance, construction activities, staging equipment, and/or removal of trees and vegetation) for the project shall be avoided, to the greatest extent possible, during the nesting season of potentially occurring native and migratory bird species (February 1 through August 31). If site-preparation activities are proposed during the nesting/breeding season, the project Applicant shall retain	City of Banning Community Development Director or designee.	Prior to the commencement of ground disturbance activities and during construction.	Evidence to the City a qualified biologist is retained, the required pre-construction survey has been completed, and, if necessary, appropriate buffers are established and monitored until the nesting effort is finished. Submittal of a report to City for mitigation		Issuance of a stop work order.

Project Name: First Lincoln Industrial Project | **Applicant:** First Industrial Realty Trust, Inc. | **Date:** February 24, 2023

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
a qualified biologist to conduct a pre-activity field survey within three days prior to the start of any ground disturbance activity to determine if active nests of species protected by the Migratory Bird Treaty Act or the California Fish and Game Code are present in the construction zone. If active nests are not identified within the construction zone, construction may be conducted during the nesting/breeding season. However, if active nests are located during the pre-activity field survey, the biologist shall immediately establish a conservative avoidance buffer surrounding the nest based on their best professional judgement and experience. The biologist shall monitor the nest at the onset of project activities, and at the onset of any changes in such project activities (e.g., increase in number or type of equipment, change in equipment usage, etc.) to determine the efficacy of the buffer. If the biologist determines that such project activities may be causing an adverse reaction, the biologist shall adjust the buffer accordingly or implement alternative avoidance and minimization measures, such as redirecting or rescheduling construction or erecting sound barriers. All work within these buffers shall be halted until the nesting effort is finished (i.e., the juveniles are surviving independent from the nest). The onsite qualified biologist shall review and verify compliance with these nesting avoidance buffers and shall verify the nesting effort has finished. Work can resume within these avoidance areas when no other active nests are found. Upon completion of the survey and nesting bird monitoring, a report shall be prepared and submitted to City for mitigation monitoring compliance record keeping.			monitoring compliance record keeping.		

Project Name: First Lincoln Industrial Project **Applicant:** **First Industrial Realty Trust, Inc.**

Date: **February 24, 2023**

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
CULTURAL RESOURCES					
MITIGATION MEASURE CUL-1: Native American Treatment Agreement. Prior to the issuance of grading permits, the applicant shall enter into a Tribal Monitoring Agreement with the Morongo Band of Mission Indians for the project. The Tribal Monitor shall be on-site during all ground-disturbing activities (including, but not limited to, clearing, grubbing, tree and bush removal, grading, trenching, fence post placement and removal, construction excavation, excavation for all utility and irrigation lines, and landscaping phases of any kind). The Tribal Monitor shall have the authority to temporarily divert, redirect or halt the ground-disturbing activities to allow identification, evaluation, and potential recovery of cultural resources.	City of Banning Community Development Director or designee.	Prior to issuance of grading permit and during construction.	Applicant agreement with the Morongo Band of Mission Indians submitted to City of Banning Planning Division.		Withhold grading permit or issuance of a stop work order.
MITIGATION MEASURE CUL-2: Retention of Archaeologist. Prior to any ground-disturbing activities (including, but not limited to, clearing, grubbing, tree and bush removal, grading, trenching, fence post replacement and removal, construction excavation, excavation for all utility and irrigation lines, and landscaping phases of any kind) and prior to the issuance of grading permits, the Applicant shall retain a qualified archaeologist who meets U.S. Secretary of the Interior Standards (SOI). The archaeologist shall be present during all ground-disturbing activities to identify any known or suspected archaeological and/or cultural resources. The archaeologist will conduct a Cultural Resource Sensitivity Training, in conjunction with the Tribe[s] Tribal Historic Preservation Officer (THPO) and/or designated Tribal Representative. The training session will focus on what the archaeological and tribal cultural resources that may be encountered during ground-	City of Banning Community Development Director or designee.	Prior to and during construction.	Evidence to the City: 1) A professional archaeologist meeting the Secretary of the Interior's Professional Standards for Archaeology (U.S. Department of Interior, 2012) is retained; 2) Qualified archaeologist administers Cultural Resource Sensitivity Training and monitors ground-disturbing activities.		Issuance of a stop work order.

