INITIAL STUDY AND DRAFT MITIGATED NEGATIVE DECLARATION

ARCATA LAND COMPANY, LLC

COMMERCIAL CANNABIS OUTDOOR LIGHT-DEPRIVATION AND MIXED-LIGHT CULTIVATION PROJECT

APPLICATION NO. 12255

Applicant:

Arcata Land Company LLC
3318 Foster Avenue
Arcata, CA 95521
Attn: Lane Devries

Lead Agency:

Humboldt County Planning & Building Department
3015 H Street
Eureka, CA 95501

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1.0 INTRODUCTION

1.1 Project Title

Arcata Land Company, LLC Commercial Cannabis Outdoor Light-Deprivation and Mixed-Light Cultivation Project.

1.2 Lead Agency Name and Address

Lead Agency Name:	Humboldt County Planning & Building Department
Lead Agency Address:	3015 H Street, Eureka, CA 95501
Contact Person:	Rodney Yandell
Phone Number:	707-445-7541

1.3 Project Sponsor's Name and Address

Owner / Applicant:
Arcata Land Company, LLC
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3318 Foster Avenue
Arcata, CA 95521

Agent:
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612 Clarion Court
San Luis Obispo, CA 93401

Biologist:
SHN Consulting Engineers & Geologists
Attn: Gretchen O'Brien
812 W. Wabash Ave.
Eureka, CA 95501

1.4 Project Location

The Project is located between 27th Street and Foster Avenue, west of the City of Arcata, in an unincorporated area of Humboldt County, California. The Project is located in Section 19 of Township 06 North, Range 01 East, in the Arcata North 7.5-minute USGS quadrangle. The Project site is located outside of the Coastal Zone, but within the City of Arcata Planning Area Boundary. See Figure 1, Site and Vicinity Map.

1.5 Assessor Parcels, Ownership, Zoning, and General Plan Designations

The Project site's assessor parcel numbers, ownership, County zoning and County General Plan land use designations are shown in Table 1, below. Also, See Figure 2, Parcel and Zoning Map.

TABLE 1
ASSESSOR PARCELS, OWNERSHIP, ZONING AND GENERAL PLAN DESIGNATIONS

Current APN[1]	Ownership	Zoning[2]	General Plan[3]
506-231-021	Arcata Land Company LLC	MH-Q	AE
505-151-011	Arcata Land Company LLC	MH-Q	AE

Notes:

1. Source: Humboldt County Assessor's Office and Humboldt County Web GIS, accessed May October 2020.
2. Source: Humboldt County Zoning Code, with verification thru Humboldt County Web GIS. MH = Heavy Industrial; Q = Qualified Combining Zone.
3. Source: Humboldt County General Plan, with verification thru Humboldt County Web GIS. AE = Agricultural Exclusive.

The Project parcels were the subject of a Lot Line Adjustment ("LLA") recorded on May 14, 2020 (See Appendix A, LLA Record of Survey Recorded Map)[1]. The County assigned Assessor's Parcel Numbers in October 2020. The Project is located on one legal parcel and two tax parcels (See Appendix B, Certificate of Subdivision Compliance).

2.0 DESCRIPTION OF PROJECT

Arcata Land Company, LLC ("ALC") proposes to develop a commercial cannabis outdoor light-deprivation and mixed-light cultivation project on property located between 27th Street and Foster Avenue, west of the City of Arcata, in an unincorporated area of Humboldt County, California ("Project"). The Project involves commercial cannabis cultivation activities on Assessor's Parcel Numbers ("APNs") 506-231-021 and 505-151-011, which total approximately 38.2 acres ("Site"). The Site is zoned Heavy Industrial with a Qualified Combining Zone. The Project involves only cultivation, with processing to occur at an existing permitted processing, manufacturing, and distribution facility located on a contiguous parcel (APN 506-231-018). Existing land uses on the Site are agricultural, while historic activities consisted of heavy industrial operations in support of the former timber products mill site located on APN 506-231-018.

Cultivation will take place in four areas (geographic blocks) of the Site totaling approximately 22.9 acres. Area 1 (6.2 acres) consists of existing hoop structures located in the northwest quadrant of the Site that will be converted from flower production to cannabis. New hoop structures totaling approximately 16.7 acres will be constructed in the northeast quadrant (Area 2; 3.9 acres), southeast quadrant (Area 3; 4.3 acres), and southwest quadrant (Area 4; 8.5 acres) of the Site. The Project includes a combination of outdoor light-deprivation cultivation (~75% of hoop structures or 17.2 acres) and mixed-light cultivation (~25% of hoop structures or 5.7 acres). The Project will also include ancillary support features, such as an administrative building (21,000

[1] *The LLA Record of Survey Recorded Map references four parcels, designated as Parcel A, Parcel B, Parcel C, and Parcel D. Assessor Parcel Numbers were not assigned to the adjusted parcels until October 2020. Given that the majority of the technical studies were completed prior to assignment of the Assessor Parcel Numbers, they reference the parcels with letters, as shown on the LLA Record of Survey Recorded Map. For reference (and clarity), the LLA parcel letters and their corresponding Assessor Parcel Numbers are as follows: Parcel A (506-231-012); Parcel B (506-231-019, 506-231-022, 505-151-012); Parcel C (506-231-018); and Parcel D (506-231-021, 505-151-011).*

square feet), propagation and office building (39,500 square feet), utility building (1,600 square feet), new onsite wastewater treatment system, an unpaved parking area, security fencing, and storm water management features (e.g., detention basins).

Preparation of the Site for the proposed development will require approximately 23,268 cubic yards of cut and 49,181 cubic yards of fill associated with onsite access road improvements, leveling of the Site with sand/soil in the areas of the hoop structures and walkways, installation of primary and reserve leach fields, and development of two storm water detention basins totaling approximately 0.8 acre-feet in storage size.

The Project is anticipated to require up to 116 full-time equivalent employees at full buildout. The existing agricultural operation on the Site requires approximately 40 full-time equivalent employees, resulting in a net increase of approximately 76 full-time equivalent employees (at full buildout). The operation will be seasonal, with the majority of employees needed beginning in April (planting) and extending through the end of October (final harvest). Hours of operation will generally be 6:30 a.m. to 3:30 p.m., although approximately 15 employees will work an extended evening shift to manage the propagation and cultivation process.

An existing agricultural well will provide irrigation water for the Project, while drinking water will be supplied by either, or a combination of, a new 100,000-gallon water storage tank fed by the existing well, or an existing potable water supply line serviced by the City of Arcata that crosses the Site. Project employees will have access to permanent restrooms in the new administration and office building that will be served by a new private onsite wastewater treatment system for sewage disposal, in addition to temporary restrooms for Site employees during peak harvest periods.

The Project has been designed to be consistent with Humboldt County Code Section 314-55.4 of Chapter 4 of Division I of Title III, Commercial Medical Marijuana Land Use Ordinance ("CMMLUO"), as well as state cultivation regulations administered by the California Department of Food and Agriculture ("CDFA") (California Code of Regulations, Title 3, § 8000 et seq.)

2.1 Project Phasing / Buildout

The Project is anticipated to be built out in two primary phases:

1. Phase 1 (2021): Construction of the ancillary support buildings and completion of Site preparation activities, including grading, access road development, installation of utilities, fencing and security features, septic system, and storm water management controls. Operations will consist of cultivation activities within the existing hoop structures located in the northwest corner of the property (Area 1).
2. Phase 2 (late 2021 or 2022): Construction and operation of the additional hoop structures within Areas 2-4 of the Site.

Note: The phasing plan is based on current projections for anticipated buildout. Actual Site development will be dictated by the timing of permits/approvals and market conditions.

2.2 Hours / Days of Operation and Number of Employees

Hours of operation will generally be 6:30 a.m. to 3:30 p.m., Monday through Saturday, although approximately 15 employees will work an extended evening shift to manage the propagation and cultivation process. The Project is anticipated to require up to 116 full-time equivalent employees at full buildout. The existing agricultural operation on the Site requires approximately 40 full-time equivalent employees, resulting in a net increase of approximately 76 full-time equivalent employees (at full buildout). The operation will be seasonal, with the majority of employees needed beginning in April (planting) and extending through the end of October (final harvest).

2.3 Cultivation / Operations Plan

The Project entails approximately 1 million square feet of new outdoor cannabis cultivation within existing and new plastic hoop structures. Of the total cultivation, approximately 75% (750,000 square feet) will be outdoor light-deprivation cultivation, and approximately 25% (250,000 square feet) will be mixed-light cultivation using a combination of natural and artificial lighting (see Sheet 3.0, Site and Utility Plan).

The Project will employ on-site vegetative propagation (using "mothers" and "clones") incidental and accessory to the cultivation process. A mother is a plant that is grown specifically for cloning purposes. The mother plants are kept in a constant vegetative state and are never transitioned into the flowering stage. Twelve hoop structures (hoop designators #164-#175) are currently anticipated for mother plants (see Sheet C3.2, Site and Utility Plan – Area 2). Once a mother plant has reached a stable point in its vegetative growth cycle, it is ready to be cloned or propagated. Cloning is the process of taking stem cuttings from a mother plant in order to develop new plants (the clones), genetically identical to the mother. Clones will be developed indoors within the propagation building located in the southwest corner of the Site (see Sheet 3.0, Site and Utility Plan, and Sheet C4.3, Details – Buildings). Once the cloned plant roots are 1-2 inches in length, which may take anywhere from 7-21 days, they will be moved to designated hoop structures (hoop designators #192-#197) to allow two weeks of "starter" growth (see Sheet C3.3, Site and Utility Plan – Area 4). Following the first two weeks of starter growth, the plants will be relocated to the cultivation hoop structures for growth and harvest.

Planting will occur within small pots for the mother plants, clones, and starter growth phase, with cultivation of mature plants occurring in planting crates, similar to those used in the existing flower cultivation process. Soil will be sourced from existing supplies on an adjacent parcel, and no importation of soil is anticipated.

Odors from the cultivation process will be controlled using fans that direct airflow through the hoop structures to a carbon filtration unit. In the event that carbon filtration is inadequate, odor

neutralizers such as Ecosorb, which is a water-based product that contains a proprietary blend of natural plant oils and bio-based surfactants that effectively adsorb to odor molecules, neutralizing their smell, may be utilized.

For the mixed-light component (~5.9 acres), strict adherence to night sky standards will be achieved. Light and glare will be controlled using blackout plastic/fabric to cover the hoop structures and prevent light from escaping.

The cultivation schedule will be optimized to allow consistent production levels (weekly harvests) to minimize fluctuations in labor needs and deliver stable volumes of products to customers. A summary of anticipated seasonal cultivation activities is shown in Table 2, below:

TABLE 2
ANTICIPATED SCHEDULE OF SEASONAL CULTIVATION ACTIVITIES

Planting Details			Cultivation Activities			
Planting Cycle	**Planting Date**	**Approx. No. of Hoop Structures**	**Plant Maintenance (Pruning)**	**Plant Maintenance (De-fanning)**	**Plant Maintenance (De-fanning)**	**Harvest**
1	Mar 31	9	Apr 21	May 26	Jun 16	Jun 23
2	Apr 7	9	Apr 28	Jun 2	Jun 23	Jun 30
3	Apr 14	9	May 5	Jun 9	Jun 30	Jul 7
4	Apr 21	9	May 12	Jun 16	Jul 7	Jul 14
5	Apr 28	9	May 19	Jun 23	Jul 14	Jul 21
6	May 5	9	May 26	Jun 30	Jul 21	Jul 28
7	May 12	9	Jun 2	July 7	Jul 28	Aug 4
8	May 19	9	Jun 9	Jul 14	Aug 4	Aug 11
9	May 26	9	Jun 16	Jul 21	Aug 11	Aug 18
10	Jun 2	9	Jun 23	Jul 28	Aug 18	Aug 25
11	Jun 9	9	Jun 30	Aug 4	Aug 25	Sep 1
12	Jun 16	9	Jul 7	Aug 11	Sep 1	Sep 8
13	Jun 23	9	Jul 14	Aug 18	Sep 8	Sep 15
14	Jun 30	9	Jul 21	Aug 25	Sep 15	Sep 22
15	Jul 7	9	Jul 28	Sep 1	Sep 22	Sep 29
16	Jul 14	9	Aug 4	Sep 8	Sep 29	Oct 6
17	Jul 21	9	Aug 11	Sep 15	Oct 6	Oct 13
18	Jul 28	9	Aug 18	Sep 22	Oct 13	Oct 20
19	Aug 4	9	Aug 25	Sep 29	Oct 20	Oct 27

Notes:

1. The anticipated schedule of seasonal activities is provided only as a guideline. Actual quantities and timing of activities will be dictated by weather, operational, and market conditions.

Following harvest, cannabis will be transported by a small pickup truck or off-road vehicle (e.g., golf cart or quad) with trailer a short distance (entirely within the confines of the property) to an approved processing, manufacturing, and distribution facility on an adjacent parcel (APN 506-231-018).

ALC has developed a detailed Operations Plan outlining security measures, inventory and quality control procedures, material storage, handling and disposal procedures, health and safety considerations, and waste management for the Project. See Appendix C, Operations Plan.

2.4 Water Source and Irrigation Plan

Water Source

Water for irrigation will be supplied by an existing permitted on-site groundwater well (County Permit Number 18/19-0783). The well is located east of the Project area on an adjoining parcel under common ownership (APN 505-151-012) (see Sheet 1, Site Plan, and Figure 3, Existing Conditions Site Map). The well is completed to a depth of approximately 150 feet and has an estimated yield of 400 gallons per minute according to the Well Completion Report (See Appendix D, County Well Permit). As documented by the well driller (Rich Well Drilling), the well is screened approximately 100' below surface in a state designated groundwater basin (Mad River Valley - Mad River Lowland; 1-008.01), and has no hydraulic connection to any surface water or larger shallow homogeneous aquifer (see Appendix E, Hydrologic Connectivity Letter).

Irrigation Plan

The Project's annual irrigation demand has been estimated at 52 acre-feet (17 million gallons), with a monthly maximum of approximately 12 acre-feet (4 million gallons) during the month of July. Irrigation water will be needed from April through October of each year, with no irrigation water anticipated during the months of November through March. The estimated output of the existing on-site groundwater well is approximately 1.8 acre-feet (576,000 gallons) per day, indicating sufficient water supply to service the irrigation demands of the Project.

The Project's estimated irrigation water usage, by month, is shown in Table 3, below.

TABLE 3
PROJECTED IRRIGATION WATER USAGE

	Month[1]						
	April	**May**	**June**	**July**	**August**	**September**	**October**
Gallons (millions)	0.9	2.3	3.5	4.0	3.4	2.2	0.7
Acre-Feet	2.6	7.1	10.9	12.2	10.5	6.6	2.2

Notes:

1. No irrigation water expected during the months of November through March.

Irrigation will be controlled by an automated irrigation system (e.g., Priva process control system) that will measure soil moisture and the surrounding environment to deliver precise water-

nutrient needs. The automated irrigation system will provide an advanced fertilizer mixing system, and control desired electrical conductivity, pH and flow rate. At all times, water will be applied using no more than agronomic rates.

2.6 Site Drainage

Existing Site Drainage

Drainage from the area of existing hoop structures in the northwest corner of the Site is routed to a retention basin located west of the hoop structures on an adjacent parcel under common ownership. Surface runoff for the remainder of the parcel is directed to onsite drainage ditches that tie into a drainageway that flows northwest into the same retention basin, or drain southward into a wetland slough (located on an adjoining parcel southeast of the Project area). The slough flows westward to an underground culvert, which is routed underneath the mill warehouse buildings and into Liscom Slough.

Project Site Drainage

The Project will add impervious area to the Site resulting from the construction of hoop houses, administration buildings, loading areas, and concrete walkways. Based on the topography of the Site, the post-development grading design splits runoff into two sub-catchments, one collects the runoff from the northern portion of the parcel, and the other the southern portion. The proposed northern sub-catchment will be primarily hoop structures and open space, while the proposed southern sub-catchment will be primarily hoop structures, open space, and office buildings located in the southwest corner of the Site. In order to separate applied irrigation water and storm water runoff, the proposed development utilizes hoop houses to isolate the cannabis crops. Runoff from the hoop structures is conveyed to storm water retention basins through a series of perforated pipes that run in between all of the hoop houses. The perforated pipes are connected to a larger network of storm drains which convey runoff to the retention basins. The Site has two proposed retention basins, one for each sub-catchment. The preliminary design for the northeast retention basin will provide 0.5 acre-feet of storage, and the southern retention basin will provide 0.33 acre-feet. Each basin will also be equipped with an outlet structure which will allow excess flow from larger storm events to be controlled and drained into the existing ditches adjacent to the property. (See Appendix F, Storm Water Management Design Memorandum).

2.7 Grading and Site Preparation

Preparation of the Site for the proposed development will require approximately 23,268 cubic yards of cut and 49,181 cubic yards of fill associated primarily with onsite access improvements, leveling of portions of the Site with sand, and development of storm water management features (e.g., detention basins).

The estimated cut quantity includes development of two storm water detention basins totaling 0.83 acre-feet in size. Basin 1 is located on adjoining APN 506-231-022 in the northeast corner of the Site, and totals 0.5 acre-feet in size. Basin 2 is located on adjoining APN 506-231-019 in the southeast corner of the Site, and totals 0.33 acre-feet in size. See Sheet C3.0, Site and Utility Plan, Sheet C3.1, Site and Utility Plan – Area 1, Sheet C3.3, Site and Utility Plan – Area 3, and Sheet C4.1, Details – Detention Basins.

The estimated fill quantity includes placement of sand/soil beneath the areas of the hoop structures and walkways. The sand/soil will be obtained from existing stockpiles on an adjacent parcel. The placement of sand/soil will involve only leveling for an even, consistent grade, and will not require compaction. See Sheet C4.0, Details – Hoop Houses.

In addition to the placement of sand/soil, Site development will include approximately 40,500 square feet of new concrete surfacing, comprised of concrete within the loading zones, walkways around the administration buildings, ADA parking stalls and ramps (12,698 square feet), green waste storage area (9,460 square feet), and walkways between hoops (18,342 square feet). See Sheet C3.0, Site and Utility Plan. Onsite access roads and the parking areas (with exception of ADA stalls and ramps) will be unpaved to minimize the quantity of impervious surface being added and to assist with storm water management at the Site.

2.8 Storage and Use of Fertilizers, Pesticides, and Other Products

ALC has considerable experience managing and using fertilizers, pesticides, and other products in existing agricultural operations on-site, and has developed detailed Standard Operating Procedures ("SOPs") for use and management of pesticides, injury and illness prevention, and waste management. See Appendix G, Standard Operating Procedures. In addition, ALC has developed project-specific waste management and pest management plans, consistent with State of California cultivation licensing requirements. See Appendix H, Waste Management Plan, and Appendix I, Pest Management Plan.

In addition to robust company policies and procedures, storage and use of fertilizers and pesticides will be conducted in accordance with the Best Practicable Treatment or Control (BPTC) measures of State Water Resources Control Board (SWRCB) Order WQ 2019-0001-DWQ, which include requirements to apply fertilizers and soil amendments at only the proper agronomic rates, and to store materials in a manner that is protected from rainfall and erosion.

No storage of fertilizers, pesticides, or hazardous materials will occur on the proposed cultivation site. All storage will occur on an adjacent parcel under common ownership that is currently setup and permitted to store and manage fertilizers, pesticides, and hazardous materials used in existing agricultural operations. The materials will be stored in fully enclosed, watertight containers, and in a manner so that they cannot enter or be transported into surface waters or groundwater. These storage facilities are already in place.

2.9 Access and Parking

The Project area will be accessed using an existing 20' wide access road from an existing driveway entrance off of Foster Avenue (See Sheet C2.0, Existing Conditions, and Figure 3, Existing Conditions Site Map). The Foster Avenue driveway has been historically used for heavy industrial traffic associated with the former mill site and is configured to accommodate service and transport trucks (170' wide driveway apron). Onsite access roads and concrete walkways will be located to provide pedestrian, vehicular, and equipment access throughout the Project Site (see Sheet C3.0, Site and Utility Plan).

Primary and secondary designated parking lots with a total of 116 standard parking stalls and 3 Americans with Disabilities Act ("ADA") accessible stalls will be located near the southwest corner of the Site (adjacent to the administration building) and on APN 506-231-018 (under the same ownership) (see Sheet C3.0 and C3.2, Site and Utility Plan). In addition, 12 bicycle parking spaces will be provided, consistent with the recommendations of the Traffic Impact Study (see Sheet C3.2, Site and Utility Plan, and Appendix Q, Traffic Impact Study). The parking area will be developed consistent with County Zoning Regulations §314-109.1.

2.10 Drinking Water, Toilets and Handwashing Facilities

Drinking water will be supplied by either, or a combination of, a new 100,000-gallon water storage tank fed by the existing well, or an existing potable water supply line serviced by the City of Arcata that crosses the Site. The facility will have breakrooms and restrooms of sufficient size to accommodate the anticipated workforce. In addition, portable toilets may be utilized to accommodate seasonal workers during peak harvest periods. A shower room will be built for use by employees who work with chemicals and fertilizers, and there will be emergency eyewash stations at locations where chemicals and fertilizers are handled. See Sheet C4.3, Details - Buildings.

SHN Consulting Engineers and Geologists ("SHN") conducted a wastewater disposal field study and identified a suitable location for an onsite sewage disposal system located on the eastern boundary of the Project area. See Sheet C3.1, Site and Utility Plan – Area 1, Sheet C3.2, Site and Utility Plan – Area 2, and Appendix J, Septic Suitability Report.

2.11 Energy Supply and Use

The property is serviced by an existing Pacific Gas and Electric (PG&E) service line, and no new or expanded energy facilities are needed in connection with the Project. It is not anticipated that electrical generators will be required.

In addition to PG&E power, the Project proposes three natural gas boilers rated at 1 million British thermal units per hour (MMBTU/hr) that will be located in the Utility Building and be used to provide temperature control within the hoop structures (see Sheet C4.3, Details – Buildings).

Energy consumption and associated air quality and greenhouse gas emissions were evaluated by a retained air quality consultant (Illingworth & Rodkin, Inc.). See Appendix K, Air Quality and Greenhouse Gas Emissions Assessment.

2.12 Security Plan

Strict security measures will be employed at the premises, including the following:

- **Access contro**l: All entrances to the facility will be restricted by an access control system. 24-hour access will be provided to emergency responders via a Knox Box.
- **Fencing:** The Project area will be fenced with chain-link fencing or other similar fencing.
- **Alarm system:** Motion detection will help the security team and camera systems identify when intruders attempt to enter the property.
- **Lighting:** LED motion sensors will be discreetly placed in and around the facility in compliance with Universal Building code.
- **Security staff:** Security staff will perform routine inspections and monitor a surveillance system 24-hours per day.
- **Camera Systems:** All Project areas will be covered by camera systems for safety purposes and to help product loss prevention.
- **Limited Access:** Access will be limited to qualified personnel only.

The security measures will protect against theft and diversion not only from intruders, but also from staff members and visitors. This will be accomplished by limiting access to the Project Site and by surveillance monitoring of personnel and visitors at all times when in close proximity to the product. Strict inventory control measures will also be employed to prevent and detect diversion. See Appendix C, Operations Plan.

2.13 Safety Training

The cultivation operations will include safety protocols and safety training relevant to specific job functions. Training topics may include:

1. Emergency contact list which includes at a minimum, operation manager contacts, emergency responder contacts, and poison control contacts;
2. Emergency action response planning;
3. Employee accident reporting and investigation policies;
4. Fire prevention;
5. Hazard communication policies, including maintenance of material safety data sheets (MSDS);
6. Materials handling policies;

7. Job hazard analyses; and
8. Personal protective equipment policies, including respiratory protection.

See Appendix C, Operations Plan.

2.14 Site-Specific Technical Reports

The following technical reports and documentation have been prepared / compiled in support of this application:

Appendix A	LLA Record of Survey Recorded Map (Kelly O'Hern Associates, May 2020)
Appendix B	Certificate of Subdivision Compliance (March 2020)
Appendix C	Operations Plan (Lenders Construction Services, October 2020)
Appendix D	County Well Permit and Well Completion Report (April 2019)
Appendix E	Hydrologic Connectivity Letter (Rich Well Drilling, August 2020)
Appendix F	Storm Water Management Design Memorandum (Wallace Group, September 2020)
Appendix G	Standard Operating Procedures (ALC, March 2020)
Appendix H	Waste Management Plan (ALC, September 2020)
Appendix I	Pest Management Plan (ALC, September 2020)
Appendix J	Septic Suitability Design Report (SHN, June 2020)
Appendix K	Air Quality and Greenhouse Gas Emissions Assessment (Illingworth & Rodkin, September 2020)
Appendix L	Biological Resources Assessment (SHN, June 2020)
Appendix M	Wetland and Other Waters Delineation Report (SHN, June 2020)
Appendix N	FEMA Letter of Map Amendment (October 1997; June 2017)
Appendix O	EnviroStor Records Search Results (September 2020)
Appendix P	Phase I Environmental Site Assessment (Partner Engineering and Science, June 2015)
Appendix Q	Traffic Impact Study (W-Trans, October 2020)
	Cultural Resources Report (Archaeological Research and Supply Company, May 2018) (Confidential on file with the County)

2.15 Requested Entitlements

County Entitlements

ALC anticipates needing to obtain the following Humboldt County permits/authorizations for the Project:

- Approval of a **Use Permit** to allow approximately 1 million square feet (22.9 acres) of outdoor light-deprivation cultivation (~750,000 square feet; 17.2 acres) and mixed-light cultivation (~250,000 square feet; 5.7 acres) within hoop structures. The Project Site is zoned Heavy Industrial with a Qualified Combining Zone (MH-Q) (consistent with CMMLUO 55.4.8.2.1.2).
- Approval of **Building Permit(s)** or **Agricultural Exemption(s)** to allow construction of the hoop structures, administrative building (21,000 square feet), propagation and office building (39,500 square feet), utility building (1,600 square feet), and water storage tank (100,000 gallons).
- Approval of a **Grading Permit** or **Agricultural Exemption** to allow general Site grading for structures, onsite access roads, hoop walkways, and parking area, as well installation of two storm water detention basins totaling approximately 0.8 acre-feet in storage size.
- Approval of an **Environmental Health Permit** for a new onsite wastewater treatment system.
- Approval of an **Air Quality Authority to Construct / Permit to Operate** for operation of three natural gas boilers rated at 1 MMBTU/hr that will provide temperature control within the hoop structures.

Other Permits, Licenses, and Approvals

ALC anticipates needing to obtain the following additional permits, licenses and approvals for the Project:

- Approval of **Licenses** for Tier 1 and Tier 2 mixed-light cultivation issued by the State of California in accordance with the Medicinal and Adult-Use Cannabis Regulation and Safety Act ("MAUCRSA"). The California Department of Food and Agriculture ("CDFA") CalCannabis Cultivation Licensing Division ("CalCannabis") is responsible for the licensing of cannabis cultivation and is responsible for the regulation of cannabis cultivation and enforcement, as defined in the Medicinal and Adult Use Cannabis Regulation and Safety Act (MAUCRSA) and CDFA regulations related to cannabis cultivation (Bus. & Prof. Code, § 26103(a)).

- Enrollment and coverage under the State Water Resources Control Board (SWRCB) General Waste Discharge Requirements and Waiver of Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities (**Order WQ 2019-0001-DWQ**).

- Proof of a lake and streambed alteration agreement issued by the California Department of Fish and Wildlife or written verification that an agreement is not needed (Cal. Code Regs., tit. 3 § 8102(w)).

3.0 ENVIRONMENTAL SETTING

The Project Site is located approximately 2.9 miles east of the Pacific Ocean, at a 25-foot elevation above sea level. The regional climate is Mediterranean in nature with warm summers and cool winters. The microclimate in Arcata is characteristic of the coast, with measurable precipitation approximately 77 days per year and totaling 50 inches on average. On average, there are 174 sunny days per year. The July high is around 63 degrees Fahrenheit and the January low is typically around 42 degrees.

The Site is heavily disturbed from previous mill operations and is currently managed for agricultural production. Surface soils on the site have been imported or graded from other areas of the property over time. The Site's hydrology has been altered over time by drainage ditches constructed around the perimeter of the old industrial lumber rack and mills' footprint. Vegetative species on the Site primarily consist of non-native grass and forb species, supporting cutleaf geranium (*Geranium dissectum*), orchard grass (*Dactylis glomerata*), wild radish (*raphanus sativus*), velvet grass (*holcus lanatus*), sweet vanilla grass (*anthoxanthum odoratum*), and field mustard *(brassica rapa*).

3.1 Historic and Existing Land Uses

The Project Site has a long history of heavy industrial and agricultural use. The Site was in agriculture (hay or livestock production) until Simpson Lumber Company constructed an industrial mill site in the late 1940's or early 1950's. The Site has been modified many times with the addition of warehouses and lumber storage racks. Between 1988 and 1993, the storage racks were removed. The fields have since been graded and are currently used for agriculture. The existing greenhouses are used to grow flowers, while the fields have been used for both flowers and mixed row crops.

3.2 Surrounding Land Uses

The predominant land uses in the vicinity of the Project include additional land holdings of the Project applicant that are used for intensive commercial agricultural operations, with mixed commercial, agricultural and residential uses in the vicinity. Development associated with the City of Arcata is located approximately 1,000 feet to the east. There are no known schools, places of worship, public parks, or tribal cultural resources within 600 feet of the Project.

The closest offsite residences are two homes located on a single parcel off of 27th Street approximately 200 feet to the north and northeast of the Site. Beyond this single parcel, the next closest homes are located >500 feet to the east of the Project Site. St. Mary's Catholic Church is located >2,000 feet to the southeast. The City of Arcata School District owns property located a minimum of 600 feet to the east (although it is currently developed to agriculture). The Mad River Montessori Preschool / Fuente Nueva Charter School is located off of Janes Road approximately 2,000 feet to the southeast.

See Figure 3, Existing Conditions Site Map.

3.3 Geology

The Project Site is located in the "Arcata Bottoms," a broad alluvial plain at the northern end of Humboldt Bay. Native materials at the Site consist of Quaternary aged alluvium. Alluvium on the Arcata Bottoms is described as unconsolidated coarse- to fine-grained sand and silt, with gravel in channel areas; the alluvium may locally interfinger with marine terrace deposits. At least some of the alluvium on the Arcata Bottoms is inferred to be Holocene in age, and appears to reflect deposition by the Mad River following the most recent sea level low stand. See Figure 6, Site Geology Map.

3.4 Soils

General Soil Units

The Natural Resources Conservation Service ("NRCS") has mapped two primary soil units on the Project Site, as shown in Table 4, below (see also Figure 4, NRCS Soils Map).

TABLE 4
NRCS SOIL SUMMARY

Map Unit Symbol	Map Unit Name
127	Jollygiant, 0 to 2 percent slopes
210	Dungan, 0 to 2 percent slopes

Prime Agricultural Soils

According to the Humboldt County Web GIS, the entire Project Site is comprised of prime agricultural soils. See Figure 5, Prime Agricultural Soils Map.

3.5 Seismicity

The Project is not located within an Alquist-Priolo Earthquake Fault Zone. There are no active faults mapped within the Project location and it is not within an Earthquake Fault Zone as mapped by the California Geological Survey.

3.6 Biological Resources

SHN conducted a Biological Resources Assessment consisting of literature reviews and field observations and studies in order to identify potential sensitive biological resources that may occur within the Project area. Key findings from SHN's assessment are summarized below:

- **Special Status Species**: A review of available literature indicates that 6 special status plant species and 15 special status animal species have a moderate or higher potential

to occur within the Project area; however, site investigations were conducted by SHN during appropriate seasons for detection, and no special status species were observed.

- **Designated Critical Habitat**: The Project areas do not contain designated critical habitat for any listed species. The closest designated critical habitat is for the Tidewater Goby (Eucyclogobius newberryi), 1.08 miles to the west of the Project area (Mad River Slough).
- **Sensitive Natural Communities**: No sensitive natural communities were identified within the Project area.
- **Wetland and Riparian Habitats**: A man-made roadside drainage ditch containing wetland indicators was mapped along the existing access road at the southwest border of the Project Site. This feature will be conserved, and will not be disrupted by Project activities (with exception of routine maintenance of the ditches, consistent with current practice).
- **Nesting Bird Habitat**: Locations with a shrub or tree canopy layer within the Project area may provide suitable nesting habitat for migratory birds. Additionally, some species, such as a western meadowlark (*Sturnella neglecta*), may nest in tall grasses.
- **Wildlife Movement Corridors**: No significant wildlife movement corridors were identified within the Project area, although some animals may use the existing and proposed roadways as movement corridors.

See Appendix L, Biological Resources Assessment, and Appendix M, Wetland and Other Waters Delineation Reports.

3.8 Flooding

According to an October 30, 1997 Letter of Map Amendment from the Federal Emergency Management Agency ("FEMA"), the Site is not located in a Special Flood Hazard Area, that is the area that would be inundated by a flood having a one percent chance of being equaled or exceeded in any given year (See Appendix N, FEMA Letter of Map Amendment).

3.9 Fire Hazard

The Project Site is located in an area of Low Fire Hazard rating and within the Arcata Fire Protection District. A new 100,000-gallon water storage tank will be located on the Site and available for fire suppression (See Sheet C3.2, Site and Utility Plan).

3.10 Hazardous Materials (Contamination)

A Phase I Environmental Site Assessment and a records search of the State of California's EnviroStor database confirms that the Site has is not identified on a list of known hazardous materials locations, and that no known soil / groundwater contamination issues are present. See Appendix O, EnviroStor Records Search Results, and Appendix P, Phase 1 Environmental Site Assessment. As part of the sale of the property from Simpson Redwood Company a thorough

environmental assessment of the site was conducted and the property entered into a Voluntary Cleanup Agreement with the California Department of Toxic Substances Control (DTSC). Remediation work completed included the removal and off-site disposal of approximately 8,600 cubic yards of soil and the treatment of 1.2 million gallons of groundwater. DTSC certified the actions sufficiently addressed onsite contamination in February 1999 provided groundwater monitoring of the small VOC plume in the southeastern portion of the site continue. Groundwater monitoring continued until 2013 when the RWQCB and the DTSC agreed that the downward trend in concentrations of contaminants was sufficient to remove the semi-annual groundwater monitoring requirement. The area of the small VOC plume and groundwater monitoring is outside of the area proposed for the cannabis cultivation. The phase 1 ESA concludes that no additional investigation is needed.

4.0 CMMLOU APPLICATION CHECKLIST

This section addresses the relevant sections of the CMMLUO that pertain to application requirements and performance standards for new commercial cannabis activities. In addition, this section includes responses to the Commercial Medical Marijuana Land Use Ordinance Cultivation Application Checklist ("Application Checklist") where the Application Checklist supplements or amplifies the requirements of the CMMLUO.

4.1 Operations Plan

ALC has developed detailed Standard Operating Procedures (SOPs and an Operations Plan that outline security measures, inventory and quality control procedures, material storage, handling, and disposal procedures, health and safety considerations, processing practices, pest management and waste management for the proposed Project. See Appendix C, Operations Plan, Appendix G, Standard Operating Procedures, Appendix H, Waste Management Plan, and Appendix I, Pest Management Plan.

4.2 Site and Floor Plans

See Sheets C1.0 through C5.1, prepared by the Wallace Group.

4.3 CEQA Evaluation

See Section 6, CEQA Evaluation for an Initial Study of potential environmental impacts, utilizing the Environmental Checklist Form presented in Appendix G of the CEQA Guidelines.

4.4 Consent and Acknowledgements

4.4.1 Consent for Onsite Inspection

Applicant hereby consents for an onsite inspection of the Site by County officials at a prearranged date and time prior to issuance of any clearance or permit, and once annually thereafter.

4.4.2 Acknowledgement of Right to Reduce Cultivation Area

Applicant hereby acknowledges the County's right to reduce the size of the area allowed for cultivation in the event that environmental conditions, such as a sustained drought or low flows in the watershed in which the cultivation area is located will not support diversions for irrigation.

4.4.3 Acknowledgement of Right to Engage Local Tribes

Applicant hereby acknowledges that the County reserves the right to engage with local Tribes before consenting to the issuance of any clearance or permit, if cultivation operations occur within an Area of Traditional Tribal Cultural Affiliation.

4.4.4 Agricultural Employer Statement

Pursuant to the MMRSA, Health and Safety Code §26051(a)(8), the applicant hereby declares that it is an "agricultural employer," as defined in the Alatorre-Zenovich-Dunlap-Berman Agricultural Labor Relations Act of 1975 (Part 3.5 commencing with Section 1140) of Division 2 of the Labor Code), to the extent not prohibited by law.

In addition to the above declaration of status as an "Agricultural Employer" per Labor Code Sections 1140-1166.3, the applicant/employer hereby agrees to comply with all applicable federal, state, and local laws and regulations governing California Agricultural Employers, which may include: federal and state wage and hour laws, CAL/OSHA, OSHA, California Agricultural Labor Relations Act, and the Humboldt County Code (including the Building Code).

5.0 CMMLUO CONSISTENCY MATRIX

The Project's consistency with the provisions and standards of the Commercial Medical Marijuana Land Use Ordinance ("CMMLUO") (§314-55.4, Chapter 4, Division 1, Title III) is detailed in Table 5, below.

TABLE 5
CMMLUO CONSISTENCY MATRIX

CMMLUO Standard	Project Consistency
55.4.8.2. Outdoor and mixed light cultivation zoning districts.	Consistent. The Project Site is zoned MH-Q. Outdoor and mixed-light cultivation are allowed with a Use Permit in the MH zone.
55.4.8.2.1. Approvals for new outdoor and mixed light cultivation areas up to 10,000 sf on parcels 5 acres or larger in size in zoning districts RA, U, FP, DF, AG, or AE.	N/A. The Project Site is zoned MH-Q.
55.4.8.2.1.1. Parcels 320 acres or larger in size.	N/A. The Project Site is zoned MH-Q.
55.4.8.2.1.2. Outdoor and mixed light cultivation in C-2, C-3, MB, ML, and MH zoning districts.	Consistent. The Project Site is zoned MH-Q. Outdoor and mixed-light cultivation are allowed with a Use Permit in the MH zone.
55.4.8.2.1.3. Outdoor and mixed light cultivation in U, FP, DF, AG, or AE zoning districts on parcels between 1 and 5 acres.	N/A. The Project Site is zoned MH-Q.
55.4.8.2.1.4. Setbacks from existing residences on parcels under 5 acres.	N/A. The Project Site is located on a legal parcel approximately 38 acres in size.
55.4.8.2.2. Approvals for existing outdoor and mixed light cultivation areas.	N/A. The Project does not involve a pre-existing cultivation.
55.4.8.3. Approvals for indoor cultivation.	N/A. The Project does not involve indoor cultivation.
55.4.8.4. Allowed zoning districts for processing facilities.	N/A. The Project involves only cultivation with processing to occur at a permitted offsite location.
55.4.8.5. Allowed zoning districts for manufacturing.	N/A. The Project does not involve manufacturing.

CMMLUO Standard	Project Consistency
55.4.8.6. Allowed zoning districts for wholesale distribution facilities.	N/A. The Project does not involve wholesale distribution.
55.4.8.7. Allowed zoning districts for nurseries.	N/A. The Project includes propagation as an incidental and subordinate use to the cultivation, but does not involve a nursery (i.e., the Project will not produce commercial cannabis nursery products for retail sale).
55.4.8.10. No more than four cannabis permits per person.	Consistent. The Project applicants will hold no more than four cannabis activity permits in Humboldt County.
55.4.9. Permit types.	Consistent. Outdoor and mixed-light cultivation are permitted in the MH zone with a Use Permit.
55.4.9.1. Processing of cannabis.	Consistent. Processing will occur at a permitted off-site location.
55.4.9.2. Combined applications.	N/A. The Project does not involve a request for a combined application.
55.4.9.3. Combination of permit types.	N/A. The Project does not involve a request for a combination of permit types.
55.4.9.4. Pre-application registration of existing cultivation site.	N/A. The Project does not involve a request for recognition of cultivation areas in existence prior to January 1, 2016.
55.4.9.5. Applications for commercial cannabis activity on Tribal Land.	N/A. The Project is not located on Tribal Lands.
55.4.10. Application requirements.	
a. Contact info for applicant	Consistent. See Section 1.3.
b. Written consent of owner	N/A. Project applicant is also the property owner.
c. Site plan	Consistent. See Sheets C1.0 through C5.1.
d. Cultivation and operations plan	Consistent. See Section 2.3 and Appendix C, Operations Plan.

CMMLUO Standard	Project Consistency
e. Copy of SWRCB permit	N/A. The Project's water demands will be served by existing permitted groundwater wells. See Sheet C2.0, Existing Conditions, and Figure 3, Existing Conditions Site Map.
f. Description of water source, storage, irrigation, and projected water usage.	Consistent. See Section 2.4.
g. Copy of Notice of Intent for NCRWQCB Order No. 2015-0023.	Consistent. Upon Use Permit approval, the Project will enroll in State Water Resources Control Board (SWRCB) Order WQ 2019-0001-DWQ.
h. Copy of Streambed Alteration Agreement.	N/A. The Project does not involve activities requiring application for a Streambed Alteration Agreement from the Department of Fish & Wildlife. See Appendix E, Hydrologic Connectivity Letter.
i. Copy of County well permit.	Consistent. See Appendix D, County Well Permit.
j. Copy of less-than-3-acre conversion exemption or timberland conversion permit.	N/A. The Project does not involve an area of timberland conversion.
k. Consent for onsite inspection.	Consistent. See Section 4.4.1.
l. Source of electrical power for indoor cultivation facilities and how it will meet energy requirements.	N/A. The Project does not involve a request for indoor cultivation facilities.
m. County right to reduce cultivation area.	Consistent. See Section 4.4.2.
n. County right to engage local Tribes.	Consistent. See Section 4.4.3.
55.4.11. Performance standards for cultivation and processing operations.	
a. Compliance with all laws.	Consistent. Project activities will be conducted in compliance with all laws or the

CMMLUO Standard	Project Consistency
	terms of a written approved compliance agreement.
b. Possession of valid licenses.	Consistent. The applicant will obtain and maintain current required licenses from the State of California.
c. Compliance with SWRCB regulations.	Consistent. The Project will maintain compliance with statutes, regulations and requirements of the SWRCB, including enrollment in Order WQ 2019-0001-DWQ). .
d. Setbacks.	Consistent. See Sheets C1.0 through C5.1.
e. Enrollment in NCRWQCB Order No. 2015-0023.	Consistent. Upon Use Permit approval, the Project will enroll in SWRCB Order WQ 2019-0001-DWQ). .
f. Tier 1 dischargers.	N/A. Upon Use Permit approval, the Project will enroll in State Water Resources Control Board (SWRCB) WQ 2019-0001-DWQ). .
g. Compliance with DFW Streambed Alteration Agreements.	N/A. The Project does not involve activities requiring application for a Streambed Alteration Agreement from the Department of Fish & Wildlife. See Appendix E, Hydrologic Connectivity Letter.
h. Compliance with less-than-3-acre conversion exemption or timberland conversion permit.	N/A. The Project does not involve an area of timberland conversion.
i. Consent to annual inspections.	Consistent. See Section 4.4.1.
j. Hazardous materials and wastes.	Consistent. Use and storage of hazardous materials will be performed in compliance with State and local laws and regulations. See Section 2.8, Appendix G, Standard Operating Procedures, Appendix H, Waste Management Plan, and Appendix I, Pest Management Plan.
k. Payment of fees.	Consistent. The applicant will pay all applicable application and annual inspection fees.

CMMLUO Standard	Project Consistency
l. Water surface diversion.	N/A. The Project's water demands will be served by existing groundwater wells.
m. Trucked water.	Consistent. Water will be supplied by onsite wells, and truck water shall not be used except for emergencies.
n. Conditions of approval.	Consistent. The Project will comply with all special conditions of approval which may be imposed on the Use Permit.
o. Generator noise.	N/A. The Project does not involve use of a generator.
p. Storage of fuel.	Consistent. Fuel will be stored and handled in compliance with applicable state and local laws and regulations. See Section 2.8.
q. Agricultural employer statement.	Consistent. See Section 4.4.4.
r. Compliance with CA Agricultural Employer laws.	Consistent. The Project will comply with all applicable federal, state, and local laws and regulations governing California Agricultural Employers.
s. Processing Practices.	N/A. Processing will occur at a permitted off-site location.
t. Employee Safety Practices.	Consistent. See Appendix C, Operations Plan and Appendix G, Standard Operating Procedures.
u. Processing Plan.	N/A. Processing will occur at a permitted off-site location.
Performance standards for mixed light cultivation.	
v. Artificial lighting.	Consistent. The Project applicant will shield hoop structures so that little to no light escapes. Light and glare will be controlled using blackout plastic/fabric to cover the hoop structures and prevent light from escaping. Light will not escape at a level that is visible

CMMLUO Standard	Project Consistency
	from neighboring properties between sunset and sunrise.
w. Light shielding.	Consistent. The Project will comply with the International Dark Sky Association standards for Lighting Zone 0 and Lighting Zone 1, and be designed to regulate light spillage onto neighboring properties resulting from backlight, uplight, or glare.
55.4.17. Sunset for applications.	Consistent. Project applications were submitted prior to the 12/31/16 sunset date.

6.0 CEQA EVALUATION

6.1 Environmental Factors Potentially Affected

The proposed Project will not have a significant effect on the environment, as indicated by the checklist on the following pages.

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

6.2 Determination

On the basis of this 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.



1/26/2021

Signature Date

Rodney Yandell Humboldt County Planning and Building Department

Printed Name For

6.3 Evaluation of Environmental Impacts

The following checklist is taken from the Environmental Checklist Form presented in Appendix G of the CEQA Guidelines. The checklist is used to describe the impacts of the proposed Project and identify project-specific mitigation measures, as appropriate: For this checklist, the following designations are used:

Potentially Significant Impact: An impact that could be significant, and for which no mitigation has been identified. If any potentially significant impacts are identified, an EIR must be prepared.

Less Than Significant with Mitigation Incorporated: An impact that requires mitigation to reduce the impact to a less-than-significant level.

Less-Than-Significant Impact: Any impact that would not be considered significant under CEQA relative to existing standards.

No Impact: The Project would not have any impact.

I. AESTHETICS. *Except as provided in Public Resources Code Section 21099, would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 nonurbanized 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 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?	☐	☐	☒	☐

Discussion

a. For purposes of determining significance under CEQA, a scenic vista is defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. In addition, some scenic vistas are officially designated by public agencies, or informally designated by tourist guides. A substantial adverse effect to such a scenic vista is one that degrades the view from a designated view spot. No governmentally designated scenic vista or specific scenic view spot has been identified within the vicinity of the Project. Further, the project Site is not accessible to the public and is surrounded by privately-owned lands. Therefore, the Project will have ***no impact*** on a scenic vista.

b. According to the California Scenic Highway Mapping System, there are no designated state scenic highways in Humboldt County. The nearest eligible scenic highway (as listed in Sections 263.1 through 263.8 of the California Streets and Highways Code) is Highway 101 located greater than one mile to the east of the Project Site. In addition, the Project does not involve removal or damage to scenic resources such as trees rock outcroppings, or historic buildings. Therefore, the Project would result in ***no impact*** to scenic resources within a state scenic highway.

c. The Project Site is a component of a large private land holding (350+ acres) of the Project applicant that is currently used as a cut flower and general agricultural operation. The predominant land uses in the vicinity of the Project include additional land holdings of the Project applicant, as well as mixed commercial, agricultural and scattered rural residential uses. The surrounding vicinity is sparsely populated with approximately five residences located within 1,000 feet of the Project Site. The closest offsite residences are two homes located on a single parcel off of 27th Street approximately 200 feet to the north and northeast of the Site. Beyond this single parcel, the next closest homes are located >500 feet to the east of the Project Site.

   The Project Site has a long history of heavy industrial and agricultural use. The Site was in agriculture (hay or livestock production) until Simpson Lumber Company constructed an industrial mill site in the late 1940's or early 1950's. The Site has been modified many times with the addition of warehouses and lumber storage racks. Between 1988 and 1993, the storage racks were removed. The fields have since been graded and are currently used for agriculture. The existing greenhouses are used to grow flowers, while the fields have been used for both flowers and mixed row crops.

   Approximately seven acres of hoop structures currently existing on the Project Site, and an additional 85 acres of hoop structures are located on adjoining parcels to the north. The Project proposes hoop structures, a water storage tank, and ancillary support buildings that will be consistent with the existing visual character of the Site and surrounding parcels. In addition, the new structures will be obscured from view from off-site residences and motorists on both Foster Avenue and 27th Street due to significant existing perimeter vegetation on adjoining parcels.

   Therefore, the Project would not substantially degrade the existing visual character or quality of the Site and its surroundings, and would result in a ***less than significant impact***.

d. New lighting at the Site will consist of task and operational lighting in the ancillary support structures/buildings (administration buildings), artificial lighting in a portion of the hoop structures, and outdoor lighting for security purposes.

   Ancillary structures/facilities (i.e., administration building, propagation and office building, utility building) would have operational and task lighting within the buildings which will not be visible outside the building due to window coverings and limited operating hours (generally daylight hours, from sunrise to sunset). Onsite staff would be responsible each evening for ensuring all lights are turned off or blacked out prior to sunset each day.

   Outdoor lighting at the Site will be limited to perimeter lighting installed for security purposes, and lighting in the parking and loading areas. All new outdoor lighting will be the minimum lumens required for security purposes, directed downward, and shielded to prevent lighting spillover onto adjacent properties.

The majority of the hoop structures (~750,000 square feet; 17.2 acres) will be outdoor light-deprivation, and will not employ artificial lighting. The remainder of the hoop structures (~250,000 square feet; 5.7 acres) will be mixed-light, and include artificial lighting. For the hoop structures that will employ mixed-light cultivation, strict adherence to International Dark Sky Association standards for Lighting Zone 0 and Lighting Zone 1 is a requirement of the County Commercial Medical Marijuana Land Use Ordinance.. Light and glare will be controlled using blackout plastic/fabric to cover the hoop structures and prevent light from escaping. Lighting will be designed to regulate light spillage onto neighboring properties resulting from backlight, uplight, or glare, and light will not escape at a level that is visible from neighboring properties between sunset and sunrise.