Project Name: First Lincoln Industrial Project **Applicant:** **First Industrial Realty Trust, Inc.**

Date: **February 24, 2023**

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
disturbing activities, and the procedures to be followed in such an event.					
MITIGATION MEASURE CUL-3: Cultural Resource Management Plan. Prior to any ground-disturbing activities the project archaeologist shall develop a Cultural Resource Management Plan (CRMP) and/or Archaeological Monitoring and Treatment Plan (AMTP) to address the details, timing and responsibility of all archaeological and cultural resource activities that occur on the project site. This Plan shall be written in consultation with the consulting Tribe[s] and shall include the following: approved Mitigation Measures (MM)/Conditions of Approval (COA), contact information for all pertinent parties, parties' responsibilities, procedures for each MM or COA, and an overview of the project schedule.	City of Banning Community Development Director or designee.	Prior to construction.	Evidence to the City the project archaeologist prepares a Cultural Resource Management Plan (CRMP) and/or Archaeological Monitoring and Treatment Plan (AMTP).		Issuance of a stop work order.
MITIGATION MEASURE CUL-4: Pre-Grade Meeting. The retained qualified archeologist and Consulting Tribe[s] representative shall attend the pre-grade meeting with the grading contractors to explain and coordinate the requirements of the monitoring plan.	City of Banning Community Development Director or designee.	Prior to construction.	Evidence to the City the qualified archeologist and Consulting Tribe[s] representative attend the pre-grade meeting.		Issuance of a stop work order.
MITIGATION MEASURE CUL-5: On-site Monitoring. During all ground-disturbing activities the qualified archaeologist and the Native American monitor shall be on site full-time. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and any discoveries of Tribal Cultural Resources as defined in California Public Resources Code Section 21074. Archaeological and Native American monitoring will be discontinued when the depth of grading and soil conditions no longer retain the potential to contain cultural deposits. The qualified archaeologist, in consultation with the Native American monitor, shall be	City of Banning Community Development Director or designee.	During construction.	Evidence to the City the qualified archaeologist and the Native American monitor are on site full-time as appropriate.		Issuance of a stop work order.

Project Name: First Lincoln Industrial Project **Applicant:** **First Industrial Realty Trust, Inc.**

Date: **February 24, 2023**

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
responsible for determining the duration and frequency of monitoring.					
MITIGATION MEASURE CUL-6: Inadvertent Discovery of Cultural Resources. In the event that previously unidentified cultural resources are unearthed during construction, the qualified archaeologist and the Native American monitor shall have the authority to temporarily divert and/or temporarily halt ground disturbance operation in the area of discovery to allow for the evaluation of potentially significant cultural resources. Isolates and clearly non-significant deposits shall be minimally documented in the field and collected so the monitored grading can proceed. 2 If a potentially significant cultural resource(s) is discovered, work shall stop within 60-feet of the discovery and an Environmentally Sensitive Area (ESA) physical demarcation/barrier constructed. All work shall be diverted away from the vicinity of the find, so that the find can be evaluated by the qualified archaeologist and Tribal Monitor[s]. The archaeologist shall notify the Lead Agency and consulting Tribe[s] of said discovery. The qualified archaeologist, in consultation with the Lead Agency, the consulting Tribe[s] and the Native American monitor, shall determine the significance of the discovered resource. A recommendation for the Tribal Cultural Resource's treatment and disposition shall be made by the qualified archaeologist in consultation with the Tribe[s] and the Native American monitor[s] and be submitted to the Lead Agency for review and approval. Below are the possible treatment and dispositions of significant cultural resources in order of CEQAs preference: A. Full avoidance.	City of Banning Community Development Director or designee.	During construction.	Evidence to the City: 1) Appropriate buffers are established as necessary; 2) Recommendation for the treatment and disposition of resources by the qualified archaeologist in consultation with the Tribe[s] and the Native American monitor[s].		Issuance of a stop work order.

Project Name: First Lincoln Industrial Project | **Applicant:** First Industrial Realty Trust, Inc. | **Date:** February 24, 2023

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
B. If avoidance is not feasible, preservation in place. C. If preservation in place is not feasible, all items shall be reburied in an area away from any future impacts and reside in a permanent conservation easement or Deed Restriction. D. If all other options have been proven to be infeasible, data recovery through excavation and curated in a Curation Facility that meets the Federal Curation Standards (CFR s79.1).					
MITIGATION MEASURE CUL-7: Inadvertent Discovery of Human Remains. The Morongo Band of Mission Indians requests the following specific conditions to be imposed in order to protect Native American human remains and/or cremations. **No photographs are to be taken except by the coroner, with written approval by the consulting Tribe[s].** A. Should human remains and/or cremations be encountered on the surface or during any and all ground-disturbing activities (i.e. clearing, grubbing, tree and bush removal, grading, trenching, fence post placement and removal, construction excavation, excavation for all water supply, electrical, and irrigation lines, and landscaping phases of any kind), work in the immediate vicinity of the discovery shall immediately stop within 100-feet of the discovery. The area shall be protected, project personnel/observers restricted. The County Coroner is to be contacted within 24 hours of discovery. The County Coroner has 48 hours to come to his/her determination pursuant to State and Safety Code §7050.5. and Public Resources Code (PRC) § 5097.98. B. In the event that the human remains and/or cremations are identified as Native American, the Coroner shall	City of Banning Community Development Director or designee.	During construction.	Evidence to the City: 1) Appropriate buffer areas have been established as applicable; 2) Coordinate with Morongo Band of Mission Indians and County Coroner as necessary; 3) Report of findings filed with the City and Morongo Band of Mission Indians, and Eastern Information Center (EIC).		Issuance of a stop work order.

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notify the Native American Heritage Commission within 24 hours of determination pursuant to subdivision (c) of HSC §7050.5. C. The Native American Heritage Commission shall immediately notify the person or persons it believes to be the Most Likely Descendant (MLD). The MLD has 48 hours, upon being granted access to the Project site, to inspect the site of discovery and make their recommendation for final treatment and disposition, with appropriate dignity, of the remains and all associated grave goods pursuant to PRC §5097.98. D. If the Morongo Band of Mission Indians has been named the Most Likely Descendant (MLD), the Tribe may wish to rebury the human remains and/or cremation and sacred 3 items in their place of discovery with no further disturbance and reside in perpetuity. The place(s) of reburial will not be disclosed by any party and is exempt from the California Public Records Act (California Government Code § 6254[r]). Reburial location of human remains and/or cremations will be determined by the Tribes Most Likely Descendant (MLD), the landowner, and the City Planning Department.					
MITIGATION MEASURE CUL-8: Final Report: The final report[s] created as a part of the project (AMTP, isolate records, site records, survey reports, testing reports, etc.) shall be submitted to the Lead Agency and Consulting Tribe[s] for review and comment. After approval from all parties, the final reports are to be submitted to the Eastern Information Center, and the Consulting Tribe[s].	City of Banning Community Development Director or designee.	After construction.	Evidence to the City final monitoring compliance report is submitted to the Lead Agency and Consulting Tribe[s] for review and comment. After approval from all parties, the final reports must be submitted to the Eastern Information Center and the Consulting		Withhold occupancy permit.

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			Tribe[s].		
GEOLOGY AND SOILS					
MITIGATION MEASURE GEO-1: Prior to issuance of grading permits, the City shall verify a Paleontological Resource Impact Mitigation Plan is prepared by a qualified paleontologist to be implemented during ground-disturbing activities. Implementation of the Paleontological Resource Impact Mitigation Plan shall include (but not be limited to) the following: • Review of project-specific geotechnical report data, with particular regard to location and depth of earthmoving and the rock unit(s) encountered; • A monitoring schedule indicating part-time "spot check" to verify deposits of paleontological potential. Part-time monitoring of deposits with paleontological potential shall occur based on the observed geological conditions; adjustments to the intensity and appropriateness of monitoring shall be at the discretion of the qualified paleontologist; • Development of a formal agreement between the project applicant and an appropriate repository for the final disposition and permanent storage and maintenance of any fossil collections and associated data; • The construction schedule, term/schedule of on-site paleontological monitor(s) and the extent of areas and activities to be monitored; • Authority of paleontological monitor(s) to temporarily redirect construction activity in the vicinity of any paleontological discovery;	City of Banning Community Development Director or designee.		Evidence to the City: 1) Project proponent/developer prepares a Paleontological Resource Impact Mitigation Plan; 2) Project proponent/developer retains a qualified paleontologist for monitoring; 3) Adequate provisions are in place to protect or retrieve/record/evaluate paleontological resources; 4) Formal agreement between the project applicant and appropriate repository for fossils; 5) Submittal of required evaluation and report by a qualified paleontologist to the City.		Withhold grading permit and/or issuance of a stop work order.