The project would comply with all CMMLUO performance standards for lighting, and new structures, including lighting plans, would be subject to approval by the Humboldt County Building Department. In addition, the Project has been designed consistent with, and will conform to CDFA's regulations (Cal. Code Regs. tit.3, § 8000 et seq.), which contain protections for environmental resources. With respect to aesthetics CDFA's regulations require all outdoor lighting used for security purposes shall be shielded and downward facing (§8304(c)); and mixed-light license types of all tiers and sizes shall ensure that lights used for cultivation are shielded from sunset to sunrise to avoid nighttime glare (§8304(g)).

Thus, the Project will not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area and a ***less than significant impact*** would occur.

II. 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) prepare the California Dept. 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 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. Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

Discussion

a. Humboldt County is not included in the Farmland Mapping and Monitoring Program (https://www.conservation.ca.gov/dlrp/fmmp/Pages/county_info.aspx; accessed October 2, 2020). According to the Humboldt County Web GIS, the entire Project Site (approximately 38 acres) is mapped as prime agricultural soils, however the site has effectively been converted previously through the adoption of the Heavy Industrial (MH) zone district. All of the Project-related uses (e.g., outdoor light-deprivation and mixed-light cultivation, accessory buildings, access roads, parking) that will occur on the prime agricultural soils are agricultural uses or agricultural related uses. Therefore, the Project would not convert any existing Farmland to non-agricultural uses, and ***no impact*** would occur.

b. The Project Site is zoned Heavy Industrial with a Qualified Combining Zone (MH-Q). Outdoor light-deprivation and mixed-light cultivation are allowed uses with a Use Permit in the MH zone pursuant to Section 55.4.8.2.1.2 of the CMMLUO. According to the County Web GIS mapping, there is no Williamson Act contract applicable to the Project Site. Thus, the Project would not conflict with existing zoning for agricultural use or a Williamson Act contract, and therefore, ***no impact*** would occur relative to existing zoning for agricultural use.

c.d. The Project Site is not identified as forest land (as defined in PRC section 12220[g]) or timberland (as defined by PRC section 4526), and is not zoned Timberland Production (as defined by Government Code section 51104[g]). Therefore, the Project would not result in the conversion of forest land and would not conflict with forest land, timberland, or Timberland Production zoning, and ***no impact*** would occur.

e. The Project would not produce significant growth in the area that would result in the conversion of farmland or forest land. Growth inducing impacts are generally caused by projects that have an effect on economic growth, population growth, or land development. The Project is anticipated to require a maximum of 116 employees during the peak harvest season. It is anticipated that these employees (or the majority of them) would be from within Humboldt County. Therefore, the Project is not anticipated to result in the need for new residential dwelling units, and thus, would not indirectly convert farmland to non-agricultural land or forest land to non-forest land. ***No impact*** would occur.

III. 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. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b. 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?	☐	☐	☒	☐

Discussion

a.b. The project is located in Humboldt County, which is in the North Coast Air Basin, which includes all of Humboldt, Del Norte, Trinity, and Mendocino counties, as well as a portion of Sonoma County. The North Coast Unified Air Quality Management District ("NCUAQMD") is one of three air districts responsible for overseeing compliance with State and Federal laws, regulations, and programs within the North Coast Air Basin. NCUAQMD includes Del Norte, Humboldt, and Trinity Counties. Ambient air quality standards have been established at both the State and federal level. The area is listed as "attainment" or "unclassified" for all the federal and state ambient air quality standards except for the state 24-hour particulate (PM10) standard in Humboldt County only. The District has not exceeded the federal annual standard for particulate matter during the last five-year period.

In 1995, NCUAQMD provided a study to identify the major contributors of PM10, which were summarized in the Particulate Matter PM10 Attainment Plan. PM10 emissions in Humboldt County are generated by a variety of sources and the PM10 Attainment Plan includes control strategies that are intended to achieve attainment of the state's air quality standard. Control strategies include transportation control measures such as encouraging the use of public transit and replacing the diesel-powered bus fleet with natural gas fueled models, encouraging car-pooling and bicycle commuting, removal or repair of vehicles with inefficient emission control systems, and traffic flow improvements that reduce idling and VMT. Land use control measures encourage mixed use or more

dense development. The PM10 Attainment Plan also includes measures that limit residential burning as well as various measures to encourage the installation of EPA certified woodstoves.

In order to assess the Project's potential for air quality impacts, Illingworth & Rodkin, Inc., ("I&R") a professional air quality consulting firm, prepared a comprehensive air quality emissions evaluation. I&R used the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 to estimate emissions from on-site construction and operational activities, including vehicle trips. The resulting emissions were compared against the NCUAQMD's published emissions thresholds[2]. See resulting emissions comparison summaries in Table A and B, below:

TABLE A
CONSTRUCTION PERIOD EMISSIONS

Scenario	ROG	NOx	PM10	PM2.5
2021 Construction Emissions (tons)	1.34	4.03	0.21	0.18
BACT Threshold (tons per year)	40	40	15	10
Exceed Threshold?	**No**	**No**	**No**	**No**
2021 Construction Emissions (pounds)	8.91	26.76	1.41	1.20
BACT Threshold (pounds per day)	50	50	80	50
Exceed Threshold?	**No**	**No**	**No**	**No**

TABLE B
OPERATIONAL PERIOD EMISSIONS

Scenario	ROG	NOx	PM10	PM2.5
2022 Operational Emissions (tons)	0.5	0.3	0.2	0.1
BACT Threshold (tons per year)	40	40	15	10
Exceed Threshold?	**No**	**No**	**No**	**No**
2022 Operational Emissions (pounds)	3.4	4.2	2.5	0.8
BACT Threshold (pounds per day)	50	50	80	50
Exceed Threshold?	**No**	**No**	**No**	**No**

As summarized in Tables A and B, I&R's air quality modeling indicates that the Project's potential emissions during both the construction and operational phases will be well below the NCUAQMD's significance thresholds. In addition, Project activities will comply with the dust control regulations contained in NCUAQMD Rule 104, Section D.2. Pursuant to Rule 104, the handling, transporting, or open storage of materials in a manner which allows or may allow unnecessary amounts of particulate matter to become airborne is

[2] The NCUAQMD has not formally adopted CEQA significance thresholds, so recommends using the Best Available Control Technology (BACT) emission rate thresholds for stationary sources as defined and listed in the NCUAQMD Regulation I, Rule 110, New Source Review And Prevention of Significant Deterioration, Section E (Requirements), Item 1 (Best Available Control Technology [BACT]).

not permitted. Reasonable precautions must be taken to prevent particulate matter from becoming airborne, including, but not limited to: (1) covering open bodied trucks when used for transporting materials likely to give rise to airborne dust; (2) conducting agricultural practices in such a manner as to minimize the creation of airborne dust; and (3) the use of water for control of dust in construction operations, the grading of roads, and the clearing of land.

Given that Project emissions will be below relative significance thresholds, and with implementation of dust control measures required by the NCUAQMD, the Project will not conflict with implementation of an air quality plan, air quality standard, or non-attainment Pollutant, and impacts would be ***less than significant***.

c. A sensitive receptor is a person who is particularly susceptible to health effects due to exposure to an air contaminant. Land uses considered sensitive receptors include residences, schools, playgrounds, childcare centers, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. With the exception of scattered rural residential, there are no sensitive land uses within the vicinity. The surrounding vicinity is sparsely populated with approximately five residences located within 1,000 feet of the Project Site. As discussed in the air quality impact analysis section above, the Project would not produce significant quantities of criteria pollutants during construction or operation. As a result, the Project would not expose sensitive receptors to substantial pollutant concentrations, and impacts would be ***less than significant***.

d. In general, odor regulations fall into two categories: (1) they are covered through a general nuisance regulation or (2) they are covered under a separate air district rule. California Health and Safety Code section 41700 prohibits discharge of air contaminants, including odors, that cause nuisance or annoyance to the public; however, odors related to agricultural operations are exempt under Health and Safety Code section 41704. Similarly, the growing and harvesting of cannabis crops is considered an agricultural operation, and therefore exempt from NCUAQMD Rule 104(1.1).

   The Project has the potential to emit odors during the construction and operational phases. During construction, the project would generate localized emissions of diesel exhaust from conventional construction equipment and transport trucks. It is possible that these emissions may be noticeable from time to time by adjacent receptors; however, they would be localized to the work area, short-term, and would not include any sources of significant odors likely to adversely affect a substantial number of people off-site.

   During operation, the cultivation of cannabis is a potential source of odors. The odor of cannabis is described by some as an offensive skunk-like smell. This odor is produced by terpenes, which are volatile, unsaturated hydrocarbons found in the oils of various plants. Naturally, these oils are most present late in the budding cycle and at harvest. Without proper controls, greenhouse (hoop structure) cultivation can lead to a buildup of these odors because of reduced ventilation, heat and humidity conditions.

Potential odors generated during cultivation activities within the hoop structures will be controlled using mechanical means, including fans that direct airflow through the hoop structures to a carbon filtration unit. Carbon filtration is an effective technology for reducing VOC emissions from cannabis cultivation activities. Carbon filters work by an absorption process where the porous surfaces chemically attract the VOC contaminants present in the exhaust air stream. In addition to the fact that the facility will employ mechanical odor control measures, the number of nearby receptors is limited. The Project Site is a component of a large private land holding (350+ acres) of the Project applicant that is currently used as a cut flower and general agricultural operation. The predominant land uses in the vicinity of the Project include additional land holdings of the Project applicant, as well as mixed commercial, agricultural and scattered rural residential uses. The surrounding vicinity is sparsely populated with approximately five residences located within 1,000 feet of the Project Site. The closest offsite residences are two homes located on a single parcel off of 27th Street approximately 200 feet to the north and northeast of the Site. Beyond this single parcel, the next closest homes are located >500 feet to the east of the Project Site.

Given the limited number of potential receptors, separation distance, and control measures to be implemented through the Conditional Use Permit, the Project is not anticipated to create objectionable odors affecting a substantial number of people and impacts would be less than significant.

IV. BIOLOGICAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 US 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 Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Discussion

1. SHN conducted a Biological Resources Assessment to assess the potential presence of any candidate, sensitive, or special status species within the Project area. The site was visited in December 2018 to assess available habitat for special-status species that were reported in the vicinity, and seasonally appropriate surveys occurred on May 2 and July 19, 2019.

   Plant Species

   Based on a review for special status plant species, 72 special status plant species have been reported from the region consisting of the Project area's quadrangle and surrounding quadrangles. Of the special status plant species reported in the region, 66 plant species are considered to have a low potential to occur within the Project area and 6 species have a moderate or higher potential to occur within the Project area. Species that have a moderate or higher potential to occur within the Project area are described below:

   - *Hosackia gracilis* is a perennial herb in the Fabaceae family. It is neither State nor federally listed, but has a CRPR of 4.2 and a heritage rank of G4/S3. Its elevation range is reported from 0 to 700 meters above sea level. Within its range state-wide, its blooming period is reported as March through July. This species is reported from wetlands, roadsides, and a variety of habitats from coastal scrub to coniferous forests. Although suitable habitat may exist within the Project area for this species, it was not detected.
   - *Lathyrus palustris* is a perennial herb in the Fabaceae family. It is neither State nor federally listed, but has a CRPR of 2B.2 and a heritage rank of G5/S2. Its elevation range is reported from 2 to 140 meters above sea level. Within its range state-wide, its blooming period is reported as March through August. This species is reported from bogs, fens, lower montane coniferous forest, marsh, swamp, coastal prairie, and coastal scrub. Although suitable habitat may exist within the study area for this species, it was not detected.
   - *Montia howellii* is an annual herb in the Montiaceae family. It is neither State nor federally listed, but has a CRPR of 2B.2 and a heritage rank of G3G4/S2. Its elevation range is reported from 0 to 835 meters above sea level. Within its range state-wide, its blooming period is reported as March through May. This species is reported from meadows and seeps, north coast coniferous forests, vernal pools, vernally mesic sites, and sometimes roadsides. Although suitable habitat may exist within the study area for this species, it was not detected.
   - *Sidalcea malachroides* is a perennial herb in the Malvaceae family. It is neither State nor federally listed, but has a CRPR of 4.2 and a heritage rank of G3/S3. Its elevation range is reported from 0 to 730 meters above sea level. Within its range state-wide, its blooming period is reported as March through August. This species is reported from woodlands, clearings near the coast, and often in disturbed areas.

Although suitable habitat may exist within the study area for this species, it was not detected.

- *Sidalcea malviflora* ssp. *patula* is a perennial herb in the Malvaceae family. It is neither State nor federally listed, but has a CRPR of 1B.2 and a heritage rank of G5T2/S2. Its elevation range is reported from 5 to 1,255 meters above sea level. Within its range state-wide, its blooming period is reported as May through August. This species is reported from coastal bluff scrub, coastal prairie, roadcuts and north coast coniferous forests. Although suitable habitat may exist within the study area for this species, it was not detected.
- *Sidalcea oregana* ssp. *eximia* is a perennial herb in the Malvaceae family. It is neither State nor federally listed, but has a CRPR of 1B.2 and a heritage rank of G5T1/S1. Its elevation range is reported from 5 to 1,805 meters above sea level. Within its range state-wide, its blooming period is reported as June through August. This species is reported from meadows, seeps, low montane conifer forests, and in gravelly soil. Although suitable habitat may exist within the study area for this species, it was not detected.

Animal Species

Based on a review of special status animal species, 66 special status animal species have been reported with the potential to occur in the Project region. Of the special status animal species potentially occurring in the region, 51 animal species are considered to have a no or low potential to occur within the Project area and 15 species have a moderate or higher potential. Species with a moderate or high potential for occurrence within the Project area are described below:

- The northern red-legged frog (*Rana aurora*) is an amphibian in the Ranidae family. Reported habitats include Klamath and north coast flowing waters and riparian forests, usually near dense riparian cover. It is generally found near permanent water, but is sometimes found far from water in damp woods and meadows during the non-breeding season (May to November). Status: Federal None, State None, Species of Special Concern, Global rank Apparently Secure, State rank Vulnerable. Suitable dispersal habitat for this species exists within the study area and potential breeding habitat exists in the drainage along the western boundary of the study area, although it was not detected.
- The Cooper's hawk (*Accipiter cooperii*) occurs in woodlands, riparian forest, chiefly of open, interrupted, or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river floodplains; also, live oaks. This species builds stick platform nests lined with bark in crotches of riparian deciduous trees and second-growth conifers near streams. Status: Federal None, State None, Watchlist, Global rank Secure, State rank Apparently Secure. Foraging habitat for this species exists in the eastern half of the study area and adjacent to

the study area. Potential foraging habitat exists for this species within the study area, nesting habitat exists on adjacent property, although it was not detected.

- The sharp-shinned hawk (*Accipiter striatus*) can be found in ponderosa pine, black oak, riparian deciduous, mixed conifer, Jeffrey pine habitats, and prefers riparian areas. North-facing slopes with plucking perches are critical requirements. Nests are usually within 275 feet of water. Status: Federal None, State None, Watchlist, Global rank Secure, State rank Apparently Secure. Foraging habitat for this species exists in the study area and adjacent to the study area, although it was not detected.
- The great egret (*Ardea alba*) is a colonial nester in large trees. Rookery sites are located near marshes, tideflats, irrigated pastures, and margins of rivers and lakes. This species is most often found foraging around water, including wet fields and grassy meadows near water. Status: Federal None, State None, Sensitive, Global rank Secure, State rank Apparently Secure. Potential foraging habitat exists for this species within the study area during the wet season, although it was not detected.
- The great blue heron (*Ardea herodias*) is a colonial nester in tall trees, cliffsides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows. This species is most often found foraging near or in water, or in grassy fields near water. Status: Federal None, State None, Sensitive, Global rank Secure, State rank Apparently Secure. Potential foraging habitat exists for this species within the study area during the wet season, although it was not detected.
- The short-eared owl (*Asio flammeus*) lives in large, open areas with low vegetation including grasslands, savannah, marshes, and agricultural areas. They can be seen during the day and make their nests on the ground. Status: Federal None, State None, Species of Special Concern, Global rank Secure, State rank Vulnerable. Suitable foraging and potential nesting habitat exist for this species within the study area, although it was not detected.
- The Vaux's swift (*Chaetura vauxi*) typically nests in tree cavities and forages in the air over streams and standing water that support invertebrates. Status: Federal None, State None, Species of Special Concern, Global rank Secure, State rank Imperiled/Vulnerable. Potential aerial foraging habitat exists within the study area for this species, although it was not detected.
- The northern harrier (*Circus cyaneus*) is most common in large undisturbed tracts of wetlands and grasslands with low, thick vegetation during the breeding season. In winter, they use a wider range of habitat types with low vegetation including sand dunes, deserts, pastures, and croplands. Status: Federal None, State None, Species of Special Concern, Global rank Secure, State rank Vulnerable. Winter foraging habitat exists for this species within the study area, although it was not detected.

- The snowy egret (*Egretta thula*) nests in colonies in isolated areas, often near water. They forage in marshes and estuaries, grassy ponds, pools, and wet fields. Status: Federal None, State None, Global rank Secure, State rank Apparently Secure. Potential foraging habitat exists for this species within the study area during the wet season, although it was not detected.
- The white-tailed kite (*Elanus leucurus*) can be found in foothills, valleys, and river bottomlands and marshes. They typically use open grasslands for foraging and nest in densely-topped trees. Status: Federal None, State None, Fully Protected, Global rank Secure, State rank Apparently Secure/Vulnerable. Potential foraging habitat exists for this species in the study area and nesting habitat adjacent to the study area, although it was not detected.
- The Merlin (*Falco columbarius*) nests near forest openings near water and forages typically for smaller birds in the air in open areas. Status: Federal None, State None, Watch List, Global rank Secure, State rank Sensitive/Apparently Secure. Foraging habitat exists for this species within the study area, although it was not detected.
- The American peregrine falcon (*Falco peregrinus anatum*) occupies wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, and human-made structures. Nest consists of a scrape or a depression or ledge in an open site. Status: Federal Delisted, State Delisted, Fully Protected, Global rank Apparently Secure, State rank Vulnerable/Apparently Secure. Potential foraging habitat exists within the study area for this species, although it was not detected.
- The Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*) live in grasslands, meadows, and cultivated fields, as well as coastal scrub and estuaries. Status: Federal None, State None, Species of Special Concern, Global rank imperiled/sensitive, State rank imperiled/sensitive. Foraging and nesting habitat exists for this species within the study area, although it was not detected.
- The western bumble bee (*Bombus occidentalis*) is an insect in the Apidae family. This species was once common and widespread, but has declined precipitously from central California to southern British Columbia, perhaps from disease. Status: Federal None, State None, Sensitive, Global Rank Imperiled/Vulnerable, State Rank Critically Imperiled. There is suitable foraging and nesting habitat available for this species within the study area, although it was not detected.
- The obscure bumblebee (*Bombus calignosus*) lives in along coastal areas of the western states in underground burrows or above ground in abandoned bird nests. Status: Federal None, State None, Vulnerable, Global Rank Apparently Secure, State Rank Critically Imperiled/Imperiled. There is suitable foraging and nesting habitat available for this species within the study area, although it was not detected.

The Site is heavily disturbed and actively managed for agricultural production. During the field surveys conducted as part of the SHN Biological Resources Assessment, no special status plant or animal species were documented within the Project area. However, due to the potential presence of nesting birds at the Site, the following mitigation is recommended:

Mitigation Measure BR-1: Preconstruction Bird Surveys

Project-related vegetation management should occur outside the bird nesting season, (February 28 through September 1). If project-related brush clearing must occur during the breeding season, a preconstruction nesting-bird survey shall be conducted by a qualified biologist no more than two weeks prior to Project activities. If active nests are found, a no-disturbance buffer zone shall be established of a minimum of 250 feet.. Within this buffer zone, no construction shall take place until September 1 or until the biologist determines that the nest is no longer active.

Level of Significance After Mitigation:

Implementation of Mitigation Measure BR-1 would reduce potential impacts to candidate, sensitive, or special status species to ***less than significant***.

b. Sensitive natural communities are habitats that are generally defined by vegetation type and geographical location and are increasingly restricted in abundance and distribution. Recognition of natural communities is an ecosystem-based approach to maintaining biodiversity in California. High quality occurrences of natural communities with heritage ranks of three (3) or lower are considered by CDFW to be significant resources and fall under the CEQA guidelines for addressing impacts. No sensitive natural communities were identified by SHN within the Project area. Thus, the Project will have ***no impact*** on any sensitive natural community identified in local or regional plans, policies, or regulations.

c. A Project-specific wetland delineation conducted by SHN did not identify any wetlands within the Project area, but did identify a man-made roadside drainage ditch approximately 5,100 square feet in size containing wetland indicators located along the existing access road at the southwest border of the Project site. The drainage ditch is classified as a Class IV watercourse (*all other man-made irrigation canals*) under the State Water Resources Control Board (SWRCB) Order WQ 2019-0001-DWQ)., with no prescribed setback requirements.

The drainage ditch is located outside of the Project boundary, and will be conserved and not disrupted by Project activities (with exception of routine maintenance of the ditch, consistent with current practice). In addition, the Project will be subject to the water quality requirements of WQ 2019-0001-DWQ and the County's CMMLUO performance standards. This includes requiring that fertilizers and pesticides/herbicides be applied consistent with product labeling and managed to ensure that they will not enter or be

released into surface or groundwater. As a result, the Project will not physically interfere with the potentially jurisdictional drainage ditch located near the Project boundary. Nevertheless, SHN recommends the following mitigation measure to ensure that no impact to potentially jurisdictional waters occurs:

Mitigation Measure BR-2: Protection of Drainage Ditches

Use standard BMPs during ground disturbance activities and remove construction debris and waste from and up to 100 feet around drainage ditches.

Level of Significance After Mitigation:

Implementation of Mitigation Measures BR-2 would reduce potential impacts to federally protected wetlands and other waters to ***less than significant***.

d. SHN found that there are no significant wildlife movement corridors within the Project area, and Project activities will not impact or restrict existing drainage ditches and swales, maintaining general movement corridors in the Project vicinity. As a result, the Project will not interfere substantially with movement of native resident or migratory wildlife species or with established native resident or migratory wild-life corridors and a ***less than significant impact*** would occur.

e. The Project does not conflict with local policies or ordinances protecting biological resources. The Project will not impact riparian or wetlands habitats or involve the removal of trees. As a result, the Project will not conflict with any local policies or ordinances protecting biological resources, and ***no impact*** would occur.

f. According to the U.S. Fish & Wildlife Service Environmental Conservation Online System, the Project Site is not located within the boundaries of a Habitat Conservation Plan. Habitat Conservation Plans in Humboldt County primarily apply to forest lands and include: 1) Green Diamond Resource Company California Timberlands & Northern Spotted Owl (formerly Simpson Timber Company); 2) Humboldt Redwood Company (formerly Pacific Lumber, Headwaters); and 3) Regli Estates.

According to the California Department of Fish & Wildlife website, the Project Site is not located in the boundaries of a Natural Community Conservation Plan. Existing Conservation plans for Humboldt County include the Green Diamond and Humboldt Redwoods Company (previously Pacific Lumber Company) Habitat Conservation Plans.

In addition, to being located outside of the boundaries of a habitat conservation plan or natural community conservation plan, the Project is located on private property, does not involve the removal of trees, and includes mitigation measures to further reduce potential impacts to special-status species and habitats. Therefore, the Project will not conflict with any local policies or ordinances protecting biological resources or conflict

with the provisions of an adopted Habitat Conservation Plan, Natural Community Plan, or other approved plan applicable to the Project area, and ***no impact*** would occur.

V. CULTURAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 dedicated cemeteries?	☐	☒	☐	☐

Discussion

a-c. A Cultural Resources Investigation was prepared for the Project by Archaeological Research and Supply Company in May 2018 (updated June 2020). The investigation included a records search through the California Historical Resources Information System's regional Northwest Center (NWIC), Native American Heritage Commission (NAHC) inquiry, coordination with local tribes, and pedestrian survey of the Site. In addition, representatives of the Blue Lake Rancheria, Bear River Band of Rohnerville Rancheria, and the Wiyot Tribe conducted a field visit with Archaeological Research and Supply Company in May 2018.

Consultation with Native American tribes traditionally and culturally associated with the project area has been an ongoing part of the process. Specifically, an invitation for Tribal Consultation pursuant to AB 52 was sent to the Bear River Band of Rohnerville Rancheria, Blue Lake Rancheria, the Wiyot Tribe, and Cher-Ae Heights Indian Community of the Trinidad Rancheria that were all identified as potentially being affected by the NAHC on July 29, 2020. The Tribes did not accept the request.

No prehistoric resources were identified within the Project area, but one 1920-50s area historic trash scatter was identified. The cultural resources study concludes that the Project will not impact significant historic or prehistoric archaeological resources so long as earth disturbances do not extend more than 8 feet below the existing ground surface and a heightened inadvertent discovery protocol is implemented.

The Project does not propose to excavate greater than 8 feet in depth. To address the unlikely event that buried cultural resource deposits are discovered during Project

activities, (and consistent with §8304(d) of CDFA regulations) the following mitigation measure is proposed relating to inadvertent discovery procedures:

Mitigation Measure CR-1: Inadvertent Discovery Protocol

If suspected cultural resources, such as lithic materials or ground stone, historic debris, building foundations, or bone are discovered during Project activities, work shall be stopped within 100 feet of the discovery. Contact will be made to the County, a professional archaeologist and representatives from the Blue Lake Rancheria, Bear River Band of Rohnerville Rancheria, and Wiyot Tribe. The professional historic resource consultant, Tribes and County officials will coordinate provide an assessment of the find and determine the significance and recommend next steps.

If human remains are discovered during Project activities, work will stop at the discovery location, within 100 feet, and any nearby area reasonably suspected to overlie adjacent to human remains (Public Resources Code, Section 7050.5). The Humboldt County coroner will be contacted to determine if the cause of death must be investigated. If the coroner determines that the remains are of Native American origin, it is necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the NAHC (Public Resources Code, Section 5097). The coroner will contact the NAHC. The descendants or most likely descendants of the deceased will be contacted, and work will not resume until they have made a recommendation to the landowner or the person responsible for the excavation work for means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in Public Resources Code, Section 5097.98.

Level of Significance After Mitigation:

Potential impacts associated with the disturbance of cultural resources that may be encountered during Project activities would be ***less than significant*** with implementation of Mitigation Measure CR-1.

VI. ENERGY. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Result in 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?	☐	☐	☒	☐

Discussion

a.b. The Project involves only cultivation, with processing to occur at an offsite location. The Project will utilize energy resources primarily through use of artificial lighting in a portion of the hoop structures, and to a lesser extent, task and operational lighting in the ancillary support structures / buildings (administration buildings), outdoor lighting for security purposes, natural gas use in boilers, and fuel use in Project vehicles. The property is serviced by an existing Pacific Gas and Electric (PG&E) service line, and no new or expanded energy facilities are needed in connection with the Project. The Project includes installation and operation of three natural gas boilers that will be used to provide temperature control within the hoop structures. The Site is serviced by an existing natural gas line, and no new or expanded gas facilities are needed in connection with the Project. No generator is anticipated.

Approximately 75% of the hoop structures are proposed as outdoor light-deprivation, and will require no artificial lighting. The remainder of the hoop structures will utilize a combination of natural and artificial lighting to improve cultivation yields. The outdoor light-deprivation component of the Project is anticipated to be classified as Mixed-Light Tier 1, and the mixed-light component of the Project is anticipated to be classified as Mixed-Light Tier 2 for CDFA licensing purposes. Energy use associated with the operation of the mixed light hoop-style greenhouses is conservatively estimated at 27 kilowatt hours (kWh) per square foot of canopy using the results of a 2018 energy use survey conducted by the Northwest Power and Conservation Council. Thus, the annual energy consumption from the mixed light hoop houses proposed by the project is estimated at 6,750,000 kWh (or 6,750 MWh).

With respect to new buildings proposed for the Site, they will be subject to compliance with the California Green Building Standards Code (CALGreen Code), which is part of the California Building Standards Code under Title 24, Part 11. The CALGreen Code encourages sustainable construction standards that involve planning/design, energy efficiency, water efficiency resource efficiency, and environmental quality. These green

building standard codes are mandatory statewide and are applicable to residential and non-residential developments. The most recent CALGreen Code (2019 California Building Standard Code) was effective as of January 1, 2020. The California Building Energy Efficiency Standards (California Energy Code) is under Title 24, Part 6 and is overseen by the California Energy Commission (CEC). This code includes design requirements to conserve energy in new residential and non-residential developments. This Energy Code is enforced and verified by local agencies during the planning and building permit process. The current energy efficiency standards (2019 Energy Code) replaced the 2016 Energy Code as of January 1, 2020. Under the 2019 standards for nonresidential developments, it is predicted that new buildings will use 30 percent less energy due to lighting upgrades. For the Project, all new outdoor lighting will be the minimum lumens required for security purposes.

The Project's energy usage was analyzed by Illingworth & Rodkin, Inc., ("I&R") a professional air quality consulting firm, for potential air quality impacts. I&R's analysis demonstrates that the Project's energy usage will not have a significant impact with respect air quality criteria pollutants or greenhouse gas emissions. The Project will only utilize energy as needed for operational demands, and will not result in wasteful, inefficient, or unnecessary consumption. In addition, no new or expanded energy facilities are anticipated to be needed in connection with the Project. Therefore, a ***less than significant impact*** would occur with respect to energy.

VII. GEOLOGY AND SOILS. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

Discussion

a.i.,ii. According to the Humboldt County GIS, the Project Site is not located within an Alquist-Priolo fault hazard zone; however, earthquakes on active faults in the region have the capacity to produce a range of ground shaking intensities in the Project area. Ground shaking may affect areas hundreds of miles distant from an earthquake's epicenter. Some degree of ground motion resulting from seismic activity in the region could occur during the long-term operation of the Project; however, all new buildings will be required to meet the requirements of California Building Code, which addresses seismic requirements. The State of California provides minimum standards for building design through the California Building Code (CBC; California Code of Regulations Title 24). Where no other building codes apply, CBC Chapter 29 regulates excavation, foundations, and retaining walls. The CBC applies to building design and construction in the State and is based on the federal Uniform Building Code (UBC) used widely throughout the country. The CBC has been modified for California conditions with numerous more detailed and/or more stringent regulations. Specific minimum seismic safety and structural design requirements are set forth in CBC Chapter 16. The Code identifies seismic factors that must be considered in structural design. Any structures proposed as part of the project are required to be constructed in accordance with the California Building Code and comply with County building permit requirements. Therefore, ***a less than significant impact*** would occur relating to earthquake faults and strong seismic ground shaking.

a.iii. Liquefaction is a phenomenon whereby unconsolidated and/or near-saturated soils lose cohesion and are converted to a fluid state as a result of severe vibratory motion. The relatively rapid loss of soil shear strength during strong earthquake shaking results in temporary, fluid-like behavior of the soil. Soil liquefaction causes ground failure that can damage roads, pipelines, underground cables and buildings with shallow foundations. According the Humboldt County GIS, the Project Site is in an area subject to potential liquefaction. The County's Building Regulations address potential soil stability hazards by requiring soils reports and site-specific engineering, as necessary, prior to issuance of building permits. In addition, the California Building Code provides soil classification guidelines for expansive soils. Proposed structures to be located on expansive soils, require special design considerations prior to permit. Based on conformance to County and state building requirements, the Project would not expose people or structures to potential substantial adverse effects related to seismic-related ground failure, including liquefaction, and a ***less than significant impact*** would occur.

a.iv. According to the Humboldt County Web GIS system, no historic landslides are designated in or near the Project area. The Project parcels and immediately surrounding area are designated with a stability rating of 0 (relatively stable). Therefore, the Project will not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides, and ***no impact*** will occur.

b. The Project does not involve the removal of any trees within the Project area, or vegetation outside of the Project footprint that could result in erosion. The Project grading and site plans were developed by professional engineering firm Wallace Group, who also prepared a technical memorandum addressing storm water management, including storm water detention basin sizing and design.

The Project will maintain coverage under SWRCB Order WQ 2019-0001-DWQ, which prescribes Best Practicable Treatment or Control measures to control runoff and erosion, including monitoring of erosion control measures during and after design storm events, and repair or replacement, as needed, of ineffective erosion control measures immediately.

Given the design elements of the Project, as well as implementation of BMPs and BPTC measures, the Project is not expected to result in significant soil erosion or loss of topsoil during the construction or operational phases of the Project. Therefore, the Project will not result in substantial soil erosion or the loss of topsoil, and a ***less than significant impact*** would occur.

c. According to the Humboldt County Web GIS system, no historic landslides are designated in or near the Project area. The Project parcels and immediately surrounding area are designated with a stability rating of 0 (relatively stable). The Project Site is essentially flat, with little topographic variation. In addition, new structures will be required to comply with the County's Building Regulations and California Building Code which provide special considerations and requirements to ensure stability of soils. Therefore, the Project would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and a ***less than significant impact*** would occur.

d. Expansive soils possess a "shrink-swell" characteristic. Shrink/swell potential is the relative change in volume to be expected with changes in moisture content, that is, the extent to which the soil shrinks as it dries out or swells when it gets wet. No expansive soils have been identified on the Project Site and ***no impact*** from expansive soils is expected.

e. The Project area will be served by a new on-site wastewater treatment system to be reviewed and approved by the County Department of Environmental Health. The system will be located on the eastern boundary of the Project area, as shown on the proposed Site plan. The system was designed by SHN, who conducted a septic suitability assessment and determined that the soils at the Project Site are capable of supporting a new wastewater treatment system of adequate size for the Project. Therefore, a ***less than significant*** relating to use of septic tanks would occur.

f. No unique paleontological or geologic features are known to exist on the Project Site. However, a mitigation measure is proposed to address the unlikely event that buried paleontological resources are discovered during Project activities.

Mitigation Measure GEO-1: Inadvertent Discovery Protocol

In the event that paleontological resources are discovered, work shall be stopped within 100 feet of the discovery and a qualified paleontologist shall be notified. The paleontologist shall document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in State CEQA Guidelines Section 15064.5. If fossilized materials are discovered during construction, excavations within 100 feet of the find shall be temporarily halted or diverted until the discovery is examined by a qualified paleontologist. The paleontologist shall notify the appropriate agency to determine procedures that would be followed before construction is allowed to resume at the location of the find.

Level of Significance After Mitigation:

Potential impacts associated with the disturbance of paleontological resources that may be encountered during Project activities would be ***less than significant*** with implementation of Mitigation Measure GEO-1.

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

Discussion

a,b. The NCUAQMD does not have established significance thresholds for evaluating the impacts of a project's greenhouse gas (GHG) emissions. According to the NCUAQMD website, in 2011, the NCUAQMD adopted Rule 111 (Federal Permitting Requirements for Sources of Greenhouse Gases) into the District rules, to establish a threshold above which New Source Review and federal Title V permitting applies, and to establish federally enforceable limits on potential to emit greenhouse gases for stationary sources; however, according to the NCUAQMD, these are considered requirements for stationary sources and should not be used as a threshold of significance for CEQA evaluations.

The Project could generate both direct and indirect GHG emissions. Direct GHG emissions include emissions that will primarily result from stationary (boilers) and mobile (vehicle/equipment) sources. Indirect GHG emissions are generated by electricity consumption and waste generation. Indirect emissions resulting from the use of artificial lighting within a portion of the hoop structures will be the primary contributor of greenhouse gas emissions from the Project.

Approximately 75% of the hoop structures are proposed as outdoor light-deprivation, and will require no artificial lighting. The remainder of the hoop structures will utilize a combination of natural and artificial lighting to improve cultivation yields. Energy use associated with the operation of the mixed light hoop-style greenhouses is conservatively estimated at 27 kilowatt hours (kWh) per square foot of canopy using the results of a 2018 energy use survey conducted by the Northwest Power and Conservation Council. Thus, the annual energy consumption from the mixed light hoop houses proposed by the project is estimated at 6,750,000 kWh (or 6,750 MWh).

As noted above, neither the NCUAQMD nor Humboldt County has established thresholds of significance for evaluating a project's GHG emissions. Since there are no applicable

thresholds for projects in the Air District or Humboldt County, the NCUAQMD recommends the use of thresholds and guidance provided by other air districts in the State such as the Bay Area Air Quality Management District (BAAQMD). The BAAQMD has developed project screening criteria to provide lead agencies and project applicants with a conservative indication of whether a project could result in potentially significant impacts related to greenhouse gas emissions. Projects below the applicable screening criteria would not exceed the 1,100 metric tons (MT) of CO2e/yr GHG threshold established by the BAAQMD for land use projects, other than permitted stationary sources. The BAAQMD has not established a threshold of significance for this type of project as it is agricultural rather than commercial or industrial.

In order to assess the Project's potential for impacts associated with greenhouse gas emissions, Illingworth & Rodkin, Inc., ("I&R") a professional air quality consulting firm, prepared a detailed greenhouse gas emissions evaluation. I&R used CalEEMod to estimate greenhouse emissions from on-site construction and operational activities, including energy usage and vehicle trips. The resulting emissions were compared against a significance threshold of 1,100 MT CO2e/year. See resulting greenhouse gas emissions summary in Table C, below:

TABLE C
ANNUAL PROJECT GREENHOUSE GAS EMISSIONS

Source Category	Proposed Project (MT CO2e/yr)	
	2022	**2030**
Area	0	0
Energy Consumption	705	705
Mobile	164	133
Solid Waste Generation	21	21
Stationary (Boilers)	141	141
Total Emissions (MT CO2e/yr)	1,031	1,000
Significance Threshold	1,100 MT CO2e/yr	
Exceed Threshold?	No	No

I&R's greenhouse gas emissions analysis concludes that the Project would not exceed the relevant significance threshold of 1,100 MT CO2e/year, and would not conflict or otherwise interfere with the County's General Plan, CMMLUO, or statewide GHG reduction measures. Therefore, a ***less than significant impact*** relating to greenhouse gas emissions would occur.

IX. HAZARDS AND HAZARDOUS MATERIALS. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Discussion

a.b. No storage of fertilizers, pesticides, or hazardous materials is planned to occur on the Site. All fertilizers and other materials will be stored on the adjacent property in facilities already in use for the existing agricultural operation. The adjacent parcel where this storage will occur is under common ownership and is currently setup and permitted to store and manage fertilizers, pesticides, and hazardous materials used in existing agricultural operations. The materials will be stored in fully enclosed, watertight containers, and in a manner so that they cannot enter or be transported into surface waters or groundwater. In the event that future storage of hazardous materials was to occur on the Project Site that exceeded applicable regulatory thresholds, the applicant would be required to file a Hazardous Materials Business Plan with the County Division of Environmental Health which detailed storage, quantities, labeling, and waste management requirements.

With respect to use of hazardous materials during Project activities, the Project will involve vehicles and small farming equipment that use petroleum products (gasoline and diesel fuel), vehicle fluids and lubricants; however, these fuels and oil products will be contained within the vehicles themselves and no fuel/oils are expected to be stored on the Project Site. Additionally, as part of the proposed cultivation, State of CA approved agricultural chemicals (e.g., PureCrop1, Regalia, Javelin) would be applied to the cannabis plants to control pests and mold. Approved chemicals would be applied at agronomic rates according to manufacturer's specifications.

Consistent with CDFA §8307, for all pesticides that are exempt from registration requirements, cultivation sites must comply with all pesticide laws and regulations enforced by the Department of Pesticide regulation and with the following pesticide application and storage protocols

1. Comply with all pesticide label directions;
2. Store chemicals in a secure building or shed to prevent access by wildlife;
3. Contain any chemical leaks and immediately clean up any spills;
4. Apply the minimum amount of product necessary to control the target pest;
5. Prevent offsite drift;
6. Do not apply pesticides when pollinators are present;
7. Do not allow drift to flowering plants attractive to pollinators;
8. Do not spray directly to surface water or allow pesticide product to drift to surface water. Spray only when wind is blowing away from surface water bodies;
9. Do not apply pesticides when they may reach surface water or groundwater; and
10. Only use properly labeled pesticides. If no label is available consult the Department of Pesticide Regulation.

ALC has considerable experience managing and using fertilizers, pesticides, and other products in existing agricultural operations on the Project Site and adjoining parcels, and has developed detailed Standard Operating Procedures for use and management

of pesticides, injury and illness prevention, and waste management. In addition, ALC has developed project-specific waste management and pest management plans, consistent with State of California cultivation licensing requirements. Further, the Project will comply with the CMMLUO performance standards, and the Best Practicable Treatment or Control (BPTC) measures of State Water Resources Control Board (SWRCB) Order WQ 2019-0001-DWQ. The SWRCB program and County ordinance have "standard conditions" applicable to cannabis operations that address impacts from the storage and use of hazardous materials which include the following requirements:

- Any pesticide or herbicide product application be consistent with product labeling and be managed to ensure that they will not enter or be released into surface or groundwater.
- Petroleum products and other liquid chemicals be stored in containers and under conditions appropriate for the chemical with impervious secondary containment.
- Implementation of spill prevention, control, and countermeasures (SPCC) and have appropriate cleanup materials available onsite.

With appropriate storage, handling, and application practices that comply with the requirements of CDFA, SWRCB and Humboldt County, it is not anticipated that the use of these materials at the facility will pose a significant hazard. In the event of upset or accident conditions, it is unlikely that these hazardous materials would be released in a manner that would create a significant hazard to the public or the environment. Therefore, the Project will not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment and a ***less than significant impact*** would occur.

c. There are no schools located within one-quarter mile of the Project Site. The City of Arcata School District owns property located a minimum of 600 feet to the east (although it is currently developed to agriculture). The Mad River Montessori Preschool / Fuente Nueva Charter School is located off of Janes Road approximately 2,000 feet to the southeast. Therefore, the Project will not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school, and ***no impact*** would occur.

d. The State's Hazardous Waste and Substances Sites List (Cortese List, Government Code Section 65962.5) identifies sites with leaking underground fuel tanks, hazardous waste facilities subject to corrective actions, solid waste disposal facilities from which there is a known migration of hazardous waste, and other sites where environmental releases have occurred.

Review of information available on the SWRCB Geotracker and DTSC Envirostor (consistent with §8102(q) of CDFA regulations) websites indicates that there are no open

cases on the Project Site involving impacted soil and groundwater from Leaking Underground Storage Tanks (LUSTs) or other sources. There is an open case (Simpson Timber Company; T0602393409) identified at the former mill site on adjacent APN 506-231-018. The case summary on the SWRCB Geotracker website describes remediation of soil and water at the former mill site in 1997, with current case status identified as "Open – Verification Monitoring." A Phase I Environmental Site Assessment was completed for the Project Site in June 2015, which identified the aforementioned Simpson Timber Company known environmental condition, but did not identify any environmental issues warranting additional investigation on the Project Site. Accordingly, the Project is not located on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and would not create a significant hazard to the public or the environment, and ***no impact*** would occur.

e. The Project is not within two miles of a public airport. California Redwood Coast – Humboldt County Airport is approximately 5.4 miles to the north and Murray Field Airport is approximately 5.4 miles to the south. Therefore, the Project would not result in a safety hazard for people residing or working in the Project area, and ***no impact*** would occur.

f. The Project would be required to comply with the Humboldt County Fire Safe Ordinance (County Code Section 31111). The County Fire Safe Ordinance provides specific standards for roads providing ingress and egress, signage, and setback distances for maintaining defensible space. The Project Site is accessed by existing encroachments/roads off of Foster Avenue and 27th Street. As such, the Project would not impair the implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan, and ***no impact*** would occur.

g. The Project Site is located in an area of low Fire Hazard Rating and within the Arcata Fire Protection District. The Project area, and surroundings, are comprised of developed agricultural and scattered rural residential with no significant vegetation or trees. The access roads will be maintained in a state such that they are free of vegetation during times of activity. Fuels and other potentially flammable chemicals will be stored in containers designed for fuel storage that includes secondary containment and a Hazardous Materials Business Plan will be maintained (if applicable regulatory thresholds are exceeded) that outlines storage requirements and spill response procedures. A new 100,000-gallon water storage tank will be located on the Site and available for fire suppression. In addition, the Project will comply with the Humboldt County Fire Safe Ordinance. Based on the nature of the Project and Site location, the Project will not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires ***no impact*** to wildland fires will occur.

X. HYDROLOGY AND WATER QUALITY. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
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	☐	☐	☒	☐
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?	☐	☐	☒	☐

Discussion

a. A Project-specific wetland delineation conducted by SHN did not identify any wetlands within the Project area, but did identify a man-made roadside drainage ditch approximately 5,100 square feet in size containing wetland indicators located along the existing access road at the southwest border of the Project Site. The drainage ditch is classified as a Class IV watercourse (*all other man-made irrigation canals*) under the State Water Resources Control Board (SWRCB) Order WQ 2019-0001-DWQ, with no prescribed setback requirements. The drainage ditch is located outside of the Project boundary, and will be conserved and not disrupted by Project activities (with exception of routine maintenance of the ditch, consistent with current practice).

The Project does not involve the removal of any trees within the Project area, or vegetation outside of the Project footprint that could result in erosion. The Project grading and site plans were developed by professional engineering firm Wallace Group, who also prepared a technical memorandum addressing storm water management, including storm water detention basin sizing and design.

As part of the proposed cultivation, State of California approved agricultural chemicals (e.g., pesticides and fungicides) would be applied to the cannabis plants to address pest and mold issues. The proposed cultivation activities will not produce wastewater discharge since the cultivation will occur within hoop structures, and irrigation water and fertilizers will be administered at specific agronomic rates that will allow maximum uptake by the plants and prevent excess water beyond the root zone.

The Project would comply with the CMMLUO performance standards and CDFA regulations related to pesticide use. In addition, the Project would comply with the hazardous materials control measures of SWRCB Order WQ 2019-0001-DWQ. The SWRCB program and County ordinance have "standard conditions" applicable to cannabis operations that address impacts from the storage and use of hazardous materials which include the following requirements:

- Any pesticide or herbicide product application be consistent with product labeling and be managed to ensure that they will not enter or be released into surface or groundwater.
- Petroleum products and other liquid chemicals be stored in containers and under conditions appropriate for the chemical with secondary containment.
- Implementation of spill prevention, control, and countermeasures (SPCC) and have appropriate cleanup materials available onsite.

In addition, SWRCB Order WQ 2019-0001-DWQ prescribes Best Practicable Treatment or Control measures to control runoff and erosion, including monitoring of erosion control measures during and after design storm events, and repair or replacement, as needed, of ineffective erosion control measures immediately.

Consistent with §8102(dd) of the CDFA regulations, the Project Site is not located in whole or in part in a watershed or other geographic area that the State Water Resources Control Board or the Department of Fish and Wildlife has determined to be significantly adversely impacted by cannabis cultivation

Given the water quality protection measures required to be implemented under the existing regulatory framework, it is not anticipated that the Project would violate any water quality standards or waste discharge requirements or otherwise degrade water quality, and impacts would be ***less than significant***.

b. Water for irrigation will be supplied by an existing permitted on-site groundwater well (County Permit Number 18/19-0783). The well is located east of the Project area on an adjoining parcel under common ownership (APN 505-151-012). The well is completed to a depth of approximately 150 feet and has an estimated yield of 400 gallons per minute according to the Well Completion Report. As documented by the well driller (Rich Well Drilling), the well is screened approximately 100' below surface in a state designated groundwater basin (Mad River Valley - Mad River Lowland; 1-008.01), and has no hydraulic connection to any surface water or larger shallow homogeneous aquifer.

Irrigation water will be needed from April through October of each year, with no irrigation water anticipated during the months of November through March. Irrigation will be controlled by an automated irrigation system (e.g., Priva process control system) that will measure soil moisture and the surrounding environment to deliver precise water-nutrient needs. At all times, water will be applied using no more than agronomic rates. The Project's annual irrigation demand has been estimated at 52 acre-feet (17 million gallons), with a monthly maximum of approximately 12 acre-feet (4 million gallons) during the month of July. The estimated output of the existing on-site groundwater well is approximately 1.8 acre-feet (576,000 gallons) per day, indicating sufficient water supply to service the irrigation demands of the Project.

The Project's estimated irrigation water usage, by month, is shown in Table D, below.

TABLE D
PROJECTED IRRIGATION WATER USAGE

	Month[1]						
	April	**May**	**June**	**July**	**August**	**September**	**October**
Gallons (millions)	0.9	2.3	3.5	4.0	3.4	2.2	0.7
Acre-Feet	2.6	7.1	10.9	12.2	10.5	6.6	2.2

Notes:
1. No irrigation water expected during the months of November through March.

Irrigation will be controlled by an automated irrigation system (e.g., Priva process control system) that will measure soil moisture and the surrounding environment to deliver precise water-nutrient needs. The automated irrigation system will provide an advanced

fertilizer mixing system, and control desired electrical conductivity, pH and flow rate. At all times, water will be applied using no more than agronomic rates.

Given the design of the Project and demonstration of adequate water supply using an existing groundwater well, the Project is not anticipated to substantially deplete groundwater supplies or affect the production rate of nearby wells, and a ***less than significant impact*** would occur.

c. Under existing conditions, drainage from the area of existing hoop structures in the northwest corner of the Site is routed to a retention basin located west of the hoop structures on an adjacent ALC parcel. Surface runoff for the remainder of the Site is directed to onsite drainage ditches that tie into a drainageway that flows northwest into the same retention basin, or drain southward into a wetland slough (located on an adjacent parcel southeast of the Project area). The slough flows westward to an underground culvert, which is routed underneath the mill warehouse buildings and into Liscom Slough.

The Project will add impervious area to the Site resulting from the construction of hoop structures, administration buildings, loading areas, and concrete walkways. A professional engineering firm (Wallace Group) developed a project-specific storm water management design to effectively manage surface runoff. Based on the topography of the Site, the post-development grading design splits runoff into two sub-catchments, one collects the runoff from the northern portion of the Site, and the other the southern portion. The proposed northern sub-catchment will be primarily hoop structures and open space, while the proposed southern sub-catchment will be primarily hoop structures, open space, and office buildings located in the southwest corner of the Site. In order to separate applied irrigation water and storm water runoff, the proposed development utilizes hoop houses to isolate the cannabis crops. Runoff from the hoop structures is conveyed to storm water retention basins through a series of perforated pipes that run in between all of the hoop houses. The perforated pipes are connected to a larger network of storm drains which convey runoff to the retention basins. The Site has two proposed retention basins, one for each sub-catchment. The preliminary design for the northeast retention basin will provide 0.5 acre-feet of storage, and the southern retention basin will provide 0.33 acre-feet. Each basin will be equipped with an outlet structure which will allow excess flow from larger storm events to be controlled and drained into the existing ditches adjacent to the property. The engineering design demonstrates that the post-development runoff volume of the 85th percentile storm will be equal to or less than the pre-development runoff volume, consistent with SWRCB General Construction Permit post-construction storm water requirements.

In addition to implementing engineering design standards consistent with State requirements, the Project will maintain coverage under SWRCB Order WQ 2019-0001-DWQ, which prescribes Best Practicable Treatment or Control measures to control runoff and erosion, including monitoring of erosion control measures during and after design

storm events, and repair or replacement, as needed, of ineffective erosion control measures immediately.

As a result, the Project would not substantially alter the existing drainage pattern of the Site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion, siltation, polluted runoff or flooding on- or off-site, and a ***less than significant impact*** would occur.

d. The Project is not located near a large body of water capable of producing a seiche, and is not located in a tsunami inundation area. In addition, according to an October 30, 1997 Letter of Map Amendment from the Federal Emergency Management Agency ("FEMA"), the Site is not located in a Special Flood Hazard Area, that is the area that would be inundated by a flood having a one percent chance of being equaled or exceeded in any given year. As a result, the Project would have ***no impact*** from release of pollutants due to inundation from seiche, tsunami, or floods.

e. Water for irrigation will be supplied by an existing permitted on-site groundwater well (County Permit Number 18/19-0783). The well is completed to a depth of approximately 150 feet and has an estimated yield of 400 gallons per minute according to the Well Completion Report. The Project's annual irrigation demand has been estimated at 52 acre-feet (17 million gallons), with a monthly maximum of approximately 12 acre-feet (4 million gallons) during the month of July. The estimated output of the existing on-site groundwater well is approximately 1.8 acre-feet (576,000 gallons) per day, indicating sufficient water supply to service the irrigation demands of the Project. At all times, water will be applied using no more than agronomic rates.

   The well is screened approximately 100' below surface in a state designated groundwater basin (Mad River Valley - Mad River Lowland; 1-008.01), and has no hydraulic connection to any surface water or larger shallow homogeneous aquifer. In addition, the Project would comply with the CMMLUO performance standards and will maintain coverage under SWRCB Order WQ 2019-0001-DWQ, which prescribes Best Practicable Treatment or Control measures to control runoff and erosion.

   Therefore, the Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan and a ***less than significant impact*** would occur.

XI. LAND USE AND PLANNING. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

Discussion

a. The Project parcels are a component of a large private land holding (350+ acres) of the Project applicant. The predominant land uses in the vicinity of the Project include additional land holdings of the Project applicant, as well as mixed commercial, agricultural and scattered rural residential uses. The surrounding vicinity is sparsely populated with approximately five residences located within 1,000 feet of the Project Site. The Project does not propose to block or impede any adjacent roads (e.g., Foster Avenue or 27th Street), and existing access will be maintained. The Project would not divide any established communities and ***no impact*** would occur.

b. The Project would not result in changes to existing land use, zoning, or specific plans in Humboldt County. The Project would not conflict with any goals, policies, or objectives in the Humboldt County General Plan intended to mitigate potential environmental impacts. Land uses and zoning would remain unchanged. The agricultural use associated with the Project would be consistent with the allowable land uses under the Humboldt County General Plan and Zoning Ordinance. The Project has been designed to be consistent with the CMMLUO.

Although not located within the City limits, the Site is identified within the City of Arcata's Western Greenbelt Plan (2018). According to its text, the Western Greenbelt Plan serves as a "flexible, comprehensive, and long-range planning document. It is a guide for identifying significant open space areas within the Greenbelt, as well as a guide for potential protection of agricultural land and natural resources, and it is a tool for planning and developing the entire Greenbelt system." As a primary purpose, the Greenbelt Plan seeks to promote and protect agricultural uses west of the City in the Arcata Bottoms. The Greenbelt Plan notes that the Arcata Bottom lands, including lands to the west of the defined Greenbelt and within Arcata's Planning Area boundary, are largely devoted to larger farms, dairies, livestock ranches and other agricultural operations that contribute to the agricultural economy of the entire region. The Project Site (component of the Sun Valley Flower Farm) is identified as an existing agricultural operation within the Arcata

Bottom lands. The proposed Project is consistent with the intent of the Greenbelt, and will utilize a property for agricultural purposes (cultivation) that could otherwise be put to heavy industrial use per the Site's zoning.

According to the U.S. Fish & Wildlife Service Environmental Conservation Online System (ECOS), the Project Site is not located within the boundaries of a Habitat Conservation Plan. Habitat Conservation Plans in Humboldt County include the following: 1) Green Diamond Resource Company California Timberlands & Northern Spotted Owl (formerly Simpson Timber Company); 2) Humboldt Redwood Company (formerly Pacific Lumber, Headwaters); and 3) Regli Estates. These Habitat Conservation Plans primarily apply to forest lands in the County. Further, according to the California Department of Fish & Wildlife website, the Project Site is not located in the boundaries of a Natural Community Conservation Plan. The conservation plans for Humboldt County, listed on California Regional Conservation Plans Map on the CDFW website, include the Green Diamond and Humboldt Redwoods Company (previously Pacific Lumber Company) Habitat Conservation Plans.

As a result, ***no impact*** would occur.

XII. MINERAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

Discussion

a,b. The Project Site is not classified as a Mineral Resource Zone (e.g., MRZ-2) by the State Geologist, and does not contain any known locally important mineral resources. Implementation of the Project would not result in the loss of availability of a known mineral resource, would not result in the loss of availability of a locally important mineral resource recovery site, and ***no impact*** would occur.

XIII. NOISE. *Would the project result in:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 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?	☐	☐	☐	☒

Discussion

a. The Project parcels are a component of a large private land holding (350+ acres) of the Project applicant. The predominant land uses in the vicinity of the Project include additional land holdings of the Project applicant, as well as mixed commercial, agricultural and scattered rural residential uses. The surrounding vicinity is sparsely populated with approximately five residences located within 1,000 feet of the Project Site.

Humboldt County Noise Element of the General Plan

The Noise Element of the Humboldt County General Plan establishes maximum acceptable noise levels for various land use categories. According to the Noise Element, evaluating new development projects for noise impacts should be based on a comparison of the noise compatibility standards (Table 13-C of General Plan) with noise contours and other available information. Appropriate standards for short-term noise levels measured by Lmax varies with the type of land use and time of day.

TABLE E

LAND USE / NOISE COMPATIBILITY STANDARDS (TABLE 13-C OF GENERAL PLAN)



CLEARLY ACCEPTABLE | NORMALLY ACCEPTABLE | NORMALLY UNACCEPTABLE | CLEARLY UNACCEPTABLE

LAND USE INTERPRETATION FOR CNEL (or Ldn) VALUE

LAND USE CATEGORY	Maximum Interior Noise Levels*	50 – 60	61 - 70	71 - 80	81 - 90	91+
Residential Single Family, Duplex, Mobile Homes	45					
Residential Multiple Family, Dormitories, etc.	45					
Transient Lodging	45					
School Classrooms, Libraries, Churches	45					
Hospitals, Nursing Homes	45					
Auditoriums, Concert Halls, Music Shells	35					
Sports Arenas, Outdoor Spectator Sports						
Playgounds, Neighborhood Parks						
Golf Courses, Riding Stables, Water Rec., Cemeteries						
Office Buildings, Personal, Business & Professional	50					
Commercial: Retail, Movie Theaters, Restaurants	50					
Commercial: Wholesale, Some Retail, Ind., Mfg., Util.						
Manufacturing, Communications(Noise Sensitive)						
Livestock Farming, Animal Breeding						
Agriculture (except Livestock), Mining, Fishing						
Public Right-of-Way						
Extensive Natural Recreation Areas						

*Due to exterior sources

Project activities are not expected to generate significant noise levels that will exceed the Humboldt County General Plan Noise Element standards. Project activities within the administration buildings and hoop structures will be limited from a noise-generating perspective (e.g., conventional air movement fans, HVAC equipment) and will meet applicable County building and zoning code requirements for noise levels. Outdoor noise-generating activities will include vehicle use and small agricultural support equipment (e.g., ATVs, tractors, and forklifts). A generator is not anticipated. From a noise standpoint, Project activities will be consistent with agricultural and vehicle equipment used at the Site under baseline conditions.

TABLE F
REFERENCE NOISE LEVELS

Type of Vehicle	Noise Level Lmax (dB)
Auto	50 (at 100 feet)
Pickup Truck	75 (at 50 feet)
Tractor	84 (at 50 feet)

Reference: Construction Noise Impact Assessment
https://www.nrc.gov/docs/ML1225/ML12250A723.pdf

Table F, above, shows noise levels for typical vehicles and agricultural support equipment that will be used at the Site (automobiles, pickup trucks, tractors). Based on these measurements, noise levels from Project activities are expected be below the "normally acceptable" or "clearly acceptable" CNEL level by the time they reach the nearest residence.

Based on the types of equipment to be utilized by the Project, and the distance to nearby receptors, impacts related to noise are expected to be ***less than significant***.

b. The surrounding vicinity is sparsely populated with approximately five residences located within 1,000 feet of the Project Site. Further, the Project proposes agricultural activities consistent with the current and historical use of the Site, and no uses are proposed that would generate excessive groundborne vibration. ***No impact*** would occur.

c. The Project is not within two miles of a public airport and is not within an airport land use plan or the vicinity of a private airstrip. Therefore, the Project would expose people to excessive air traffic noise, and ***no impact*** would occur.

XIV. POPULATION AND HOUSING. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

Discussion

a, b. The Project would not directly induce population growth because it proposes no residential development. It would not indirectly induce population growth because it would not increase roadway capacity, nor would it extend roads or other infrastructure into previously undeveloped areas. Further, the Project involves no displacement of existing housing or people, as neither occur on the Project Site. Because the Project would not result in population growth in the area, does not involve the creation of, or necessity for, new housing, and would not displace existing housing or people, ***no impact*** related to population and housing would occur

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

Discussion

a. The Project Site is located in an area of low Fire Hazard Rating and within the Arcata Fire Protection District. The Project area, and surroundings, are comprised of developed agricultural and scattered rural residential with no significant vegetation or trees. The access roads will be maintained in a state such that they are free of vegetation during times of activity. Fuels and other potentially flammable chemicals will be stored in containers designed for fuel storage that includes secondary containment and a Hazardous Materials Business Plan will be maintained (if applicable regulatory thresholds are exceeded) that outlines storage requirements and spill response procedures. A new 100,000-gallon water storage tank will be located on the Site and available for fire suppression. In addition, the Project will comply with the Humboldt County Fire Safe Ordinance. Based on the nature of the Project and Site location, and compliance with County fire safe ordinance requirements, it is not anticipated that the Project will result in a significant increase in the number of calls-for-service related to fire. As such, the Project will not result in the need for new or physically altered fire protection facilities, and a ***less than significant impact*** would occur.

The Humboldt County Sheriff's Office is responsible for law enforcement in the unincorporated areas of the County. To address potential security issues, the applicant will implement the detailed security plan contained in the Operations Plans plan prepared for the Project. Implementation of the security plan measures and compliance with CMMLUO security and operational performance standards will minimize impacts on local law enforcement. As such, the Project will not result in the need for new or physically altered law enforcement facilities, and a ***less than significant impact*** would occur.

Since the Project does not propose residential development and will not significantly increase the population in the Arcata area, the Project would not create a need for new schools, increase any school population, or increase the demand for public parks or other public facilities such as public health facilities and libraries. As a result, ***no impact*** would occur.

XVI. 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?	☐	☐	☐	☒

Discussion

a,b. As previously described, the Project does not involve the creation of new housing and would not result in population growth in the area. Similarly, new recreational facilities are not proposed as part of the Project and the demand for such facilities would not increase with implementation of the Project. Therefore, because the Project would not result in any increase in the use of, or demand for, parks or recreation facilities, ***no impact*** related to recreation would occur.

XVII. TRANSPORTATION *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b. Conflict or be inconsistent with CEQA Guidelines section 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?	☐	☐	☒	☐

Discussion

a. W-Trans Traffic Engineering Consultants prepared a Traffic Impact Study for the Project, analyzing potential impacts relative to circulation, access for pedestrians, bicyclists, and to transit. Consistent with SB 743, the project's transportation impacts were analyzed using Vehicle Miles Traveled (VMT). While no longer a part of the CEQA review process, vehicular traffic service levels at key intersections were also evaluated for consistency with General Plan policies by determining the number of new trips that the Project would be expected to generate, distributing these trips to the surrounding street system based on anticipated travel patterns specific to the Project, then analyzing the impact the new traffic would be expected to have on the study intersections.

Circulation: The Traffic Impact Study found that all study intersections are expected to continue operating acceptably at LOS C or better and that the Project would not result in an adverse effect to the surrounding roadway network in all modeled scenarios with the exception of the Future Plus Project Conditions Scenario. In that scenario, study intersections are expected to continue operating acceptably at LOS C or better overall upon the addition of project trips to the anticipated Future volumes, except for Foster Avenue/Alliance Road and Sunset Avenue/US 101 North Ramps both of which would operate at LOS D overall during the p.m. peak hour. With installation of a mini roundabout at Foster Avenue/Alliance Road and a roundabout at Sunset Avenue/US 101 North Ramps, both intersections would operate acceptably with project trips added to Future volumes. Based on this finding, the Traffic Impact Study recommends that the applicant pay proportional share fees to the City of Arcata to alleviate the project's contribution to the needed improvements at Foster Avenue/Alliance Road and Sunset Avenue/US 101 North

Ramps, consisting of $13,512 and $8,714, respectively. This will be made a condition of project approval for the Conditional Use Permit requested from the County, as a project's effect on automobile delay shall not constitute a significant environmental impact per Section 15064.3(a) of CEQA Guidelines and can't be mitigated through the CEQA process.

Pedestrian: W-Trans found that given the rural location of the Project Site, pedestrian trips to external destinations are expected to be limited. The Project Site is not located within what is generally considered an acceptable walking distance (one-quarter mile) of any destinations that would be reachable with the provision of pedestrian facilities so the lack of existing facilities for pedestrians does not result in an impact. Although external pedestrian trips are not anticipated, internal trips are expected between the various facilities. As shown on the Site plan, pedestrian facilities including sidewalks and pathways would be provided throughout the Site.

Bicycle: W-Trans found that existing bike lanes on Sunset Avenue, Alliance Road, and Foster Avenue together with the shared use of minor streets provide adequate access for bicyclists within the study area. Upon completion of the planned improvements outlined in the City of Arcata Pedestrian & Bicycle Master Plan and the Humboldt Regional Bicycle Plan, including the provision of Class III bike routes on Foster Avenue between Alliance Road and Janes Road and on Janes Road to the south of Foster Avenue, access for bicyclists would be improved and the project Site would be connected to the surrounding network. It should be noted that even upon completion of the planned improvements, the approximately one-third mile segment of Foster Avenue between the project driveway and Janes Road would not have a bicycle facility; however, given the low volume of vehicles and short length of the segment, it would be considered acceptable for bicyclists to share the roadway with motorists. Zoning regulations for the County of Humboldt do not specify bicycle parking requirements for cultivation uses, though because the Site would be accessible for bicyclists the Traffic Impact Study recommends that bicycle parking be provided at a rate of one space for every 10 employees. This would translate to a need for 12 bicycle parking spaces based on the maximum employment count of 116 employees. The Project Site plan incorporates the W-Trans recommendation for 12 bicycle parking spaces.

Transit: W-Trans found that the lack of existing transit service within acceptable walking distance of the Project Site is typical for its rural location. Should an employee need to use transit, they could bike to the nearest transit stops at Foster Avenue/Alliance Road, the Arcata Transit Center, or Arcata High School. The lack of transit facilities serving the project does not result in an impact given the rural location and expected demand.

The Project will not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities and a ***less than significant impact*** would occur.

b. Senate Bill (SB) 743 established a change in the metric to be applied for determining transportation impacts associated with development projects. Rather than the delay-based criteria associated with a Level of Service (LOS) analysis, the increase in Vehicle Miles Traveled (VMT) as a result of a project is now the basis for determining CEQA impacts with respect to transportation and traffic. As of the date of this analysis, the County has not yet established thresholds of significance related to VMT. As a result, the project-related VMT impacts were assessed based on guidance provided by the California Governor's Office of Planning and Research (OPR) in the publication Transportation Impacts (SB 743) CEQA Guidelines Update and Technical Advisory, 2018.

OPR provides guidance for VMT analysis based on VMT per capita for residential projects and VMT per worker for employment-based projects. Since the VMT associated with the proposed project would be primarily associated with employment-based travel, VMT per employee was used as the metric for this analysis. Projects that generate vehicle travel exceeding 15 percent below the existing regional average VMT per employee may indicate a significant transportation impact and similarly, projects which achieve a VMT per employee of 15% or more below that of existing development is reasonable to consider as less than significant. OPR guidance states that a county is an appropriate geographical boundary for a baseline if that is the area within which workers of the project would be expected to live. Employees of the proposed project are expected to reside within the County Humboldt so countywide data was used to establish the baseline VMT per employee.

The County of Humboldt has a travel demand model that includes numerous traffic analysis zones (TAZs) within the region that contain VMT information. Caltrans District 1 staff was consulted to obtain the VMT information for the entire county as well as TAZ 235, which is the zone in which the project Site is located. The countywide average daily VMT per employee of 14.59 was used as a baseline for this analysis. Applying OPR's guidance, an employee-based project generating a VMT that is 15 percent or more below this value, or 12.40 miles per employee per day or less, would reasonably have a less-than-significant VMT impact. TAZ 235 has a daily VMT per employee of 2.41; however, the TAZ only has two employees so data for adjacent TAZs was also reviewed. The existing processing uses on adjacent APN 506-231-018 are located in TAZ 886 along with the Sun Valley Group flower business to the north of the project Site. This TAZ has 505 employees with a VMT per employee of 3.64, or approximately 75 percent below the existing countywide average. Given the similar land use characteristics to the proposed project and substantially more employee data points available, the VMT for TAZ 886 rather than TAZ 235 was determined to be a better representation of the project. Since it is reasonable to presume that the travel patterns of workers for the proposed project would be similar to those of workers in TAZ 886, it is reasonable to conclude that the project would have a VMT per employee which is well below the 15 percent or more threshold suggested by OPR's Technical Advisory Document on VMT. Accordingly, a ***less than significant*** VMT impact is associated with employee travel.

c. The Project would use existing, public roadways to access the Project Site and would use gravel access roads internal to the Project Site. The internal access roads would be improved to standards consistent with the envisioned level of use. The Project does not include construction of roads outside of the Project Site.

All activities associated with operation of the Project would occur entirely within the Project Site, and would not involve driving or operating farm equipment external to the Site. On public roads, delivery trucks and employee vehicles would use public roadways when traveling to and from the Project Site.

W-Trans found that sight lines on Foster Avenue are adequate to accommodate all turns into and out of the project driveway, and that no channelization in the form of a turn pocket would be warranted at the project driveway.

The Project will not substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersection) or incompatible uses (e.g. farm equipment), and a ***less than significant impact*** would occur.

d. The Project would use existing roadways (e.g., Foster Avenue) and encroachments to access the Project Site. The Project also proposes to improve existing access roads within the Project Site and construct parking areas to serve the proposed cannabis use. The Project will be required to comply with the Humboldt County Fire Safe Ordinance 1952, which the California Board of Forestry and Fire Protection has accepted as functionally equivalent to PRC 4290. The County Fire Safe Ordinance provides specific standards for roads providing ingress and egress, signage, and setback distances for maintaining defensible space. Compliance with the County's Fire Safe Ordinance will ensure that adequate access for emergency vehicles is provided. Therefore, the Project will result in adequate emergency access, and a ***less than significant impact*** would occur.

XVIII. TRIBAL CULTURAL RESOURCES.	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Discussion

a.i.ii. Tribal cultural resources potentially affected by the Project activities were investigated by Archaeological Research and Supply Company in May 2018 (updated June 2020). The investigation included a records search through the California Historical Resources Information System's regional Northwest Center (NWIC), Native American Heritage Commission (NAHC) inquiry, coordination with local tribes, and pedestrian survey of the Site. In addition, representatives of the Blue Lake Rancheria, Bear River Band of Rohnerville Rancheria, and the Wiyot Tribe conducted a field visit with Archaeological Research and Supply Company in May 2018.

Consultation with Native American tribes traditionally and culturally associated with the project area has been an ongoing part of the process. Specifically, an invitation for Tribal Consultation pursuant to AB 52 was sent to the Bear River Band of Rohnerville Rancheria, Blue Lake Rancheria, the Wiyot Tribe, and Cher-Ae Heights Indian Community of the

Trinidad Rancheria that were all identified as potentially being affected by the NAHC on July 29, 2020. The Tribes did not accept the request.

No prehistoric resources were identified within the Project area, but one 1920-50s area historic trash scatter was identified. The cultural resources study concludes that the Project will not impact significant historic or prehistoric archaeological resources so long as earth disturbances do not extend more than 8 feet below the existing ground surface and a heightened inadvertent discovery protocol is implemented.

The Project does not propose to excavate greater than 8 feet in depth. To address the unlikely event that buried tribal cultural resource deposits are discovered during Project activities, the following mitigation measure is proposed relating to inadvertent discovery procedures:

Mitigation Measure TCR-1: Inadvertent Discovery Protocol

If suspected tribal cultural resources, such as lithic materials or ground stone, historic debris, building foundations, or bone are discovered during Project activities, work shall be stopped within 100 feet of the discovery. Contact will be made to the County, a professional archaeologist and representatives from the Blue Lake Rancheria, Bear River Band of Rohnerville Rancheria, and Wiyot Tribe. The professional historic resource consultant, Tribes and County officials will coordinate provide an assessment of the find and determine the significance and recommend next steps.

If human remains are discovered during Project activities, work will stop at the discovery location, within 100 feet, and any nearby area reasonably suspected to overlie adjacent to human remains (Public Resources Code, Section 7050.5). The Humboldt County coroner will be contacted to determine if the cause of death must be investigated. If the coroner determines that the remains are of Native American origin, it is necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the NAHC (Public Resources Code, Section 5097). The coroner will contact the NAHC. The descendants or most likely descendants of the deceased will be contacted, and work will not resume until they have made a recommendation to the landowner or the person responsible for the excavation work for means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in Public Resources Code, Section 5097.98.

Level of Significance After Mitigation:

Potential impacts associated with the disturbance of cultural resources that may be encountered during Project activities would be ***less than significant*** with implementation of Mitigation Measure TCR-1.

XIX. UTILITIES AND SERVICE SYSTEMS. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunication 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 infrastructures, 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?	☐	☐	☒	☐

Discussion

a. Water supply: The Project's annual irrigation demand has been estimated at 52 acre-feet (17 million gallons), with a monthly maximum of approximately 12 acre-feet (4 million gallons) during the month of July. The estimated output of the existing on-site groundwater well is approximately 1.8 acre-feet (576,000 gallons) per day, indicating sufficient water supply to service the irrigation demands of the Project. Drinking water will be supplied by either, or a combination of, a new 100,000-gallon water storage tank fed by the existing well, or an existing potable water supply line serviced by the City of Arcata that crosses the Site.

Wastewater Treatment: The Project area will be served by a new on-site wastewater treatment system to be reviewed and approved by the County Department of Environmental Health. The system will be located on the eastern boundary of the Project

area, as shown on the proposed Site plan. The system was designed by SHN, who conducted a septic suitability assessment and determined that the soils at the Project Site are capable of supporting a new wastewater treatment system of adequate size for the Project. In addition, temporary restrooms may be supplied for Site employees during peak harvest periods.

Storm Water: The Project will add impervious area to the Site resulting from the construction of hoop structures, administration buildings, loading areas, and concrete walkways. A professional engineering firm (Wallace Group) developed a project-specific storm water management design to effectively manage surface runoff. With the engineered design, runoff from the hoop structures is conveyed to storm water retention basins through a series of perforated pipes that run in between all of the hoop houses. The perforated pipes are connected to a larger network of storm drains which convey runoff to two properly sized retention basins. Each basin will be equipped with an outlet structure which will allow excess flow from larger storm events to be controlled and drained into the existing ditches adjacent to the property. The engineering design demonstrates that the post-development runoff volume of the 85th percentile storm will be equal to or less than the pre-development runoff volume, consistent with SWRCB General Construction Permit post-construction storm water requirements.

Electric: The property is serviced by an existing Pacific Gas and Electric (PG&E) service line, and no new or expanded energy facilities are needed in connection with the Project.

Natural Gas: The Project includes installation and operation of three natural gas boilers that will be used to provide temperature control within the hoop structures. The Site is serviced by an existing natural gas line, and no new or expanded gas facilities are needed in connection with the Project.

Telecommunications: The Site is serviced by existing telecommunication and internet lines, and no new or expanded telecommunications facilities are needed in connection with the Project.

The Project would not require relocation or construction of new utilities that may cause significant environmental impacts, and a ***less than significant impact*** would occur.

b. Water for irrigation will be supplied by an existing permitted on-site groundwater well (County Permit Number 18/19-0783). The well is located east of the Project area on an adjoining parcel under common ownership (APN 505-151-012). The well is completed to a depth of approximately 150 feet and has an estimated yield of 400 gallons per minute according to the Well Completion Report. As documented by the well driller (Rich Well Drilling), the well is screened approximately 100' below surface in a state designated groundwater basin (Mad River Valley - Mad River Lowland; 1-008.01), and has no hydraulic connection to any surface water or larger shallow homogeneous aquifer.

Irrigation water will be needed from April through October of each year, with no irrigation water anticipated during the months of November through March. Irrigation will be controlled by an automated irrigation system (e.g., Priva process control system) that will measure soil moisture and the surrounding environment to deliver precise water-nutrient needs. At all times, water will be applied using no more than agronomic rates. The Project's annual irrigation demand has been estimated at 52 acre-feet (17 million gallons), with a monthly maximum of approximately 12 acre-feet (4 million gallons) during the month of July. The estimated output of the existing on-site groundwater well is approximately 1.8 acre-feet (576,000 gallons) per day, indicating sufficient water supply to service the irrigation demands of the Project. An existing potable water supply line serves the Site and will be utilized to supply drinking water for the proposed Project.

Therefore, adequate water supplies are available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years, and a ***less than significant impact*** would occur.

c. The Project area will be served by a new on-site wastewater treatment system to be reviewed and approved by the County Department of Environmental Health. The system will be located on the eastern boundary of the Project area, as shown on the proposed Site plan. The system was designed by SHN, who conducted a septic suitability assessment and determined that the soils at the Project Site are capable of supporting a new wastewater treatment system of adequate size for the Project. Therefore, ***no impact*** would occur relating to capacity of a local wastewater treatment provider.

d. The Project's waste generation will involve miscellaneous agricultural refuse and debris, and cannabis waste. Non-cannabis wastes will include empty soil, soil amendment, and fertilizer bags, empty plant pots or containers, and typical refuse. Refuse will be sorted to divert recyclables such as paper, plastic, glass, and metals from the waste stream and taken to a recycling center. The remaining solid wastes will be collected and deposited into a solid waste receptacle for temporary storage, which will be kept covered. The solid waste will be removed from the Site as needed and disposed of at an authorized waste transfer facility. The solid waste receptacle will be sized appropriately for the volume of waste generated and may be adjusted in size periodically as conditions warrant. It is anticipated that no more than one dumpster per week will be needed. Cannabis waste will include stems, stalks, degraded cannabis plant material, and general cannabis biomass.

Consistent with §8108 and §8308 of the CDFA regulations, cannabis waste will be managed through either or a combination of on-site composting and off-site disposal by properly licensed collection and processing providers. collection and processing by a local agency, a waste hauler franchised or contracted by a local agency, or a private waste hauler permitted by a local agency.

For on-site composting, cannabis waste will be stored and managed in a designated compost management area at the Site. Composting activities will be conducted in accordance with local and state regulations covering composting activities.

For off-site disposal, collection and processing will be performed by a local agency, a waste hauler franchised or contracted by a local agency, or a private waste hauler permitted by a local agency. The cannabis waste will be made unusable and unrecognizable ("destroyed") prior to leaving the Site through a County approved method involving either grinding and/or mixing with other plant materials for composting, or grinding and incorporating the cannabis waste with approved non-consumable solid wastes such that the resulting mixture is at least 50 percent non-cannabis waste.

According to the Humboldt County General Plan, the County, currently trucks its solid waste to a site near Medford, Oregon under a long-term contract. It has a subsequent contract to utilize a landfill located in Anderson, California. Together, the County has committed to contracts which meet its landfill disposal needs over the next 20 years. Therefore, the Project will be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs, and a ***less than significant impact*** would occur.

e. The California Integrated Waste Management Act of 1989 (Public Resources Code Division 30), enacted through Assembly Bill (AB) 939 and modified by subsequent legislation, required all California cities and counties to implement programs to divert waste from landfills (Public Resources Code Section 41780). Compliance with AB 939 is determined by the Department of Resources, Recycling, and Recovery (Cal Recycle). Each county is required to prepare and submit an Integrated Waste Management Plan for expected solid waste generation within the county to the CIWMB. In 2012, the unincorporated area of Humboldt County met or exceeded the waste diversion mandate of 50 percent set by the Integrated Waste Management Act of 1989 (Humboldt County 2014).

The Project's construction and operation activities would comply with all federal, state, and local statutes related to solid waste, including AB 939. This would include compliance with the Humboldt Waste Management Authority's recycling, hazardous waste, and composting programs in the County to comply with AB 939.

Vegetative matter such as root balls, branches, and leaves would be chipped and composted or hauled offsite and disposed of in accordance with County and State requirements.

Therefore, the Project will not violate any federal, state, and local statutes and regulations related to solid waste, and a ***less than significant impact*** would occur.

XX. WILDFIRE. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

Discussion

a-d. The Project Site is located in an area of low Fire Hazard Rating and within the Arcata Fire Protection District. The Project area, and surroundings, are comprised of developed agricultural and scattered rural residential with no significant vegetation or trees. The access roads will be maintained in a state such that they are free of vegetation during times of activity. Fuels and other potentially flammable chemicals will be stored in containers designed for fuel storage that includes secondary containment and a Hazardous Materials Business Plan will be maintained (if applicable regulatory thresholds are exceeded) that outlines storage requirements and spill response procedures. A new 100,000-gallon water storage tank will be located on the Site and available for fire suppression. In addition, the Project will comply with the Humboldt County Fire Safe Ordinance, which provides specific standards for roads providing ingress and egress, signage, and setback distances for maintaining defensible space.

Accordingly, the Project would not exacerbate wildfire risks and impacts ***no impact*** would occur.

XXI. 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?	☐	☐	☒	☐

Discussion

a. All potential impacts to the environment were evaluated as part of the analysis in this document, including potential impacts to habitat for fish or wildlife species, rare or endangered plants and animals, and cultural resources. Where impacts were determined to be potentially significant, mitigation measures have been imposed to reduce those impacts to less than significant levels. Accordingly, with incorporation of the mitigation measures imposed throughout this document, the Project would not substantially degrade the quality of the environment and impacts would be ***less than significant***.

Mitigation:

All mitigation measures discussed is this document shall apply (See Section 6.4 – Discussion of Mitigation Measures, Monitoring, and Reporting Program).

b. The following is a list of currently proposed projects within a 1-mile radius of the project site, based on information available to Humboldt County.

- Ryan Simas (County of Humboldt): 10,000 square feet of new mixed-light commercial cannabis cultivation and 4,000 square feet of new indoor commercial cannabis cultivation on a 48.74-acre parcel (3203 Upper Bay Road/APN 507-161-006).

- Park Meadow Estates (County of Humboldt): 10,000 square feet of new mixed-light commercial cannabis cultivation on a 26.16-acre parcel (2160 Foster Avenue/APN 505-151-001). Water will be supplied by a proposed well. A maximum of four employees are anticipated.

- WE Produce (County of Humboldt): New 160,680 square-foot indoor commercial cannabis operation and 30,000 square-foot commercial cannabis nursery on a 9.69-acre parcel (2730 Foster Avenue/APN 506-231-012). Water will be supplied by rainwater catchment. A maximum of 61 employees are anticipated.

- Foster Ave (City of Arcata) Annexation and proposed single-family, multi-family, and assisted living residential development that would provide housing for approximately 269 residents.

- Sunset Terrace (City of Arcata): 142-unit multi-family residential development between Foster Avenue and Sunset Avenue on an approximately 3.56-acre parcel (1301 Sunset Avenue/APN 505-121-034). The proposed units will be all 1-bedroom apartments. This would result in a density of approximately 40 residential units per acre and would provide housing for a minimum of 142 residents.

- Twin Parks (City of Arcata): 40-unit multi-family residential project on the southeast corner of Foster Avenue and Alliance Road on an approximately 1.02-acre parcel (1301 Foster Avenue/APN 505-131-018). The proposed units will be a mix of 1-bedroom and studio apartments. This would result in a density of approximately 39 residential units per acre and would provide housing for a minimum of 40 residents.

The Project will not have impacts that are individually limited, but cumulatively considerable. This Mitigated Negative Declaration documents the Project's design features and mitigation measures that eliminate the Project's potential impacts on the environment or mitigate the potential impacts to a less-than-significant level. The only potentially significant impacts associated with this project were for cultural resources, paleontological resources, and biological resources. As those potential impacts all are completely mitigated for and are only relevant to the project site itself, there are no impacts that would be viewed as cumulatively considerable.

"When there is no substantial evidence of any individual potentially significant effect by a project under review, the lead agency may reasonably conclude the effects of the project will not be cumulatively considerable." (L*eonoff v. Monterey County Bd. of Supervisors* (1990) 222 Cal.App.3d 1337, 1358; S*ierra Club v. West Side Irrigation Dist*. (2005) 128 Cal.App.4th 690, 701-702; *Hines v. California Coastal Comm'n* (2010) 186 Cal.App.4th 830, 858.)

Further, the Project is consistent with the "Mitigated Negative Declaration for Medical Marijuana Land Use Ordinance – Phase IV – Commercial Cultivation of Cannabis for Medical Use" that Humboldt County adopted in connection with its adoption of the Medical Marijuana Land Use Ordinance. The County MND expressly analyzed the cumulative environmental impacts of commercial cannabis cultivation operations as permitted under the CMMLUO.

The Project is consistent with the CMMLUO and the County MND, and has incorporated mitigation measures to lessen potentially significant impacts to less than significant. Therefore, the Project would not contribute to environmental effects that are individually limited, but cumulatively considerable, and impacts would be ***less than significant***.

Mitigation:

All mitigation measures discussed is this document shall apply (See Section 6.4 – Discussion of Mitigation Measures, Monitoring, and Reporting Program).

c. The Project's potential to result in environmental effects that could adversely affect human beings, either directly or indirectly, has been discussed throughout this document. There are no instances where the proposed project has the potential to result in substantial direct or indirect adverse effects to human beings.

Mitigation:

All mitigation measures discussed is this document shall apply (See Section 6.4 – Discussion of Mitigation Measures, Monitoring, and Reporting Program).

6.4 Discussion of Mitigation Measures, Monitoring, and Reporting Program

The Initial Study found that the project could result in potentially significant adverse impacts unless mitigation measures are required. A list of mitigation that addresses and mitigates potentially significant adverse impacts to a level of non-significance follows.

Biological Resources

The Site is heavily disturbed and actively managed for agricultural production. During the field surveys conducted as part of the SHN Biological Resources Assessment, no special status plant or animal species were documented within the Project area. However, due to the potential presence of nesting birds at the Site, the following mitigation is recommended:

Mitigation Measure BR-1: Preconstruction Bird Surveys

Project-related vegetation management should occur outside the bird nesting season, (February 28 through September 1). If project-related brush clearing must occur during the breeding season, a preconstruction nesting-bird survey shall be conducted by a qualified biologist no more than two weeks prior to Project activities. If active nests are found, a no-disturbance buffer zone of a minimum of 250 feet shall be established. Within this buffer zone, no construction shall take place until September 1 or until the biologist determines that the nest is no longer active.

A Project-specific wetland delineation conducted by SHN did not identify any wetlands within the Project area, but did identify a man-made roadside drainage ditch containing wetland indicators located along the existing access road at the southwest border of the Project Site. The following mitigation measure is recommended to ensure no impacts to potentially jurisdictional waters.

Mitigation Measure BR-2: Protection of Drainage Ditches

Use standard BMPs during ground disturbance activities and remove construction debris and waste from and up to 100 feet around drainage ditches.

Cultural Resources

To address the unlikely event that buried cultural resource deposits are discovered during Project activities, the following mitigation measure is proposed relating to inadvertent discovery procedures:

Mitigation Measure CR-1: Inadvertent Discovery Protocol

If suspected cultural resources, such as lithic materials or ground stone, historic debris, building foundations, or bone are discovered during Project activities, work shall be stopped within 100 feet of the discovery. Contact will be made to the County, a

professional archaeologist and representatives from the Blue Lake Rancheria, Bear River Band of Rohnerville Rancheria, and Wiyot Tribe. The professional historic resource consultant, Tribes and County officials will coordinate provide an assessment of the find and determine the significance and recommend next steps.

If human remains are discovered during Project activities, work will stop at the discovery location, within 100 feet, and any nearby area reasonably suspected to overlie adjacent to human remains (Public Resources Code, Section 7050.5). The Humboldt County coroner will be contacted to determine if the cause of death must be investigated. If the coroner determines that the remains are of Native American origin, it is necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the NAHC (Public Resources Code, Section 5097). The coroner will contact the NAHC. The descendants or most likely descendants of the deceased will be contacted, and work will not resume until they have made a recommendation to the landowner or the person responsible for the excavation work for means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in Public Resources Code, Section 5097.98.

Geology and Soils

The following mitigation measure is proposed to address the unlikely event that buried paleontological resources are discovered during Project activities:

Mitigation Measure GEO-1: Inadvertent Discovery Protocol

In the event that paleontological resources are discovered, work shall be stopped within 100 feet of the discovery and a qualified paleontologist shall be notified. The paleontologist shall document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in State CEQA Guidelines Section 15064.5. If fossilized materials are discovered during construction, excavations within 100 feet of the find shall be temporarily halted or diverted until the discovery is examined by a qualified paleontologist. The paleontologist shall notify the appropriate agency to determine procedures that would be followed before construction is allowed to resume at the location of the find.

Tribal Cultural Resources

To address the unlikely event that buried tribal cultural resource deposits are discovered during Project activities, the following mitigation measure is proposed relating to inadvertent discovery procedures.

Mitigation Measure TCR-1: Inadvertent Discovery Protocol

If suspected tribal cultural resources, such as lithic materials or ground stone, historic debris, building foundations, or bone are discovered during Project activities, work shall

be stopped within 100 feet of the discovery. Contact will be made to the County, a professional archaeologist and representatives from the Blue Lake Rancheria, Bear River Band of Rohnerville Rancheria, and Wiyot Tribe. The professional historic resource consultant, Tribes and County officials will coordinate provide an assessment of the find and determine the significance and recommend next steps.

If human remains are discovered during Project activities, work will stop at the discovery location, within 100 feet, and any nearby area reasonably suspected to overlie adjacent to human remains (Public Resources Code, Section 7050.5). The Humboldt County coroner will be contacted to determine if the cause of death must be investigated. If the coroner determines that the remains are of Native American origin, it is necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the NAHC (Public Resources Code, Section 5097). The coroner will contact the NAHC. The descendants or most likely descendants of the deceased will be contacted, and work will not resume until they have made a recommendation to the landowner or the person responsible for the excavation work for means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in Public Resources Code, Section 5097.98.

A Mitigation and Monitoring Report is attached.

6.5 Earlier Analyses

Earlier analysis may be used where, pursuant to the tiering, program EIR, or other CEQA process, one or more effects have been adequately analyzed in an earlier EIR or negative declaration. Section 16063(c)(3)(D). In this case a discussion should identify the following:

a) Earlier analyses used. Identify earlier analyses and state where they are available for review.

    1. Humboldt County General Plan & EIR
    2. Humboldt County Zoning Ordinance
    3. CMMLUO and its Mitigated Negative Declaration for Medical Marijuana Land Use Ordinance – Phase IV – Commercial Cultivation of Cannabis for Medical Use

Items 1-3 are available for review at Humboldt County Planning Division.

Earlier analysis has been used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration (CEQA Guidelines Section 15063 (c)(3)(D)).

b) Impacts Adequately Addressed. Some of the effects from the above checklist were within the scope of and adequately analyzed in the document(s) listed in Section 2.5.a., pursuant to applicable legal standards.

c) Mitigation Measures. It was not necessary to include mitigation measures, which were incorporated or refined from the document(s) listed in Section 2.5.a to reduce effects that are "Less than Significant with Mitigation Incorporated."

HUMBOLDT COUNTY PLANNING & BUILDING DEPARTMENT MITIGATION MONITORING AND REPORTING PROGRAM

Arcata Land Company, LLC, Conditional Use Permit

APNs 506-231-021 and 505-151-011; Record Number: 12255

Assessor Parcel Numbers: 506-231-021 and 505-151-011

Mitigation measures were incorporated into conditions of project approval for the above referenced project. The following is a list of these measures and a verification form that the conditions have been met. For conditions that require ongoing monitoring, attach the Monitoring Form for Continuing Requirements for subsequent verifications.

MITIGATION MEASURES:

BIOLOGICAL RESOURCES

BR-1: Preconstruction Bird Surveys

Project-related vegetation management should occur outside the bird nesting season, (February 28 through September 1). If project-related brush clearing must occur during the breeding season, a preconstruction nesting-bird survey shall be conducted by a qualified biologist no more than two weeks prior to Project activities. If active nests are found, a no-disturbance buffer zone of a minimum of 250 feet shall be established. Within this buffer zone, no construction shall take place until September 1 or until the biologist determines that the nest is no longer active.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
If vegetation removal is to occur during the bird nesting season (Feb 28 – Sept 1).	Annually		HCP&BD*		

BR-2: Protection of Drainage Ditches

Use standard BMPs during ground disturbance activities and remove construction debris and waste from and up to 100 feet around drainage ditches.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken

During construction activity and project operations.	Continuous		HCP&BD*		

Cultural Resources

CR-1: Inadvertent Discovery Protocol
If suspected cultural resources, such as lithic materials or ground stone, historic debris, building foundations, or bone are discovered during Project activities, work shall be stopped within 100 feet of the discovery. Contact will be made to the County, a professional archaeologist and representatives from the Blue Lake Rancheria, Bear River Band of Rohnerville Rancheria, and Wiyot Tribe. The professional historic resource consultant, Tribes and County officials will coordinate provide an assessment of the find and determine the significance and recommend next steps.

If human remains are discovered during Project activities, work will stop at the discovery location, within 100 feet, and any nearby area reasonably suspected to overlie adjacent to human remains (Public Resources Code, Section 7050.5). The Humboldt County coroner will be contacted to determine if the cause of death must be investigated. If the coroner determines that the remains are of Native American origin, it is necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the NAHC (Public Resources Code, Section 5097). The coroner will contact the NAHC. The descendants or most likely descendants of the deceased will be contacted, and work will not resume until they have made a recommendation to the landowner or the person responsible for the excavation work for means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in Public Resources Code, Section 5097.98.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
During construction activity and project operations.	Continuous		HCP&BD*		

Geology and Soils

GEO-1: Inadvertent Discovery Protocol
In the event that paleontological resources are discovered, work shall be stopped within 100 feet of the discovery and a qualified paleontologist shall be notified. The paleontologist shall document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in State CEQA Guidelines Section 15064.5. If fossilized materials are discovered during construction, excavations within 100 feet of the find shall be temporarily halted or diverted until the discovery is examined by a

qualified paleontologist. The paleontologist shall notify the appropriate agency to determine procedures that would be followed before construction is allowed to resume at the location of the find.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
During construction activity and project operations.	Continuous		HCP&BD*		

Tribal Cultural Resources

TCR-1: Inadvertent Discovery Protocol

If suspected cultural resources, such as lithic materials or ground stone, historic debris, building foundations, or bone are discovered during Project activities, work shall be stopped within 100 feet of the discovery. Contact will be made to the County, a professional archaeologist and representatives from the Blue Lake Rancheria, Bear River Band of Rohnerville Rancheria, and Wiyot Tribe. The professional historic resource consultant, Tribes and County officials will coordinate provide an assessment of the find and determine the significance and recommend next steps.

If human remains are discovered during Project activities, work will stop at the discovery location, within 100 feet, and any nearby area reasonably suspected to overlie adjacent to human remains (Public Resources Code, Section 7050.5). The Humboldt County coroner will be contacted to determine if the cause of death must be investigated. If the coroner determines that the remains are of Native American origin, it is necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the NAHC (Public Resources Code, Section 5097). The coroner will contact the NAHC. The descendants or most likely descendants of the deceased will be contacted, and work will not resume until they have made a recommendation to the landowner or the person responsible for the excavation work for means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in Public Resources Code, Section 5097.98.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
During construction activity and project operations.	Continuous		HCP&BD*		

* HCP&BD = Humboldt County Planning and Building Department

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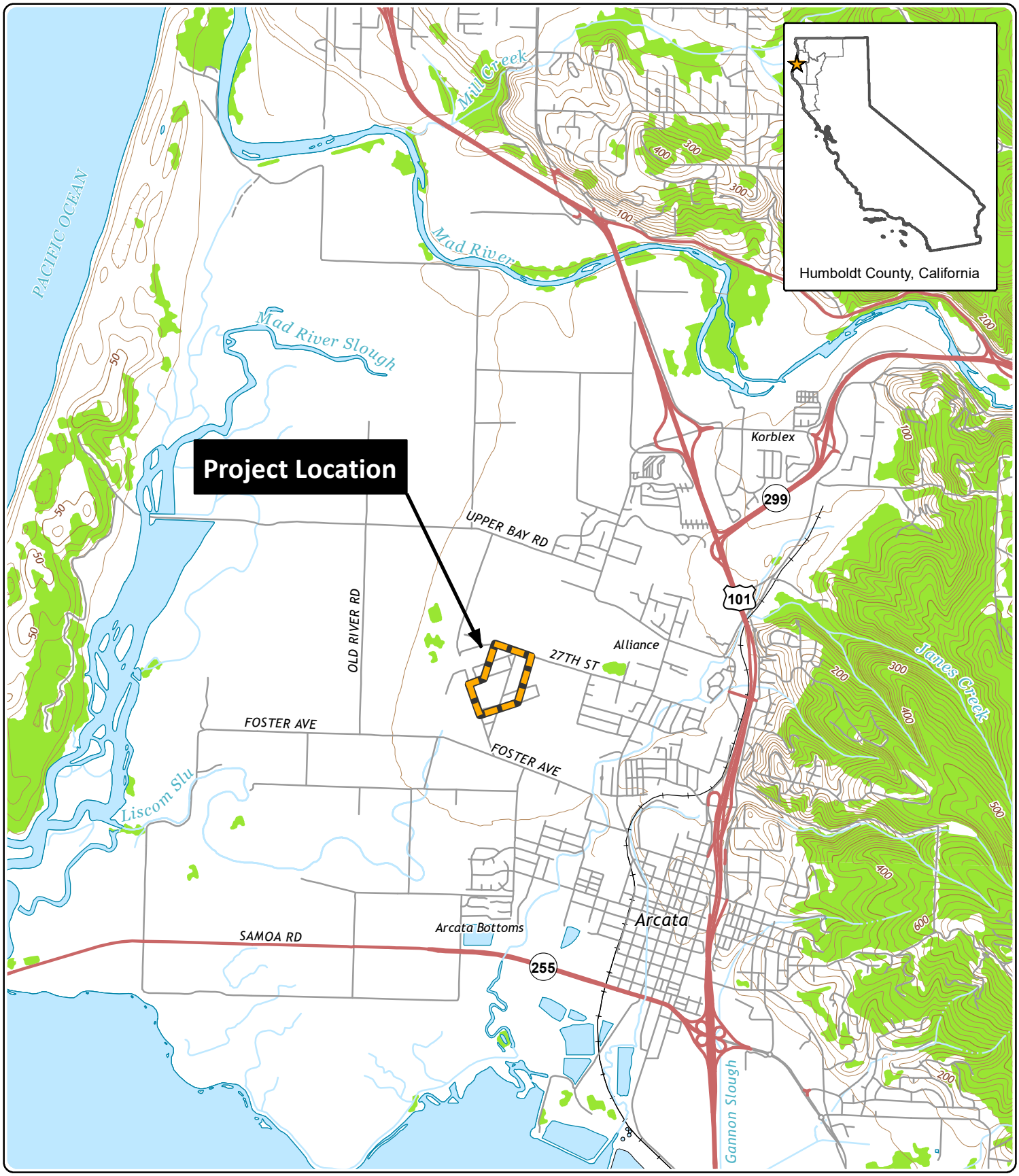
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Wallace Group. “Arcata Land Company LLC Site Improvements.” September 23, 2020.

W-Trans. “Traffic Impact Study for the Arcata Land Company Commercial Cannabis Project.” October 14, 2020.



Data: United State Geological Survey, Arcata North, Arcata South, Eureka, & Tyee City Quadrangle California 7.5'. 2015. Data Downloadable Online. Accessed [07/18/2018].