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• Procedures for the evaluation and option to recover large fossil specimens and for the evaluation, recovery, and processing of small fossil specimens; • Fossil specimen preparation, identification to the lowest taxonomic level possible, curation, and cataloging; and • A report of findings. The paleontologist shall be equipped to record and salvage fossil resources that may be unearthed during construction. The paleontologist shall temporarily halt or divert construction equipment within a radius of 50 feet to allow recording and removal of the unearthed resources. Any fossils found shall be offered for curation at a curation facility approved by the City. A report of findings, including, when appropriate, an itemized inventory of recovered specimens and a discussion of their significance, shall be prepared upon completion of the steps outlined above. The report and inventory, when submitted to and approved by the appropriate lead agency, shall signify completion of the program to mitigate impacts on paleontological resources. This measure shall be implemented to the satisfaction of the City's Community Development Director or designee.					
HAZARDS AND HAZARDOUS MATERIALS					
MITIGATION MEASURE HAZ-1: Any increase in building area or change in use that differs from what was previously evaluated by the Airport Land Use Commission (ALUC) (108,786 square feet of warehouse area, 5,000 square feet of office area, and 5,000 square feet of second floor office mezzanine area) shall require an amended review by the ALUC. Furthermore, the maximum height of the proposed structures to top point shall not exceed 55 feet above ground level, and the maximum elevation at the top of the	City of Banning Community Development Director or designee.	Prior to and during construction.	Evidence to the City that the design standards presented to the Riverside County Airport Land Use Commission are included in the construction plans and executed on site.		Withhold building permit or issuance of stop work order.

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structures shall not exceed 2,383 feet above mean sea level. The maximum height and top point elevation specified above shall not be amended without further review by the ALUC and the Federal Aviation Administration (FAA); provided, however, that reduction in structure height or elevation shall not require further review by the ALUC. Additionally, temporary construction equipment used during actual construction of the structures shall not exceed 55 feet in height and a maximum elevation of 2,383 feet above mean sea level, unless separate notice is provided to the FAA through the Form 7460-1 process. If marking and/or lighting for aviation safety are accomplished on a voluntary basis, such marking and/or lighting (if any) shall be installed in accordance with FAA Advisory Circular 70/7460-1 L Change 2 and shall be maintained in accordance therewith for the life of the project. Furthermore, any outdoor lighting installed shall be hooded or shielded to prevent either the spillage of lumens or reflection into the sky. Outdoor lighting shall be downward facing.					
MITIGATION MEASURE HAZ-2: The following uses shall be prohibited: a. Any use which would direct a steady light or flashing light of red, white, green, or amber colors associated with airport operations toward an aircraft engaged in an initial straight climb following takeoff or toward an aircraft engaged in a straight final approach toward a landing at an airport, other than an FAA-approved navigational signal light or visual approach slope indicator.	City of Banning Community Development Director or designee.	Prior to and during construction.	Evidence to the City that the conditions of approval prescribed by the Riverside County Airport Land Use Commission are included in the construction plans and executed on site.		Withhold building permit or issuance of stop work order.

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b. Any use which would cause sunlight to be reflected towards an aircraft engaged in an initial straight climb following takeoff or towards an aircraft engaged in a straight final approach towards a landing at an airport. c. Any use which would generate smoke or water vapor or which would attract large concentrations of birds, or which may otherwise affect safe air navigation within the area. (Such uses include landscaping utilizing water features, aquaculture, outdoor production of cereal grains, sunflower, and row crops, composting operations, wastewater management facilities, artificial marshes, trash transfer stations that are open on one or more sides, recycling centers containing putrescible wastes, construction and demolition debris facilities, fly ash disposal, and incinerators.) d. Any use which would generate electrical interference that may be detrimental to the operation of aircraft and/or aircraft instrumentation. e. Highly noise-sensitive outdoor nonresidential uses. f. Any use which results in a hazard to flight, including physical (e.g., tall objects), visual, and electronic forms of interference with the safety of aircraft operations.					
MITIGATION MEASURE HAZ-3: A Riverside County Airport Land Use Commission-approved "Notice of Airport in Vicinity" shall be provided to all prospective purchasers and occupants of the property and be recorded as a deed notice. In the event that the Office of the Riverside County Assessor-Clerk-Recorder declines to record said notice, the text of the notice shall be included on the Environmental Constraint Sheet (ECS) of the final parcel map, if an ECS is otherwise required.	City of Banning Community Development Director or designee.	Prior to occupancy.	Evidence to the City that a Riverside County Airport Land Use Commission-approved "Notice of Airport in Vicinity" is provided to all prospective purchasers and occupants of the property and recorded as a deed notice or included on the Environmental Constraint		Withhold occupancy permit.

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			Sheet (ECS) of the final parcel map, as applicable.		
MITIGATION MEASURE HAZ-4: Any proposed stormwater basins or facilities shall be designed and maintained to provide for a maximum 48-hour detention period following the design storm and remain totally dry between rainfalls. Vegetation in and around the basins that would provide food or cover for birds would be incompatible with airport operations and shall not be utilized in project landscaping. Trees shall be spaced to prevent large expanses of contiguous canopy, when mature. Landscaping in and around the basin(s) shall not include trees or shrubs that produce seeds, fruits, or berries. Landscaping in the stormwater basin, if not rip-rap, should be in accordance with the guidance provided in ALUC "LANDSCAPING NEAR AIRPORTS" brochure, and the "AIRPORTS, WILDLIFE AND STORMWATER MANAGEMENT" brochure, which list acceptable plants from Riverside County Landscaping Guide or other alternative landscaping as may be recommended by a qualified wildlife hazard biologist. A notice sign shall be permanently affixed to the stormwater basin with the following language: "There is an airport nearby. This stormwater basin is designed to hold stormwater for only 48 hours and not attract birds. Proper maintenance is necessary to avoid bird strikes". The sign shall also include the name, telephone number or other contact information of the person or entity responsible to monitor the stormwater basin.	City of Banning Community Development Director or designee.	Prior to and during construction.	Evidence to the City that stormwater basins or facilities are designed and notice signs are permanently affixed to project stormwater basins per Riverside County Airport Land Use Commission standards.		Withhold occupancy permit.
MITIGATION MEASURE HAZ-5: Within five (5) days after construction of the structure reaches its greatest height,	City of Banning	Within five (5) days after construction of	Evidence to the City that FAA Form 7460-2 (Part II), Notice		Withhold occupancy

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FAA Form 7460-2 (Part II), Notice of Actual Construction or Alteration, shall be completed by the project proponent or his/her designee and e-filed with the Federal Aviation Administration. This requirement is also applicable in the event the project is abandoned or a decision is made not to construct the applicable structure.	Community Development Director or designee.	the structure reaches its greatest height.	of Actual Construction or Alteration, is e-filed with the Federal Aviation Administration.		permit or issuance of stop work order.

STANDARD CONDITIONS

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Standard Condition No. / Implementing Action	Responsible for Monitoring	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
GEOLOGY AND SOILS					
STANDARD CONDITION GEO-1: Prior to issuance of grading and/or building permits, the project applicant shall provide evidence to the City of Banning (City) for review and approval that proposed structures, features, and facilities have been designed and would be constructed in conformance with applicable provisions of the 2022 edition of the California Building Code (CBC) or the most current edition of the CBC in effect at the time the applicant's development application is deemed complete by the City. Additionally, the project applicant shall provide evidence to the City that the recommendations cited in the site-specific geotechnical investigation are incorporated into project plans and/or implemented as deemed appropriate by the City. Geotechnical recommendations may include, but are not limited to, removal of existing vegetation and any other surface and subsurface improvements that would not remain in place for use with the new development. Remedial earthwork, overexcavation, and ground improvement shall occur to depths specified in the geotechnical investigation to provide a sufficient layer of engineered fill or densified soil beneath the structural footings/foundations, as well as proper surface and subsurface drainage devices and erosion control. Retaining wall parameters shall be in accordance with the geotechnical investigation to protect against lateral spreading and landslides.	City of Banning Director of Building and Safety or designee.	Prior to issuance of grading and/or building permits and during construction.	Evidence to the City: 1) Design-level plans comply with California Building Code in effect at the time of development application submittal; 2) Recommendations in the design-level geotechnical/soils/geologic report are incorporated as applicable.		Withhold grading and/or building permits and/or issuance of a stop work order.