Legend:

Site Boundary

0 0.5 1 Miles N

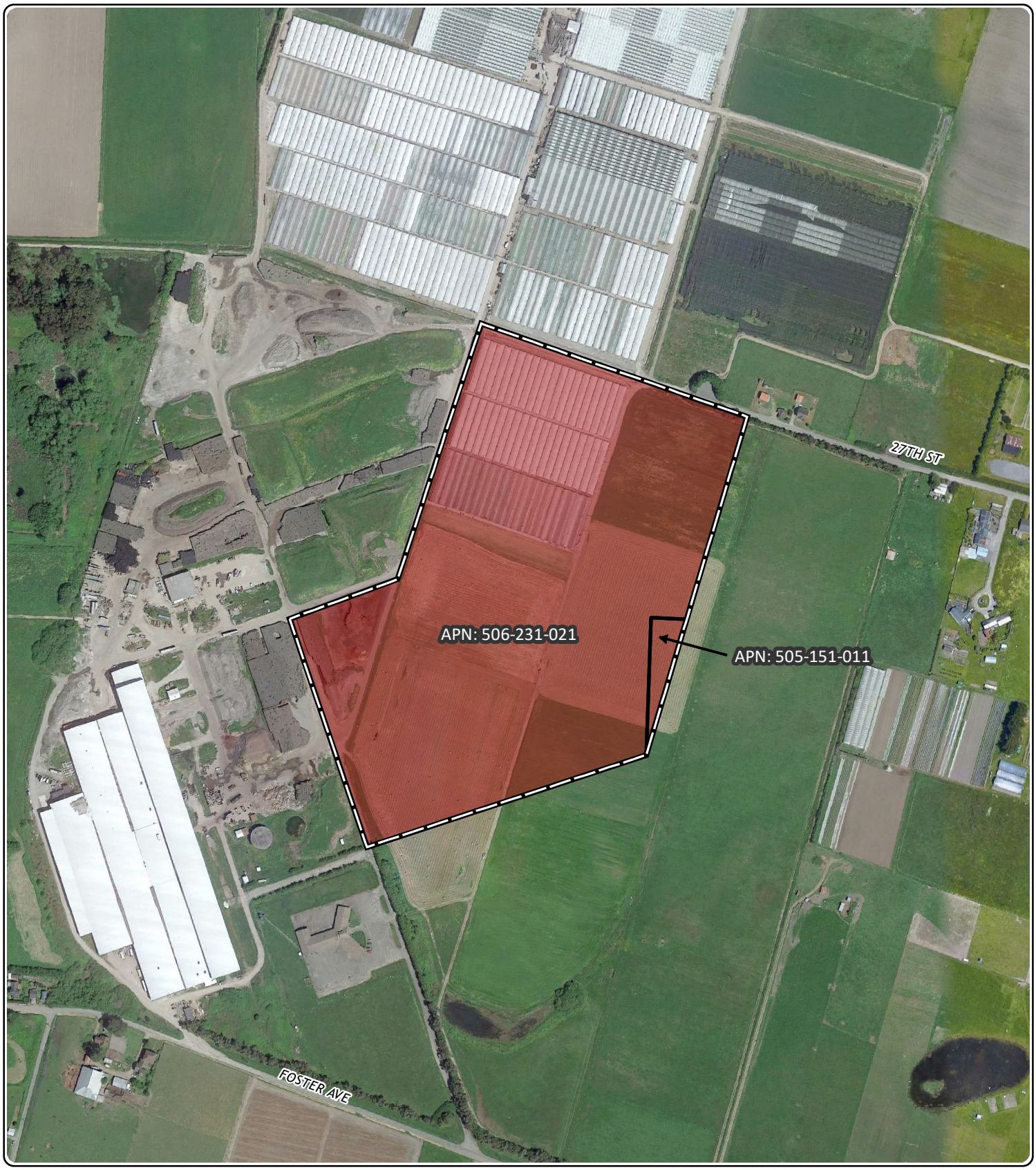
Site and Vicinity Map
Commercial Cannabis Outdoor and Mixed-Light Cultivation Project (App 12255)
Arcata Land Company LLC
Humboldt County, California

Figure 1

10/19/2020

Disclaimer: The data was mapped for planning purposes only. No liability is assumed for accuracy of the data shown.

COMPASS LAND GROUP



Aerial photo adapted from Google Earth Maps Imagery Date 5/27/2016.
Parcels mapped per Plot Plan & Survey by Kelly O'Hern Associates. March 2020.
Humboldt County GIS Zoning. Humboldt County Building & Planning, 04/13/2020. Accessed Online.

Legend:
- Site Boundary
- County Parcel
- Heavy Industrial Zoning

0 300 600 Feet

N

Parcel and Zoning Map
Commercial Cannabis Outdoor and Mixed-Light Cultivation Project (App 12255)
Arcata Land Company LLC
Humboldt County, California

Figure 2

10/28/2020

Disclaimer: The data was mapped for planning purposes only. No liability is assumed for accuracy of the data shown.

COMPASS LAND GROUP



Aerial photo adapted from Google Earth Maps Imagery Date 5/27/2016.
Parcel D mapped per Plot Plan & Survey by Kelly O'Hern Associates. March 2020.

Legend:

Site Boundary

0 300 600 Feet N

Existing Conditions Site Map
Commercial Cannabis Outdoor and
Mixed-Light Cultivation Project (App 12255)
Arcata Land Company LLC
Humboldt County, California

Figure 3

10/28/2020

Disclaimer: The data was mapped for planning purposes only. No liability is assumed for accuracy of the data shown.

COMPASS LAND GROUP



Aerial photo adapted from Google Earth Maps Imagery Date 5/27/2016.
Geology of the Cape of Mendocino, Eureka, Garberville, and Southwestern part of Hayfork. Sheet 1 Eureka. R.J. McLaughlin et al. USGS. 2000. Accessible Online. ngmdb.usgs.gov

Legend:

Site Boundary

Qal - Quaternary Alluvium

0 300 600 Feet

N

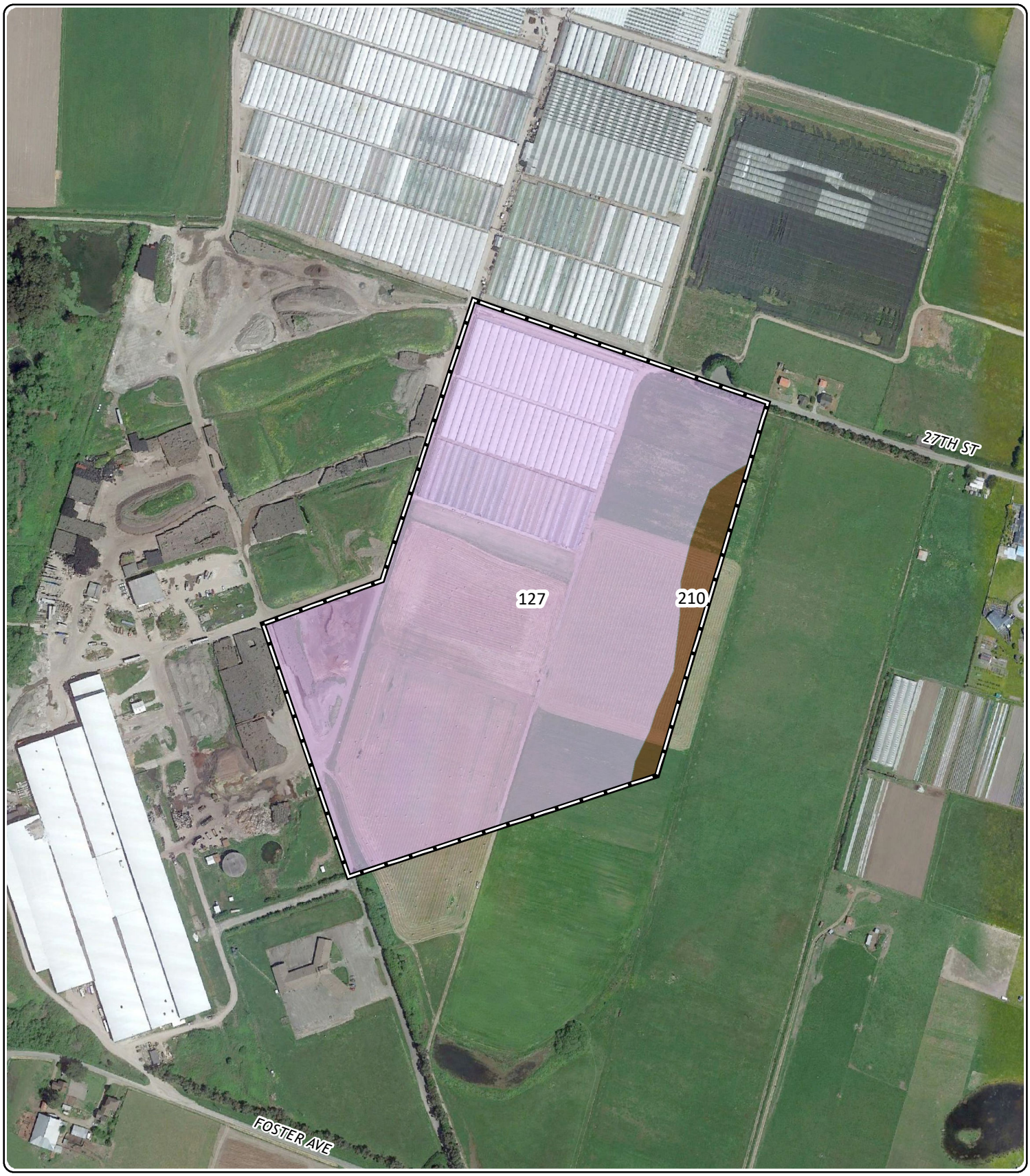
Site Geology Map
Commercial Cannabis Outdoor and Mixed-Light Cultivation Project (App 12255)
Arcata Land Company LLC
Humboldt County, California

Figure 4

10/28/2020

Disclaimer: The data was mapped for planning purposes only. No liability is assumed for accuracy of the data shown.

COMPASS LAND GROUP



Aerial photo adapted from Google Earth Maps Imagery Date 5/27/2016.
Humboldt County Community Development Services, Humboldt County Agricultural Land Soils, 2001. Accessible Online.

Legend:

Site Boundary
127 - Jollygiant, 0 to 2 percent slopes
210 - Dungan, 0 to 2 percent slopes

0 300 600 Feet N

NRCS Soils Map
Commercial Cannabis Outdoor and Mixed-Light Cultivation Project (App 12255)
Arcata Land Company LLC
Humboldt County, California

Figure 5

10/28/2020

Disclaimer: The data was mapped for planning purposes only. No liability is assumed for accuracy of the data shown.

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Aerial photo adapted from Google Earth Maps Imagery Date 5/27/2016.
Humboldt County Community Development Services, Humboldt County Agricultural Land Soils, 2001. Accessible Online.

Legend:
- Site Boundary
- Ba7 - silty clay loam
- Fe2 - silt loam

0 300 600 Feet N

Humboldt County Prime Agricultural Soils
Commercial Cannabis Outdoor and Mixed-Light Cultivation Project (App 12255)
Arcata Land Company LLC
Humboldt County, California

Figure 6

10/28/2020

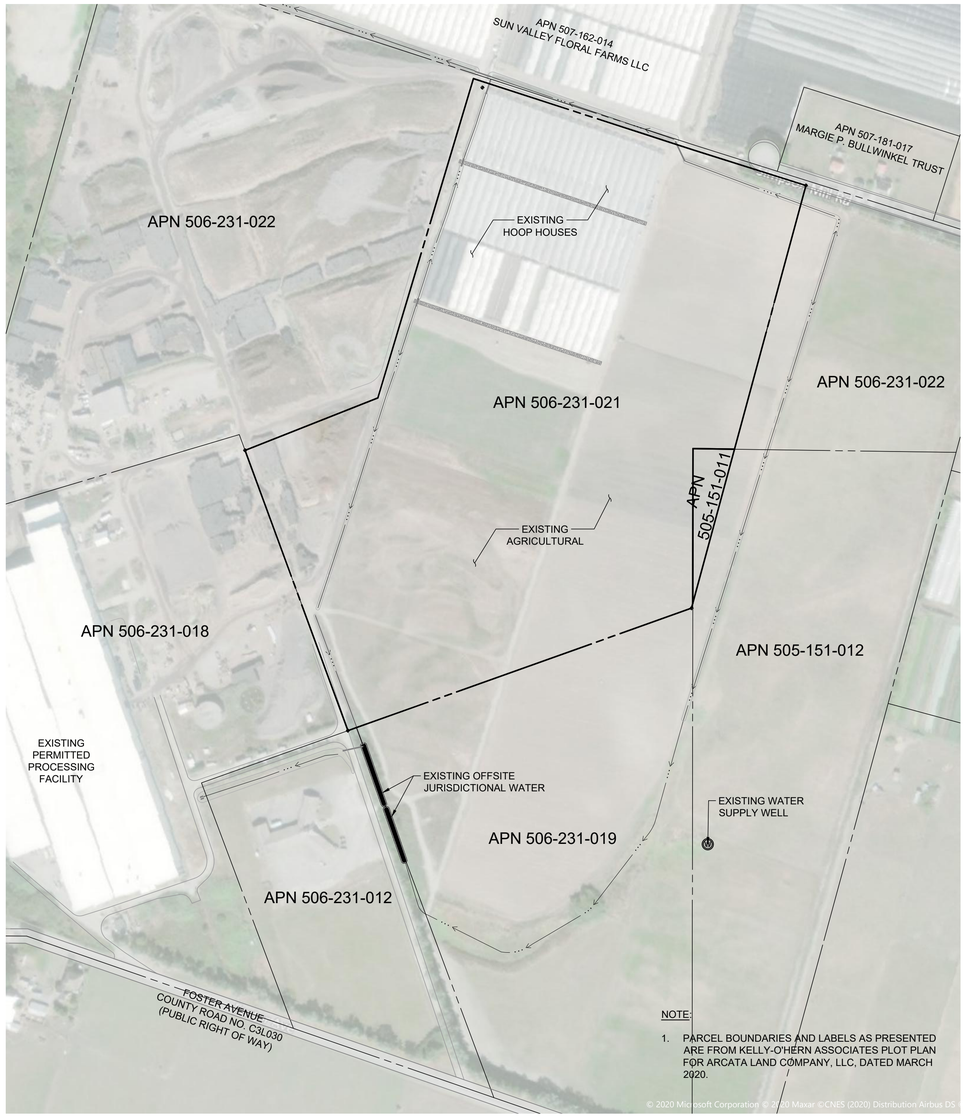
Disclaimer: The data was mapped for planning purposes only. No liability is assumed for accuracy of the data shown.

COMPASS LAND GROUP

FILE NAME: 1595-0001-ALC-COV.DWG

ARCATA LAND COMPANY, LLC
COMMERCIAL CANNABIS OUTDOOR LIGHT DEPRIVATION AND MIXED-LIGHT CULTIVATION PROJECT SITE PLAN

3318 FOSTER AVENUE
ARCATA, CA 95521



NOTE:

1. PARCEL BOUNDARIES AND LABELS AS PRESENTED ARE FROM KELLY-O'HERN ASSOCIATES PLOT PLAN FOR ARCATA LAND COMPANY, LLC, DATED MARCH 2020.

EXISTING CONDITIONS SITE MAP
1" = 200'-0"



SITE LOCATION
NTS



SITE VICINITY
NTS

Sheet List Table	
Sheet Number	Sheet Title
C1.0	COVER SHEET
C2.0	EXISTING CONDITIONS
C3.0	SITE AND UTILITY PLAN - OVERVIEW
C3.1	SITE AND UTILITY PLAN - AREA 1
C3.2	SITE AND UTILITY PLAN - AREA 2
C3.3	SITE AND UTILITY PLAN - AREA 3
C3.4	SITE AND UTILITY PLAN - AREA 4 AND 5
C4.0	DETAILS - HOOP HOUSES
C4.1	DETAILS - DETENTION BASINS
C4.2	DETAILS - DRAINAGE STRUCTURES
C4.3	DETAILS - BUILDINGS
C5.0	LIGHTING PLAN
C5.1	LIGHTING DETAILS

APPLICANT/OWNER

ARCATA LAND COMPANY, LLC
3318 FOSTER AVENUE
ARCATA, CA 95521
CONTACT: LANE DEVRIES

SITE INFORMATION

APNS: 505-151-011 AND 506-231-021
SECTIONS 19, 20, 29, &30 T6N, R1E, HUMBOLDT MERIDIAN, UNINCORPORATED HUMBOLDT COUNTY

ZONING: MH-Q (HEAVY INDUSTRIAL, QUALIFIED COMBINING ZONE)

ADDRESS: 3318 FOSTER AVENUE, ARCATA, CA 95521

LOT SIZE: 38.2 AC

PRELIMINARY EARTHWORK

AREA OF DISTURBANCE: 33.1 AC
CUT: 18,586 CY
FILL: 46,586 CY (37,640 CY SAND/SOIL FILL FOR HOOP HOUSE AREAS)
MAX DEPTH CUT: 5.9'

SITE IMPROVEMENTS

BUILDINGS
- HOOP HOUSES AREA 1: 6.2 AC
- HOOP HOUSES AREA 2: 3.9 AC
- HOOP HOUSES AREA 3: 4.3 AC
  - INCLUDES 1.2 AC OF MOTHER HOOP HOUSES
- HOOP HOUSES AREA 4: 8.5 AC
  - INCLUDES 0.6 AC OF STARTS AND 3.4 AC OF MIXED-LIGHT
- ADMINISTRATION BUILDING: 21,000 SF
- PROPAGATION AND OFFICE BUILDING: 39,500 SF
- UTILITY BUILDING: 1,600 SF

PARKING AND LOADING
- (3) ADA STALLS (1 VAN ACCESSIBLE)
- (116) STANDARD STALLS
- (4) LOADING STALLS
- IN ACCORDANCE WITH HUMBOLDT COUNTY CODE TITLE III DIVISION 1 CH 4 SECTION 314-109

PAVEMENT SURFACES
- CONCRETE: 40,500 SF

STORMWATER DETENTION
- BASIN 1 STORAGE CAPACITY: 0.50 AF
- BASIN 2 STORAGE CAPACITY: 0.33 AF

WATER STORAGE
- WATER STORAGE TANK: 100,000 GALLONS

ARCATA LAND COMPANY, LLC
3318 FOSTER AVENUE, ARCATA, CA
COVER
SHEET C1.0

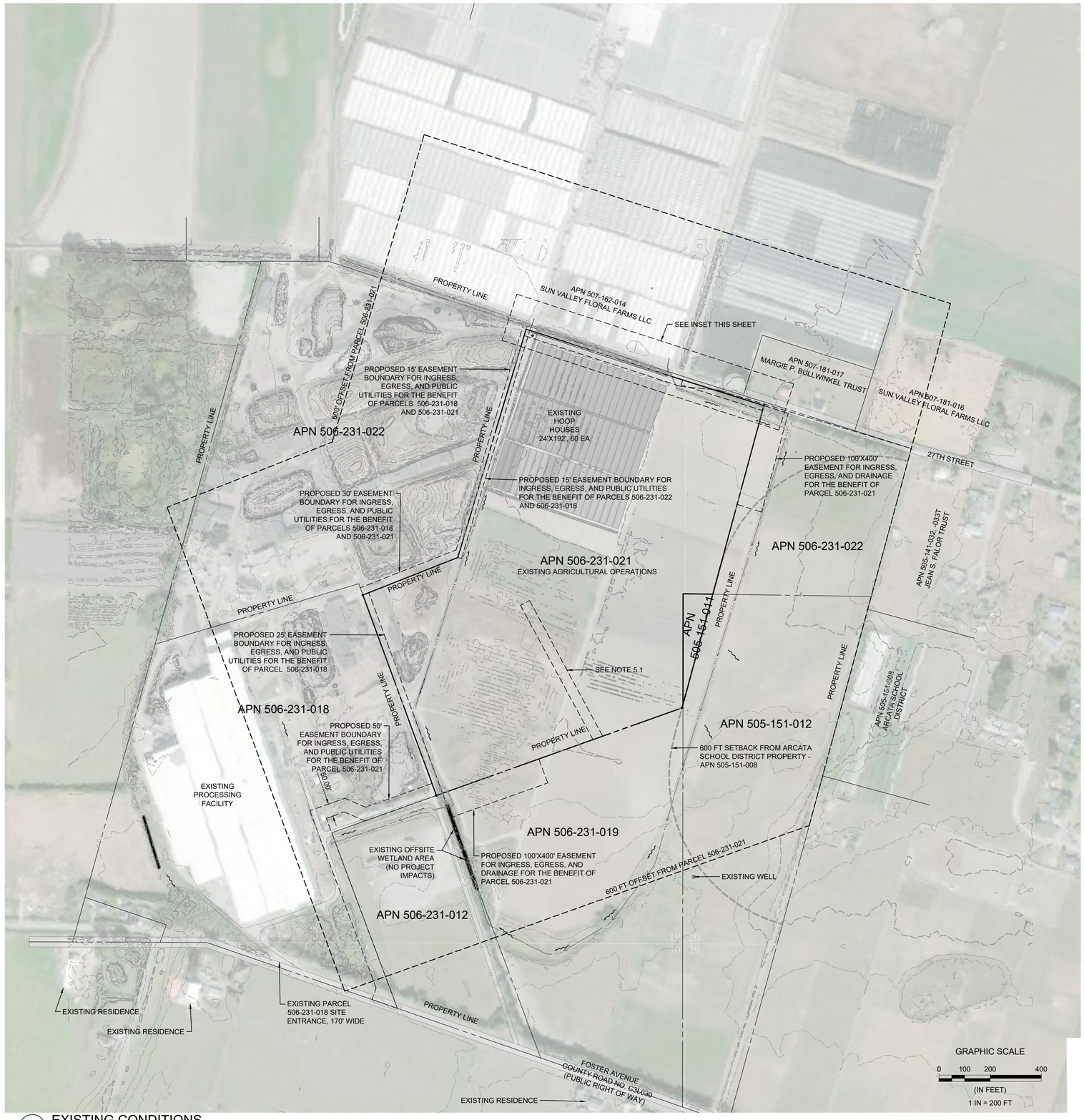
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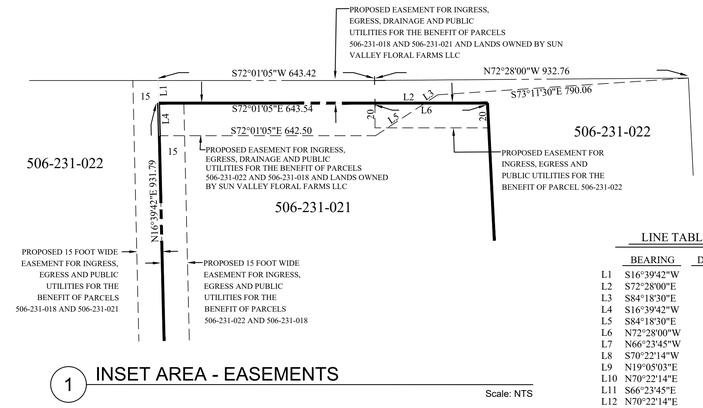
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FILE NAME: 1595-0001-ALC-EXST-COND.DWG



1 EXISTING CONDITIONS

Scale: 1:200



1 INSET AREA - EASEMENTS

Scale: NTS

LINE TABLE

	BEARING	DISTANCE
L1	S16°39'42"W	13.60
L2	S72°28'00"E	125.27
L3	S84°18'30"E	17.54
L4	S16°39'42"W	26.40
L5	S84°18'30"E	128.64
L6	N72°28'00"W	332.85
L7	N66°23'45"W	87.59
L8	S70°22'14"W	75.00
L9	N19°05'03"E	48.35
L10	N70°22'14"E	145.60
L11	S66°23'45"E	87.59
L12	N70°22'14"E	276.33

NOTE:

1. THE PROPERTY LINES SHOWN ON THIS PLOT PLAN ARE BASED ON BOOK 74 OF SURVEYS, PAGES 137 & 138. APNS WERE ASSIGNED AFTER A LOT LINE ADJUSTMENT COMPLETED IN MAY 2020.
2. BASIS OF BEARINGS: BOOK 74 OF SURVEYS, PAGES 137 & 138.
3. ACCORDING TO FLOOD INSURANCE RATE MAP NO. 06023C0690F, WITH A DATE OF IDENTIFICATION OF NOVEMBER 4, 2016, FOR COMMUNITY NUMBER 060060 IN HUMBOLDT COUNTY, STATE OF CALIFORNIA, A PORTION OF THE SUBJECT PROPERTY IS LOCATED WITHIN FLOOD ZONE A (WITHIN A 100-YEAR FLOOD ZONE) AND A PORTION IS LOCATED WITHIN FLOOD ZONE X (AREAS OF MINIMAL FLOODING). THE APPROXIMATE LOCATION OF THE LINE BETWEEN ZONE A AND ZONE X HAS BEEN LOCATED PER SAID FLOOD INSURANCE RATE MAP NO. 06023C069CF.
   - 3.1. BASED ON FEMA CASE NO. 98-09-088A, REVALIDATED BY CASE NO. 11-09-0847V EFFECTIVE JUNE 22, 2017, ARCATA LAND COMPANY PARCELS ARE NOW IN ZONE X, OUTSIDE OF ZONE A.
4. DIRECTIONS OF RUNOFF ARE PER AERIAL MAPPING AND ARE APPROXIMATE.
5. THE EXISTING PROPERTY MAY BE ENCUMBERED BY THE FOLLOWING RECORDED INSTRUMENTS:
   - 5.1. BOOK 251 DEEDS, PAGE 372 - EASEMENT GRANTED TO PACIFIC GAS AND ELECTRIC COMPANY FOR PUBLIC UTILITIES - SHOWN HEREON. EASEMENT WILL BE ELIMINATED WITHIN THE BOUNDARY OF 506-231-021.
6. NO MAJOR VEGETATION REMOVAL PROPOSED.
7. THERE ARE NO SCHOOLS, SCHOOL BUS STOPS, PLACES OF WORSHIP, PUBLIC PARKS, OR TRIBAL CULTURAL RESOURCES WITHIN 600 FEET OF THE CULTIVATION SITE.
8. THERE ARE NO JURISDICTIONAL WATERS WITHIN THE PROJECT BOUNDARY PER THE WETLANDS AND OTHER WATERS DELINEATION REPORT PREPARED BY SHN ENGINEERS (JUNE 2020).
9. ACCESS TO THE SUBJECT PROPERTY IS VIA A PROPOSED EASEMENT ACROSS PARCEL 506-231-018 ROM FOSTER AVENUE, SHOWN HEREON. FOSTER AVENUE IS A COUNTY MAINTAINED AD WITH AN ASPHALT- PAVED ROAD SURFACE OF 20 FEET IN WIDTH, WITH A GRADUAL GRADE.
10. WATER SOURCE IS AN EXISTING AGRICULTURAL WELL LOCATED ON PARCEL 505-151-012 TO THE SOUTH OWNED BY ARCATA LAND COMPANY AS SHOWN HEREON.
11. THERE ARE NO WATER DIVERSIONS ON THE SUBJECT PROPERTY.
12. MH ZONING REQUIRES 50' SETBACKS FROM THE FRONT AND REAR PARCEL BOUNDARIES; SIDE SETBACKS ARE SET AT 10% OF THE AVERAGE LOT WIDTH (HUMBOLDT COUNTY LAND USE REGULATIONS TITLE III, DIVISION 1, CHAPTER 4, SECTION 314-3.3). FOR THIS PARCEL, THIS SETBACK IS CALCULATED AS 90.6'.
13. NO STORAGE OF FERTILIZERS, PESTICIDES, OR HAZARDOUS MATERIALS WILL OCCUR ON PARCEL 506-231-021. ALL STORAGE WILL OCCUR ON AN ADJACENT PARCEL OWNED BY ARCATA LAND COMPANY, LLC.

LEGEND:

DESCRIPTION
PERIMETER SECURITY FENCE
GRADING LIMITS
PARCEL BOUNDARY
SETBACK BOUNDARY
EASEMENT BOUNDARY
FLOW LINE
OVERHEAD WIRE (EXISTING)
OVERHEAD WIRE (PROPOSED)
WATER LINE (EXISTING)
WATER LINE (PROPOSED)
SANITARY SEWER LINE (EXISTING)
SANITARY SEWER LINE (PROPOSED)
STORM DRAIN LINE (EXISTING)
STORM DRAIN LINE (PROPOSED)
GAS LINE (EXISTING)
GAS LINE (PROPOSED)
GENERALIZED SURFACE FLOW DIRECTION
MONUMENT
EXISTING TREE
EXISTING HYDRANT
EXISTING POWER POLE
LIMITS OF ALL-WEATHER SURFACE
GREENHOUSE CULTIVATION AREA
BUILDING

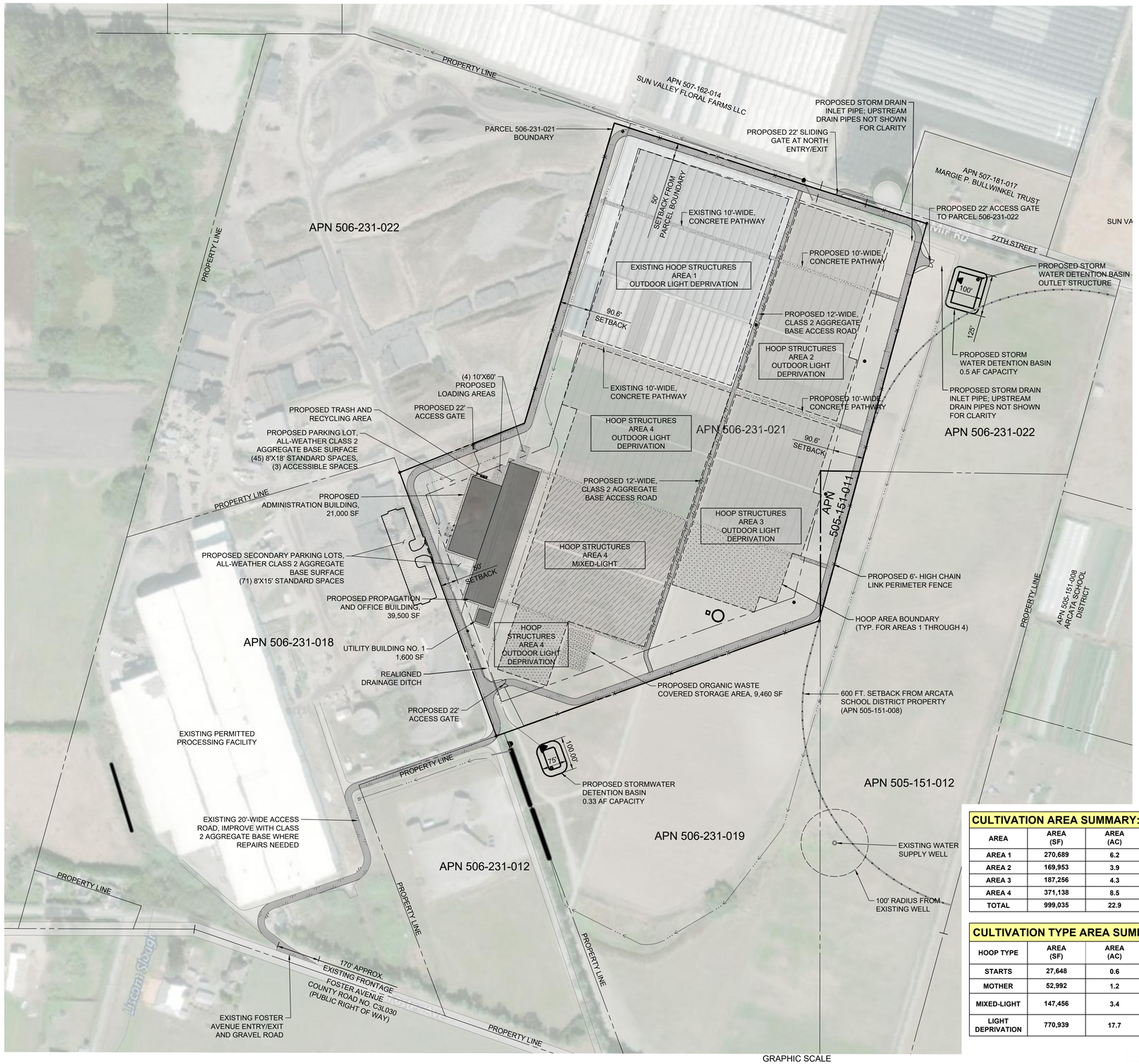
N

ARCATA LAND COMPANY, LLC
3318 FOSTER AVENUE, ARCATA, CA
EXISTING CONDITIONS
SHEET C2.0

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FILE NAME: 1595-0001-ALC-SITE.DWG



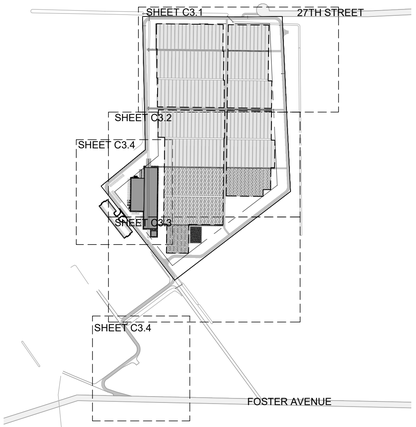
GRAPHIC SCALE

0 75 150 300

(IN FEET)

1 IN = 150 FT

N



A KEY PLAN

Scale: 1:500

LEGEND:

	DESCRIPTION
X	PERIMETER SECURITY FENCE, 6' HEIGHT
	GRADING LIMITS
	PARCEL BOUNDARY
	SETBACK BOUNDARY
	EASEMENT BOUNDARY
	FLOW LINE
O/H	OVERHEAD WIRE (EXISTING)
O/H	OVERHEAD WIRE (PROPOSED)
W	WATER LINE (EXISTING)
W	WATER LINE (PROPOSED)
SS	SANITARY SEWER LINE (EXISTING)
SS	SANITARY SEWER LINE (PROPOSED)
SD	STORM DRAIN LINE (EXISTING)
SD	STORM DRAIN LINE (PROPOSED)
GAS	GAS LINE (EXISTING)
GAS	GAS LINE (PROPOSED)
	GENERALIZED SURFACE FLOW DIRECTION
	MONUMENT
	EXISTING TREE
	EXISTING HYDRANT
	EXISTING POWER POLE
	LIMITS OF ALL-WEATHER SURFACE
37	HOOP HOUSE CULTIVATION AREA AND HOOP HOUSE DESIGNATION NUMBER
	MIXED-LIGHT HOOP HOUSE
	MOTHER PLANT HOOP HOUSE
	STARTS HOOP HOUSE
	BUILDING

CULTIVATION AREA SUMMARY:

AREA	AREA (SF)	AREA (AC)	192' LONG HOOP HOUSE	177' LONG HOOP HOUSE	144' LONG HOOP HOUSE	TOTAL HOOP HOUSE COUNT
AREA 1	270,689	6.2	36	18	0	54
AREA 2	169,953	3.9	23	11	0	34
AREA 3	187,256	4.3	35	0	2	37
AREA 4	371,138	8.5	72	0	0	72
TOTAL	999,035	22.9	166	29	2	197

CULTIVATION TYPE AREA SUMMARY:

HOOP TYPE	AREA (SF)	AREA (AC)	LOCATION	HOOP NOS.
STARTS	27,648	0.6	AREA 4	192 - 197
MOTHER	52,992	1.2	AREA 3	164 - 175
MIXED-LIGHT	147,456	3.4	AREA 4	148 - 163 176 - 191
LIGHT DEPRIVATION	770,939	17.7	AREAS 1-4	1-147

ARCATA LAND COMPANY, LLC
3318 FOSTER AVENUE, ARCATA, CA
SITE AND UTILITY PLAN
SHEET C3.0

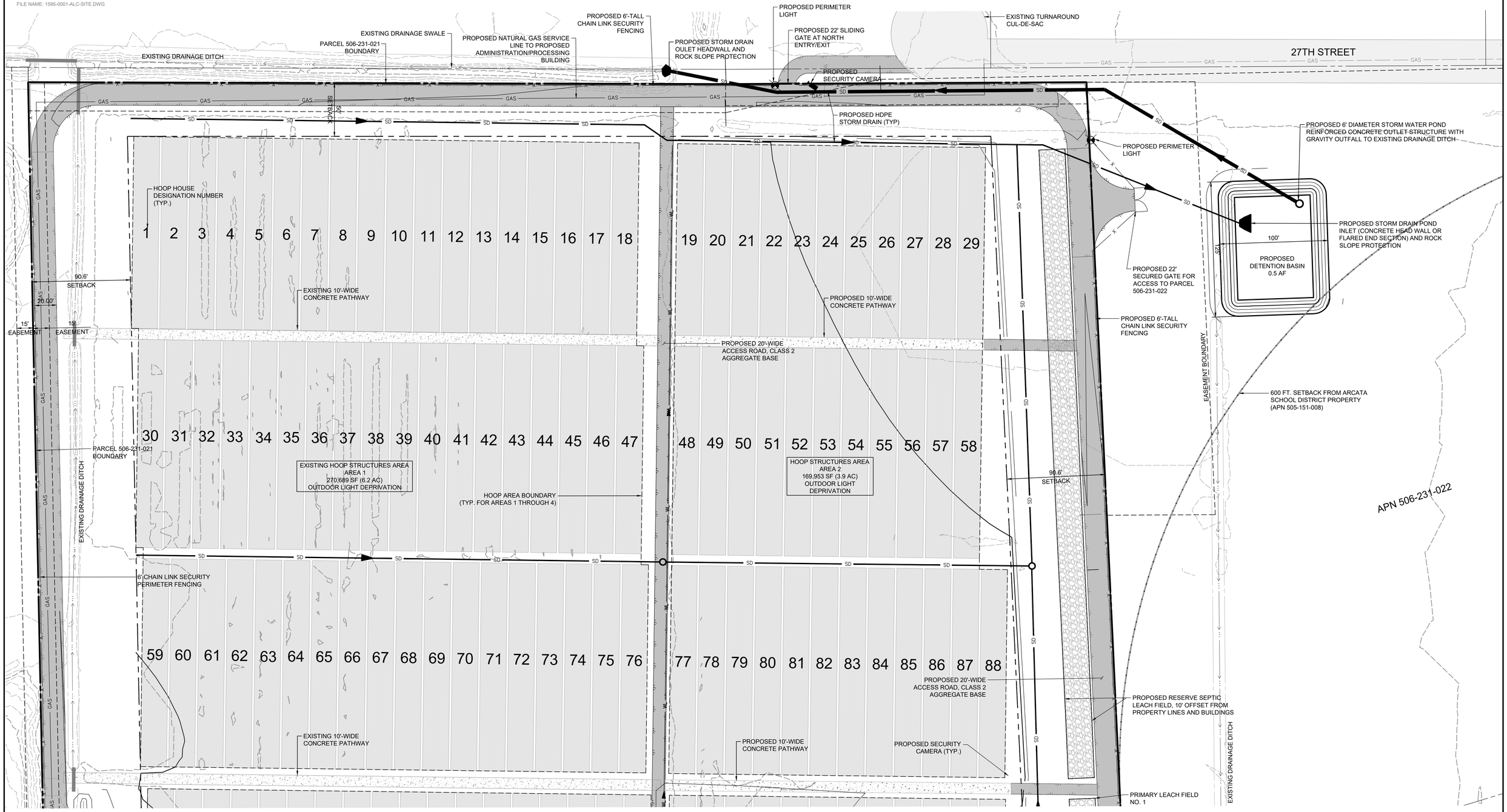
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GRAPHIC SCALE

0 20 40 80

(IN FEET)

1 IN = 40 FT

N

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3318 FOSTER AVENUE, ARCATA, CA
SITE AND UTILITY PLAN - AREA 1
SHEET C3.1

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PROPOSED 20' ACCESS ROAD, CLASS 2 AGGREGATE BASE ALL-WEATHER SURFACE

PROPOSED NATURAL GAS SERVICE LINE TO PROPOSED ADMINISTRATION/ PROPAGATION/OFFICE BUILDING

EXISTING 10'-WIDE CONCRETE PATHWAY

PROPOSED 10'-WIDE CONCRETE PATHWAY

HOOP AREA BOUNDARY (TYP. FOR AREAS 1 THROUGH 4)

89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106

107 108 109 110 111 112 113 114 115 116 117 118

90.6' SETBACK

RESERVE LEACH FIELD

PRIMARY LEACH FIELD NO. 1

PRIMARY LEACH FIELD NO. 2

PRIMARY LEACH FIELD NO. 3

PRIMARY LEACH FIELD NO. 4

PRIMARY LEACH FIELD NO. 5

PRIMARY LEACH FIELD NO. 6

PRIMARY LEACH FIELD NO. 7

PRIMARY LEACH FIELD NO. 8

APN 506-231-021

APN 505-151-011

15' EASEMENT

15' EASEMENT

PROPOSED HDPE STORM DRAIN PIPE

PROPOSED HDPE STORM DRAIN PIPE (TYP)

PROPOSED 12' ACCESS ROAD, CLASS 2 AGGREGATE BASE ALL-WEATHER SURFACE

PROPOSED SEPTIC AND PUMP TANK; MINIMUM 25' SETBACK FROM DRAINAGE SWALE

HOOP STRUCTURES AREA 4
371,138 SF (8.5 AC)
MIXED-LIGHT
(HOOP NOS. 148-163; 176-191)
AND OUTDOOR LIGHT DEPRIVATION

HOOP STRUCTURES AREA AREA 3
187,256 SF (4.3 AC)
OUTDOOR LIGHT DEPRIVATION

PROPOSED SEPTIC EFFLUENT DISTRIBUTION LINE

PROPOSED SEPTIC DISTRIBUTION BOX

119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134

135 136 137 138 139 140 141 142 143 144 145 146 147

30' EASEMENT

PROPOSED 8' CHAIN LINK SECURITY FENCING

PROPOSED SECURITY CAMERA

PROPOSED PERIMETER LIGHT

(2) 10'X60' PROPOSED LOADING AREAS

UTILITY BLDG NO. 2
40'X40';
1,600 SF

PROPOSED 10'-WIDE CONCRETE PATHWAY

MIXED-LIGHT HOOP HOUSE (TYP.)

PROPOSED STORM DRAIN CULVERT

PROPOSED 10'-WIDE CONCRETE PATHWAY

PROPOSED SECURITY CAMERA (TYP.)

10' OFFSET

PROPOSED PARKING LOT WITH (45) 8'X18' STANDARD SPACES AND (3) ACCESSIBLE SPACES, ALL-WEATHER CLASS 2 AGGREGATE BASE SURFACE

PROPOSED WALL-MOUNT SECURITY LIGHT (TYP.)

PROPOSED SEPTIC LEACH FIELD, 10' OFFSET FROM PROPERTY LINE AND BUILDINGS (TYP.)

(2) 10'X60' PROPOSED LOADING AREAS

REALIGNED DRANAGE DITCH

PROPOSED PERIMETER LIGHTING, APPROX. 500' O.C.

148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163

164 165 166 167 168 169 170 171 172 173 174 175

90.6' SETBACK

BEGIN PROPOSED 6' CHAIN LINK SECURITY FENCING

PROPOSED HDPE STORM DRAIN PIPE (TYP)

PROPOSED ADMINISTRATION BUILDING, 21,000 SF

PROPOSED PROPAGATION AND OFFICE BUILDING, 39,500 SF

50' SETBACK

25' EASEMENT

PROPOSED BOOSTER PUMPING SYSTEM AND SHED

MOTHER PLANT HOOP HOUSE (TYP.)

ADA PARKING SPACES, (2) 14'X18' (1) 18'X18' VAN ACCESSIBLE (3) TOTAL

PROPOSED WATER LINE FROM TANK TO SERVICE

PROPOSED 100,000 GAL. TANK FOR FIRE SUPPRESSION AND DOMESTIC WATER STORAGE

PROPOSED WATER SUPPLY LINE TO WATER STORAGE TANK

PROPOSED BICYCLE RACK; 12 SPACES

176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191

PROPOSED PARKING LOT WITH (56) 8'X15' STANDARD SPACES, SEE SHEET C3.4

PROPOSED 6' SIDEWALK

GRAPHIC SCALE

0 20 40 80

(IN FEET)

1 IN = 40 FT

N

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3318 FOSTER AVENUE, ARCATA, CA
SITE AND UTILITY PLAN - AREA 2
SHEET C3.2

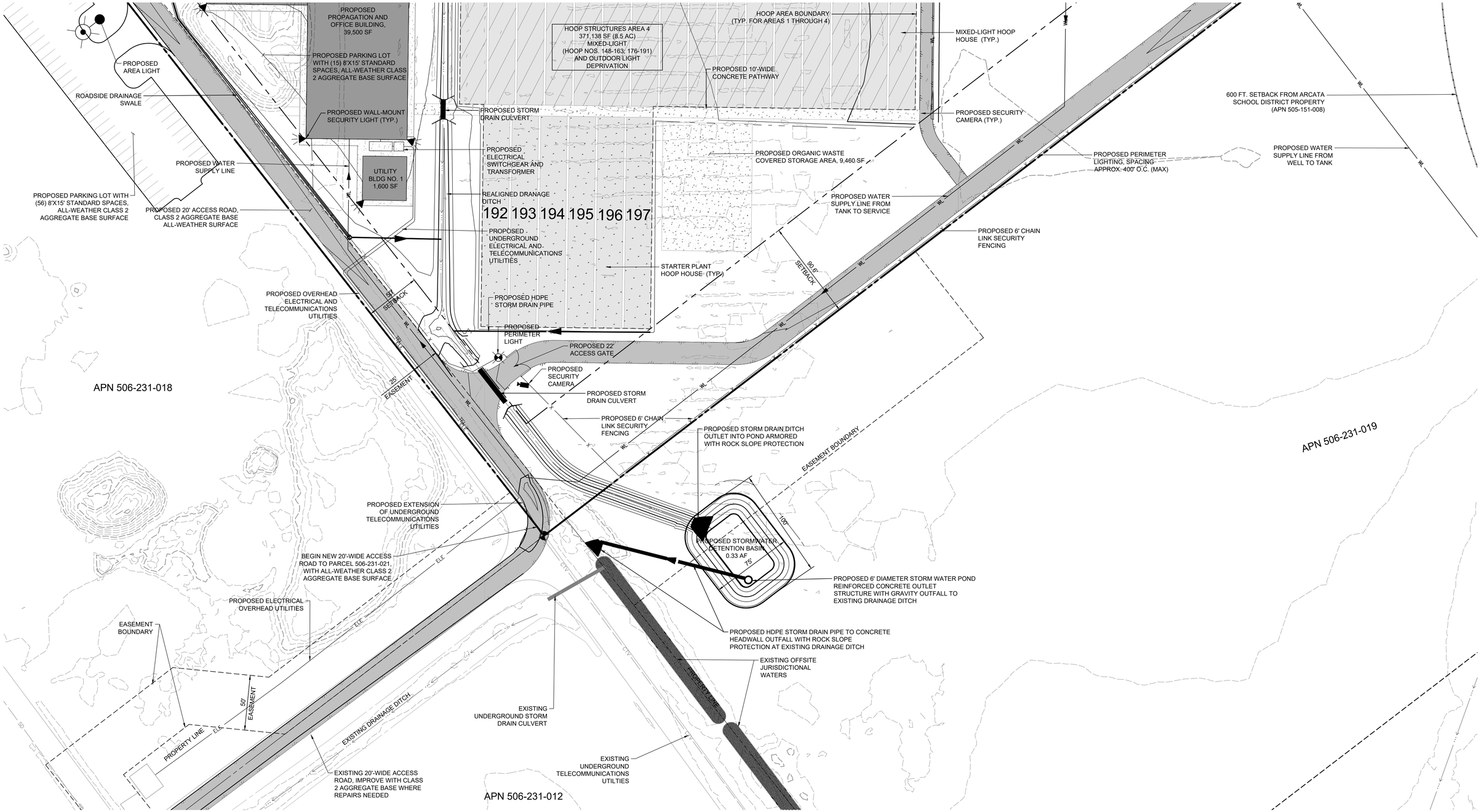
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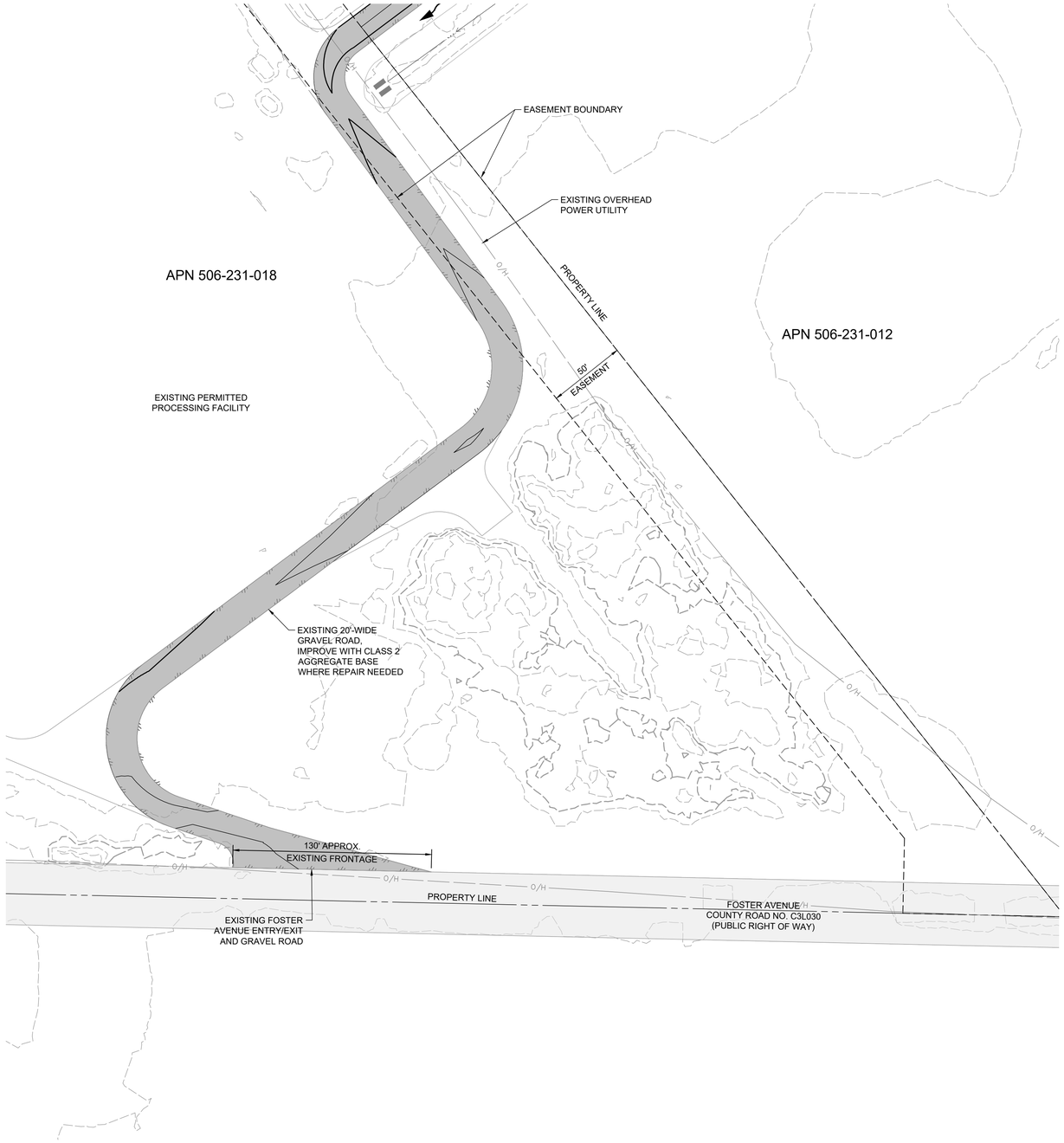


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SITE AND UTILITY PLAN - AREA 3
SHEET C3.3

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FILE NAME: 1595-0001-ALC-SITE.DWG