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Standard Condition No. / Implementing Action	Responsible for Monitoring	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
Construction of concrete structures in contact with subgrade soils determined to be corrosive shall include measures to protect concrete, steel, and other metals. Verification testing must be performed periodically at random intervals and locations to confirm that the compressible soils have been sufficiently densified. The structural engineer must determine the ultimate thickness and reinforcement of the building floor slabs based on the imposed slab loading. As necessary, the City may require additional studies and/or engineering protocols to meet its requirements. This measure shall be implemented to the satisfaction of the City Director of Building and Safety or designee.					
HYDROLOGY AND WATER QUALITY					
STANDARD CONDITION HYD-1: Construction General Permit. Prior to commencement of construction activities, the applicant shall obtain coverage under the *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Construction General Permit), NPDES No. CAS000002, Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ, or any other subsequent permit. This shall include submission of Permit Registration Documents (PRDs), including permit application fees, a Notice of Intent (NOI), a risk assessment, a site plan, a Storm Water Pollution Prevention Plan (SWPPP), a signed certification statement, and any other compliance-related documents required by the permit, to the State Water Resources Control Board via the Stormwater Multiple	Director of the City of Banning Public Works Department, or designee.	Prior to construction.	Evidence to the City a Waste Discharge Identification Number (WDID) is obtained for the Project from the SMARTS.		Withhold grading permit and/or issuance of a stop work order.

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Application and Report Tracking System (SMARTS). Construction activities shall not commence until a Waste Discharge Identification Number (WDID) is obtained for the Project from the SMARTS and provided to the Director of the City of Banning Public Works Department, or designee, to demonstrate that coverage under the Construction General Permit has been obtained. Project construction shall comply with all applicable requirements specified in the Construction General Permit, including but not limited to, preparation of an SWPPP and implementation of construction site Best Management Practices (BMPs) to address all construction-related activities, equipment, and materials that have the potential to impact water quality for the appropriate risk level identified for the Project. The SWPPP shall identify the sources of pollutants that may affect the quality of storm water and shall include BMPs (e.g., Sediment Control, Erosion Control, and Good Housekeeping BMPs) to control the pollutants in storm water runoff. Upon completion of construction activities and stabilization of the Project site, a Notice of Termination shall be submitted via SMARTS.					
STANDARD CONDITION HYD-2: In compliance with City of Banning Ordinance No. 1388 Grading, Erosion, and Sediment Control, the project applicant shall submit a grading plan and erosion control plan to the Director of the City of Banning Public Works Department, or designee, for review and approval prior to issuance of a grading permit.	Director of the City of Banning Public Works Department, or designee.	Prior to the issuance of grading permit.	Submittal to City of a grading plan and erosion control plan.		Withhold grading permit.

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STANDARD CONDITION HYD-3: Prior to the issuance of a grading permit, the project applicant shall submit a Final Water Quality Management Plan (Final WQMP) to the City of Banning (City) for review and approval. The Final WQMP shall specify the Best Management Practices (BMPs) to be incorporated into the Project design to target pollutants of concern in stormwater runoff from the Project site and the necessary operation and maintenance activity for each BMP. The Director of the City of Banning Works Department, or designee, shall ensure that the BMPs specified in the Final WQMP are incorporated into the final Project design. The proposed BMPs specified in the Final WQMP shall be incorporated into the grading and development plans submitted to the City for review and approval. Periodic maintenance of any required BMPs and landscaped areas during project occupancy and operation shall be in accordance with the schedule outlined in the Final WQMP.	Director of the City of Banning Public Works Department, or designee.	Prior to the issuance of grading permit.	Submittal to City of a Final Water Quality Management Plan (Final WQMP).		Withhold grading permit.
STANDARD CONDITION HYD-4: Prior to the issuance of a grading permit, the project applicant shall submit a Final Hydrology Report to the City of Banning (City) for review and approval to demonstrate that the proposed bioretention and detention facilities meet the City's on-site stormwater retention requirements specified in the Whitewater River MS4 Permit and Chapter 13.24 of the City of Banning Municipal Code.	Director of the City of Banning Public Works Department, or designee.	Prior to the issuance of grading permit.	Submittal to City of a Final Hydrology Report.		Withhold grading permit.

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