1 AREA 4 SITE AND UTILITY PLAN

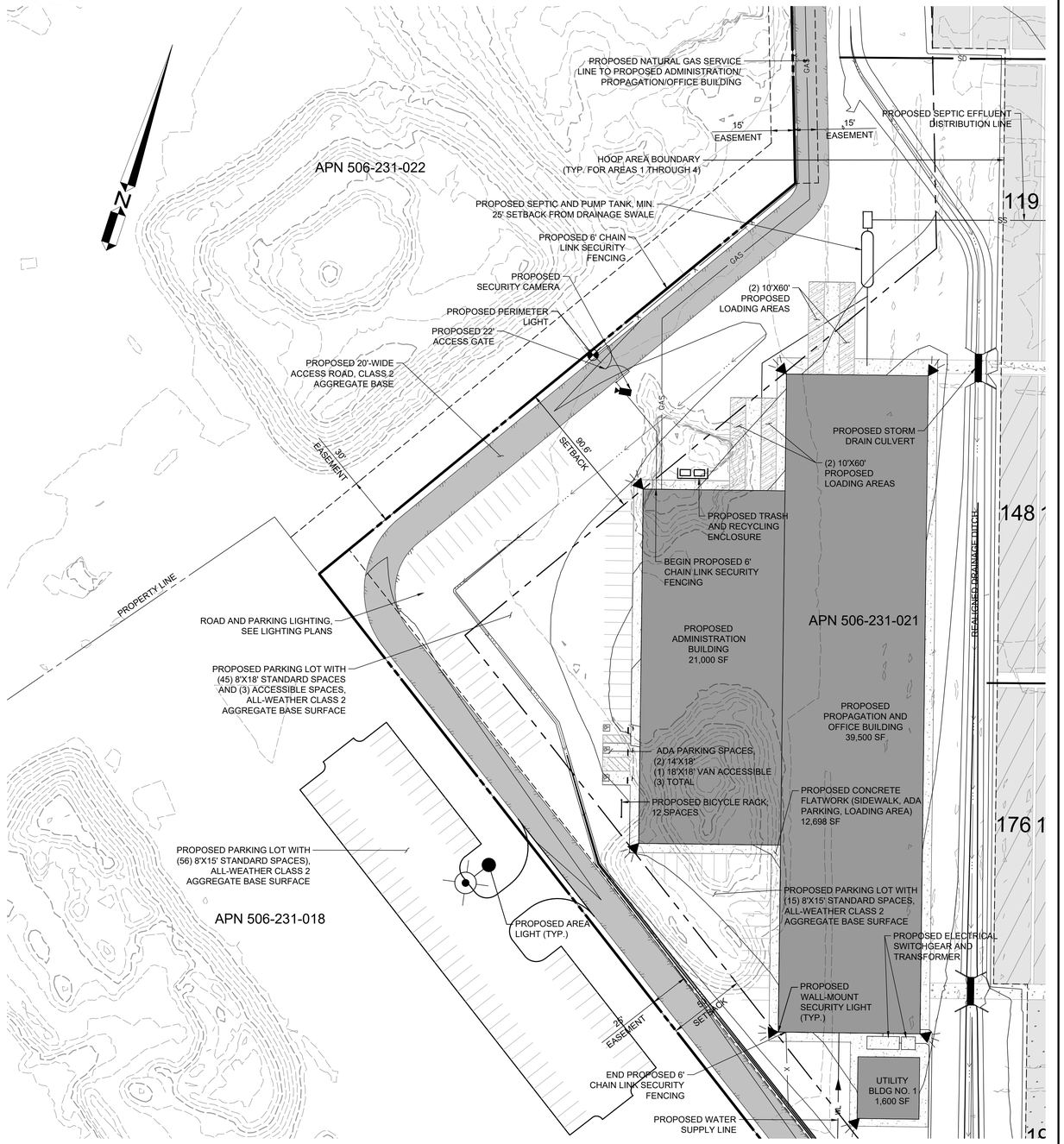
Scale: 1:40

GRAPHIC SCALE

0 20 40 80

(IN FEET)

1 IN = 40 FT



2 AREA 5 SITE AND UTILITY PLAN

Scale: 1:40

GRAPHIC SCALE

0 20 40 80

(IN FEET)

1 IN = 40 FT

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SITE AND UTILITY PLAN - AREAS 4 & 5
SHEET C3.4

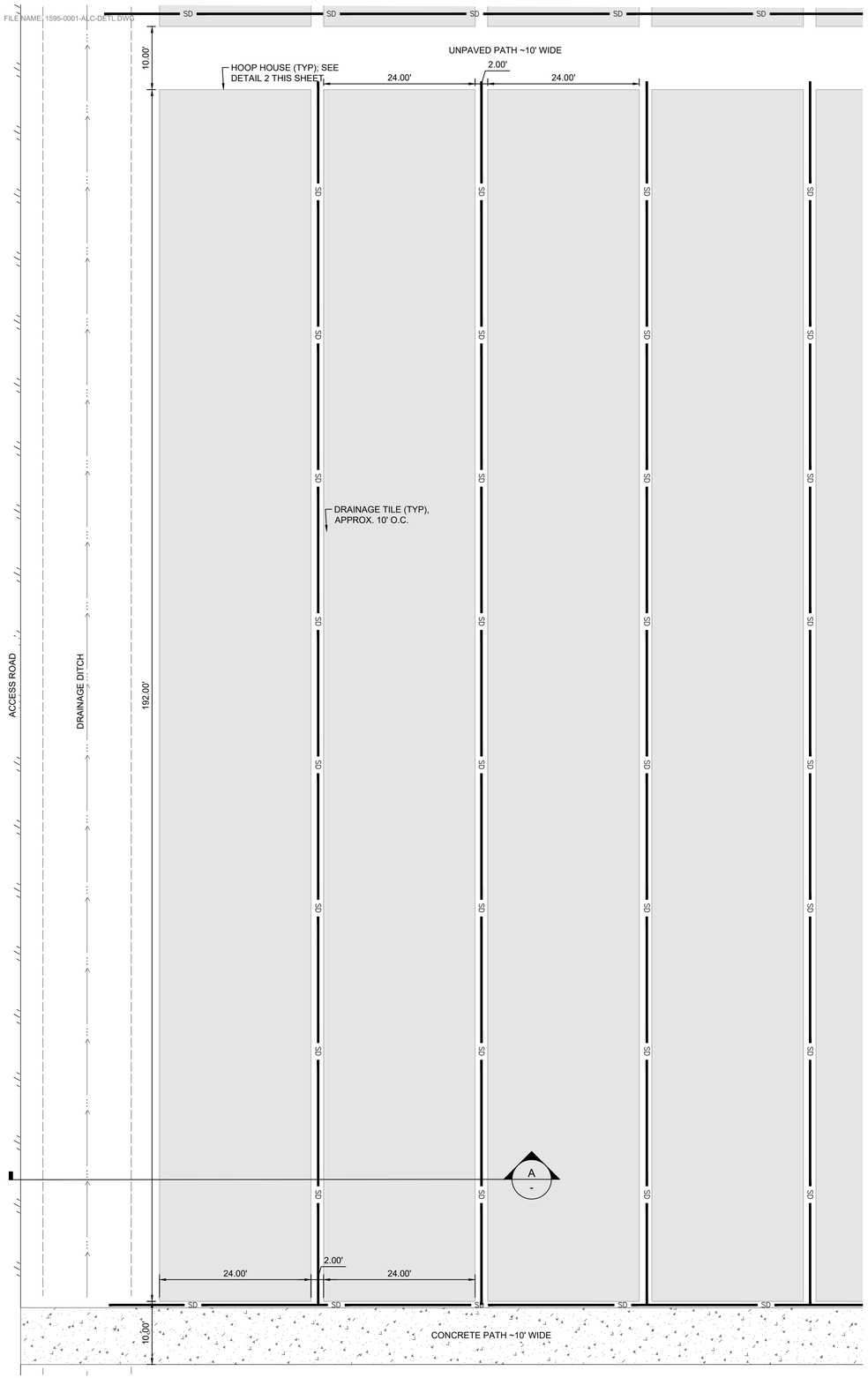
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WATER RESOURCES

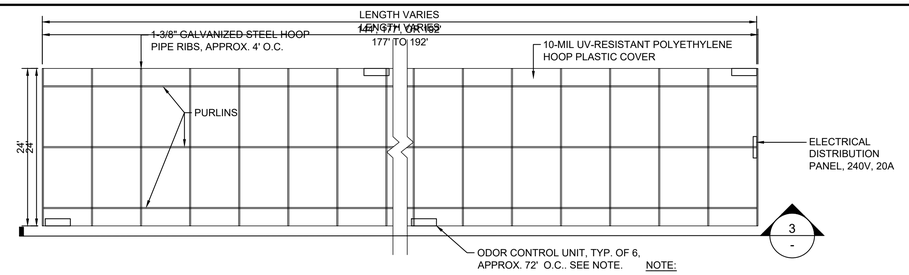
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FILE NAME: 1595-0001-ALC-DET1.DWG



1 EXISTING HOOP HOUSE AND SUBDRAIN LAYOUT

Scale: 1:10

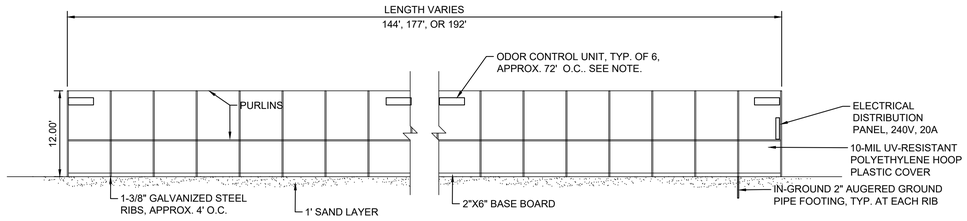


NOTE:

1. ODOR CONTROL SHALL BE PROVIDED THROUGH CARBON BASED AIR FILTERS. HOOP HOUSE AIR VOLUME RANGES FROM 37,200 TO 49,500 CF ODOR FLOW CONTROL UNITS SHALL BE SIZED TO TREAT A TOTAL OF 3 AIR VOLUMES PER HOUR.

2 PROPOSED HOOP DETAIL - PLAN

Scale: NTS

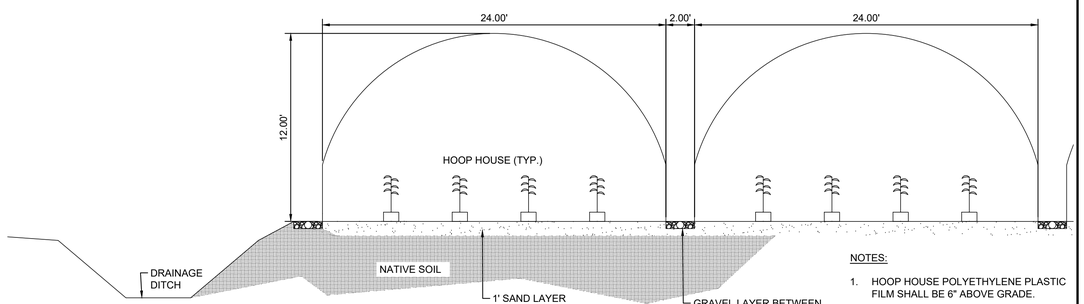


NOTE:

1. HOOP HOUSE POLYETHYLENE PLASTIC FILM SHALL BE 6" ABOVE GRADE.
2. THE PLASTIC COVERING FOR THE MIXED-LIGHT HOOP HOUSES WILL BE INCLUDE A BLACK-OUT PLASTIC/FABRIC TO PREVENT LIGHT FROM ESCAPING AT NIGHT.
3. ODOR CONTROL SHALL BE PROVIDED THROUGH CARBON BASED AIR FILTERS. HOOP HOUSE AIR VOLUME RANGES FROM 37,200 TO 49,500 CF ODOR FLOW CONTROL UNITS SHALL BE SIZED TO TREAT A TOTAL OF 3 AIR VOLUMES PER HOUR.

3 PROPOSED HOOP DETAIL - SECTION

Scale: NTS



NOTES:

1. HOOP HOUSE POLYETHYLENE PLASTIC FILM SHALL BE 6" ABOVE GRADE.
2. DRIP IRRIGATION RUNS THROUGH THE CENTER OF ROW CROPS.

A HOOP ELEVATION

Scale: 1:5

GRAPHIC SCALE

0 5 10 20

(IN FEET)

1 IN = 10 FT

N

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DETAILS - HOOP HOUSES
SHEET C4.0

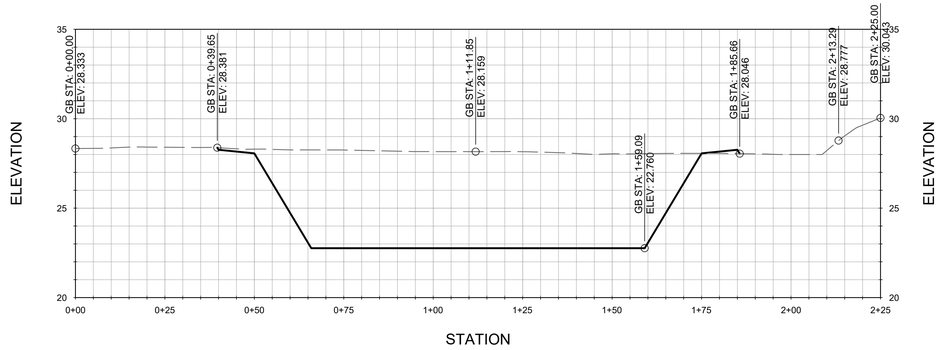
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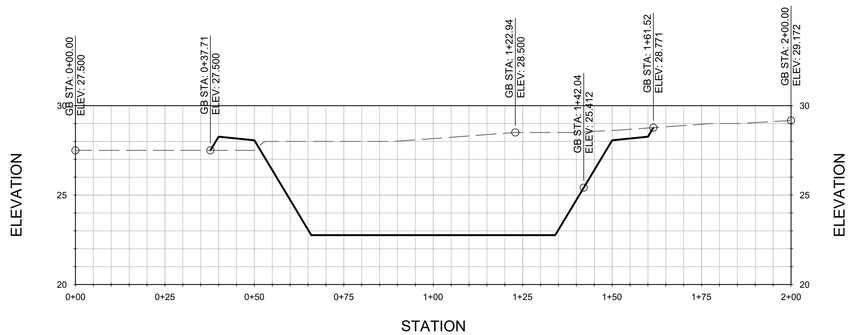
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FILE NAME: 1595-0001-ALC-DETL.DWG



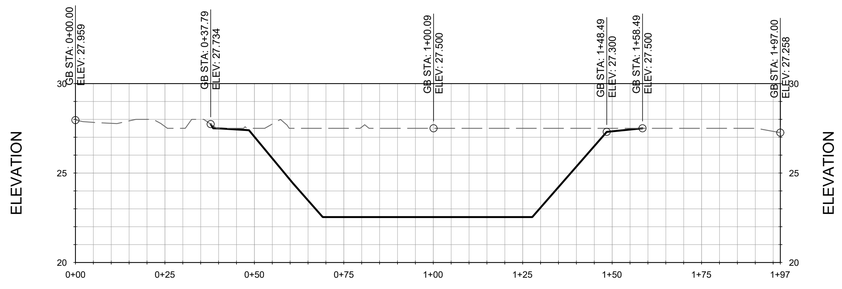
1 STORMWATER DETENTION BASIN NO. 1 NORTH-SOUTH SECTION

Scale: HORIZ 1:20; VERT 1:4



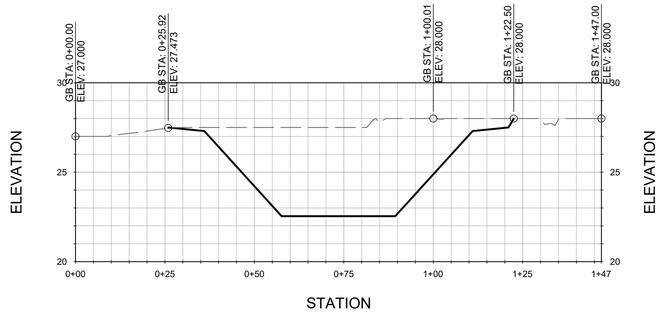
2 STORMWATER DETENTION BASIN NO. 1 EAST-WEST SECTION

Scale: HORIZ 1:20; VERT 1:4



3 STORMWATER DETENTION BASIN NO. 2 NORTH-SOUTH SECTION

Scale: HORIZ 1:20; VERT 1:4



4 STORMWATER DETENTION BASIN NO. 2 EAST-WEST SECTION

Scale: HORIZ 1:20; VERT 1:4

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DETAILS - DETENTION BASINS
SHEET C4.1

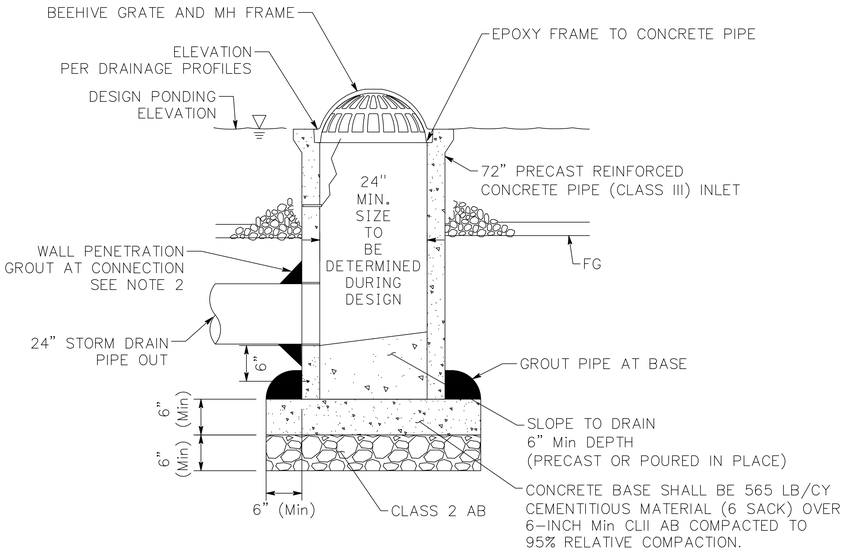
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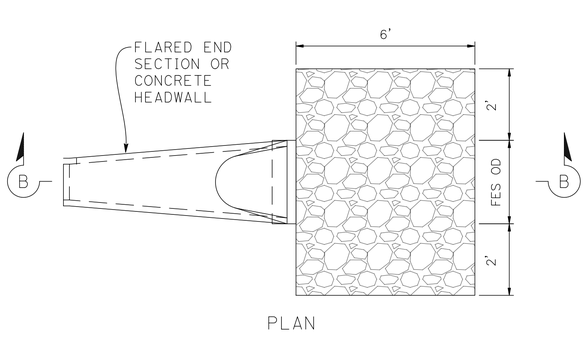
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FILE NAME: 1595-0001-ALC-DETL.DWG

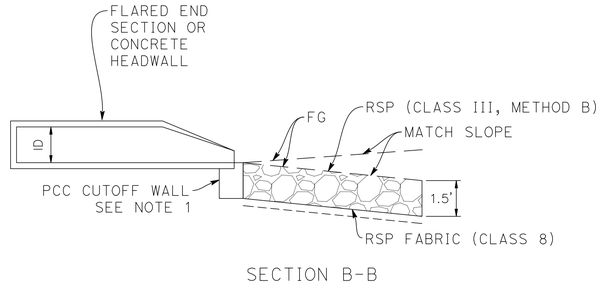


1 DETENTION POND OVERFLOW STRUCTURE

Scale: NTS



PLAN



SECTION B-B

2 STORM DRAIN OUTFALL DETAIL

Scale: NTS

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DETAILS - DRAINAGE STRUCTURES
SHEET C4.2

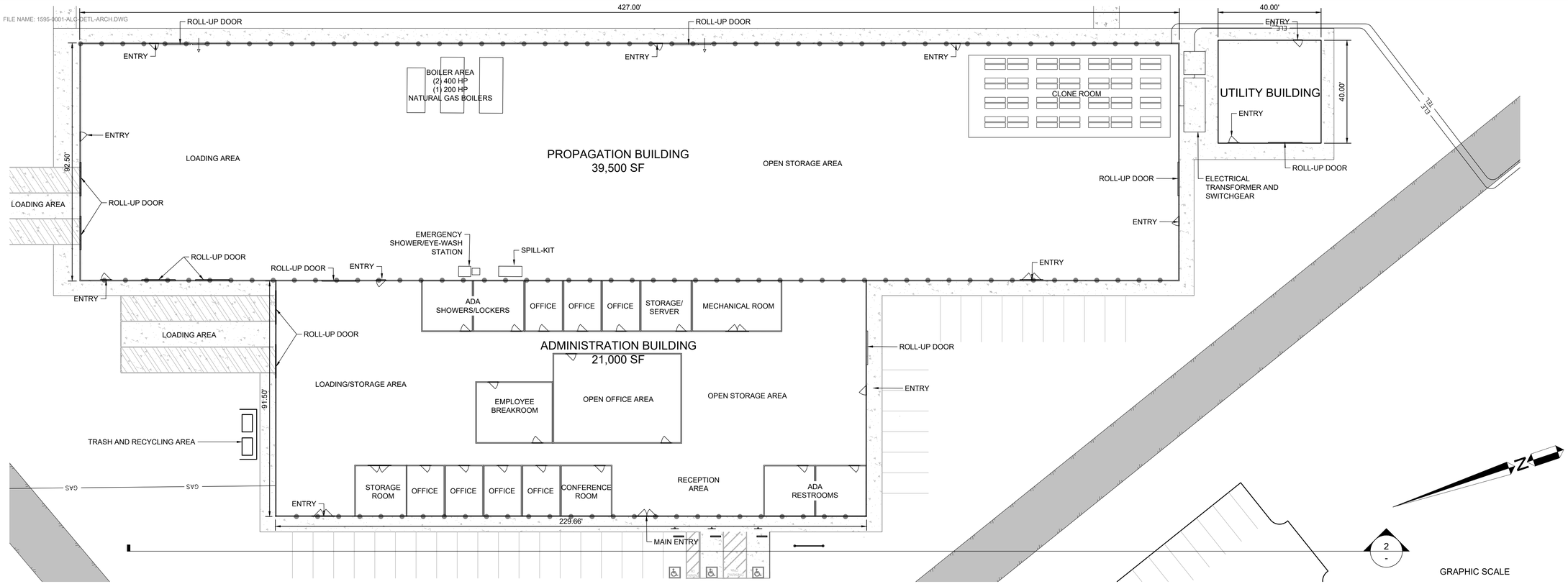
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FILE NAME: 1595-0001-ALC-DETL-ARCH.DWG



GRAPHIC SCALE

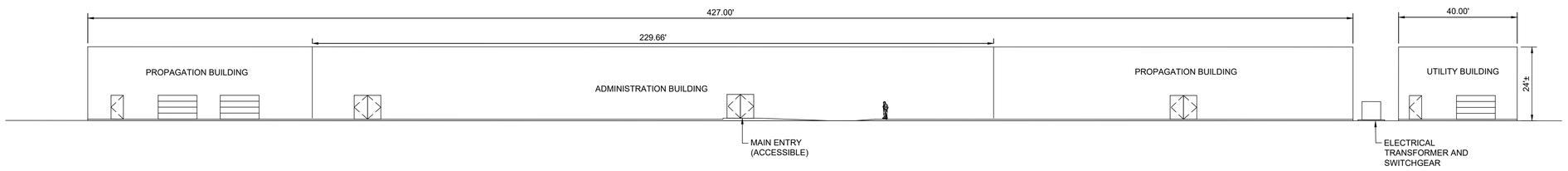
0 10 20 40

(IN FEET)

1 IN = 20 FT

1 BUILDING LAYOUT

Scale: 1" = 20'-0"



GRAPHIC SCALE

0 10 20 40

(IN FEET)

1 IN = 20 FT

2 BUILDING ELEVATION

Scale: 1" = 20'-0"

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DETAILS - BUILDINGS
SHEET C4.3

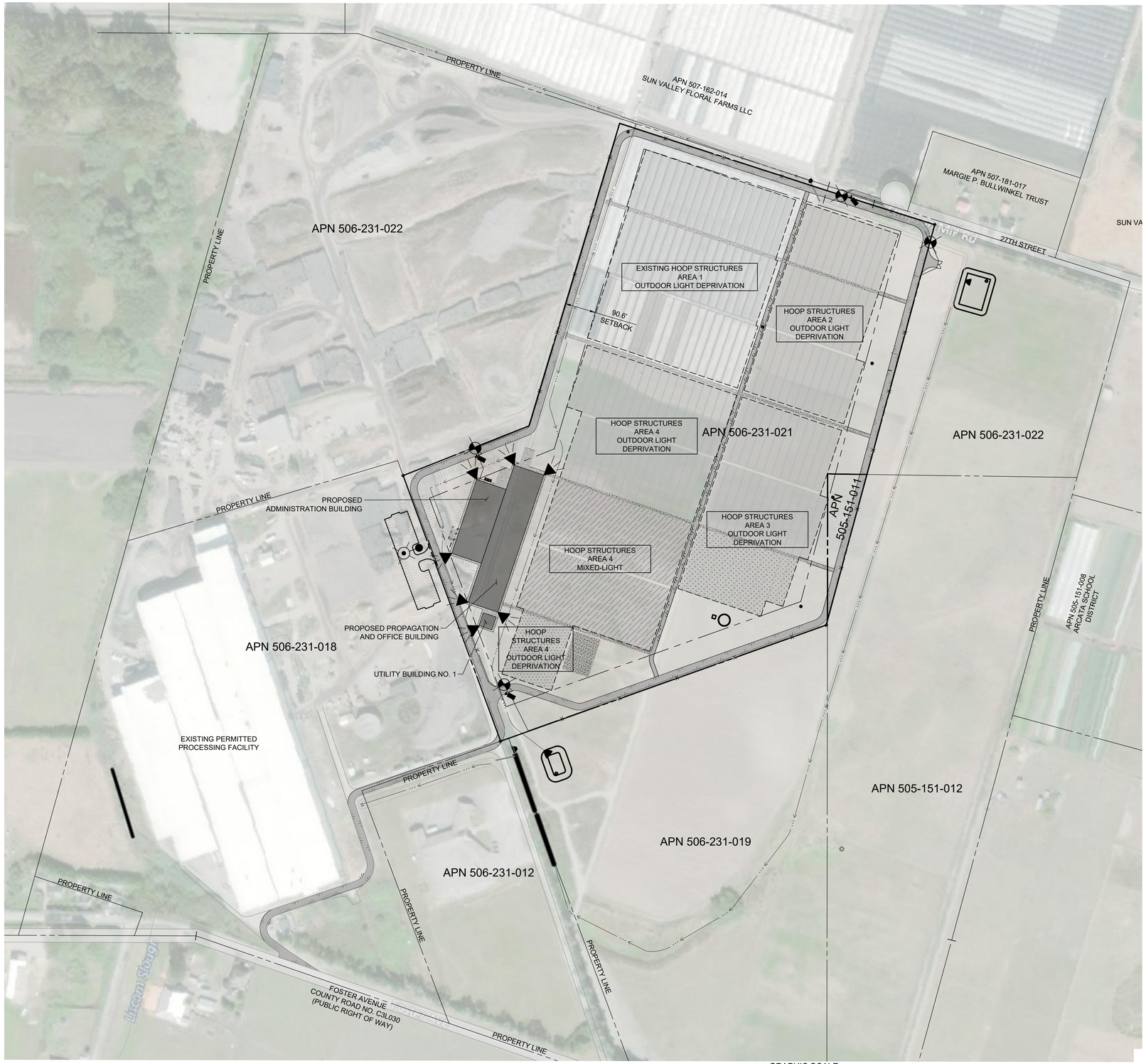
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FILE NAME: 1595-0001-ALC-LIGHT.DWG



N

LEGEND:

	DESCRIPTION	QUANTITY
	FENCE MOUNT SECURITY CAMERA MOTION–ACTIVATED (UP TO 15 MIN WITH TRIGGERING)	3
	WALL MOUNT SECURITY LIGHT, WITH CAMERA MOTION–ACTIVATED (UP TO 15 MIN WITH TRIGGERING)	7
	PERIMETER SECURITY LIGHT, MOTION–ACTIVATED (UP TO 15 MIN WITH TRIGGERING)	4
	SITE AREA LIGHT	1

GRAPHIC SCALE

0 75 150 300

(IN FEET)

1 IN = 150 FT

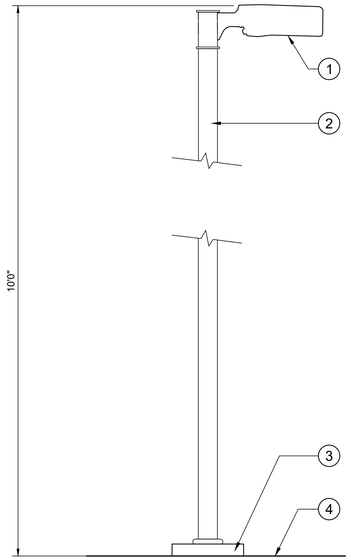
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LIGHTING PLAN
SHEET C5.0

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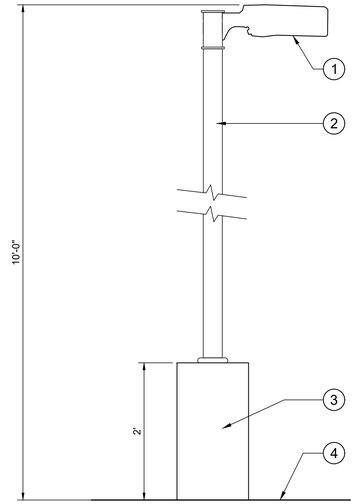
1 LED AREA LIGHT (TWO FIXTURES PER POLE)
2 LIGHT POLE
3 CONCRETE FOOTING
4 FINISH GRADE

NOTES
A. STRUCTURAL ENGINEERING BY OTHERS
B. ELECTRICAL ENGINEERING BY OTHERS
C. ALL SECURITY LIGHTING TO BE MOTION ACTIVATED WITH LENGTH OF UP TO 15 MINUTES PER TRIGGERING

ELEVATION

1 PERIMETER SECURITY LIGHTING

1" = 1'–0" DETAIL–FILE



1 LED AREA LIGHT
2 LIGHT POLE
3 CONCRETE FOOTING
4 FINISH GRADE

NOTES
A. STRUCTURAL ENGINEERING BY OTHERS
B. ELECTRICAL ENGINEERING BY OTHERS
C. CONNECT TO DAWN TO DUSK TIMER

ELEVATION

2 SITE AREA LIGHT

1" = 1'–0" DETAIL–FILE

1000LED®

FULL-CUTOFF WALL PACK LIGHT **45W**



PRODUCT FEATURES:

- ❖ LUMILEDS LED, high luminous efficiency and long working life.
- ❖ High efficiency LED Driver, the wide range input voltage AC120-277V ;
- ❖ Cast alloy design, better cooling, light quality, LED Tj < 85℃.
- ❖ Optical design, greatly improved the light utilization and evenness
- ❖ **PHOTOCELL CONTROL (OPTIONAL)**

MODEL #	
PROJECT:	
NOTES:	
DATE:	
PREPARED BY:	

Additional Information:

- Power: 45W
- Input: AC 120-277V
- CCT：5000K
- Output: 4800 LM
- Light Source: LUMILEDS
- Driver: OWN

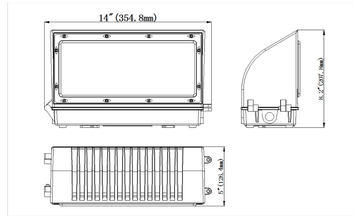
Structure Features:

- Shell Material: Alloy & PC
- Color: Dark Bronze
- Weight: 6.3 lbs.

5 Year Limited Warranty · cULus LISTED E496658 · DLC PREMIUM

PRODUCT APPLICATIONS:

The 1000LED LED WALL PACK Lighting Series can be widely used in Pedestrian Walkways, Parking Garages, Public Areas, Schools, Hospitals, Hotels and Outdoor Walkways



NOTE:

ALL WALL MOUNT SECURITY LIGHTS TO BE SET AT A HEIGHT OF 9' OR 10' ABOVE FINISHED GRADE.

3 WALL MOUNT SECURITY LIGHT CUT SHEET

SCALE: N/A

superbrightleds.com

LED Parking Lot/Area Light

ALD Series Specifications

Project_____

Date_____Type_____



ALD-50K30W-C-BRC3-FM

Features
- 100–277 VAC and 200–480 VAC models available
- DLC Premium - ≥140 lm/W
- 1–10 V dimmer compatible
- ≥80 CRI
- L70 rated 50,000 hour lifetime
- Wide variety of mounting options available

Construction
Features a low-profile aluminum body and swappable polycarbonate lens design. Engineered for minimal wind resistance.

Application
Easily replaces traditional shoebox area/parking lot lights. Type III-M distribution and the these ideal for many applications including factories, warehouses, and other large, high ceiling spaces.

Output Equivalencies

ALD-xK10W-C-BRC3	250 W MH
ALD-xK15W-C-BRC3	400 W MH
ALD-xK19W-C-BRC3	750 W MH
ALD-xK30W-C-BRC3	1,000 W MH
ALD-xK40W-B-BRC3	1,500 W MH
ALD-xK50W-B-BRC3	2,000 W MH

Warranty
Five (5) Year Warranty

Certifications and Compliances
DesignLights Consortium listed as DLC Premium, UL Listed for damp or dry locations, and RoHS compliant.

UL LISTED · DLC PREMIUM

Available Models²
- ☐ ALD-50K10W-C-BRC3
- ☐ ALD-50K15W-C-BRC3
- ☐ ALD-50K19W-C-BRC3
- ☐ ALD-50K30W-C-BRC3
- ☐ ALD-50K40W-B-BRC3³
- ☐ ALD-50K50W-B-BRC3³

Mounting Style
- ☐ -SF (Standard Knuckle Slipfitter)
- ☐ -SFS (Photocell Knuckle Slipfitter)
- ☐ -FM (Square/Round Pole Arm)
- ☐ -FB (U-Bracket/Flood)

Part Number Breakdown

Example: ALD-50K40W-B-BRC3-FM

Family		Color Temperature	Wattage	Voltage	Mount
ALD	-	50K [5000K]	10W [100 W]	C-BRC3 [120–277 VAC]	-SF -SFS -FM or -FB³
			15W [150 W]		
			19W [185 W]		
			30W [300 W]		
			40W [400 W]	B-BRC3 [200–480 VAC]	
			50W [500 W]		

Optional Accessories
Mounting Options¹
- Knuckle Slipfitter Mount (ALD-SF)
- Knuckle Slipfitter Photocell Style Mount (ALD-SFS)
- Square/Round Fixed Arm Pole Mount (ALD-FM)
- U-Bracket/Flood Mount³ (ALD-FB)

Alternate Lenses (required number varies by light)
- Type II-M (ALD-LENS-2M)
- Type III-S (ALD-LENS-3S)
- Type IV-M (ALD-LENS-4M)
- Type V-M (ALD-LENS-5M)
- Nema 6x5 (ALD-LENS-NEMA-6x5)

Notes

[1] bundled with lights, but also available for purchase separately
[2] Contact customer service if interested in options other than those listed.
[3] 100–300 W models only

Rev V1 Date: 2/15/2019
Specifications are subject to change without notice.
Printed in the U.S.A.

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F 314.972.6202
email: commercial-sales@superbrightleds.com
www.superbrightleds.com/cat/industrial-led-lighting/

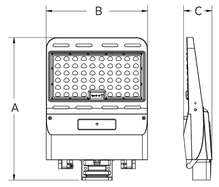
superbrightleds.com

LED Parking Lot/Area Light

ALD Series Specifications

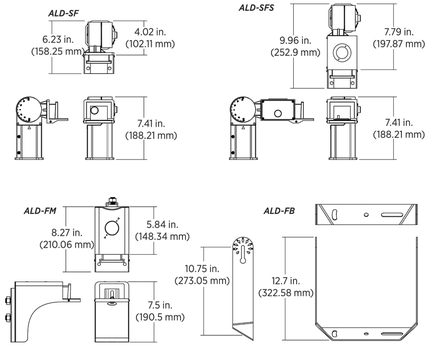
Dimensional Drawings

Lights



Model	Length (A)	Width (B)	Height (C)
ALD-50K10W-C-BRC3	16.88 in. (428.71 mm)	12 in. (304.8 mm)	3.46 in. (87.88 mm)
ALD-50K15W-C-BRC3			
ALD-50K19W-C-BRC3			
ALD-50K30W-C-BRC3	21.94 in. (557.34 mm)	12 in. (304.8 mm)	3.46 in. (87.88 mm)
ALD-50K40W-B-BRC3	30.54 in. (775.65 mm)	13.38 in. (339.85 mm)	4.16 in. (105.66 mm)
ALD-50K50W-B-BRC3			

Mounts



Specifications are subject to change without notice.

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F 314.972.6202
email: commercial-sales@superbrightleds.com
www.superbrightleds.com/cat/industrial-led-lighting/

4 PERIMETER SECURITY / SITE AREA LIGHT

SCALE: N/A

LIGHTING NOTES

1. ALL LIGHTS SHALL ADHERE TO THE INTERNATIONAL DARK SKY ASSOCIATION STANDARDS TO PREVENT LIGHT POLLUTION.
2. ALL SITE LIGHTING SHALL ADHERE TO THE HUMBOLDT COUNTY COMMERCIAL CANNABIS LAND USE ORDINANCE (ORDINANCE NO. 2559)
3. ALL SITE LIGHTING SHALL BE DOWN-SHIELDED TO PREVENT LIGHT FROM SPILLING OUTSIDE THE BOUNDARIES OF THE PARCEL AND OPERATED SUCH THAT FISH AND/OR WILDLIFE ARE NOT AFFECTED.

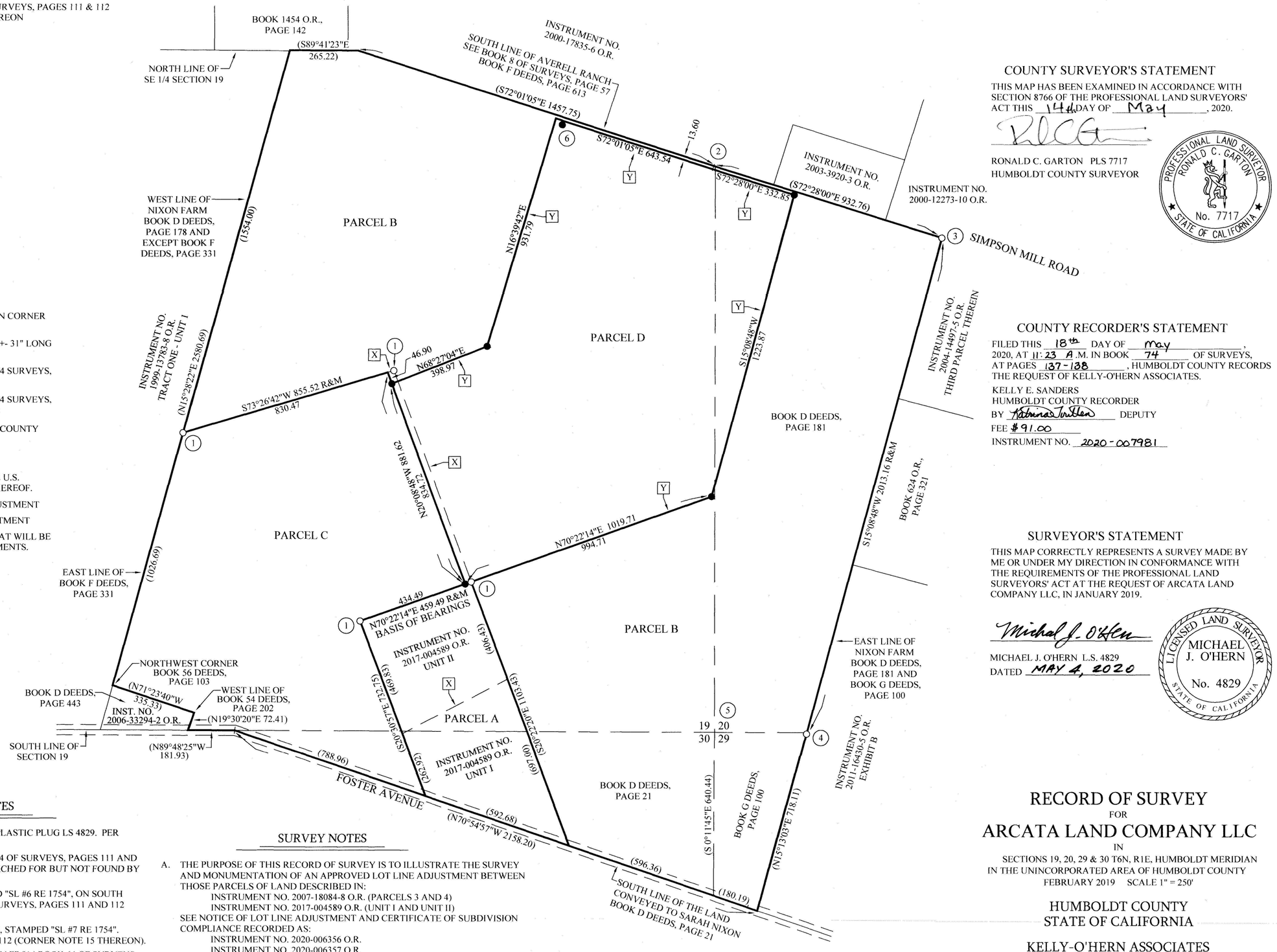
ARCATA LAND COMPANY, LLC
3318 FOSTER AVENUE, ARCATA, CA
LIGHTING DETAILS
SHEET C5.1

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BASIS OF BEARINGS: BOOK 64 OF SURVEYS, PAGES 111 & 112 AS SHOWN HEREON





LEGEND

- ○ FOUND MONUMENT, AS NOTED IN CORNER NOTES SHOWN HEREON
- ● SET 1/2" GALVANIZED IRON PIPE +- 31" LONG WITH PLASTIC PLUG LS 4829
- ( ) RECORD DIMENSION PER BOOK 64 SURVEYS, PAGES 111 & 112
- R&M RECORD DIMENSION PER BOOK 64 SURVEYS, PAGES 111 & 112 AND MEASURED
- O.R. OFFICIAL RECORDS, HUMBOLDT COUNTY
- BCIP BRASS CAP IRON PIPE
- ◯ CORNER NOTE NUMBER
- DISTANCES SHOWN HEREON ARE U.S. SURVEY FEET AND DECIMALS THEREOF.
- [X] LINE DELETED BY LOT LINE ADJUSTMENT
- [Y] LINE ADDED BY LOT LINE ADJUSTMENT
- SEE SHEET 2 FOR EASEMENTS THAT WILL BE CREATED BY SEPARATE INSTRUMENTS.

CORNER NOTES

1. FOUND 1/2" GALVANIZED IRON PIPE WITH PLASTIC PLUG LS 4829. PER BOOK 64 OF SURVEYS, PAGES 111 AND 112.
2. THE BCIP IN CONCRETE SHOWN ON BOOK 64 OF SURVEYS, PAGES 111 AND 112 (CORNER NOTE 17 THEREON) WAS SEARCHED FOR BUT NOT FOUND BY THIS SURVEY.
3. FOUND BRASS CAP IN CONCRETE, STAMPED "SL #6 RE 1754", ON SOUTH SIDE OF COUNTY ROAD. SEE BOOK 64 OF SURVEYS, PAGES 111 AND 112 (CORNER NOTE 16 THEREON).
4. FOUND 1" IRON PIPE WITH 2 1/2" BRASS CAP, STAMPED "SL #7 RE 1754". SEE BOOK 64 OF SURVEYS, PAGES 111 AND 112 (CORNER NOTE 15 THEREON).
5. SECTION CORNER - CALCULATED LOCATION FROM BOOK 64 OF SURVEYS, PAGES 111 & 112 SHOWN HEREON. NOT VISITED BY THIS SURVEY.
6. SET REFERENCE MONUMENT (ACTUAL CORNER FALLS IN A DITCH). ACTUAL CORNER BEARS N58°32'09"W 15.54 FEET FROM REFERENCE MONUMENT.

SURVEY NOTES

A. THE PURPOSE OF THIS RECORD OF SURVEY IS TO ILLUSTRATE THE SURVEY AND MONUMENTATION OF AN APPROVED LOT LINE ADJUSTMENT BETWEEN THOSE PARCELS OF LAND DESCRIBED IN:
   INSTRUMENT NO. 2007-18084-8 O.R. (PARCELS 3 AND 4)
   INSTRUMENT NO. 2017-004589 O.R. (UNIT I AND UNIT II)
   SEE NOTICE OF LOT LINE ADJUSTMENT AND CERTIFICATE OF SUBDIVISION COMPLIANCE RECORDED AS:
   INSTRUMENT NO. 2020-006356 O.R.
   INSTRUMENT NO. 2020-006357 O.R.

B. THIS SURVEY IS BASED ON BOOK 64 OF SURVEYS, PAGES 111 AND 112.

C. ONLY THE LINES CREATED BY LOT LINE ADJUSTMENT AND THE LINES BETWEEN FOUND CORNERS NOTED HEREON HAVE BEEN SURVEYED FOR THIS MAP. ALL OTHER DIMENSIONS ARE RECORD DIMENSIONS, AS NOTED.

COUNTY SURVEYOR'S STATEMENT

THIS MAP HAS BEEN EXAMINED IN ACCORDANCE WITH SECTION 8766 OF THE PROFESSIONAL LAND SURVEYORS' ACT THIS 14th DAY OF May, 2020.

RONALD C. GARTON PLS 7717
HUMBOLDT COUNTY SURVEYOR

PROFESSIONAL LAND SURVEYOR RONALD C. GARTON No. 7717 STATE OF CALIFORNIA

COUNTY RECORDER'S STATEMENT

FILED THIS 18th DAY OF May, 2020, AT 11:23 A.M. IN BOOK 74 OF SURVEYS, AT PAGES 137-138, HUMBOLDT COUNTY RECORDS THE REQUEST OF KELLY-O'HERN ASSOCIATES.

KELLY E. SANDERS
HUMBOLDT COUNTY RECORDER
BY Katrina Trutten DEPUTY
FEE $91.00
INSTRUMENT NO. 2020-007981

SURVEYOR'S STATEMENT

THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECTION IN CONFORMANCE WITH THE REQUIREMENTS OF THE PROFESSIONAL LAND SURVEYORS' ACT AT THE REQUEST OF ARCATA LAND COMPANY LLC, IN JANUARY 2019.

MICHAEL J. O'HERN L.S. 4829
DATED MAY 4, 2020

LICENSED LAND SURVEYOR MICHAEL J. O'HERN No. 4829 STATE OF CALIFORNIA

RECORD OF SURVEY
FOR
ARCATA LAND COMPANY LLC
IN
SECTIONS 19, 20, 29 & 30 T6N, R1E, HUMBOLDT MERIDIAN
IN THE UNINCORPORATED AREA OF HUMBOLDT COUNTY
FEBRUARY 2019 SCALE 1" = 250'

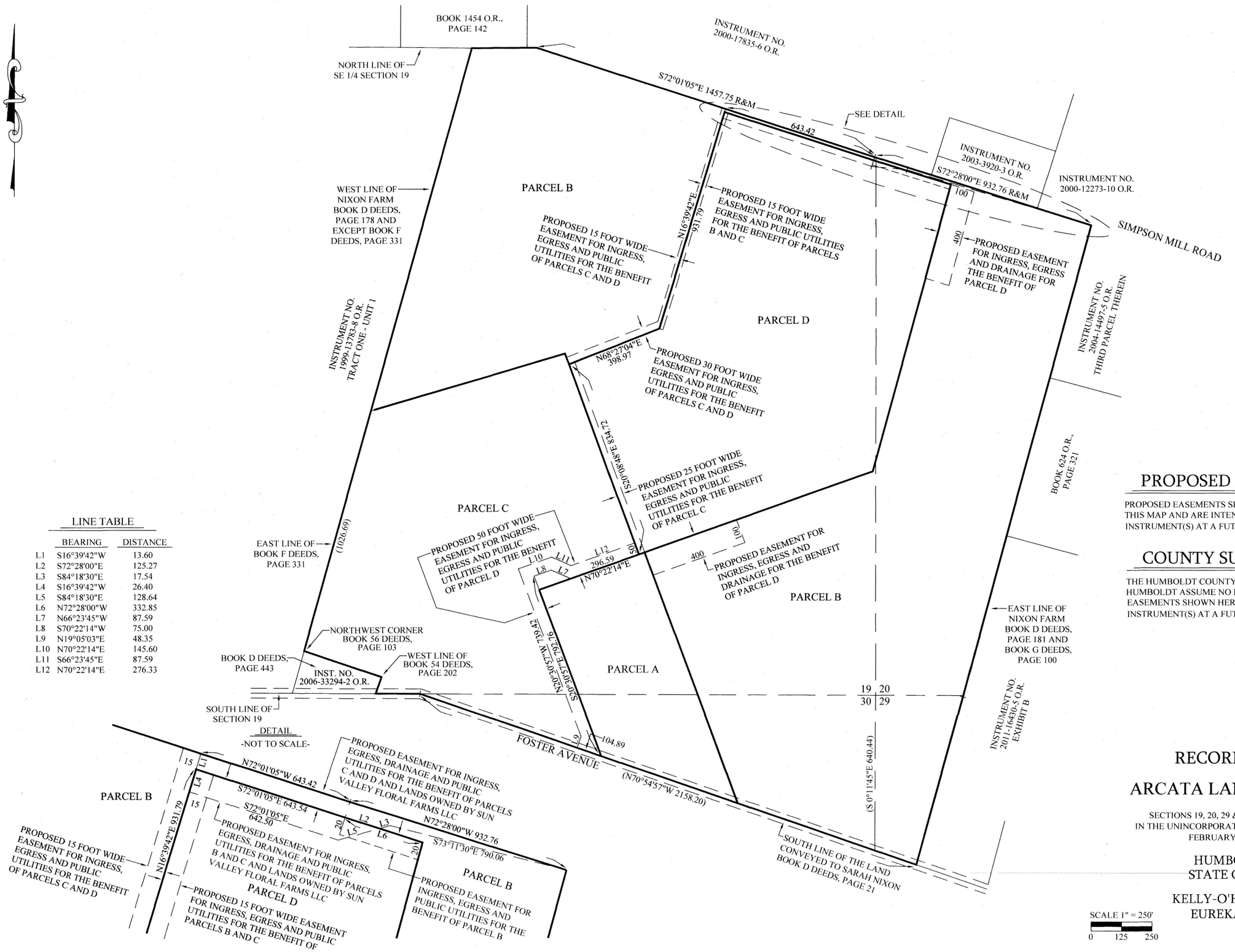
HUMBOLDT COUNTY
STATE OF CALIFORNIA

KELLY-O'HERN ASSOCIATES
EUREKA, CALIFORNIA

SCALE 1" = 250'
0 125 250

SHEET 1 OF 2 SHEETS

BOOK 74 OF SURVEYS, PAGE 137



LINE TABLE

	BEARING	DISTANCE
L1	S16°39'42"W	13.60
L2	S72°28'00"E	125.27
L3	S84°18'30"E	17.54
L4	S16°39'42"W	26.40
L5	S84°18'30"E	128.64
L6	N72°28'00"W	332.85
L7	N66°23'45"W	87.59
L8	S70°22'14"W	75.00
L9	N19°05'03"E	48.35
L10	N70°22'14"E	145.60
L11	S66°23'45"E	87.59
L12	N70°22'14"E	276.33

PROPOSED EASEMENT NOTE

PROPOSED EASEMENTS SHOWN HEREON ARE NOT CREATED BY THIS MAP AND ARE INTENDED TO BE CREATED BY SEPARATE INSTRUMENT(S) AT A FUTURE TIME.

COUNTY SURVEYOR'S NOTE

THE HUMBOLDT COUNTY SURVEYOR AND THE COUNTY OF HUMBOLDT ASSUME NO RESPONSIBILITY THAT THE PROPOSED EASEMENTS SHOWN HEREON WILL BE CREATED BY SEPARATE INSTRUMENT(S) AT A FUTURE TIME.

RECORD OF SURVEY

FOR

ARCATA LAND COMPANY LLC

IN

SECTIONS 19, 20, 29 & 30 T6N. R1E, HUMBOLDT MERIDIAN
IN THE UNINCORPORATED AREA OF HUMBOLDT COUNTY
FEBRUARY 2019 SCALE 1" = 250'

HUMBOLDT COUNTY
STATE OF CALIFORNIA

KELLY-O'HERN ASSOCIATES
EUREKA, CALIFORNIA

SCALE 1" = 250'
0 125 250

Recording Requested By:
County of Humboldt
Planning and Building Department

Return To:
County of Humboldt
Planning and Building Department
3015 H Street
Eureka CA 95501-4484

2020-006356

Recorded - Official Records
Humboldt County, California
Kelly E. Sanders, Recorder
Recorded by: HUMBOLDT CNTY

Pages: 6

Recording Fee: $ 41.00
Tax Fee: $0.00
Clerk: kt Total: $41.00
Apr 14, 2020 at 03:30:40

NOTICE OF LOT LINE ADJUSTMENT AND CERTIFICATE OF SUBDIVISION COMPLIANCE

Property Owner(s) Of Record:
ARCATA LAND COMPANY, LLC, a California Limited Liability Company

Assessor's Parcel Number(s):
505-151-003, et seq.

Number of Resulting Parcels Certified: 3
Identified herein as Parcel B, Parcel C, Parcel D

Application No.: **13484**

Case No.: **LLA-17-005**

NOTICE IS HEREBY GIVEN that the real properties described in the attached EXHIBIT "A" as Parcel B, Parcel C and Parcel D are the result of a lot line adjustment in accordance with Section 66412(d) of the Government Code of the State of California, and any portions of prior parcels contained within said resultant parcel descriptions have been merged into the single parcels described herein as Parcel B, Parcel C and Parcel D.

THIS NOTICE IS GIVEN by the person(s) whose name(s) is/are subscribed on page 3 of this instrument as the owner(s) of record of the real properties described in the attached EXHIBIT "A".

THIS CERTIFICATE relates only to issues of compliance or noncompliance with the Subdivision Map Act and local ordinances enacted pursuant thereto and no further compliance with the Subdivision Map Act is necessary. However, development of the parcel may require issuance of a permit or permits, or other grant or grants of approval.

THIS CERTIFICATE DOES NOT CERTIFY that the real property for which this notice has been given is suitable for development in accordance with existing or future regulations.

On this 18 day of MARCH, 2020, I HEREBY CERTIFY that the lot line adjustment for which this Notice is given has been executed with the approval of the County of Humboldt and that the parcel or unit of land resulting from the lot line adjustment complies with the provisions of the California Subdivision Map Act and County of Humboldt Ordinances enacted pursuant thereto.

BY _____
John H. Ford, Director
County of Humboldt Planning and Building Department

Case No.: LLA-17-005
APN: 505-151-003 et seq.

CERTIFICATE OF ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document, to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA }
COUNTY OF HUMBOLDT }

On this 18 day of March 20 20, before me, Tasheena Evenson Notary Public, personally appeared **JOHN H. FORD** who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing is true and correct.

Witness my hand and official seal.

Signature (seal)

TASHEENA EVENSON
Notary Public - California
Humboldt County
Commission # 2247448
My Comm. Expires Jun 23, 2022

Page 3 Notice of Lot Line Adjustment

Case No.: LLA-17-005
APN: 505-151-003 et seq.

OWNER'S REPRESENTATION

I hereby represent that I am the owner of record of the real properties described in the attached EXHIBIT "A" and that I have consented to and executed the lot line adjustment for which I have given the notice herein.

(for names and signatures)

ARCATA LAND COMPANY, LLC, a California limited liability company

By : ~~Leendert~~ DeVries, Manager

If additional notary acknowledgment required, please attach full page acknowledgment form.

CERTIFICATE OF ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document, to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA }
COUNTY OF HUMBOLDT }

On this 19th day of February 2020, before me, Tina M. Uhl Notary Public, personally appeared Leendert DeVries who proved to me on the basis of satisfactory evidence to be the person~~(s)~~ whose name~~(s)~~ is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she~~/~~they~~ executed the same in his/~~her~~/~~their~~ authorized capacity~~(ies)~~, and that by his/~~her~~/~~their~~ signature~~(s)~~ on the instrument the person~~(s)~~, or the entity upon behalf of which the person~~(s)~~ acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing is true and correct.

Witness my hand and official seal.

Tina M. Uhl (seal)
Signature

Tina M. Uhl
Comm. #2215884
Notary Public California
Humboldt County
Comm. Expires Oct. 23, 2021

EXHIBIT A

PROPERTY DESCRIPTION

All that real property situated in the County of Humboldt, State of California, described as follows:

PARCEL B

Those portions of Sections 19, 20, 29 and 30, Township 6 North, Range 1 East, Humboldt Meridian, described as follows:

COMMENCING at the Southeast corner of Section 19, Township 6 North, Range 1 East, Humboldt Meridian;

thence South 0 degrees 11 minutes 45 seconds East, 640.44 feet to the South line of that parcel of land conveyed to Sarah Nixon by deed recorded December 20, 1859, recorded in Book D of Deeds, Page 21, Humboldt County Records, said point being the TRUE POINT OF BEGINNING;

thence North 70 degrees 54 minutes 57 seconds West, along said South line, 596.36 feet;

thence North 20 degrees 22 minutes 20 seconds West, 1103.43 feet;

thence North 70 degrees 22 minutes 14 seconds East, 994.71 feet;

thence North 15 degrees 08 minutes 48 seconds East, 1223.87 feet;

thence North 72 degrees 28 minutes 00 seconds West, 332.85 feet;

thence North 72 degrees 01 minutes 05 seconds West, 643.54 feet;

thence South 16 degrees 39 minutes 42 seconds West, 931.79 feet;

thence South 68 degrees 27 minutes 04 seconds West, 398.97 feet;

thence North 20 degrees 08 minutes 48 seconds West, 46.90 feet;

thence South 73 degrees 26 minutes 42 seconds West, 830.47 feet, to the East line of that parcel of land conveyed to George Danskin by deed recorded June 3, 1867 in Book F of Deeds, Page 331;

thence North 15 degrees 28 minutes 22 seconds East, along said East line, 1554.00 feet, to the North line of the Southeast Quarter of said Section 19;

thence South 89 degrees 41 minutes 23 seconds East, along said North line, 265.22 feet to the most Westerly corner of that parcel of land conveyed to Dunbar D. Averell by deed recorded March 16, 1868 in Book F of Deeds, Page 613;

thence South 72 degrees 01 minutes 05 seconds East, along the South line of said parcel, 1457.75 feet;

thence continuing along the South line of said parcel, South 72 degrees 28 minutes East, 6.28 feet to the East line of said Section 19;

thence South 72 degrees 28 minutes East, along the North line of that parcel of land conveyed to Isaac Nixon by deed recorded February 13, 1861 in Book D of Deeds, Page 181, a distance of 926.48 feet to the most Easterly corner thereof;

thence South 15 degrees 08 minutes 48 seconds West, along the East line of said parcel, 2013.16 feet to the Southeast corner thereof;

thence South 15 degrees 13 minutes 03 seconds West, along the East line of that parcel of land conveyed to Sarah Nixon by Deed recorded October 17, 1868 in Book G of Deeds, Page 100, for a distance of 718.11 feet to the Southeast corner of said parcel;

thence North 70 degrees 54 minutes 57 seconds West, along the South line of said parcel, 180.19 feet to the TRUE POINT OF BEGINNING.

This description is based on a Record of Survey for Arcata Land Company LLC dated February 2019 to be filed with the Humboldt County Recorder subsequent to the recordation of this document.

PARCEL C

Those portions of Sections 19 and 30, Township 6 North, Range 1 East, Humboldt Meridian, described as follows:

COMMENCING at the Southeast corner of Section 19, Township 6 North, Range 1 East, Humboldt Meridian;

thence South 0 degrees 11 minutes 45 seconds East, 640.44 feet to the South line of that parcel of land conveyed to Sarah Nixon by deed recorded December 20, 1859, recorded in Book D of Deeds, Page 21, Humboldt County Records;

thence North 70 degrees 54 minutes 57 seconds West, along said South line, 596.36 feet;

thence North 20 degrees 22 minutes 20 seconds West, 1103.43 feet;

thence South 70 degrees 22 minutes 14 seconds West, 25.00 feet to the TRUE POINT OF BEGINNING;

thence North 20 degrees 08 minutes 48 seconds West, 881.62 feet;

thence South 73 degrees 26 minutes 42 seconds West, 830.47 feet, to the East line of that parcel of land conveyed to George Danskin by deed recorded June 3, 1867 in Book F of Deeds, Page 331;

thence South 15 degrees 28 minutes 22 seconds West, along said East line, 1026.69 feet, to the Northwest corner of that parcel of land conveyed to George S. Connick by deed recorded January 28, 1896 in Book 56 of Deeds, Page 103;

thence South 71 degrees 23 minutes 40 seconds East, along the North line of that parcel of land conveyed to John A. Kneeland by deed recorded November 4, 1862 in Book D of Deeds, Page 443, for a distance of 335.33 feet, to the West line of that parcel of land conveyed to William Nixon by deed recorded June 5, 1895 in Book 54 of Deeds, Page 202;

thence South 19 degrees 30 minutes 20 seconds West, along said West line, 72.41 feet, to the South line of said Section 19;

thence South 89 degrees 48 minutes 25 seconds East, along said South line of Section 19, for a distance of 181.93 feet, to said South line of that parcel of land conveyed to Sarah Nixon;

thence South 70 degrees 54 minutes 57 seconds East, along said South line, for a distance of 788.96 feet;

thence leaving said South line, North 20 degrees 30 minutes 57 seconds West, 732.75 feet, to a point that bears South 70 degrees 22 minutes 14 seconds West from the point of beginning;

thence North 70 degrees 22 minutes 14 seconds East, 434.49 feet, more or less, to the TRUE POINT OF BEGINNING.

This description is based on a Record of Survey for Arcata Land Company LLC dated February 2019 to be filed with the Humboldt County Recorder subsequent to the recordation of this document.

PARCEL D

Those portions of Sections 19 and 20, Township 6 North, Range 1 East, Humboldt Meridian, described as follows:

COMMENCING at the Southeast corner of Section 19, Township 6 North, Range 1 East, Humboldt Meridian;

thence South 0 degrees 11 minutes 45 seconds East, 640.44 feet to the South line of that parcel of land conveyed to Sarah Nixon by deed recorded December 20, 1859, recorded in Book D of Deeds, Page 21, Humboldt County Records;

thence North 70 degrees 54 minutes 57 seconds West, along said South line, 596.36 feet;

thence North 20 degrees 22 minutes 20 seconds West, 1103.43 feet, to the TRUE POINT OF BEGINNING;

thence North 70 degrees 22 minutes 14 seconds East, 994.71 feet;

thence North 15 degrees 08 minutes 48 seconds East, 1223.87 feet;

thence North 72 degrees 28 minutes 00 seconds West, 332.85 feet;

thence North 72 degrees 01 minutes 05 seconds West, 643.54 feet;

thence South 16 degrees 39 minutes 42 seconds West, 931.79 feet;

thence South 68 degrees 27 minutes 04 seconds West, 398.97 feet;

thence South 20 degrees 08 minutes 48 seconds East, 834.72 feet, to a point that bears South 70 degrees 22 minutes 14 seconds West from the point of beginning;

thence North 70 degrees 22 minutes 14 seconds East, 25.00 feet, more or less, to the TRUE POINT OF BEGINNING.

This description is based on a Record of Survey for Arcata Land Company LLC dated February 2019 to be filed with the Humboldt County Recorder subsequent to the recordation of this document.

Prepared by:

Michael J. O'Hern

Michael J. O'Hern
LS 4829
Dated: Feb. 24, 2020



Commercial Cannabis Outdoor & Mixed-Light Cultivation Facilities

Outdoor & Mixed-Light Cultivations Operations Plan & Manual

Revised 10/17/2020

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OPERATIONS PLAN & MANUAL

1) County's Access to the Facility:

a) All facility personnel will cooperate fully with all conditions in the Permit and Permit Application requiring that the County, its agents, and employees, be granted access to the facility to seek verification of the information contained within the permit, permit applications, the Operations Manual, and the Operating Standards at any time before or after the permits are issued.

b) The Humboldt County Sheriff's Department will be authorized to have access to the facility's security surveillance video.

2) Staffing & Staff Screening Processes

a) The facilities will require up to 116 FTE employees at full buildout. The operation will be seasonal, with the majority of employees needed beginning in April (planting) and extending through the end of October (final harvest).

b) All candidates for staff positions will undergo criminal background checks as part of the standard screening process. To the maximum effect allowed by California and federal employment law, candidates with a felony criminal history or a history of drug abuse will be screened from employment.

3) Vehicle Trips

a) See Traffic Impact Study prepared for this project by W-Trans for Vehicle Trip estimates and other transportation methods; i.e. pedestrian, bicycle, transit.

4) Days and Hours of Operation

a) The facility is not open to the public and will not accept visitors without a specific business purpose.

b) Hours of operation will generally be 6:30 a.m. to 3:30 p.m., Monday through Saturday, although approximately 15 employees will work an extended evening shift to manage the propagation and cultivation process.

5) Location Map (See Site Plan)

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6) Security Measures

a) The security measures located on the premises will include the following:

i) Lighting -- outdoor lighting will be minimized and controlled by photocell switching, timers, infrared motion sensors and/or other state-of-the-art control systems to provide an appropriate light level at the exterior of the facilities to ensure that personnel and the video surveillance system can effectively monitor the space in and around the facility. Exterior lighting will be directed so as to not pose a nuisance to neighboring properties.

ii) Camera Systems -- All Project areas will be covered by camera systems for surveillance and worker safety purposes, and to prevent product loss or diversion.

iii) Alarm – a security/burglar alarm system will be installed and operated at all appropriate times within the facility. This system will be monitored by a security staff and a third-party remote central control station which will have the responsibility for automatically providing notification to law enforcement of any breach in the facility's security system.

iv) Access Control -- all entrances to the facility will be restricted by an access control system. 24 hour access to the facility by emergency responders (Fire Dept.) will be provided via a Knox Box.

v) Fencing – the cultivation area will be fenced with chain-link fencing.

vi) The Safety of Staff -- working in concert together, the access control system, lighting, fencing, surveillance, and alarm systems, will provide a secure and protected facility for the staff to occupy.

vii) The security measures will secure the commercial cannabis against diversion for non-commercial purposes by protecting against theft not only from intruders, but also from staff members and visitors. This is done by limiting access into the facility as necessary and by surveillance monitoring of personnel and visitors at all times when in close proximity to the product. Strict inventory control measures will also be engaged to prevent and detect diversion.

viii) All commercial cannabis other than lab samples will be transported to State licensed and/or locally permitted licensed commercial cannabis, processing, wholesale, distribution, or manufacturing facilities by a state licensed and/or locally permitted licensed transport company.

7) Customer Screening, Registration, and Validation Process and Procedures.

a) The facility is for the purpose of cultivation only, and all products will be sold to state licensed facilities on a wholesale basis. As this is the case, the facility will not be open to the public and <u>will not</u> accept visitors without a specific pre-authorized business purpose. Only authorized representatives of state licensed customer facilities and appropriately licensed vendors will be allowed to enter the facility and be in close proximity to commercial cannabis, but in all cases supervised at all times. Any other vendors or maintenance workers allowed in the facility will be at all times escorted and sequestered from the finished products and harvested materials.

8) Inventory control processes and procedures

a) The facilities inventory control process includes tracking of all incoming seedlings, including the name and state license number of the licensee, the testing lab data (as applicable), the strain, the supplier's product tracking identification data, and bill of lading from the transport company or nursery.

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b) All incoming plants will be assigned a unique number or identifier that can be cross-referenced to the above referenced data and stays with the product through the cultivation, harvesting, off-site processing, and to final sale to our authorized customers.

c) All outgoing product will be tracked by SKU, batch number, invoice, and shipping documents; unless the product is not for sale and will be destroyed. The process for documenting product to be destroyed is described separately in this manual.

d) The methodologies for tracking and inventory control of commercial cannabis may be modified subject to requirements imposed by the County, Department of Health, or Bureau of Cannabis Control, and will be adjusted accordingly as required under law.

9) Not Used:

10) Description of chemicals stored or discharged:

a) The facility may handle routine agricultural products and support chemicals (e.g., fertilizers, pesticides, fuels, lubricants) in amounts requiring a Hazardous Material Business Plan (HMBP). If so, it will register its hazardous materials with the local agency using the Hazardous Materials/Waste Registration Form so that the local agency can evaluate the storage or use and give notice of any permits or storage/use fees that may apply.

b) If the facility begins to handle any individual hazardous material or mixture containing a hazardous material which has a quantity at any time during the reporting year equal to or greater than those listed below, it will complete a Hazardous Material Business Plan (HMBP) and submit a copy to the local agency (Humboldt County DHHS Division of Environmental Health):
   i) 500 pounds for solid hazardous materials. [H&SC §25503.5(a)]
   ii) The following amounts for liquid hazardous materials:
      (a) Lubricating oil as defined by H&SC §25503.5(b)(2)(B): 55 gallons of any type or 275 gallons aggregate quantity on site. H&SC §25503.5(b)(2)(A)]
      (b) All others, including waste oil: 55 gallons. [H&SC §25503.5(a)]
   iii) The following amounts of hazardous material gases:
      (a) Oxygen, Nitrogen, or Nitrous Oxide stored/handled at a physician, dentist, podiatrist, veterinarian, or pharmacist's place of business: 1,000 cubic feet of each material on site. [H&SC §25503.5(b)(1)]
      (b) All others: 200 cubic feet. [H&SC §25503.5(a)]
   iv) Amounts of radioactive materials requiring an emergency plan under Parts 30, 40, or 70 of Title 10 Code of Federal Regulations or equal to or greater than applicable amounts specified in items 1, 2, or 3, above, whichever amount is smaller. [H&SC §25503.5(a)]

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v) Applicable federal threshold planning quantities for extremely hazardous substances listed in 40 CFR Part 355, Appendix A.

c) Disposal of any chemical, dangerous, or hazardous waste will be conducted in a manner consistent with federal, state and local laws, regulations, rules or other requirements. Any waste solvents or other chemicals will be handled and disposed of properly by *Safety-Kleen* or another highly qualified and properly licensed contractor.

11) Consumer safety control processes, procedures, and documentation.

a) Product Quality Control:
   i) In addition to meeting all state and local requirements for product quality control, the standard procedures for operation will include the following:
      (1) Samples from each batch of finished products will be screened and tested by a state licensed and/or locally permitted licensed independent laboratory for pesticides, mold, and other undesirable qualities prior to release for sale to wholesalers and retailers.
      (2) Documentation of all lab test results will be kept on file.

b) Packaging:
   i) All final packaging of processed goods will meet state requirements for packaging.

12) Health and Safety:

a) Training.
   i) Prior to engaging in the harvesting of any product, the licensee will have an owner or employee who has successfully passed an approved and accredited food safety certification examination as specified in Sections 113947.2 and 113947.3 of the California Retail Food Code. Food safety certification will be achieved by successfully passing an examination from an accredited food protection manager certification organization. The certification organization will be accredited by the American National Standards Institute as meeting the requirements of the Conference for Food Protection's "Standards for Accreditation of Food Protection Manager Certification Programs."

b) Employee Knowledge:
   i) All employees will have adequate knowledge of, and will be properly trained in, food safety as it relates to their assigned duties.
   ii) There will be at least one food safety certified owner or employee at the facility responsible for setting policy and providing training to employees. The certified owner or employee need not be present at the facility during all hours of operation.
   iii) The certified owner or employee will be responsible for ensuring that all employees who handle, or have responsibility for handling harvested commercial cannabis, have sufficient knowledge to ensure the safe handling of the product. The nature and extent of the knowledge that each employee is required to have may be tailored, as appropriate, to the employee's duties.

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c) Facility Inspection:

i) The facility will welcome inspection of the commercial cannabis cultivation area by the local fire department, building inspector, or code enforcement officer to confirm that no health or safety concerns are present. It is understood that the inspections may result in additional specific standards to meet local jurisdiction restrictions related to commercial cannabis. An annual fire safety inspection may result in the required installation of fire suppression devices, or other means necessary for adequate fire safety.

d) Sanitary Conditions:

The facility will take all reasonable measures and precautions to ensure the following:

i) That any person who, by medical examination or supervisory observation, is shown to have, or appears to have, an illness, open lesion, including boils, sores, or infected wounds, or any other abnormal source of microbial contamination for whom there is a reasonable possibility of contact with commercial cannabis will be excluded from any operations which may be expected to result in contamination until the condition is corrected;

i) Hand washing facilities will be clean, functional, and be furnished with running water. Hand washing facilities shall be located in close proximity to where good sanitary practices require employees to wash or sanitize their hands, and provide effective hand-cleaning and sanitizing preparations and sanitary towel service or suitable drying devices;

ii) That all persons working in direct contact with commercial cannabis will conform to hygienic practices while on duty, including but not limited to:

(1) Maintaining adequate personal cleanliness;

(2) Washing hands thoroughly in an adequate hand-washing area(s) before starting work and at any other time when the hands may have become soiled or contaminated; and

(1) Refraining from having direct contact with commercial cannabis if the person has or may have an illness, open lesion(s), including boils, sores, or infected wounds, or any other abnormal source of microbial contamination, until such condition is corrected.

iv) That waste is properly removed and the operating systems for waste disposal are maintained in an adequate manner so that they do not constitute a source of contamination in areas where cannabis is exposed;

iii) That there is appropriate lighting in all areas where commercial cannabis is stored, and where equipment or utensils are cleaned;

v) That there is adequate screening or other protection against the entry of pests. Rubbish will be disposed of so as to minimize the development of odor and minimize the potential for the waste becoming an attractant, harborage, or breeding place for pests;

iv) That fixtures and other facilities are maintained in a sanitary condition;

v) That toxic cleaning compounds, sanitizing agents, and other chemicals will be identified, held, stored and disposed of in a manner that protects against contamination of cannabis in a manner that is in accordance with any applicable local, state or federal law, rule, regulation or ordinance;
vi) That all operations will be conducted in accordance with adequate sanitation principles;
vii) That employees are provided with adequate and readily accessible toilet facilities that are maintained in a sanitary condition and good repair; and
viii) That any cannabis or cannabis waste that can support the rapid growth of undesirable microorganisms are held in a manner that prevents the growth of these microorganisms.

13) Solid Waste:

a) Refuse will be sorted to divert recyclables such as paper, plastic, glass, and metals from the waste stream. Those recyclables will be taken to a recycling center for recycling.
b) The remaining solid wastes will be collected and deposited into a solid waste receptacle for temporary storage, which will be kept covered. The solid waste will be removed from the site no less frequently than weekly and disposed of at an authorized waste transfer facility. The solid waste receptacle will be sized appropriately for the volume of waste generated and may be adjusted in size periodically as conditions warrant due to production cycles and seasonal factors.

14) Disposal of Product Waste and Destroyed Product:

a) Methods to make waste unusable and unrecognizable.
   i) Cannabis waste will be made unusable and unrecognizable prior to leaving the facility through one of the following methods unless another method is prescribed by the County of Humboldt or the State of California:
      (1) Grinding and/or mixing with other plant materials for composting; or if required;
      (2) Grinding and incorporating the cannabis waste with non-consumable, solid wastes listed below such that the resulting mixture is at least 50 percent non-cannabis waste:
         (a) Non-recyclable solid waste;
         (b) Green waste;
         (c) Grease or other compostable oil waste;
         (d) Bokashi, or other compost activators;
         (e) Other wastes approved by the State Licensing Authority that will render the cannabis waste unusable and unrecognizable as cannabis; and
         (f) Soil.
   ii) The methodology for destroying and disposing of cannabis waste shall be in compliance with all state regulatory requirements.

b) Records of destroyed product:
   i) Records of destroyed raw materials and product will be kept and cross-referenced by batch number and SKU and/or another unique identifier. The weight or volume, as appropriate, will be recorded along with the method of disposal.

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ii) The methodology for recording destroyed cannabis waste shall be in compliance with all state regulatory requirements.

Cultivation Plan

15) Basic Requirements

a) Water Quality, Conservation, & Use

i) Description of water source, storage, irrigation plan, and projected water usage.

(1) All water for cultivation will be supplied by existing wells. No diverted surface water is intended nor required to be stored for use during the standard surface water diversion forbearance period.

(2) Project Irrigation Water Usage (Cubic Feet per month):

The Project's estimated irrigation water use, by month, is shown below.

PROJECTED IRRIGATION WATER USAGE

	Month[1]						
	April	**May**	**June**	**July**	**August**	**September**	**October**
Gallons (millions)	0.9	2.3	3.5	4.0	3.4	2.2	0.7
Acre-Feet	2.6	7.1	10.9	12.2	10.5	6.6	2.2

Notes:

1. No irrigation water expected during the months of November through March

ii) Irrigation will be controlled by an automated irrigation system (e.g., Priva process control system) that will measure soil moisture and the surrounding environment to deliver precise water-nutrient needs. The automated irrigation system will provide an advanced fertilizer mixing system, and control desired electrical conductivity, pH and flow rate. At all times, water will be applied using no more than agronomic rates. A copy of the Notice of Intent and Monitoring Self-Certification and other documents filed with the North Coast Regional Water Quality Control Board demonstrating enrollment either has been or will be provided.

iii) In lieu of establishing on-site water storage for retention of wet season flows sufficient to provide adequate irrigation water for the size of the area to be cultivated, water from the on-site well(s) will be used to meet all water usage requirements.

iv) An approval from the RWQCB has been or will be sought through enrollment pursuant to State Water Resources Control Board (SWRCB) Order WQ 2017-0023-DWQ. The facility will comply will all applicable water quality control measures in the order.

ii) No permits, licenses or registrations with the State Water Resources Control Board, Division of Water Rights are required in connection with this Project.

v) The applicant/operator acknowledges that the County reserves the right to reduce the size of the area allowed for cultivation under any clearance or permit issued in accordance with this Section in

the event that environmental conditions, such as a sustained drought or low flows in the watershed will not support diversions for irrigation.

b) Drainage, Run-off, and Erosion Control:
   i) Drainage, Run-off, and Erosion Control will all be managed within the RWQCB's requirements for dischargers. The cultivation is to be located within a fully enclosed structure(s) during the wet seasons which prevents soil erosion, and any excess water used during cultivation will be recycled or evaporated instead of discharged. No cultivation water will be disposed of by discharge.

   ii) Site maintenance, erosion control and drainage features may include the following:
      (1) Roads will be maintained as appropriate (with adequate surfacing and drainage features) to avoid developing surface ruts, gullies, or surface erosion that results in sediment delivery to surface waters.
      (2) Roads, driveways, trails, and other defined corridors for foot or vehicle traffic of any kind will have adequate ditch relief drains or rolling dips and/or other measures to prevent or minimize erosion along the flow paths and at their respective outlets.
      (3) Roads and other features will be maintained so that surface runoff drains away from potentially unstable slopes or earthen fills. Where road runoff cannot be drained away from an unstable feature, an engineered structure or system will be installed to ensure that surface flows will not cause slope failure.
      (4) Roads, clearings and work areas (cleared/developed areas with the potential for sediment erosion and transport) will be maintained so that they are hydrologically disconnected, as feasible, from surface waters, including wetlands, ephemeral, intermittent and perennial streams.
      (5) Ditch relief drains, rolling dip outlets, and road pad or terrace surfaces will be maintained to promote infiltration/dispersal of outflows and have no apparent erosion or evidence of soil transport to receiving waters.
      (6) Stockpiled construction materials, if necessary, will be stored in a location and manner so as to prevent their transport to receiving waters.

c) Watershed and habitat protection:
   i) Watershed and habitat protection will be provided through compliance with the RWQCB's requirements associated with their respective permits and agreements.

d) Soils Management Plan:
   i) Soils used for cultivation will be steam-sterilized and re-fortified after harvest so that it may be used again for future cultivation, and the cycle repeated as many times as feasible to minimize the amount of imported soil necessary. In the event that soil cannot be reused, it will be disposed of appropriately as solid waste.

e) Storage of fertilizers, pesticides, and other regulated products:

i) Storage and use of fertilizers and, pesticides will be conducted in accordance with the BPTC measures of SWRCB Order WQ 2017-0023-DWQ, which include requirements to apply fertilizers and soil amendments at only the proper agronomic rates, and to store materials in a manner that is protected from rainfall and erosion.

ii) Fertilizers, potting soils, compost, and other soils and soil amendments will be stored within fully enclosed spaces (building, greenhouses) to prevent surface water contamination.

(1) Pesticides/Herbicides:

(a) Under California law, the only pesticide products not illegal to use on cannabis are those that contain an active ingredient that is exempt from residue tolerance requirements and either registered and labeled for a broad enough use to include use on cannabis or exempt from registration requirements as a minimum risk pesticide under FIFRA section 25(b) and California Code of Regulations, title 3, section 6147. For the purpose of compliance with conditions of this Order, any uses of pesticide products will be consistent with product labelling and any products on the site will be placed, used, and stored in a manner that ensures that they will not enter or be released into surface or ground waters.

(2) Fertilizers and Soil Amendments:

(a) Fertilizers, potting soils, compost, and other soils and soil amendments will be stored in locations and in a manner in which they cannot enter or be transported into surface waters and such that nutrients or other pollutants cannot be leached into groundwater.

(b) Fertilizers and soil amendments will be applied and used per packaging instructions and/or at proper agronomic rates.

(c) Cultivation areas will be maintained so as to prevent nutrients from leaving the site during the growing season and post-harvest.

f) Electrical Power:

i) The site is on the electrical grid. Generator power will not be used for cultivation.

g) Cultivation Activities:

i) Cultivation activities are described as “Outdoor and Mixed-light” as defined in Humboldt County’s CMMLUO.

ii) Schedule of activities:

(1) Activities will generally include preparation for Propagation, planting, plant care, and harvesting.

(2) The cultivation schedule will be optimized to allow consistent production levels (weekly harvests) to minimize fluctuations in labor needs and deliver stable volumes of products to customers. A summary of anticipated seasonal cultivation activities is shown in Table 2, below:

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TABLE 2

ANTICIPATED SCHEDULE OF SEASONAL CULTIVATION ACTIVITIES

Planting Details			Cultivation Activities			
Planting Cycle	**Planting Date**	**Approx. No. of Hoop Structures**	**Plant Maintenance (Pruning)**	**Plant Maintenance (De-fanning)**	**Plant Maintenance (De-fanning)**	**Harvest**
1	Mar 31	9	Apr 21	May 26	Jun 16	Jun 23
2	Apr 7	9	Apr 28	Jun 2	Jun 23	Jun 30
3	Apr 14	9	May 5	Jun 9	Jun 30	Jul 7
4	Apr 21	9	May 12	Jun 16	Jul 7	Jul 14
5	Apr 28	9	May 19	Jun 23	Jul 14	Jul 21
6	May 5	9	May 26	Jun 30	Jul 21	Jul 28
7	May 12	9	Jun 2	July 7	Jul 28	Aug 4
8	May 19	9	Jun 9	Jul 14	Aug 4	Aug 11
9	May 26	9	Jun 16	Jul 21	Aug 11	Aug 18
10	Jun 2	9	Jun 23	Jul 28	Aug 18	Aug 25
11	Jun 9	9	Jun 30	Aug 4	Aug 25	Sep 1
12	Jun 16	9	Jul 7	Aug 11	Sep 1	Sep 8
13	Jun 23	9	Jul 14	Aug 18	Sep 8	Sep 15
14	Jun 30	9	Jul 21	Aug 25	Sep 15	Sep 22
15	Jul 7	9	Jul 28	Sep 1	Sep 22	Sep 29
16	Jul 14	9	Aug 4	Sep 8	Sep 29	Oct 6
17	Jul 21	9	Aug 11	Sep 15	Oct 6	Oct 13
18	Jul 28	9	Aug 18	Sep 22	Oct 13	Oct 20
19	Aug 4	9	Aug 25	Sep 29	Oct 20	Oct 27

Notes: The anticipated schedule of seasonal activities is provided only as a guideline. Actual quantities and timing of activities will be dictated by weather, operational, and market conditions.

h) Cultivation-related wastes

i) Cultivation-related wastes including, but not limited to, empty soil bags, soil amendment bags, fertilizer bags and containers, empty plant pots or containers, dead or harvested plant waste, and spent growth medium will, for as long as they remain on the site, be stored at locations where they will not enter or be blown into surface waters, and in a manner that ensures that residues and pollutants within those materials do not migrate or leach into surface water or groundwaters.

i) Refuse and human waste

i) Refuse and garbage will be stored in a location and manner that prevents its discharge to receiving waters and prevents any leachate or contact water from entering or percolating to receiving waters.

ii) Garbage and refuse will be disposed of at an appropriate waste disposal location (see "Solid Waste" Section above for more details).

16) General Performance Requirements:

a) Water Quality – See "Water Quality, Conservation, & Use" above.

b) Setbacks:
   i) The area of cannabis cultivation is located as shown on the application site plan, appropriately set back at least 30 feet from any property line (unless adjoining parcel is of common ownership), and more than 600 feet from any School, School Bus Stop, Church or other Place of Religious Worship, Public Park, or Tribal Cultural Resource as requested by a tribal THPO.
   ii) The property line of cultivation parcel is greater than 600' from the property line of any school.
   iii) Cultivation areas and associated facilities observe all required setbacks from watercourses, wetlands and Environmentally Sensitive Habitat Areas, as described within sections 313-33 and 313-38 of the code, as well as applicable resource protection policies. Where enhanced, reduced, or modified watercourse or wetland setbacks have been agreed to by the operator and RWQCB under enrollment pursuant to NCRWQB Order No. 2017-0023 and/or preparation of a Water Resources Protection Plan, these may control and supersede any setback applied pursuant to 314-61.1.

c) Land Use:
   i) The cultivation is located on land with a zoning classification of MH-Q.

d) Odor Control:
   i) All cannabis will be grown in enclosed greenhouse/hoop-house structures.
   ii) Odor control measures will be deployed to reduce the odor of exhaust air from the enclosed greenhouses. Such measures may include carbon filtration, particle filtration, bio-filtration, sealed air-recirculation, and/or other feasible measures as advancements are made in odor control technology.

e) Chemical, Hazardous, and Dangerous Materials –
   i) Operator will refrain from the improper storage or use of any fuels, fertilizer, pesticide, fungicide, rodenticide, or herbicide. It is recognized that hazardous materials and wastes from agricultural businesses are regulated by the Humboldt County Environmental Health Division, that administers the Hazardous Materials program as one of the Certified Unified Program Agencies (CUPA).

f) Electrical Generators:
   i) Electrical Generators are not planned to be used at this facility.

17) Cultivation Operations Performance Standards:

a) Labor:
   i) Pursuant to the Medicinal and Adult Use Cannabis Regulation and Safety Act ("MAUCRSA"), Health and Safety Code section 19322(a)(9), the applicant hereby declares that it is a an 'agricultural employer,' as defined in the Alatorre-Zenovich-Dunlap-Berman Agricultural Labor Relations Act of 1975 (Part 3.5 commencing with Section 1140) of Division 2 of the Labor Code), to the extent not prohibited by law."
   ii) In addition to the above declaration of status as an "Agricultural Employer" per Labor Code Sections 1140-1166.3, the applicant/employer hereby agrees to comply with all applicable federal, state, and local laws and regulations governing California agricultural employers, which may include: federal and state wage and hour laws, CAL/OSHA, OSHA, California Agricultural Labor Relations Act, and the Humboldt County Code (including the Building Code).

b) Processing Practices:
   i) After being harvested, the cannabis is taken to an adjacent off-site CMMLUO permitted processing facility where it is trimmed, hung to dry, processed, cured and sorted.

c) Employee/Worker Safety
   i) Regarding employees engaging in commercial cannabis cultivationand processing, the licensee/employer will comply with the following Employee Safety Practices:
      (1) Cultivation operations will implement safety protocols and provide all employees with adequate safety training relevant to their specific job functions, which may include:
         (a) Emergency action response planning as necessary;
         (b) Employee accident reporting and investigation policies;
         (c) Fire prevention;
         (d) Hazard communication policies, including maintenance of material safety data sheets (MSDS);
         (e) Materials handling policies;
         (f) Job hazard analyses; and
         (g) Personal protective equipment policies, including respiratory protection.

d) Emergency Contact List:
   i) The licensee/employer will visibly post and maintain an emergency contact list which includes at a minimum:
      (1) Operation manager contacts;
      (2) Emergency responder contacts;
      (3) Poison control contacts.

e) Safe Drinking Water, Toilets, & Sanitary Facilities:
   i) At all times, employees will have access to safe drinking water and toilets and hand washing facilities that comply with applicable federal, state, and local laws and regulations. The

licensee/employer will contract with a professional temporary sanitation facilities services provider to provide and maintain toilet and hand-washing facilities in accordance with the requirements of Cal-OSHA and ADA/California Accessibility regulations.

f) On-Site Housing:
   i) There is no intent to provide worker on-site housing at this time.

18) Performance Standards for Mixed-Light Cultivation:

a) Shields:
   i) When using artificial lighting for mixed-light cultivation, shields will be deployed to shield greenhouses so that little to no light escapes during nighttime hours. Light will be prevented from escape at a level that is visible from neighboring properties between sunset and sunrise. The shields will be constructed of Obscura fabric by Ludvig Svensson Company or equivalent.

b) Design Standards:
   i) The light source will comply with the International Dark Sky Association standards for Lighting Zone 0 and Lighting Zone 1, and be designed to regulate light spillage onto neighboring properties resulting from backlight, uplight, or glare (BUG).

c) Compliance:
   i) The applicant understands and agrees that should the Humboldt County Planning Division receive complaints that the lighting is out of alignment or not complying with these standards, within ten (10) working days of receiving written notification that a complaint has been filed, the applicant shall submit written verification that the lights' shielding and alignment has been repaired, inspected and corrected as necessary

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Humboldt County Department of Health & Human Services

Division of Environmental Health
100 H Street - Suite 100 - Eureka, CA 95501
Phone: 707-445-6215 - Toll Free: 800-963-9241
Fax: 707-441-5699
envhealth@co.humboldt.ca.us

18/19-0783

WATER WELL APPLICATION
CONSTRUCTION – REPAIR – DESTRUCTION

The Well Permit will be returned to the property owner when approved by Humboldt County Division of Environmental Health (DEH)

DISTRIBUTED 3-4-19

Instructions:

1. Complete both sides and submit the Water Well Application with required fee. Include Well Driller's signature and property owner's signature.
2. Work on a well shall not be started prior to approval of the Water Well Application by DEH.
3. Any changes made to the location of a new well shall be approved by DEH prior to commencement of drilling.
4. Well Driller shall notify DEH a minimum of 24 hours prior to sealing the annular space.

Site Address	Simpson Mill Rd	APN	506-231-011
City/State/Zip	Arcata	CA	
Directions to Site			
Applicant	~~Sewell~~ Rich Drilling	Contact	Stuart
Mailing Address	1251 Rail Road Dr	Work Phone	839-1087
City/State/Zip	McKinleyville, Calif 95519	Cell Phone	
Property Owner	~~Sun Valley Floral Farms~~ Arcata Land Company, LLC	Home Phone	~~826-8732~~
Mailing Address	3140 Upper Bay Rd	Work Phone	825-5883
City/State/Zip	Arcata Calif 95521	Cell Phone	
I hereby grant 'right-of-entry' for inspection purposes			Daniel Richey CFO
Drilling Contractor	Rich Well Drilling	C-57 License #	902702

I hereby agree to comply with all laws and regulations of the County of Humboldt and the State of California Department of Water Resources Bulletin 74 pertaining to water well construction. I will contact Humboldt County Division of Environmental Health (DEH) when I commence work. Within 30 days after completion of work, I will furnish DEH a report of the work performed.

Well Driller Signature: Stuart W. Dickey

RECEIVED
FEB 27 2019
HUMBOLDT CO. DIVISION OF ENVIRONMENTAL HEALTH

Would driller like a copy of approved application? ☑ Yes ☐ No

☐ U.S. Mail address:

☐ Email address: swdickey@suddenlink.net

Type of Application:	Construction:		Intended Use:
☑ Construction	Estimated Depth (ft.)	150	☐ Domestic - private
☐ Destruction	Diameter (in.)		☐ Community Supply
☐ Repair/Modification	Depth of Seal (ft.)		☒ Irrigation
	Sealing Material		☐ Other

2722

Revised 7-26-16

Estimated Work Dates:	Casing:	Type of Sewage System:
Start _____	Diameter (in.) 8"	☐ Community Sewer
Completion _____	Material Steel	☒ OWTS (Septic)
		Distance from well site to OWTS 1000+

Special Requirements/Comments:

PLOT PLAN

Coastal Zone: ☐ Yes ☐ No

✓#6275 **FOR OFFICE USE ONLY**

Fee:	$746.00	Site Approved by:	AM Mulcahy
Date:	2-27-19	Site Approved Date:	4/9/19
Receipt:	918603	Sealed to Depth of:	20'
Project #:		Seal observed:	☐ Yes ☒ No
Paid by:	Rich Well Drilling	Final Approved Date:	am 4/9/19

State of California

Well Completion Report

Form DWR 188 Submitted 4/6/2019

WCR2019-004628

Owner's Well Number: 1 | Date Work Began: 3/17/2019 | Date Work Ended: 3/27/2019

Local Permit Agency: Humboldt County Department of Health & Human Services - Land Use Program

Secondary Permit Agency: | Permit Number: 18/19-0783 | Permit Date: 02/27/2019

Well Owner (must remain confidential pursuant to Water Code 13752)

Name:

Mailing Address:

City: State: Zip:

Planned Use and Activity

Activity: New Well

Planned Use: Water Supply Irrigation - Agriculture

Well Location

Address:

City: Arcata | Zip: 95521 | County: Humboldt

Latitude: 40 Deg. 53 Min. 2.0399 Sec. N | Longitude: -124 Deg. 6 Min. 3.9599 Sec. W

Dec. Lat.: 40.8839 | Dec. Long.: -124.1011

Vertical Datum: | Horizontal Datum: WGS84

Location Accuracy: | Location Determination Method:

APN: 506-231-011

Township: 06 N

Range: 01 E

Section: 19

Baseline Meridian: Humboldt

Ground Surface Elevation:

Elevation Accuracy:

Elevation Determination Method:

Borehole Information

Orientation: Vertical | Specify:

Drilling Method: Cable Tool | Drilling Fluid: Water

Total Depth of Boring: 130 Feet

Total Depth of Completed Well: 130 Feet

Water Level and Yield of Completed Well

Depth to first water: 21 (Feet below surface)

Depth to Static Water Level: (Feet) | Date Measured:

Estimated Yield*: 400 (GPM) | Test Type: Bailing

Test Length: 6 (Hours) | Total Drawdown: 10 (feet)

*May not be representative of a well's long term yield.

Geologic Log - Free Form

Depth from Surface Feet to	Feet	Description
0	5	Brown Silty Top Soil
5	21	Brown Silty Clay
21	37	BROWN SandY Clay
37	85	Blue Sand And Gravel W/ Wood and Some Silty Clay
85	127	Yellow Sand And Gravel
127	130	Yellow Sand And Gravel W/ Hard yellow Clay

RECEIVED

APR - 8 2019

HUMBOLDT CO. DIVISION
OF ENVIRONMENTAL HEALTH

Casings

Casing #	Depth from Surface Feet to Feet		Casing Type	Material	Casings Specificatons	Wall Thickness (inches)	Outside Diameter (inches)	Screen Type	Slot Size if any (inches)	Description
1	0	90	Blank	Low Carbon Steel	Grade: ASTM A53	0.25	8.5			
1	90	125	Screen	Low Carbon Steel	Grade: ASTM A53	0.25	8.5	Milled Slots	0.05	
1	125	130	Blank	Low Carbon Steel	Grade: ASTM A53	0.25	8.5			

Annular Material

Depth from Surface Feet to Feet		Fill	Fill Type Details	Filter Pack Size	Description
0	20	Cement	Other Cement		
20	130	Filter Pack	Other Gravel Pack		No Filter Pack Casing Was Driven Into Formation

Other Observations:

Borehole Specifications

Depth from Surface Feet to Feet		Borehole Diameter (inches)
0	20	13
20	130	8

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name: RICH WELL DRILLING & PUMP SERVICE INC
Person, Firm or Corporation

1251 RAILROAD DRIVE (Address) | MC (City) | CA (State) | 95519 (Zip)

Signed: *electronic signature received* (C-57 Licensed Water Well Contractor) | 04/06/2019 (Date Signed) | 902702 (C-57 License Number)

DWR Use Only

CSG #	State Well Number	Site Code	Local Well Number

N — Latitude Deg/Min/Sec

W — Longitude Deg/Min/Sec

TRS:

APN:

RICH
WELL DRILLING
& PUMP SERVICE

1251 Railroad Drive. McKinleyville, CA 95519. State license#902702

August 19, 2020

Rudolf Visser
Arcata Land Company LLC
3318 Foster Avenue
Arcata, CA 95521

Subject: Agriculture Irrigation Well; APN 506-231-011

Dear Mr. Visser:

Rich Well Drilling completed pump testing and obtained a permit for an existing agriculture irrigation well on APN 506-231-011 in March 2019. The well is completed to a depth of approximately 150 feet and screened approximately 100' below surface in a state designated groundwater basin (Mad River Valley – Mad River Lowland; 1-008.01). There are no nearby streams or surface waters. Based on site-specific circumstances, I do not believe that the well has a hydraulic connection to any surface water or any larger shallow homogeneous aquifer.

Sincerely,

Stuart Dickey

Rich Well Drilling and Pump Service Company

MEMORANDUM

Arcata Land Company LLC
Arcata Land Company LLC Site Improvements – 1595-0001

Date: September 23, 2020

To: Rudolf Visser
Arcata Land Company, LLC
3318 Foster Avenue
Arcata, CA 95521

From: Kyle Anderson, PE

Subject: Stormwater Management Strategy Revisions

Introduction

This purpose of this memorandum is to present the stormwater management design strategy proposed for the commercial cannabis cultivation project being developed in an unincorporated area West of the City of Arcata. The project is located on the north side of Foster Ave. between Dolly Varden Road and Janes Road in Arcata, CA and is currently used for agriculture cultivation of both flowers and row crops.

Permitting

A previous preliminary stormwater management plan prepared by SHN Consulting applied the requirements of the Humboldt County Low Impact Development (LID) Manual and the Humboldt County MS4 Stormwater permit. Based on a review of the County's MS4 boundary, the proposed development lies outside the MS4 Phase II Permit Boundary Area (see **Appendix A**). Therefore, the proposed development is subject to the State Water Resource Control Board General Construction Permit post construction stormwater requirements.

As a result, a water balance must be performed according to the Construction General Permit post-construction requirements and the post-development runoff volume of the 85th percentile storm must be equal to or less than the pre-development runoff volume. See **Appendix B** for the preliminary water balance summary.

Site Hydrology

The existing parcel impacted by the proposed development is approximately 30 acres and drains to an existing ditch north of the site. Runoff from the site generally flows from south to north. The native soil is a silty clay loam with a stabilized infiltration rate of 2 inches per hour, as tested by SHN Consulting. The composite curve number of the pre-development area is 84 (see **Appendix C**).

The proposed development will add impervious area from the construction of hoop houses and concrete walkways. As a result, the proposed composite curve number is increased to 96.

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Due to the topography of the existing site, the post-development grading design splits runoff into two subcatchments, one collects the runoff from the northern portion of the parcel, and the other the southern portion (see **Appendix C** for subcatchment delineation). The proposed northern subcatchment is primarily hoop houses and open space and the proposed southern subcatchment is primarily hoop houses, open space, and an office building located in the southwest corner of the site.

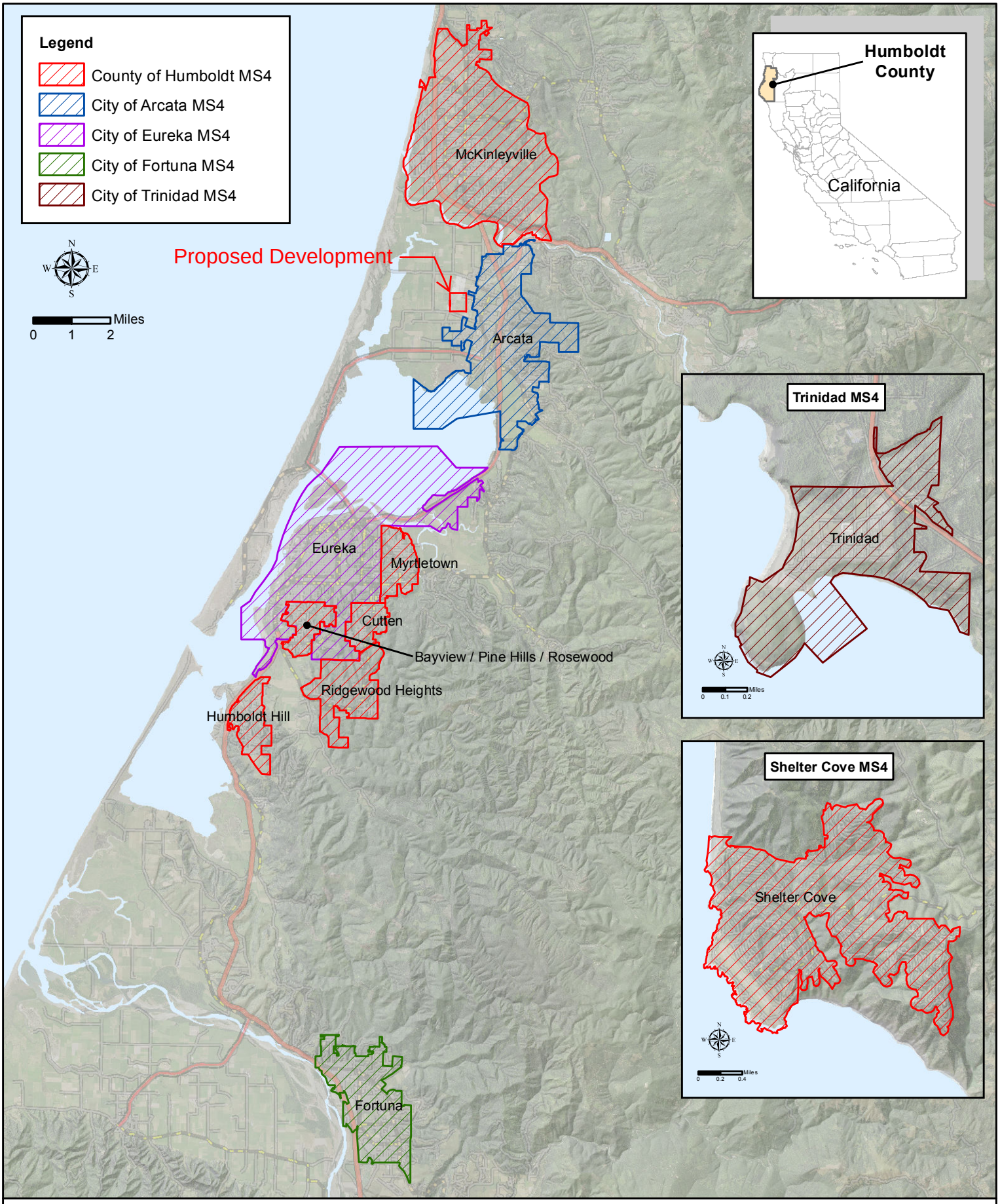
Design

In order to separate applied irrigation water and stormwater runoff, the proposed development utilizes hoop houses to isolate the cannabis crops. Runoff from the hoop houses is conveyed to stormwater retention basins through a series of perforated pipes that run in between all of the hoop houses. (see **Appendix D**).

The perforated pipes are connected to a larger network of 12-inch storm drains which convey runoff to the retention basins. The site has two proposed retention basins, one for each subcatchment. The preliminary design for the northeast retention basin will provide 3.8 acre-feet of storage, and the southern retention basin will provide 2.5 acre-feet. To encourage infiltration into the native soil and satisfy the requirements of the stormwater balance calculator, the footprint of these basins will be a combined minimum of 1.75 acres and the bottom surface ripped to a depth of 6 inches to facilitate increased storage capacity.

Each basin will also be equipped with an outlet structure which will allow excess flow from larger storm events to be controlled and drained into the existing ditches adjacent to the property.

APPENDIX A
HUMBOLDT COUNTY MS4 PHASE II
PERMIT BOUNDARY MAP



Humboldt LID Stormwater Manual - MS4 Boundary Areas Map

This map is intended for planning purposes and should not be used for precise measurement or navigation. All locations are approximate.

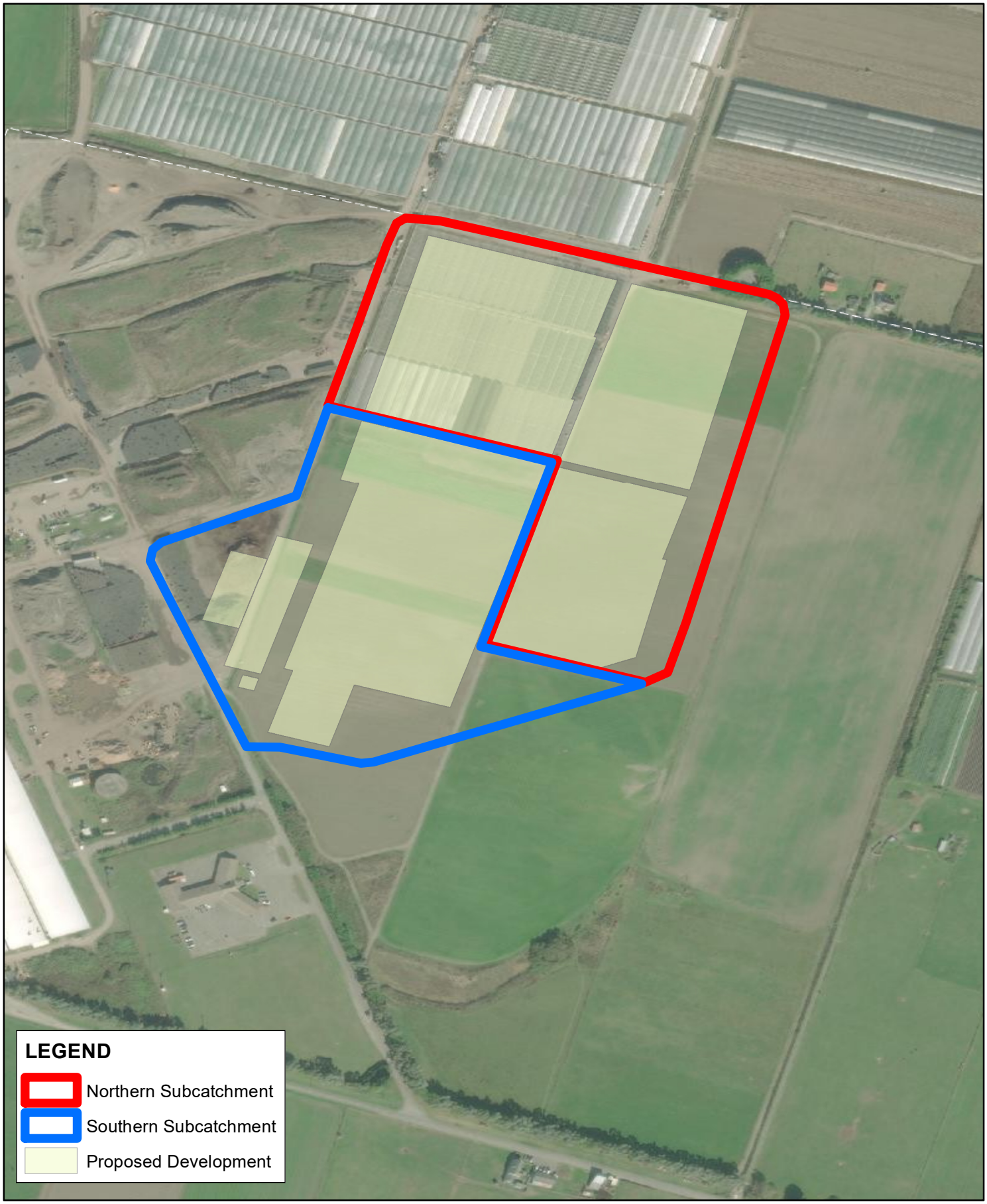
Imagery: USDA NAIP (2014)
Map Prepared: May 2016

APPENDIX B
WATER BALANCE SUMMARY

Post-Construction Water Balance Calculator

User may make changes from any cell that is orange or brown in color (similar to the cells to the immediate right). Cells in green are calculated for you.		(Step 1a) If you know the 85th percentile storm event for your location enter it in the box below	(Step 1b) If you can not answer 1a then select the county where the project is located (click on the cell to the right for drop-down): This will determine the average 85th percentile 24 hr. storm event for your site, which will appear under precipitation to left.	***HUMBOLDT***	
		0.65	(Step 1c) If you would like a more percise value select the location closest to your site. If you do not recgonize any of these locations, leave this drop-down menu at location. The average value for the County will be used.	**EUREKA WFO WOODLEY IS**	
Project Information			***Runoff Calculations***		
Project Name:	***Arcata Land Company LLC Site Improvements***		(Step 2) Indicate the Soil Type (dropdown menu to right):	***Group C Soils***	**Low infiltration. Sandy clay loam. Infiltration rate 0.05 to 0.15 inch/hr when wet.**
Waste Discharge Identification (WDID):			(Step 3) Indicate the existing **dominant** non-built land Use Type (dropdown menu to right):	***Cultivated Agricultural: minor crop residue cover***	
Date:	***Optional***		(Step 4) Indicate the proposed **dominant** non-built land Use Type (dropdown menu to right):	***Natural Desert Landscape***	
Sub Drainage Area Name (from map):	***Optional***			**Complete Either**	
Runoff Curve Numbers				**Sq Ft** / **Acres**	**Acres**
Existing Pervious Runoff Curve Number	**90**		*(Step 5) Total Project Site Area:*	**31.50**	**31.50**
Proposed Development Pervious Runoff Curve Number	**94**		*(Step 6) Sub-watershed Area:*	**31.50**	**31.50**
Design Storm			*Percent of total project :*	**100%**	
Based on the County you indicated above, we have included the 85 percentile average 24 hr event - P85 (in)^ for your area.	**0.65**	**in**			
The Amount of rainfall needed for runoff to occur (Existing runoff curve number -P from existing RCN (in)^)	**0.22**	**In**	***(Step 7) Sub-watershed Conditions***	**Complete Either**	**Calculated Acres**
P used for calculations (in) (the greater of the above two criteria)	**0.65**	**In**	Sub-watershed Area (acres)	**Sq Ft** / **Acres**	**31.50**
^Available at www.cabmphandbooks.com			Existing Rooftop Impervious Coverage	**0**	**0.00**
			Existing Non-Rooftop Impervious Coverage	**7.6**	**7.60**
			Proposed Rooftop Impervious Coverage	**1.75**	**1.75**
			Proposed Non-Rooftop Impervious Coverage	**20.4**	**20.40**
			Credits	**Acres**	**Square Feet**
			Porous Pavement	**0.00**	**0**
			Tree Planting	**0.00**	**0**
Pre-Project Runoff Volume (cu ft)	**23,007**	**Cu.Ft.**	Downspout Disconnection	**0.00**	**0**
Project-Related Runoff Volume Increase w/o credits (cu ft)	**51,055**	**Cu.Ft.**	Impervious Area Disconnection	**19.58**	**852,905**
			Green Roof	**0.00**	**0**
			Stream Buffer	**0.00**	**0**
Project-Related Volume Increase with Credits (cu ft)	**-2,075**	**Cu.Ft.**	Vegetated Swales	**0.00**	**0**
			Subtotal	**19.58**	**852,905**
			Subtotal Runoff Volume Reduction Credit	**37309 Cu. Ft.**	
You have achieved your minimum requirements			***(Step 9) Impervious Volume Reduction Credits***	**Volume (cubic feet)**	
			Rain Barrels/Cisterns	**0 Cu. Ft.**	
			Soil Quality	**15,821 Cu. Ft.**	
			Subtotal Runoff Volume Reduction	**15,821 Cu. Ft.**	
			Total Runoff Volume Reduction Credit	**53,130 Cu. Ft.**	

APPENDIX C
SUBCATCHMENT DELINEATION AND HYDROLOGY



Subcatchment Delineation
Arcata Land Company LLC

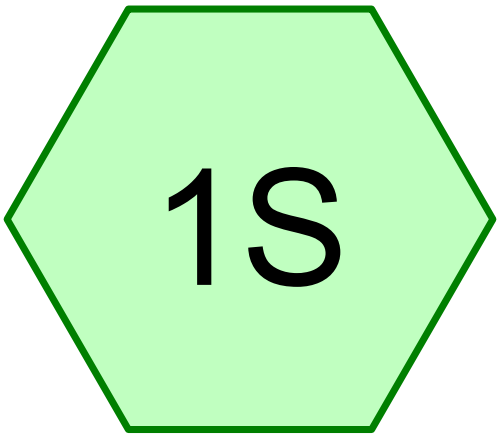
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612 CLARION COURT
SAN LUIS OBISPO, CA 93401
T 805 544-4011 F 805 544-4294
www.wallacegroup.us

1 in = 400 Feet

0 100 200 400

JOB NO: 1595-0001
MAP DOC: SUBCATCHMENT DELINEATION.MXD
CREATED BY: DJG
DATE: 09/23/2020

EXHIBIT NOTES:
WALLACE GROUP DID NOT PERFORM SURVEY SERVICES FOR THIS MAP. NOT A LEGAL DOCUMENT.



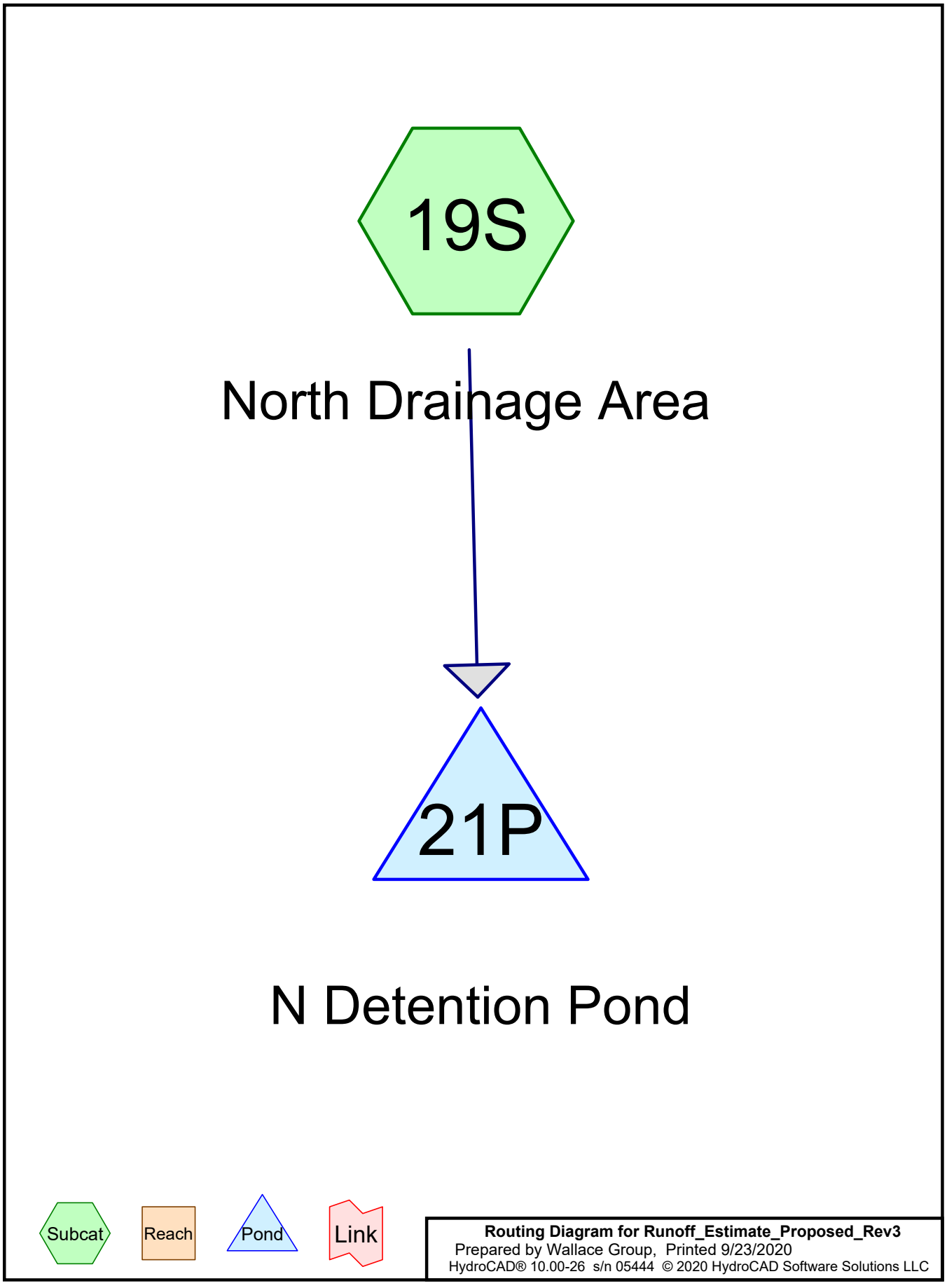
Existing Land

Subcat Reach Pond Link

Routing Diagram for Runoff_Estimate_Existing
Prepared by Wallace Group, Printed 9/23/2020
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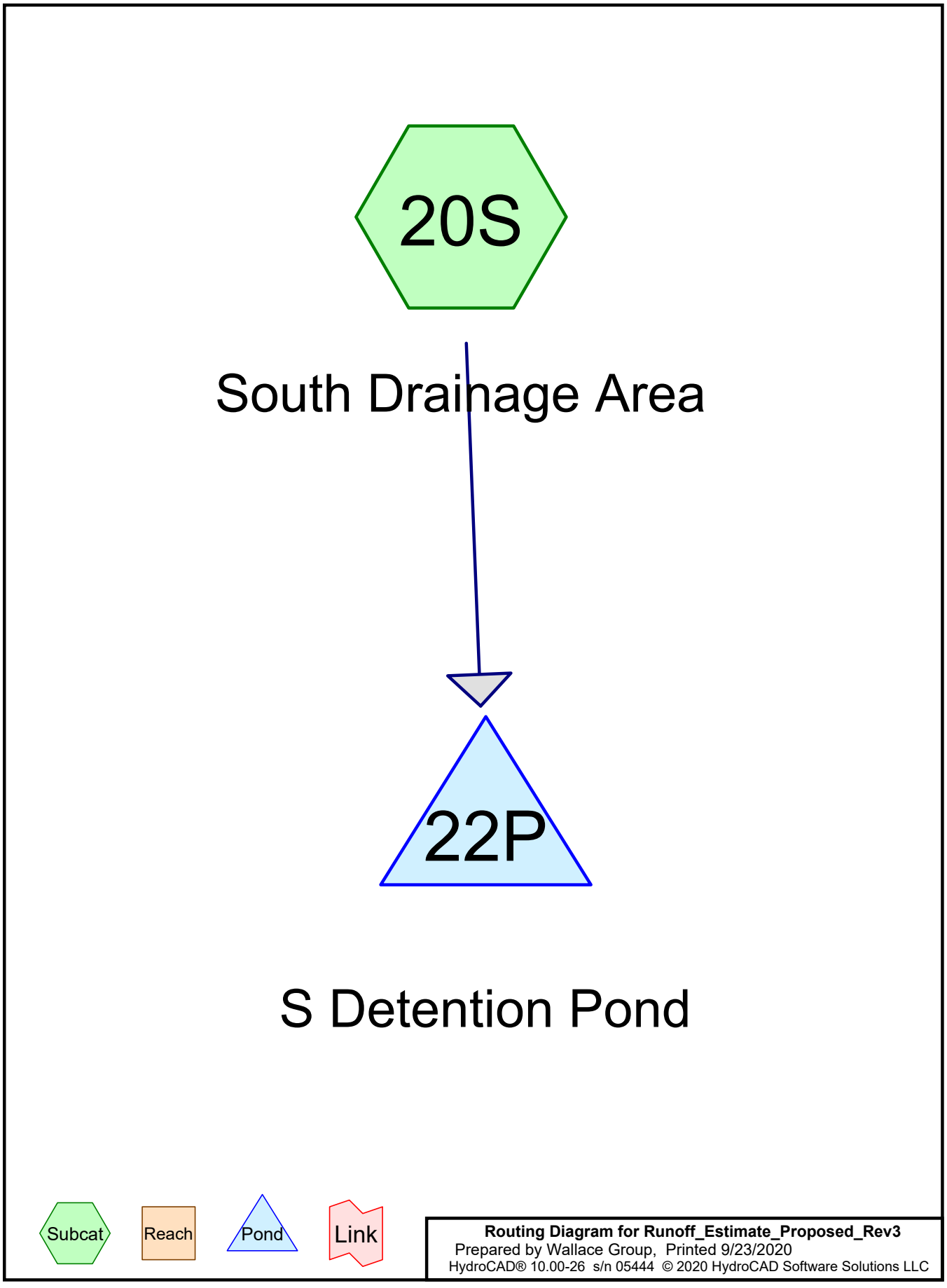
Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.165	91	Gravel Access Road (1S)
29.835	84	Pasture/grassland/range, Fair, HSG D (1S)
30.000	**84**	**TOTAL AREA**


19S
North Drainage Area
21P
N Detention Pond
Subcat
Reach
Pond
Link
Routing Diagram for Runoff_Estimate_Proposed_Rev3
Prepared by Wallace Group, Printed 9/23/2020
HydroCAD® 10.00-26 s/n 05444 © 2020 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.250	98	Concrete (impermeable) (19S)
0.200	89	Gravel Road (CN from table) (19S)
1.040	91	Gravel Rows (CN approximates native soil to account for infiltration) (19S)
12.490	98	Hoop Houses (impermeable) (19S)
4.000	91	Open Space (19S)
17.980	**96**	**TOTAL AREA**



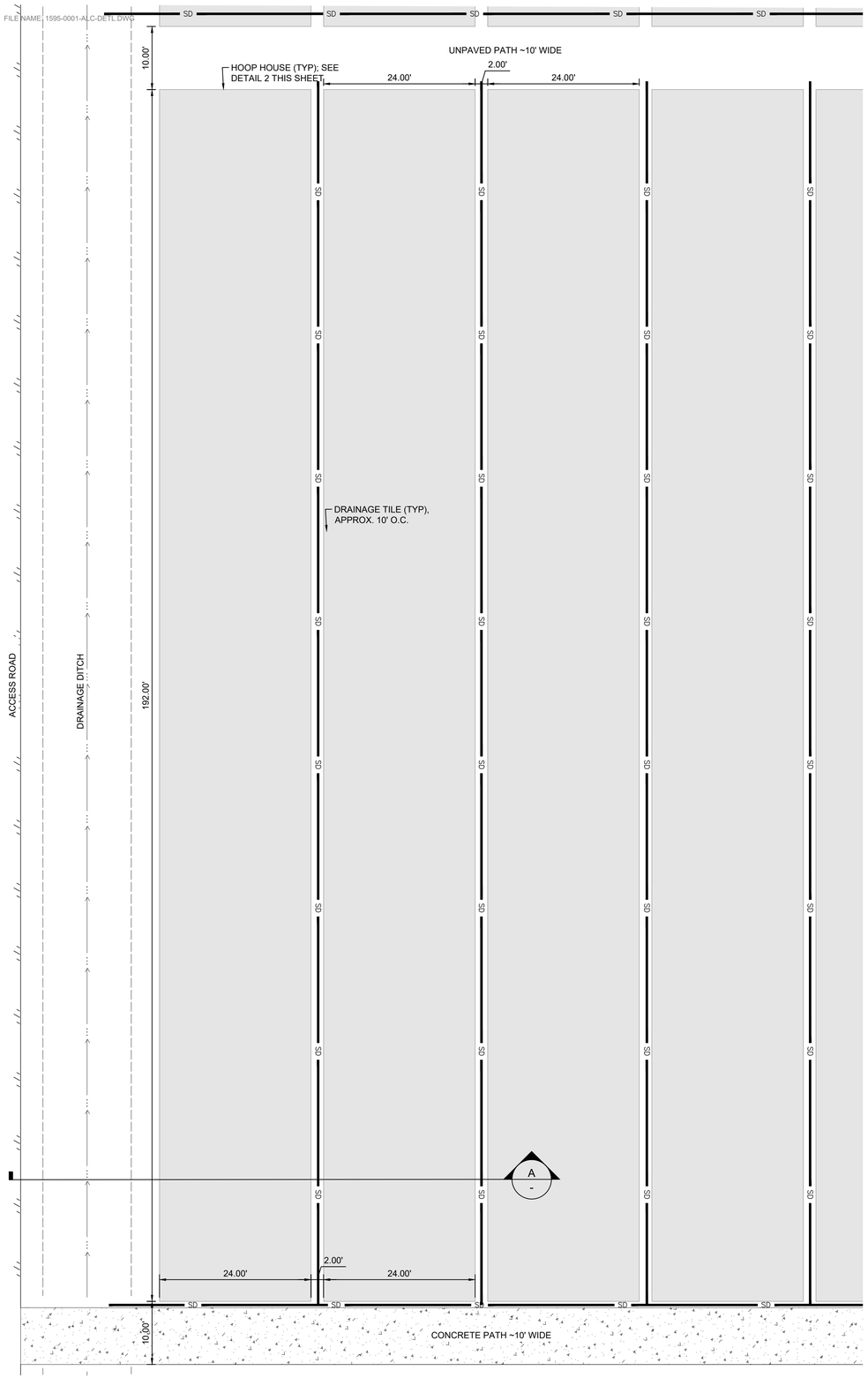
Routing Diagram for Runoff_Estimate_Proposed_Rev3
Prepared by Wallace Group, Printed 9/23/2020
HydroCAD® 10.00-26 s/n 05444 © 2020 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.540	98	Concrete (impermeable) (20S)
0.190	89	Gravel Road (20S)
0.610	91	Gravel Rows (CN approximates native soil to account for infiltration) (20S)
7.090	98	Hoop Houses (impermeable) (20S)
1.740	98	Office Building (20S)
1.850	91	Open Space (20S)
12.020	**96**	**TOTAL AREA**

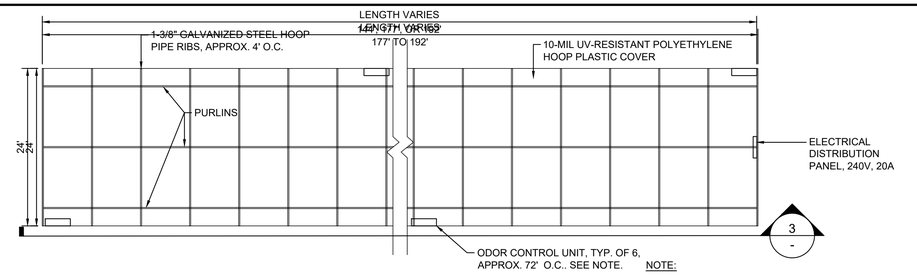
APPENDIX D
HOOP HOUSE AND GRAVEL TRENCH DETAIL

FILE NAME: 1595-0001-ALC-DET1.DWG



1 EXISTING HOOP HOUSE AND SUBDRAIN LAYOUT

Scale: 1:10

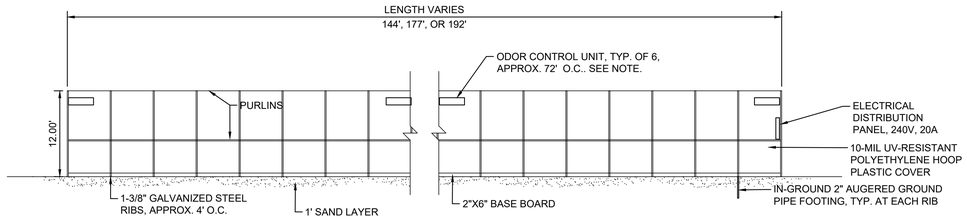


NOTE:

1. ODOR CONTROL SHALL BE PROVIDED THROUGH CARBON BASED AIR FILTERS. HOOP HOUSE AIR VOLUME RANGES FROM 37,200 TO 49,500 CF ODOR FLOW CONTROL UNITS SHALL BE SIZED TO TREAT A TOTAL OF 3 AIR VOLUMES PER HOUR.

2 PROPOSED HOOP DETAIL - PLAN

Scale: NTS

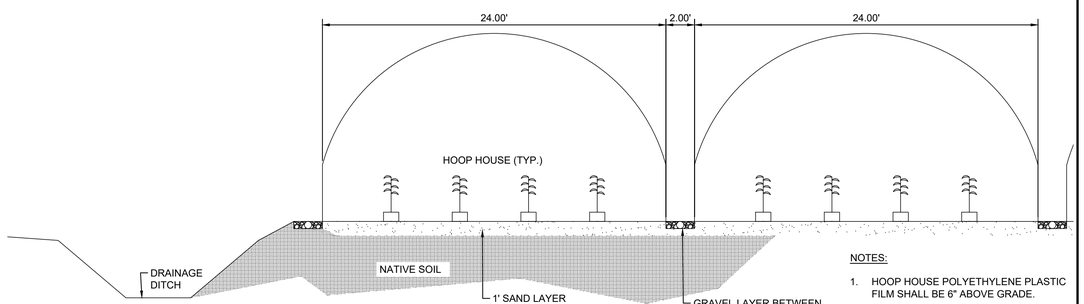


NOTE:

1. HOOP HOUSE POLYETHYLENE PLASTIC FILM SHALL BE 6" ABOVE GRADE.
2. ODOR CONTROL SHALL BE PROVIDED THROUGH CARBON BASED AIR FILTERS. HOOP HOUSE AIR VOLUME RANGES FROM 37,200 TO 49,500 CF ODOR FLOW CONTROL UNITS SHALL BE SIZED TO TREAT A TOTAL OF 3 AIR VOLUMES PER HOUR.

3 PROPOSED HOOP DETAIL - SECTION

Scale: NTS



NOTES:

1. HOOP HOUSE POLYETHYLENE PLASTIC FILM SHALL BE 6" ABOVE GRADE.
2. DRIP IRRIGATION RUNS THROUGH THE CENTER OF ROW CROPS.

A HOOP ELEVATION

Scale: 1:5

GRAPHIC SCALE

0 5 10 20

(IN FEET)

1 IN = 10 FT

N

ARCATA LAND COMPANY, LLC
3318 FOSTER AVENUE, ARCATA, CA
DETAILS - HOOP HOUSES
SHEET C4.0

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Fertilizer Loading and Mixing Standard Operating Procedure

Title: Fertilizer Loading and Mixing SOP

Doc. No.:	SOP-OPR-006	Rev. :	A
Area:	Arcata Land Company	Date:	March 14, 2020
Doc. Owner:	Tim Crockenberg		

1.0 PURPOSE

1.1 To make the right fertilizer recipe to be delivered in the irrigation system to the crop in the greenhouse according to plant nutrient demand.

2.0 SCOPE

2.1 This procedure must be observed by any Team Member performing the mixing of the fertilizers formulas. Only authorized Team Members can follow the steps described in this procedure.

2.2 If you have any doubt about your responsibilities please check and confirm with your Manager before proceeding.

3.0 REFERENCES

3.1 Fertilizers Safety Data Sheets (SDS)

3.1.1 Check the ALC fertilizers SDS binder

3.2 Preparation of fertilizer solutions: Physical and chemical considerations. Haifa Group table (Can be seen in the attachments in this procedure)

4.0 DEFINITIONS

4.1 **SDS (formerly known as MSDS: Material Safety Data Sheet):** Safety Data Sheet: Document that contains the information on potential health effects of exposure to chemicals or other potentially dangerous substances and on safe working procedures when handling chemical products.

4.2 **PH:** is a measure of hydrogen ion concentration; a measure of the acidity or alkalinity of a solution. Aqueous solutions at 25°C with a **pH** less than seven are acidic, while those with a **pH** greater than seven are basic or alkaline.

4.3 **EC (Electrical conductivity):** When an electrical current passes through a wire, what moves and carries the current are the ELECTRONS. But in solutions, the current is carried by IONS: positively charged CATIONS [+] such as H+ , Na+, Mg+, etc. and negative ANIONS [-] such as OH-, Cl-, Acetate-, etc. The conductivity of a solution depends on the concentration of ALL the ions present, the greater their concentrations, the greater the conductivity, These ions all have the electrical unit charges shown by their symbols, but they move at different velocities through the solution, so they contribute differently to the conductivity. The conductivity is the sum of the contribution of ALL the ions present in the solution

4.4 **Dry matter:** Is what remains after all of the water is evaporated out of a feed: grain and fresh or dried forages.

4.5 **Fertilizer:** Is a material of natural or synthetic origin that is applied to the soil or the plants to supply one or more nutrients essential for the growth of the plants. Fertilizers are commonly used for growing all crops, with application rates depending on the soil fertility and according to the particular crop. The nutrients required for healthy plant life are classified according to the elements. Plants are made up of four main elements: Hydrogen, Oxygen, Carbon, and Nitrogen.

4.5.1 **Macronutrients elements**: The macro-nutrients are consumed in larger quantities and are present in plant tissue in quantities from 0.15% to 6.0% on a dry matter (DM).

Chemical element	Name	Application
N	Nitrogen	Leaf growth
P	Phosphorus	Develop of roots, flowers, seeds, fruits
K	Potassium	Strong stem growth, movement of water in plants, promotion of flowering and fruiting
Mg	Magnesium	Has an important role in photosynthesis because it forms the central atom of chlorophyll. Without sufficient amounts of magnesium, plants begin to degrade the chlorophyll in the old leaves. Chlorophyll is the pigment that gives plants their green color and carries out the process of photosynthesis.
Ca	Calcium	Calcium in plants increases the nutrient uptake, build strong cell walls for sturdier plants, and increase vitality. A Calcium deficiency will cause severe plant stress, visual symptoms include: necrosis at the tips and margins of young leaves; bulb and fruit abnormalities; deformation of leaves; highly branched, short, brown root systems; severe, stunted growth; and general chlorosis.
S	Sulfur	In plants, **sulfur** is essential for nitrogen-fixing nodules on legumes and necessary in the formation of chlorophyll. Plants use **sulfur** in the processes of producing proteins, amino acids, enzymes and vitamins. **Sulfur** also helps **the plants r**esistance to disease, aids in growth, and in seed formation.

4.5.2 **Micronutrients:** Are consumed in smaller quantities and are present in plant tissue on the order of parts-per-million (ppm), ranging from 0.15 to 400 ppm DM (Dry matter), or less than 0.04% DM. These elements are often present at the active sites of enzymes that carry out the plant's metabolism. Micro elements- Fe, B, Cu, Mo, M, can be find individual or in all al combination like Micronutrients chelate.

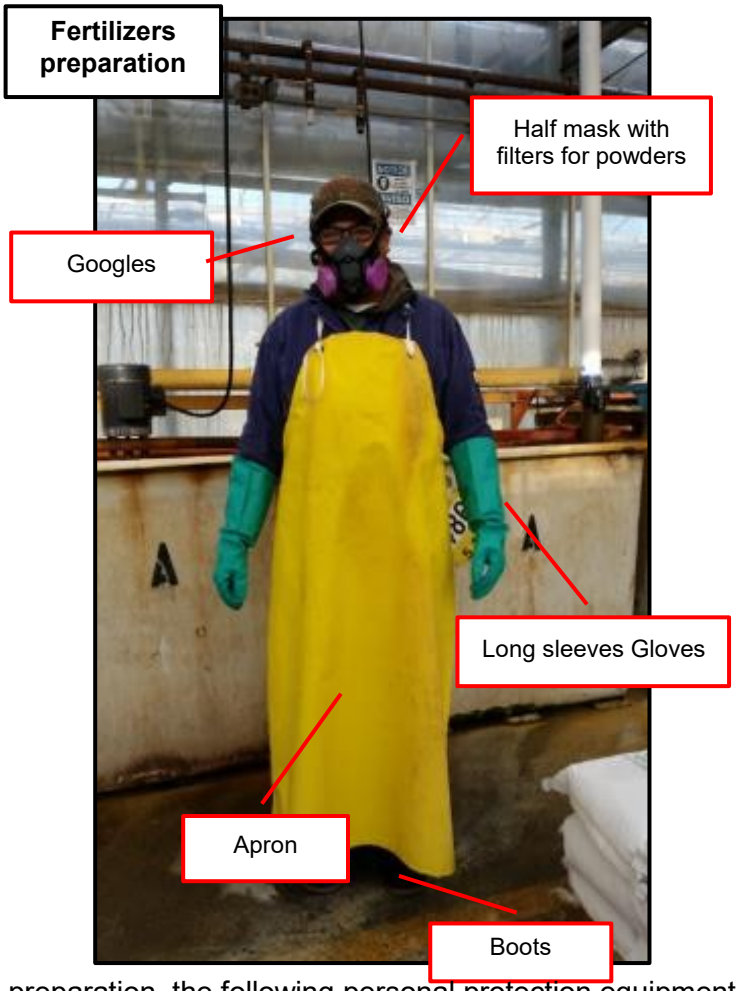
Chemical element	Name	Application
Fe	Iron	First of all, **iron** is involved when a plant produces chlorophyll, which gives the plant oxygen as well as its healthy green color. This is why plants with an **iron** deficiency, or chlorosis, show a sickly yellow color to their leaves. **Iron** is also necessary for some enzyme functions in many plants.
B	Boron	**Function**: **Boron** is used with calcium in cell wall synthesis and is essential for cell division (creating new **plant** cells). **Boron** requirements are much higher for reproductive growth so it helps with pollination, and fruit and seed development
Cu	Copper	**Copper** activates some enzymes in **plants** which are involved in lignin synthesis and It is also required in the process of photosynthesis, is essential in **plant** respiration and assists in **plant** metabolism of carbohydrates and proteins.
Mo	Molybdenum	Involved in the nitrogen metabolism, essential in nitrogen fixation by legumes.
Mn	Manganese	Is used in **plants** as a major contributor to various biological systems including photosynthesis, respiration, and nitrogen assimilation.

5.0 SAFETY RECOMMENDATIONS (PERSONAL PROTECTION EQUIPMENT)

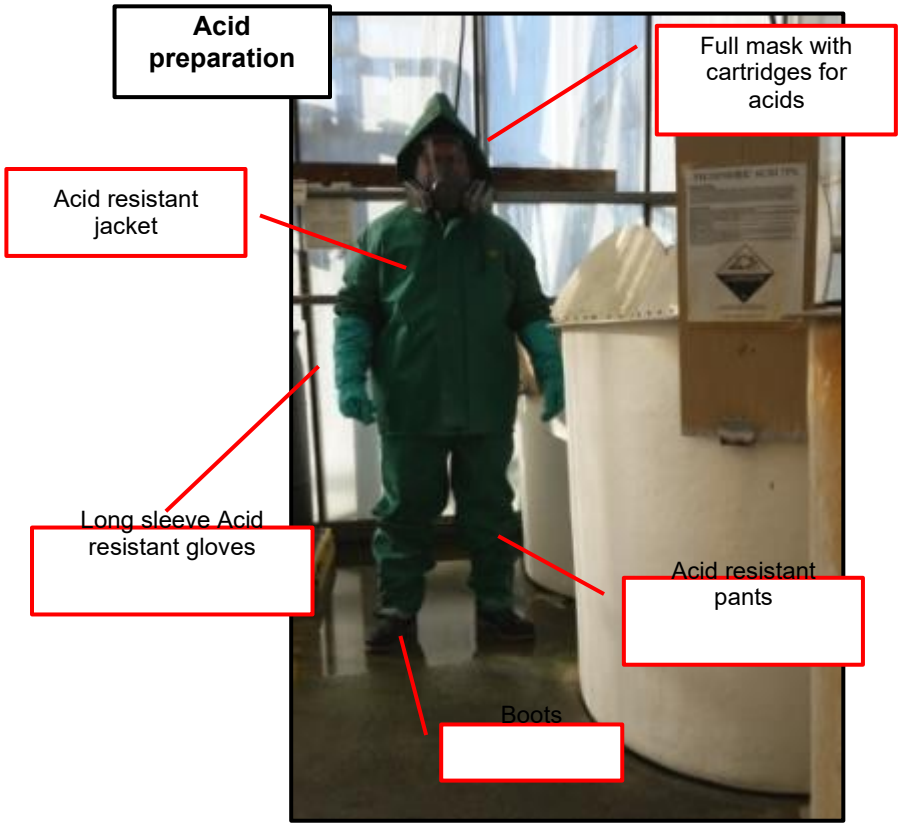
5.1 It is mandatory to read and understand the SDS of the fertilizer materials used in the preparation solution process and the hazard situation to which can be exposed before using these

5.2 It is mandatory the use of the Personal Protection Equipment all the time when manipulate these materials.

5.3 For fertilizers preparation, the following PPE is required:



5.4 For Acids preparation, the following personal protection equipment is required:



5.5 Always keep your area clean and organize

5.6 Each chemical or fertilizer must be well identified and stored in a dry and safe place under a safety lock.

5.7 It is mandatory to have an "**Eye wash station"**, a "**First aid kit"** and an **"Emergency spill kit"** in the fertilizers mixing area.

5.8 The person in charge should have all knowledge to provide first Aid in case of accident. That means this person should be certified.

6.0 PROCEDURE

FERTILIZERS STORAGE

6.1 All fertilizers should be stored in an locked area with access only to authorized Team members



6.2 Warning/Danger signs should be posted to identify the storage room

6.3 All stored fertilizers containers must be identified, properly labeled and properly closed to prevent any spill or scatter.

6.4 The storage area should have a list off all the stored fertilizers and a binder with all the SDS.

FERTILIZERS MIXING

6.5 Remember to wear your PPE (Personal Protection Equipment) before handling the fertilizers

6.6 The fertilizer formula is prepared in 2 different tanks labeled as **"A**" & **"B**" and the **"Acid"** formula to adjust the PH of the fertilizers mix is prepared on a third tank, labeled as **"C"**.

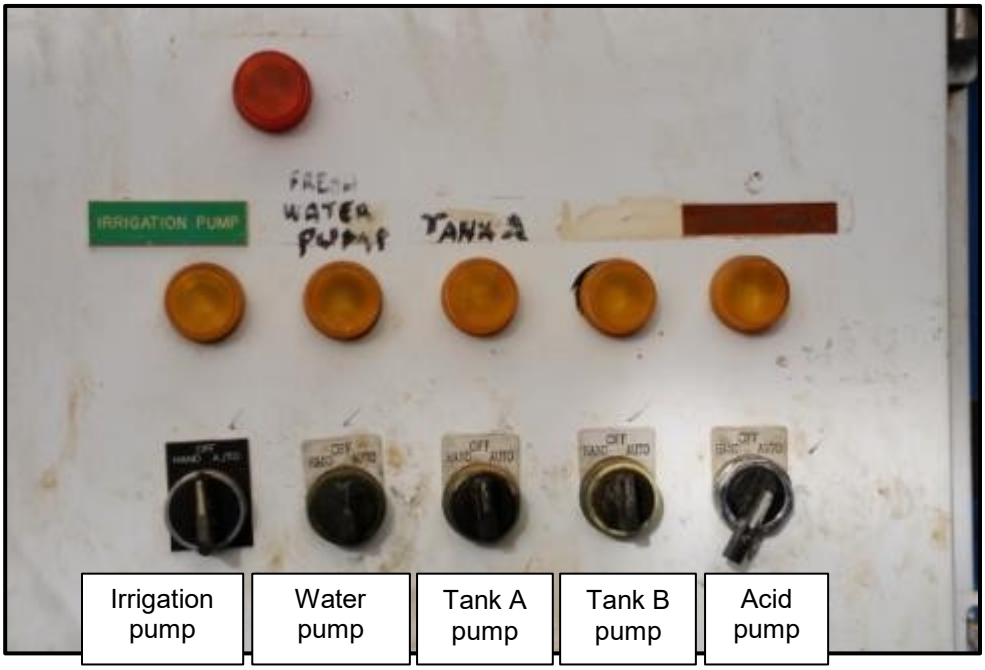
6.7 Mixing different fertilizers can sometimes result in the formation of precipitates, to avoid this, fertilizers are mix in two separated tanks:

- Tank A – Combination of micronutrients: Calcium, Nitrates, Potassium, Iron, Sulfur, Boron, Manganese, Cooper, Molybdenum, MPH, NH_4NO_3, Fe, $MgNO_3$
- Tank B - $CaNO_3$, KNO_3, Macro elements

6.8 To proceed with the preparation of the fertilizer, first turn all the irrigation pumps OFF.

6.9 Open the pumps switches box and move all pump switches to the OFF position.





TANK "A" MIX PREPARATION

6.10 Every "Tank A" has a capacity of 200 gals, 4 "Tanks A" are available, the same described formula needs to be prepared on each tank.



6.11 Inspect and determine if the tank has a volume below 25% of its capacity, if this case, proceed and fill the tanks with dull water all the way to approximately half the tank.



6.12 Slowly add to each Tank A the following fertilizers:

6.12.1 300 lbs. Calcinit (6 bags)

6.12.2 150 lbs. Ultrasol K Plus (3 bags)

6.12.3 16 oz. Brandt Sequestar 13.2% Fe (Use a 16 oz. measuring cut)

6.12.4 8 oz. STEM (Soluble Trace Element Mix, half of the 16 oz. measuring cup)

16 oz. measuring cup





6.13 When adding the fertilizers, the mixers should be in operation to homogenize the formula.

6.14 It is a good practice to leave in front of the tanks the empty bags of the fertilizers that has been added, to keep a good track of the quantities added to every tank.

6.15 Once added all the ingredients, fill the tank with water opening the water valve



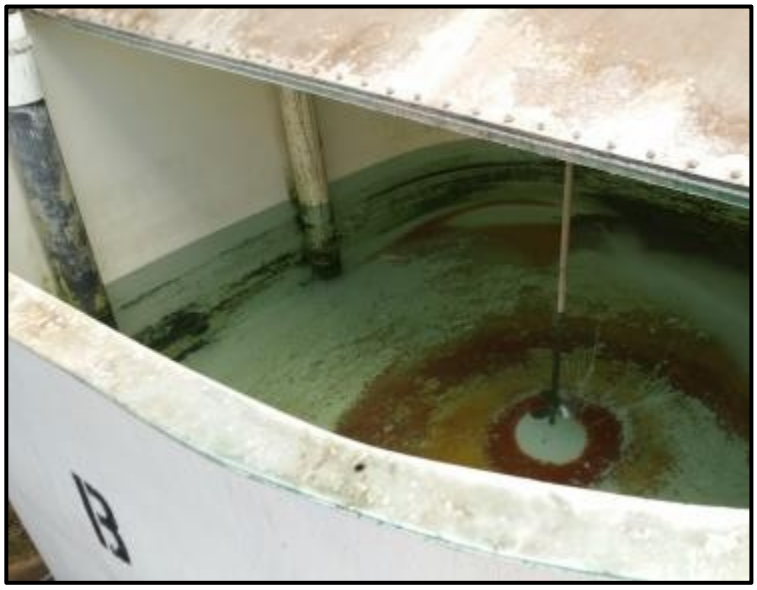
6.16 Close the valve and proceed, the tank A preparation has been concluded.

TANK "B" MIX PREPARATION

6.17 Tank B has a capacity of 400 gals, inspect and determine if the tank has a volume below 25% of its capacity, if this case, proceed and fill the tank with dull water to approximately half the tank.

6.18 Open the water valve and fill only half of the tank.





6.19 Close the valve and with the mixer in operation proceed to slowly add the following ingredients to the tank.

6.19.1 400 lbs. Power Mag 10 (8 bags)

6.19.2 300 lbs. Monopotassium Phosphate (6 bags)



6.20 When finish adding all elements to the formulation, complete the tank with water, the tank should be full.



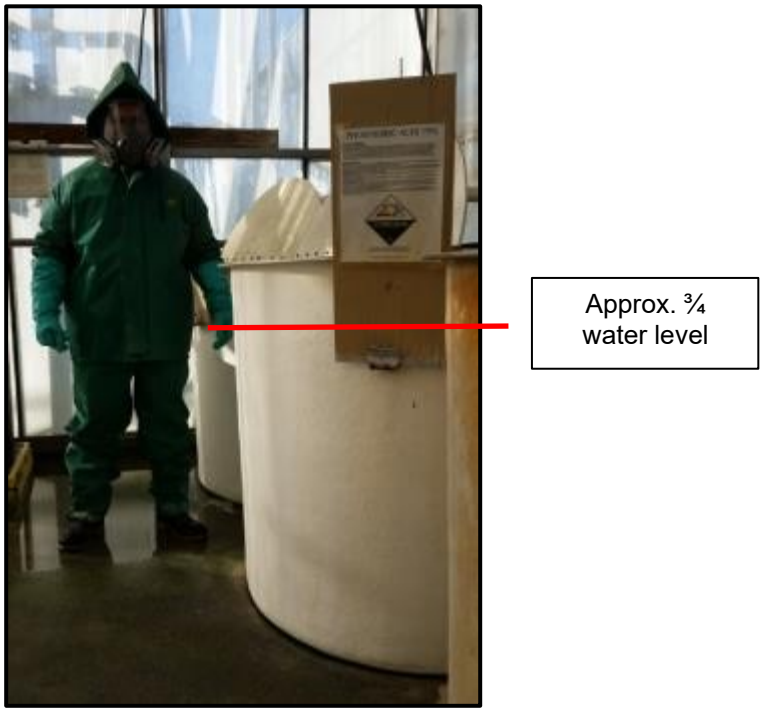
6.21 The tank B preparation has been concluded.

ACID PREPARATION

6.22 The pH adjustor usually it is an ACID like, Nitric, Phosphoric or Citric .This element it is really important in fertilizer process helping some elements to be easy uptake by the plants and to prevent diseases infection.

6.23 The use of full body protection it is required for the acid preparation, extra precautions are required during this process.

6.24 Fill approximately ¾ of the acid tank with water.



6.25 Close the water valve.

6.26 **Never add water to the acid, this causes an exothermic reaction releasing a lot of heat, the solution may boil violently, splashing concentrated acid out of the container. On the other hand, adding acid to water, the solution that forms is very dilute and the small amount of heat released is not enough to vaporize.**

6.27 The phosphoric acid diluted to a concentration of 75% comes in UN drums (Certified drums to be used to transport chemicals).

6.28 A drum of Phosphoric acid is placed over a spill containment pallet to collect any possible spills.





6.29 The handling of the drums is made by using a manual drum lifter



6.30 After filling the acid tank up to ¾ of its capacity with water, proceed to add the phosphoric acid.

6.31 Always keep the mixer in operation during this process.

6.32 The phosphoric acid pump is remotely activated by a switch located below to the Personal Protection Equipment cabinet.



6.33 By not having anyone near to the acid tanks, push the acid pump switch to start pumping the phosphoric acid to the tanks “C”.

6.34 Filling the tanks “C” with acid will take approximately 2 minutes plus 15 seconds. Due to the duration of the filling of the tanks, if available it is recommended to use a chronometer to keep track of the time.

6.35 Always keeps an eye of the filling of the tanks while pushing the acid pump switch.



6.36 Once tank is full, stop the pumping of acid.



6.37 When not in use, unplug the acid pump from the outlet, this to prevent anyone to turn the pump ON when not required.



6.38 The phosphoric acid preparation has been concluded

FILTER CLEANING

6.39 The delivering of the fertilizers mix formula is done by electrical pumps; these pumps have a metallic trap (filter) that collects any debris that may be mixed in the solution.

6.40 After performing the fertilizers mix preparation and before starting to deliver this to irrigation, it is necessary to perform the cleaning of the Tank A and Tank B filters.

6.41 Identify the location of the Tank A and Tank B filers



6.42 Close the valves coming into the pumps and remove the cover of the “Y” conector, pull the filter out.



6.43 Thoroughly clean the filter by using a plastic brush.





6.44 Once finished, return it back to the “Y” connector and tight the cap.

6.45 Don’t forget to clean both filters “Tank A” and “Tank B”

6.46 Open the valves coming to the tanks

6.47 The Tank A and B filters cleaning has been concluded

LOG BOOK AND CLEANING OF THE AREA

6.48 After the preparation of the fertilizers it is mandatory to document the fertilizers quantities added in the Fertilizers log, this need to be signed by the Team Member that prepared the mix.



6.49 Return the pump switches back to their automatic position, close the control panel with the cover and lock it again.





6.50 Proceed to clean and remove all the empty fertilizers bags from the room and dispose these in the outside tote





6.51 Wash and sweep the floor, leave your area clean.





FERTILIZERS IRRIGATION

6.52 The fertilizers mix ingredients depend on factors like:

- 6.52.1 Kind of crop
- 6.52.2 Developing stages
- 6.52.3 Environment
- 6.52.4 Finishing stages
- 6.52.5 Quality and quantity of yield
- 6.52.6 Harvesting date
- 6.52.7 Laboratory result from the previses samples
- 6.52.8 Elements balance according with lab results and crop performance

6.53 The irrigation of the fertilizers to the greenhouses is performed by an automatic system controlled by a computer program; the program set on the computer starts and stops the irrigation of the crops, adjusting the E.C. and pH to the required levels. The system used in ALC Arcata to control the irrigation of the greenhouses is the PRIVA.

6.54 The probe IS placed in to the mixed fertilizer flow that reads the E.C. and pH level from the fertilizer solution. This information is delivered to the computer program to automatic adjust these parameters in the solution according with setting goals.



6.55 After the EC and pH match the goal for the destination crop, this fertilizer it is ready to be applied.

6.56 Delivery pump-It is a pump with capacity to deliver mix fertilizer from the mixing tanks to the greenhouse keeping the pressure steady all the way.

6.57 Delivery irrigation lines - Represent the pipes network from the delivery pump to the crop. The dimension and structure of these pipes is calculated taking in consideration the pump capacity and the pressure required.

6.58 Pressure regulator: Keeps the pressure on the right level for uniformity fertilizer delivery to the crop

.

6.59 Irrigation sprinklers - It is according with kind of irrigating tip and the volume to be applied to the crop (Overhead, dripper, mist, etc.)



7.0 TRAINING

7.1 The training on this Standard Operation Procedure should be performed by the Grower or the Grower Assistant.

7.2 Any training should be documented and signed by the Trainer and the Team Member; records should be kept on file in the Human Resources department.

7.3 This procedure should be reviewed with the Team Members every time that there is a Revision change.

8.0 RECORD KEEPING

8.1 It is required to keep all fertilizers mix formulation and any laboratories analysis results on file.

9.0 ATTACHMENTS

9.1 Preparation of fertilizer solutions: Physical and Chemical considerations.

Preparation of fertilizer solutions: physical and chemical considerations

Water solubility of solid fertilizers at various temperatures

	Solubility in water (g/liter)		
	10°C	20°C	30°C
Urea	450	510	570
Ammonium nitrate	610	660	710
Haifa MAP™	290	370	460
Haifa MKP™	180	230	290
Multi-K™ (potassium nitrate)	210	310	450
Haifa SOP™	80	100	110
Haifa Cal™ (calcium nitrate)	950	1200	1500
Magnisal™ (magnesium nitrate)	2200	2400	2700
Magnesium sulfate	620	710	810

Note: most fertilizers absorb heat from the water upon dissolution, thus lowering the temperature of the solution in what is termed an endothermic reaction.

Tip for success: when preparing a fertilizer solution, first fill half of the tank with water, and then slowly add the dry fertilizer while constantly agitating the solution. Complete by filling water. This sequence enhances dissolution and prevents formation of lumps on the bottom of the tank.

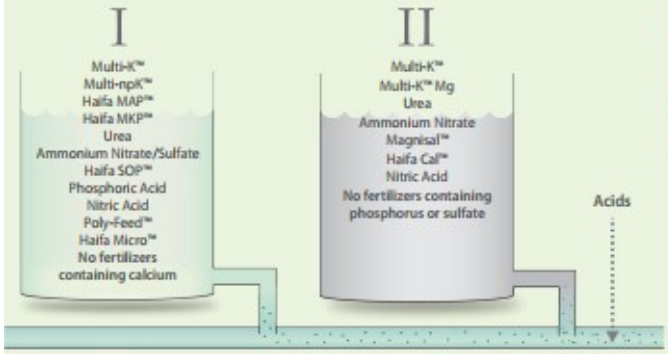
Compatibility of fertilizers

Mixing two different fertilizers can sometimes result in formation of precipitates. Such cases indicate that these fertilizers are not compatible and special care must be taken to avoid mixing them in the same tank. The solutions should be prepared in two separate tanks referred as Two Tank system. Use the chart to determine whether fertilizers can be dissolved together in the same tank or should be separated.

	Urea	AN	AS	MAP	MKP	PN	PN+Mg	PN+P	SOP	CN	N+Mg	NPK+ME
Urea	✓	C	C	C	C	C	C	C	C	C	C	C
Ammonium nitrate (AN)	C	✓	C	C	C	C	C	C	C	C	C	C
Ammonium sulfate (AS)	C	C	✓	C	C	L	L	C	C	L	C	C
Haifa MAP™	C	C	C	✓	C	C	L	C	C	X	X	C
Haifa MKP™	C	C	C	C	✓	C	L	C	C	X	X	C
Multi-K™ (potassium nitrate - PN)	C	C	L	C	C	✓	C	C	C	C	C	C
Multi-K™ Mg (PN+Mg)	C	C	L	L	L	C	✓	X	C	X	C	C
Multi-npK™ (PN+P)	C	C	C	C	C	C	X	✓	C	X	X	C
Haifa SOP™	C	C	C	C	C	C	C	C	✓	X	C	C
Haifa Cal™ (calcium nitrate - CN)	C	C	L	X	X	C	X	X	X	✓	C	X
Magnisal™ (magnesium nitrate - N+Mg)	C	C	C	X	X	C	C	X	C	C	✓	C
Poly-Feed™ (NPK+ME)	C	C	C	C	C	C	C	C	C	X	C	✓

C – Compatible L – Limited compatibility X- Incompatible

The figure provide rules of thumb for preparing fertilizer solution in a Two Tank system



Tips for success:

- Fertilizers containing phosphate or sulfur should not be mixed with calcium fertilizers.
- Phosphoric or sulfuric acids should be added only to the non-calcium containing tank or they can be injected directly to the irrigation water.
- Nitric acid may be added to either tanks or injected directly to the irrigation water.
- To maintain the stability of the micronutrient chelates, the pH in the tank should be higher than 4.

Haifa
www.haifa-group.com

10.0 APPROVEERS

POSITION	NAME	SIGNATURE/DATE
Arcata Farm Manager	Tim Crockenberg	
Safety Manager		
CIP Manager	Marisol Marquez	

11.0 CHANGE HISTORY LOG

Rev	Date	BRIEF DESCRIPTION OF CHANGE	REASON FOR CHANGE
A		Standard Operation Procedure Release	N/A

Injury and Illness Prevention Program

ARCATA LAND COMPANY

INJURY AND ILLNESS PREVENTION PROGRAM

Prepared By:



2130 Brundage Lane

Bakersfield, CA 93304-2702

(661) 377-8300

September, 2019

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Company Policy Statement

The Arcata Land Company believes strongly that all accidents are preventable, and nothing is more important to us than the safety and well-being of our employees. Arcata Land Company also commits to protect the environment to the best of our ability. Each of our employees is acquainted and trained in Injury & Illness Prevention, and are responsible for ensuring compliance with all local, state, and/or federal laws. Full documentation of our Environmental, Health, and Safety programs can be found at: 3318 Foster Ave, Arcata, CA 95521.

Responsibilities

The person who has the overall responsibility for the implementation and administration for Arcata Land Company Injury & Illness Prevention Plan is Tim Crockenberg.

Management

1. All managers and supervisors of Arcata Land Company are responsible for the overall implementation of the Injury & Illness Prevention Plan as it pertains to their jobsite. Each manager/supervisor for Arcata Land Company will maintain a copy of the Injury & Illness Prevention Plan for review by employee request.
2. Arcata Land Company managers/supervisors will encourage safe working habits among employees and will strictly enforce Company safety rules fairly and evenly.
3. The Sun Valley Group will provide training and Personal Protective Equipment as needed to ensure a safe and productive work environment. To this end, The Sun Valley Group has created Codes of Safe Practices to be followed by employees to assist them in safely conducting work.
4. Managers/supervisors will receive training and instruction to familiarize themselves with the safety and health hazards to which employees under their immediate direction and control may be exposed.
5. Managers/supervisors are responsible for investigating any reports of unsafe conditions brought to their attention by employees. Managers/supervisors will take corrective actions as needed, up to and including work stoppage.
6. Managers/Supervisors will work with The Sun Valley Group upper management to set and verify achievement of target goals for safety, loss prevention, and performance by:
    a. Verifying employee participation through annual reviews of certifications, disciplinary notices, etc.
    b. Ensuring compliance with The Sun Valley Group programs by employees and/or contractors.
    c. Enforcing safety policies.
    d. Investigating any incident or 'near miss' with the potential for injuries and/or damage.
    e. Conducting periodic safety inspections.
    f. Promptly correcting and/or reporting any unsafe condition.
    g. Conducting regular safety meetings and providing documentation of employee participation.
    h. Ensuring all employees have successfully passed required training sessions and are capable of working in a safe manner.
    i. Ensuring all employees are familiar with specific jobsite hazards to which they might be exposed.
    j. Stopping work/tasks at any jobsite under his/her control that is deemed to be unsafe.
    k. Ensuring that emergency procedures will be invoked when appropriate.

l. Take corrective actions in regard to employee behavior/negligence, up to and including written warnings and/or immediate termination.

Employees

1. The Sun Valley Group employees are fully trained are expected to assume personal responsibility for their ongoing safe behavior while at work.
2. In addition, The Sun Valley Group employees are responsible for:
    a. Familiarizing themselves with all The Sun Valley Group safety programs.
    b. Refraining from performing any function for which they have not been trained.
    c. Making sure all work is performed safely.
    d. Following established company practices and governmental regulations.
    e. Safely using all tools as required.
    f. Properly using Personal Protective Equipment as needed and/or required.
    g. Immediately reporting any/all injuries, 'near misses', unsafe conditions, and/or defective equipment to their supervisor. The Sun Valley Group will not tolerate retaliation against any employee who reports an unsafe condition, negative behavior, and/or workplace hazard.
    h. Assisting in incident investigations.

Compliance

The Sun Valley Group will ensure compliance through:

1. Providing our employees with all applicable safety training, including Hazard Communication, Injury & Illness Prevention, and task-specific training as needed.
2. Evaluating the performance of our employees in regard to safety on an annual basis.
3. Encouraging participation in safety programs through recognition.
4. Disciplining any employee who fails to adhere to our safety programs and procedures. Discipline can include:
    a. Verbal Warning – Documented and placed in the employee's personnel file.
    b. Written Warning – Documented and placed in the employee's personnel file.
    c. Dismissal – Documented and placed in the employee's personnel file.

Communication

The Sun Valley Group understands the importance of communication, especially when it concerns safety. The Sun Valley Group will conduct periodic safety meetings to highlight safety and/or environmental issues and how to achieve resolution. Records of these meetings will be kept in the main office at 3160 Upper Bay Road, Arcata, CA 95521. Subject matter for these meetings may include:

1. Results of Program Audit & Safety inspections;
2. Reviews of any incidents and/or 'near misses' and offer solutions to mitigate similar situations;
3. Review potential hazards and their potential mitigation techniques;
4. Review employee-submitted safety suggestions;
5. Audit safety information/programs as needed;
6. Conduct safety training sessions at least once per month.

Hazard Assessment

The Sun Valley Group recognizes the need to identify and communicate workplace hazards to its employees. The Sun Valley Group will conduct periodic Program Audit & Safety inspections to locate and identify hazards. These inspections will be performed by either The Sun Valley Group supervisors or outside (3rd party) consultants. Whenever workplace/jobsite hazards are identified, the appropriate supervisor will be notified. These hazards will be removed or mitigated to provide our employees with a safe area in which to work.

Inspections will be performed as follows, utilizing a Job Hazard Analysis Form:

1. Job Locations – Quarterly;
2. Shops and Yards – Quarterly;
3. Equipment – Jobsite - Prior to use and/or Quarterly;
4. Equipment – Shop/Yard – Prior to use and/or Quarterly;
5. Overhead Cranes – Prior to use;
6. Vehicles – Basic items (windshield wipers, fluids, brakes, tires, etc.) – Prior to use;
7. Vehicles – Mechanical items (drive-train, etc.) – Prior to use;
8. Whenever new substances, processes, procedures, equipment, and/or hazards are introduced;
9. Following any accident, injury, or 'near miss';
10. As needed, determined by supervisors/managers.

HAZARD ASSESSMENT FORM

Name of person filling out this form: _____

Date: _____

Department: _____

Description of Condition, Job Title, etc.: _____

_____

_____

_____

CHEMICAL HAZARDS

Are chemicals to be used? _____ Yes No NA Is there a toxic hazard? _____ Yes No NA Is there a volatility hazard? _____ Yes No NA Is there a carcinogenic, mutagenic, or teratogenic hazard? _____ Yes No NA

Description of hazard(s): _____

_____

Recommended mitigation: Administrative/Engineering controls/PPE: _____

_____

_____

_____

ELECTRICAL HAZARDS

Is electrical equipment to be used? _____ Yes No NA

Does the voltage measure in excess of 1000V? _____ Yes No NA

Description of hazard(s): _____

_____

Recommended mitigation: Administrative/Engineering controls/PPE: _____

_____

_____

_____

EYE HAZARDS

Is there a possibility of chemical exposure? _____ Yes No NA Are workers faced with extreme temperatures (hot or cold)? _____ Yes No NA Is there dust/flying debris in the area? _____ Yes No NA Is there a possibility of impact/collision? _____ Yes No NA Is there the possibility of exposure to excessive light/radiation? _____ Yes No NA Is there a possibility of chemical splash? _____ Yes No NA

Description of hazard(s): _____

_____

Recommended mitigation: Administrative/Engineering controls/PPE: _____

_____

HEAD HAZARDS

Is there a possibility of impact/collision? Yes No NA Is there a possibility of electrical shock? Yes No NA Are workers faced with extreme temperatures? Yes No NA Is there a possibility of chemical splash? Yes No NA

Description of hazard(s):

Recommended mitigation: Administrative/Engineering controls/PPE:

FOOT HAZARDS

Is there a possibility of chemical exposure? Yes No NA Are workers faced with extreme temperatures (hot or cold)? Yes No NA Is there a possibility of impact/collision? Yes No NA Is there a chance for slips, trips, or falls? Yes No NA Is there a possibility for punctures from below? Yes No NA Are surfaces wet, slippery, icy, or otherwise treacherous? Yes No NA Is an explosive/flammable atmosphere present? Yes No NA Is electrical shock a possibility? Yes No NA Is there a possibility of chemical splash? Yes No NA

Description of hazard(s):

Recommended mitigation: Administrative/Engineering controls/PPE:

HAND HAZARDS

Is there a risk of chemical exposure? Yes No NA Are workers exposed to extreme temperatures? Yes No NA Is there a possibility for cuts/abrasions? Yes No NA Is there a chance for a puncture? Yes No NA Is electric shock a possibility? Yes No NA Are bloodborne pathogens present in the area? Yes No NA Is there a possibility of chemical splash? Yes No NA Are there any pinch-points? Yes No NA Description of hazard(s):

Recommended mitigation: Administrative/Engineering controls/PPE: _____

_____

_____

_____

BODY/TORSO HAZARDS

Will the employee be required to work at heights over 6-feet? _____ Yes No NA Are conditions present that could physically crush an employee? _____ Yes No NA Are workers exposed to extreme temperatures? _____ Yes No NA Is there a possibility of being exposed to radiation? _____ Yes No NA Is there a possibility of chemical exposure? _____ Yes No NA Is there a possibility of electric shock? _____ Yes No NA Is there a possibility of impact? Yes No NA Is there a possibility of abrasion? _____ Yes No NA Is there a possibility of chemical splash? _____ Yes No NA

Description of hazard(s): _____

_____

Recommended mitigation: Administrative/Engineering controls/PPE: _____

_____

_____

_____

NOISE HAZARDS

Is the area subject to noisy conditions? _____ Yes No NA

Description of hazard(s): _____

_____

Recommended mitigation: Administrative/Engineering controls/PPE: _____

_____

_____

_____

RESPIRATORY HAZARDS

Is there a possibility for chemical exposure? _____ Yes No NA Is there a possibility for particulate exposure? _____ Yes No NA Is the area a Confined Space? _____ Yes No NA Is there a possibility to exposure to fumes, dusts, vapors, or mists? _____ Yes No NA

Description of hazard(s): _____

_____

Recommended mitigation: Administrative/Engineering controls/PPE: _____

_____

_____

SPECIAL PROVISIONS

Are any special time constraints associated with this task/condition? _____Yes No NA

If so, describe: _____

_____

Are any special Monitoring (personal or area) issues presented by this task/condition?

_____Yes No NA

If so, describe: _____

_____

Are there any special Waste Disposal issues presented
by this task/condition? _____Yes No NA

If so, describe: _____

_____

Are there any special First Aid considerations
presented by this task/condition? _____Yes No NA

If so, describe: _____

_____

Are there any special Training issues
presented by this task/condition? _____Yes No NA

If so, describe: _____

_____

Does this task/condition any special Emergency procedures? _____Yes No NA

Description of hazard(s): _____

_____

Recommended mitigation: Administrative/Engineering controls/PPE: _____

_____

_____

_____

COMMENTS_____

_____

_____

_____

HAZARD ACKNOWLEDGEMENT FORM

I have been apprised of the potential hazards associated with tasks/assignments located at:

_____

_____

I agree to heed all warnings and abide by The Sun Valley Group safety procedures while working at this site.

_____

(name)

_____

(signature) (date)

Incident/Accident/Near Miss Investigation

Any/all incidents that result in an accident, injury, or 'near miss' will be reported promptly to the Competent Supervisor. The purpose is to ensure that incidents are investigated to determine the root cause(s) to prevent re-occurrence, not to assign blame.

Any incident resulting in an injury will initiate The Sun Valley Group emergency procedures as outlined in the The Sun Valley Group Emergency Action Plan. The first priority is to assure the injured worker receives competent and timely First Aid and/or medical attention. (Note: All injuries must be noted on the OSHA 300-Log.) Basic Emergency Response procedures are as follows:

Assistance will be given to the injured employee by those qualified to perform First Aid/CPR.

If needed, 9-1-1 will be called, or the injured worker will be transported to a qualified medical facility. If 9-1-1 is called, one employee will be designated to go out to the nearest street/intersection to guide emergency responders to the injured party.

All incidents, accidents, and/or 'near misses' will be promptly investigated by a team comprised of managers, supervisors, onsite employees, and/or 3rd party outside consultants competent in incident investigation. The following guidelines should be utilized:

1. Visit the scene as soon as possible following any incident, accident, or 'near miss'. Take pictures, sketch diagrams, take measurements, etc. wherever applicable. Document these proceedings.
2. Interview the injured worker (if possible) and witnesses, documenting these interviews. Ask them what they heard, saw, and even smelled. Whenever possible, have the witness write out and sign their statement. Interview witnesses apart from each other whenever possible.
3. Look for any potential factor that may have played a part in the incident. Document all findings.
4. Collect any physical evidence which may prove useful (defective parts, broken tools, etc.). Do not allow unauthorized persons to handle collected evidence. Make evidence available to legal counsel, insurance carriers, etc.
5. Determine the root cause(s) using an Accident Investigation Form. Make sure to include statements as to how to prevent future re-occurrences.
6. Take (and document) appropriate corrective actions.

ACCIDENT/NEAR MISS FORM

Report Date: _____

Report Prepared By: _____

Company Information:

The Sun Valley Group

3160 Upper Bay Road, Arcata, CA 95521

Employee Information:

Employee(s) involved

Name: _____

Sex: _____

SS #: _____

Job Description: _____

Wage: _____

Accident Information:

Was an accident report made? _____

_____

Accident report reviewed? _____

Where did the accident occur? _____

_____

_____

Date and time of accident: _____

What was being done when the accident occurred? _____

_____

_____

_____

_____

_____

How did the accident occur (describe the events fully)? _____

_____

_____

_____

_____

_____

Was employee injured? What object or substance injured the employee? _____

_____

_____

_____

_____

Injury description: _____

Physician Name and address: _____

Hospital name (if hospitalized): _____

How long was the employee away from work? _____

Review and Recommendations _____

Hazard Mitigation

Access to any area where hazards/potential hazards are known to exist will be limited to those employees who have the proper training/certification to enter such areas. These hazardous areas may include (but are not limited to): confined spaces, elevated work surfaces, the immediate vicinity of chemical releases, or the immediate area of other undefined hazards.

During Emergency Response operations, only those employees with appropriate training and/or experience shall be allowed access to hazardous areas. In the event such a hazardous area exists, entry may only be made if all of the following conditions are met:

1. Approval is obtained from the appropriate supervisor/manager.
2. All hazards have been identified and mitigated through elimination of the hazard or the appropriate Personal Protective Equipment. This is best done by holding a quick meeting of concerned parties prior to anyone accessing the hazardous area.
3. The employee making access has been properly trained and is knowledgeable in the task they are to perform.
4. All required permits (and/or other documentation) have been granted.

Hazards presented by unsafe conditions, practices, or procedures shall be corrected when observed or discovered. In the event several hazards are present, they shall be evaluated and corrected based on the severity they present. Hazard correction will occur whenever a new hazard is discovered or introduced to the workplace.

In the event a hazard cannot be removed or immediately corrected, it is the duty of the jobsite supervisor/manager to stop all work at the site and remove all employees from the vicinity of the hazard. Call 9-1-1 if needed. (If 9-1-1 is called, the supervisor/manager will designate an individual to go to the nearest street or intersection to guide emergency responders to the scene of the incident.) It is the duty of the jobsite supervisor/manager to document the hazard and response actions taken.

Training and Instruction

Training and instruction will be provided to all new employees. Employees will be made aware of all potential hazards (including health, safety, and/or environmental hazards) and how to maintain a safe and productive working environment. Each The Sun Valley Group employee will be given job/task-specific training prior to being allowed to work, as well as overall training on our Injury & Illness Prevention Plan. Training will also be given whenever there is a change in job responsibilities, and/or whenever new substances, processes, procedures or equipment are discovered or introduced. Re-training may also be required in some cases following an accident, injury, or 'near miss' or whenever the employer is made aware of a new or previously unrecognized hazard. Supervisors will receive training and instruction to familiarize themselves with the safety and health hazards to which employees under their immediate direction and control may be exposed. Additionally, The Sun Valley Group will provide 'tail gate' safety meetings at least once every thirty working days.

Training may include (but is not limited to):

- The Sun Valley Group's Injury & Illness Prevention Plan
- The Sun Valley Group's Emergency Action Plan
- The Sun Valley Group's Fire Prevention Plan
- The Sun Valley Group's Codes of Safe Practices
- Hazard Communication
- Equipment-Specific Safety
- Fall Protection
- Elevated Platforms (including scissor-lifts, manlifts, etc.)
- Forklift Safety
- Lock-Out, Block-Out, Tag-Out Procedures
- Confined Space (entry and/or awareness)
- Hand & Power Tool Safety
- Machine Guarding

- Crane Safety
- Rigging Safety
- Defensive Driving
- Heat/Cold Stress (There is more information on this topic in the The Sun Valley Group Emergency Action Plan, including a map indicating shaded locations, emergency communication procedures, and First Aid.

In the event a task requires additional training, employees assigned to complete those tasks will be given function-specific training.

Record-Keeping

Records pertaining to The Sun Valley Group's safety programs are housed in the main office at 3160 Upper Bay Road, Arcata, CA 95521. These records may include:

- The Sun Valley Group's Injury & Illness Prevention Plan
- The Sun Valley Group's Emergency Action Plan
- The Sun Valley Group's Fire Prevention Plan
- The Sun Valley Group's Codes of Safe Practices
- Jobsite inspection forms
- Hazard Assessment inspections
- Unsafe work conditions and mitigation techniques utilized
- Employee training records

Individual employee training records will be maintained via roll sheet and/or individual records, housed in The Sun Valley Group's main office, located at 3160 Upper Bay Road, Arcata, CA 95521

Among the records to be kept are:

1. Program Audit & Safety Inspection reports
2. Actions taken to correct jobsite hazards
3. Employee training
4. Awards and disciplinary items
5. Incident investigation reports

The Sun Valley Group shall keep records of fatalities, injuries, and illnesses and must record each fatality, injury and illness that:

- Is worked related; and
- Is a new case; and
- Meets one or more of the general recording criteria.

Each recordable injury or illness must be entered on an OSHA 300 Log and 301 Incident Report, within seven (7) calendar days of receiving information that a recordable injury or illness has occurred.

A company executive must certify that he or she has examined the OSHA 300 Log and when found to be correct will sign the OSHA 300A Summary.

A copy of the annual summary must be posted in the establishment in a conspicuous place or placed where notices to employees are customarily posted. The posted annual summary is not altered, defaced or covered by other material.

The annual summary will be posted no later than February 1st of the year following the year covered by the records and the posting kept in place through April 30th.

The OSHA 300 Log, the privacy case list (if one exists), the annual summary, and the OSHA 301 Incident Report forms must be retained for five (5) years following the end of the calendar year that these records cover.

Program Audit and Safety Inspections

A program audit and safety inspection shall be conducted a minimum of once each quarter. Tim Crockenberg will work with safety consultants in problem solving.

Documentation of findings and corrections will be kept in a Safety File at 3160 Upper Bay Road, Arcata, CA 95521.

Additional program audit and safety inspections may be made by outside independent consultants if management deems necessary.

Program Audit and Safety Inspections will be made whenever new substances, processes, procedures, or equipment is introduced.

Violence in the Workplace

- Personnel must respect each other to avoid conflict.
- Any conflict between two or more parties causing discomfort must be reported to management.
- Any misconduct between employees of different or the same gender, possibly causing a violent reaction, must be avoided.
- Avoid walking through dark hallways.
- Be prepared and cautious in case you might be attacked.
- Be prepared to defend yourself if you are a high-risk victim.
- Make sure the work premises are well-lit and the parking structure is close to the work premises and also well-lit.

Personal Protective Equipment

Specific items of personal protective equipment and apparel may be required while on the job. In other instances, the work activity, local environment or unit policy will dictate the need for additional items of personal protective equipment. Protective equipment shall be inspected prior to use by the user, properly maintained and inspected additionally as required.

Protective equipment may include, but is not limited to, the following:

Head Protection
Foot Protection
Face and Eye Protection
Hand Protection
Hearing Protection
Respiratory Protective Equipment
Protective Clothing

Refer to the applicable Codes of Safe Practices regarding the specific personal protective equipment required for any given task, work area or circumstance.

Clothing

- Each employee shall wear clothing appropriate to the work to be performed.
- Contaminated clothing shall be changed as soon as possible.
- Loose or frayed clothing will not be worn at any time around any type of equipment.

- Sleeveless shirts, tank tops and shorts are not permitted unless approved by your supervisor.
- Full-length pants and shirts are mandatory in equipment areas.
- Neckties, neck chains, loose jewelry and rings shall be removed when working around moving/rotating machinery.
- Personal protective equipment and clothing must be maintained in sanitary condition and be ready for use at all times.
- Interchanging personal protective clothing or equipment between employees is strictly prohibited unless it has been properly cleaned.

Signs

The Sun Valley Group personnel shall be informed of the need to be especially conscientious and carefully observe all posted signs and warnings.

Never enter an area posted with signs using the words:

- Danger
- Stop
- Do not enter
- Pesticide
- Chemicals in use
- Keep out

Employee Information Board

An employee information board will be set up in a conspicuous area where all required California and Federal notices will be posted, such as the Worker's Compensation Notice, Discrimination in Employment signs, Pay Day Notice, Emergency Phone Numbers, etc.

Americans with Disabilities Act

1. The Americans with Disabilities Act prohibits employers from discriminating against qualified individuals with disabilities in job application procedures, hiring, firing, advancement, compensation, job training and other terms, conditions and privileges of employment.
2. Employers must not discriminate against individuals with disabilities who are qualified for a job, with or without reasonable accommodation.
3. The Sun Valley Group must reasonably accommodate the disabilities of qualified employees, unless an undue hardship would result. Reasonable accommodation may include: making existing facilities used by employees readily accessible to and usable by persons with disabilities; job restructuring; modifying work schedules; reassignment to a vacant position; acquiring or modifying equipment or devices; adjusting or modifying examinations, training materials or policies; and providing qualified readers or interpreters.
4. The Sun Valley Group employees will not ask job applicants about the existence, nature or severity of a disability. A job offer may be conditioned on the results of a medical examination or inquiry, but only if the examination or inquiry is required for all employees entering the job.
5. Tests for illegal drugs are not subject to the American with Disabilities Act's restrictions on medical examinations.

Safety Policy Violations and Reinforcement

General safety rules and specific safe and healthy work practices must be understood and followed by all employees. To ensure employee compliance, The Sun Valley Group will provide positive reinforcement (safety activities, management involvement, incentive programs, training, etc.) and corrections of unsafe performance (disciplinary action).

When needed, discipline will not focus only upon punishment. Instead, it will be used as a means of turning negative actions into positive responses, of helping to solve employee problems and helping employees learn to take responsibility for their own actions. To be effective, it will:

1. Establish and communicate job performance expectations.
2. Respond to safety violations quickly and fairly.
3. Discipline/reward consistently.
4. Counsel and motivate to promote positive work performance.

When the above positive reinforcement fails to ensure employee compliance, the following disciplinary action will take place (Labor Code 6401.7);

First Safety Violation: Oral warning given one (1) time for failure to follow proper safety procedures - documentation to file.

Second Safety Violation: Written warning - documentation to file.

Third Safety Violation: Suspension for three (3) days without pay - documentation to file.

Fourth Safety Violation: Written termination notice - documentation to file.

Blatant disregard for company safety policy resulting in an injury can be cause for immediate dismissal.

In the event an employee is terminated, he/she must receive his paycheck at that time.

Policy Against Harassment

The Sun Valley Group is committed to providing a workplace free of unlawful harassment as well as harassment based on sex or such factors as race, color, gender (including gender identity and gender expression), religion (including religious dress and grooming practices), national origin (including discrimination on the basis of possessing a driver's license to a person who cannot otherwise prove the he/she is legally present in the United States), ancestry, age, medical condition, genetic information, marital status, registered domestic partner status, physical or mental disability, sexual orientation, military or veteran status, or any other basis protected by federal, state or local law, ordinance or regulations. It also includes a perception that anyone who has any of those characteristics, or is associated with a person who has or is perceived as having any of those characteristics. The Sun Valley Group strongly disapproves of and will not tolerate the harassment of employees by managers, supervisors or co-workers. The Sun Valley Group will also work to protect employees from harassment by non-employees in the workplace.

Harassment includes verbal, physical and visual conduct that creates an intimidating, offensive or hostile working environment or that interferes with work performance. Some examples include racial slurs, ethnic jokes, posting of offensive statements, posters or cartoons or other similar conduct. Unwelcome sexual advances, requests for sexual favors and other verbal or physical conduct of a sexual nature constitute sexual harassment when (1) submission to conduct is made either explicitly or implicitly a term or condition of an individual's employment; (2) submission to or rejection of such conduct of an individual is used as the basis for employment decisions affecting such individual; or (3) such conduct has the purpose or effect of unreasonably interfering with an individual's work performance or creating an intimidating, hostile or offensive working environment.

Company policy also prohibits abusive conduct harassment. Abusive conduct is defined as conduct in the workplace, with malice, that a reasonable person would find hostile, offensive, and unrelated to the Company's legitimate interest. Such conduct includes repeated infliction of verbal abuse, the use of derogatory remarks, insults, and epithets, verbal or physical conduct that a reasonable person would find threatening, intimidating, or humiliating, or the gratuitous, sabotage or undermining of a person's work performance.

Any incident of harassment including work-related harassment by any company personnel or any other person should be reported promptly to the employee's supervisor or manager (or to any other member of management), who is responsible for investigating the matter. Managers who receive complaints or who observe harassing conduct should inform the proper persons immediately. The Sun Valley Group emphasizes that an employee is not required to complain to his / her supervisor if that supervisor is the individual who is harassing the employee.

Every complaint of harassment that is reported to company management will be investigated thoroughly, promptly and in a confidential manner. In addition The Sun Valley Group will not tolerate retaliation against any employee for making a complaint to his/her supervisor or to any other manager.

If harassment is established, The Sun Valley Group will discipline the offender. Disciplinary action for violation of this policy can range from verbal or written warnings up to and including immediate termination, depending upon the circumstances (With regard to acts of harassment by customers or vendors, corrective action will be taken after consultation with the appropriate management personnel).

Workplace Safety Principles

1. All work can be done safely.

2. Most accidents and injuries can be prevented.
3. The workplace shall be free from unreasonable risk.
4. Each worker must understand his task and how to accomplish it safely.
5. No business objective is more important than the safety of people.
6. Unsafe acts in the performance of your work are neither expected nor condoned.
7. Each person has the responsibility for his own safety as well as for the safety of his associates.

The Sun Valley Group will maintain an effective Injury and Illness Prevention Program. The program will include as a minimum:

1. Commitment to safety by management through engineering controls, administration controls and personal protective equipment;
2. Safety training;
3. Safety monitoring;
4. Regularly scheduled safety meetings;
5. Compliance with all applicable Governmental rules and regulations;
6. Quarterly program audit and safety inspections.

EMPLOYEE RECEIPT OF INJURY AND ILLNESS PREVENTION PROGRAM

I have reviewed the Injury and Illness Prevention Program from The Sun Valley Group and acknowledge that I have read this program, or it has been read to me, and that I am familiar with its contents and will abide by its guidelines.

Name:	
Date:	
Signature:	

NOTICE TO ALL EMPLOYEES: Access to Safety Data Sheets

BY CAL/OSHA REGULATION - GENERAL INDUSTRY SAFETY ORDER 5194 - YOU, YOUR PHYSICIAN, AND YOUR COLLECTIVE BARGAINING AGENT HAVE THE RIGHT TO SEE AND RECEIVE COPIES OF:

Safety Data Sheets for substances used in the workplace that are on the State Department of Industrial Relations Directors List of Hazardous Substances (Section 339, Title 8, California Administrative Code)

Attached is a list of substances present in this employment which are on the Directors List of Hazardous Substances.

Safety Data Sheets are available at:

Tim Crockenberg

From:

Tim Crockenberg

Copies of General Industry Safety Order 5194 and the Directors List of Hazardous Substances are available at:

3160 Upper Bay Road, Arcata, CA 95521

From:

Tim Crockenberg

NOTE: No employee may be discharged or discriminated against in any way for exercising the rights afforded them under the Hazardous Substances Information and Training Law

Formulated and Compiled by

CALIFORNIA SAFETY TRAINING CORPORATION
2130 Brundage Lane
Bakersfield, CA 93304-2702
PHONE: 661-377-8300 FAX: 661-377-8313

IIPP Approval

The Sun Valley Group is required by law to establish, implement and maintain an effective written Injury and Illness Prevention Program. A copy of this written Injury and Illness Prevention Program is on file at 3160 Upper Bay Road, Arcata, CA 95521 for review by each and every employee. The company expressly reserves the right to update and improve its written Injury and Illness Prevention Program from time to time, in accordance with changes in the law or where employment conditions require such changes. Furthermore, the company expressly reserves the right to implement or discontinue "Incentive Programs" in carrying out the foregoing safety policies and rules.

Lastly, the at-will employment status of employees covered herein shall in no way be affected by the company's progressive disciplinary system implemented pursuant to Labor Code in furtherance of its written Injury and Illness Prevention Program.

Reviewed and approved:

Corporate Management:		Date:	

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Company Name: The Sun Valley Group

Address: 3160 Upper Bay Road, Arcata, CA 95521

1. Person responsible for the Hazard Communication Program:

   Tim Crockenberg

2. Inventory of hazardous substances is located at:

   3160 Upper Bay Road, Arcata, CA 95521

3. Safety Data Sheets (SDS) for all hazardous substances are located at:

   Tim Crockenberg

A copy of the Hazard Communication Standard (GISO 5194) and company program are kept with the SDSs.

4. Employees may review SDSs and the Standard by following this procedure:

   Ask Tim Crockenberg

   SDSs not on hand which are requested by employees will be requested of suppliers within seven (7) days by letter.

5. The SDS file is updated with new information and new hazards identified by:

   Tim Crockenberg

   Any new hazards will be reported immediately to:

   Tim Crockenberg

   All affected employees will be notified within thirty (30) days

6. Containers of hazardous materials entering the facilities will be checked by:

   Tim Crockenberg

   This will assure that they are properly labeled with the chemical name of the contents, the appropriate hazard warning and the name and address of the supplier or manufacturer. Labels on incoming containers are not to be removed or defaced. Containers without labels will not be accepted.

7. Facility containers of hazardous materials will be labeled with the chemical name and hazard warning. Exceptions must be approved by:

   Tim Crockenberg

   The following exceptions have been approved: None at present

8. Non-routine tasks involving hazardous materials are: None at present

   Procedures for complying with the Hazard Communication Standard for these jobs are the following: None at present

9. Employee training is provided initially to all employees. This training covers the following areas:

a. The basic requirements of the Hazard Communication Standard and their right to information on chemical hazards.

b. Our company's program to comply with the Standards and procedures and to follow company programs and SDSs.

c. How to interpret and use the labels on containers of hazardous materials.

d. The potential physical hazards and health effects of the hazardous substances and how to use SDSs for more information.

e. How to handle the hazardous substances safely and other protective measures in place.

f. What to do in an emergency, release or over-exposure to the chemicals.

g. How the presence of hazardous chemicals can be detected in the work area.

10. This training is documented in the following manner: By roll sheet and individual records, signed and kept in in the employer's files.

11. Records are maintained at the following location:

3160 Upper Bay Road, Arcata, CA 95521

Training concerning new hazards (new chemicals or new information on SDSs) will be provided within thirty (30) days and documented.

12. Periodic refresher training will be provided and documented as follows: Annually by roll sheet and individual records, signed and kept in the employer's files

13. Outside employees (subcontractors and visitors) will be advised of chemical hazards in facility(s) in the following manner:

Verbally from Tim Crockenberg

Contractors will be required to provide information on any chemicals used in our facility as a condition of their contract.

Our company relies on the information contained in SDSs as permitted by the OSHA Hazard Communication Standard and does not perform independent hazard determinations.

Training concerning new hazards (new chemicals or new information on SDSs) will be provided within thirty (30) days and documented. The Sun Valley Group will communicate with employees at the Monthly Safety Meetings and through the Employee Safety Suggestions lock box located in the main office where anonymous or name suggestions can be submitted and received.

14. Communication concerning chemical or physical hazards will be provided as soon as The Sun Valley Group becomes aware of the new chemicals or hazards.

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Introduction

California Employers with any outdoor places of employment must comply with the Heat Illness Prevention Standard T8 CCR 3395. These procedures have been created to assist the employer in crafting their heat illness prevention procedures, and to reduce the risk of work related heat illnesses among their employees. These procedures are not intended to supersede or replace the application of any other Title 8 regulation, particularly T8 3203 Injury and Illness Prevention Program (IIPP). Title 8 CCR 3203 requires an employer to establish, implement, and maintain an effective IIPP. The measures listed here may be integrated into the Employer's Injury and Illness Prevention Program.

The employer must also be aware that other standards apply to Heat Illness Prevention such as the requirement to provide for drinking water, first aid and emergency response. **To effectively establish your company procedures, carefully review the key elements listed on this document, as well as the examples provided, then select and fill out the procedures applicable to your workplace. Please use additional paper when necessary. Next, implement and train employees and supervisors on your company procedures.**

Please note: These procedures provide the minimal steps applicable to most outdoor work settings and are essential to reducing the incidence of heat related illnesses. In working environments with a higher risk for heat illness (e.g., during a heat wave, or other severe working or environmental conditions), it is the employer's duty to exercise greater caution and additional protective measures beyond what is listed in this document, as needed to protect their employees. For additional information on preventing Heat Related Illness, please visit the DOSH website at: http://www.dir.ca.gov/DOSH/DOSH/HeatIllnessInfo.html.

Heat Illness Prevention Elements

The elements reflected within this Heat Illness Prevention guide are those contained in Title 8 of the California Code of Regulations, Section 3395 (T8 CCR 3395) and consist of the following:

- Provision of Water/Employee Encouragement
- Access to Shade
- Written Procedures
- Training

Regarding this program:

The employer must evaluate each situation for environmental factors which would influence an employee's ability to prevent heat illness.

The employer may eliminate procedures that are not relevant to the workplace or may leave them as a reference (without checking the box) for reference should a new need or heat illness prevention strategy be indicated by new or changing conditions.

Provision of Water

Water is a key preventive measure to minimize the risk of heat related illnesses.

- 3395 (c): Employees shall have access to potable drinking water meeting the requirements of Sections 1524, 3363, and 3457, as applicable, including but not limited to the requirements that it be fresh, pure, suitably cool, and provided to employees free of charge. The water shall be located as close as practicable to the areas where employees are working. Where drinking water is not plumbed or otherwise continuously supplied, it shall be provided in sufficient quantity at the beginning of the work shift to provide one quart per employee per hour for drinking for the entire shift. Employers may begin the shift with smaller quantities of water if they have effective procedures for replenishment during the shift as needed to allow employees to drink one quart or more per hour. The frequent drinking of water, as described in subsection (h)(1)(C), shall be encouraged.

To ensure access to sufficient quantities of potable drinking water, the following steps will be taken:

The company has plumbed fresh, pure, suitably cool water continuously supplied for the use of employees.

The supervisor is responsible for providing 1 quart (4 cups) per person/per hour of clean, suitably cool water to start the day. The supervisor will monitor and refill containers as needed. Monitoring will be at closer intervals as temperature/humidity increases.

The water shall be located as close as practicable to the areas where employees are working and be provided free of charge.

Single use drinking cups will be provided for employee use.

Equipment operators or other vehicle operators will carry a clean water supply with them in or on their vehicle.

If water supplies run low, containers will be replenished by supervisors in a timely manner, so as to allow water to remain on site at all times in quantities as required by law for each employee.

Employee Encouragement

To encourage employees to drink potable water, the following steps will be taken:

Supervisors shall verbally remind employees to drink frequently. These reminders shall be more frequent with elevated temperatures/humidity.

Drinking water will be placed near large crews to facilitate frequent water consumption.

Tailgate meetings will be held each morning to remind employees to drink water frequently. Records of this meeting are recommended.

Heat Potential

The employer will make a reasonable attempt to determine in advance potential heat illness conditions by checking the daily weather forecast prior to starting work.

Supervisors will obtain daily weather information from published news sources (ie: Newspaper, TV/Radio newscasts.)

Supervisors will obtain daily weather information from the National Weather Service at http://www.nws.noaa.gov/view/states.php?state=ca&map=on

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Access to Shade

Access to rest and shade or other cooling measures are important preventive steps to minimize the risk of heat related illnesses.

- 3395 (d) (1) Shade shall be present when the temperature exceeds 80 degrees Fahrenheit. When the outdoor temperature in the work area exceeds 80 degrees Fahrenheit, the employer shall have and maintain one or more areas with shade at all times while employees are present that are either open to the air or provided with ventilation or cooling. The amount of shade present shall be at least enough to accommodate the number of employees on recovery or rest periods, so that they can sit in a normal posture fully in the shade without having to be in physical contact with each other. The shade shall be located as close as practicable to the areas where employees are working. Subject to the same specifications, the amount of shade present during meal periods shall be at least enough to accommodate the number of employees on the meal period who remain onsite.

  Access to shade shall be available at all times, even when the temperature does not exceed 80 degrees (F). When outdoor temperature in the work area does not exceed 80 degrees (F), employers must provide timely access to shade upon an employee's request.

  Access to shade shall be of sufficient time to provide for recovery, i.e., no less than five minutes in addition to the time needed to access the shade. Employees who complain of heat-related illnesses shall be closely monitored during recovery periods to ensure their well-being.

  All employees are allowed and encouraged to take preventative cool-down rest in the shade. An employee who takes a preventative cool-down rest:

  - Shall be monitored and asked if symptoms of heat illness are being experienced.
  - Shall be encouraged to stay in the shade.
  - Will not return to work until any signs or symptoms of heat illness have abated, but in no event less than five minutes in addition to the time needed to access the shade.

  If heat related symptoms are observed while taking a preventative cool-down rest or during a preventative cool-down rest period shall be provided appropriate first aid or emergency response.

  Shade material density shall be such that no shadow is cast in the area of blocked sunlight.

  Supervisor will provide an adequate number of shade devices which may include: umbrellas, canopies, or other portable devices at the start of the shift and relocate them as needed to be as close to the crew as practicable within a target distance of 2 ½ minutes.

  During meal periods the shade provided shall be sufficient to accommodate the number of employees on the meal period who remain onsite.

Tailgate meetings will be held each morning to remind employees of the availability of shade and the importance of cooling rest breaks. Records of this meeting are recommended.

Note: If you use pop-up tents (or other portable shade measures) you need to keep people off of the ground with chairs, benches, sheets etc.

To ensure that employees have access to a preventative recovery period, the following steps will be taken:

Supervisors shall be trained in heat illness prevention, first aid, and emergency response procedures before supervising persons to allow them to better assist potential heat illness victims.

Employees shall be trained in heat illness prevention, first aid, and emergency response procedures to allow them to better monitor fellow workers. (Buddy System)

Supervisors and co-workers will monitor all employees for heat related symptoms.

If heat related symptoms are observed, employees are encouraged to take a break in a designated rest location and to drink water. Employees who are taking heat-related breaks to ensure their well-being shall be monitored by First Aid/CPR trained person or other qualified person specifically trained to provide basic first aid (such as cooling towels, etc.)

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Encourage workers who have heat related symptoms to be evaluated by qualified medical personnel before returning to work.

Acclimatization

3395: (b) Definitions:

"Acclimatization" means temporary adaptation of the body to work in the heat that occurs gradually when a person is exposed to it. Acclimatization peaks in most people within four to fourteen days of regular work for at least two hours per day in the heat. (Note: Every person has different physical condition, previous recent work experiences, tolerances to heat, etc. As such, each employee will be dealt with on an individual basis.)

To ensure employees and/or supervisors are properly acclimatized prior to working in potential heat illness conditions, the following steps will be taken:

- **Employees will be limited in the number of hours per day they spend working in potential heat-illness conditions until they have become acclimated.**
- **An employee newly assigned to a high heat area shall be closely observed by a supervisor or designee for the first 14 days of employment.**
- **All employees shall be closely observed by a supervisor or designee during a heat wave. For purposes of this section only, "heat wave" means any day in which the predicted high temperature will be at least 80 degrees (F) and at least ten degrees (F) higher than the average high daily temperature in the preceding five days.**
- **Employees shall be trained in heat illness prevention, first aid, and emergency response procedures to allow them to better monitor fellow workers. (Buddy System)**
  - All employees (including supervisors) will pay special attention to symptoms of heat illness which could indicate the need for further acclimatization, especially in un-acclimated employees.
  - Work requiring chemical-protective clothing will be performed during cooler periods of the day. Chemical-protective clothing can substantially alter the heat-load a person's body is capable of shedding.

TEMPERATURE	HUMIDITY					
	90%	80%	70%	60%	50%	40%
80°	85°	84°	82°	81°	80°	79°
85°	101°	96°	92°	90°	86°	84°
90°	121°	113°	105°	99°	86°	84°
95°		133°	122°	113°	105°	98°
100°			142°	129°	118°	109°
105°				148°	133°	121°
110°						135°

80 - 90 - Fatigue possible with prolongued exposure and activity.

90-105 - Heat cramps, and heat exhaustion possible.

105 - 130 - Heat cramps and exhaustion possible, Heat Stroke possible.

130 + More - Heat stroke likely with continued exposure.

A "Heat Index" chart will be utilized to help supervisors/managers better identify potential heat illness conditions in terms of humidity and/or Temperature. **This chart is a guide, not an absolute. Supervisors are to use common sense in making heat-illness related decisions.**

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High Heat Procedures

The following high heat procedures are required for agriculture when the ambient temperature is at 95 degrees F or higher.

3395 (e) (6) When temperatures reach 95 degrees or above, the employer shall ensure that the employee takes a minimum ten minute net preventative cool-down rest period every two hours. The preventative cool-down rest period required by this paragraph may be provided concurrently with any other meal or rest period if the timing of the preventative cool-down rest period coincides with a required meal or rest period thus resulting in no additional preventative cool-down rest period required in an eight hour workday. If the workday will extend beyond eight hours, then an additional preventative cool-down rest period will be required at the conclusion of the eighth hour of work; and if the workday extends beyond ten hours, then another preventative cool-down rest period will be required at the conclusion of the tenth hour and so on.

To ensure effective communication with emergency services supervisors will carry cell phones. These communication devices shall be checked at the worksite for reception prior to beginning each shift. Radios will be utilized to contact a central office in areas where cell phone reception is unreliable. The central office will then coordinate emergency services.

Tailgate meetings will be held each morning to remind employees to drink water frequently, and remind employees of their right to take a cool-down rest when necessary. Records of this meeting are recommended.

One or more of the following will be provided to ensure effective observation and monitoring of employees:

- **Employees/Supervisors alike will use the mandatory "Buddy System" to assist in monitoring each other's physical condition in regard to heat illness conditions.**
- **Supervisors or a central office will maintain regular communication with a sole employee by radio or cellular phone.**
- **Supervisors or designee shall provide observation of 20 or fewer co-workers to monitor all employees for heat related symptoms.**

Supervisors will consistently remind employees to drink plenty of water during high heat times of the day.

One or more employees will be designated at each worksite as authorized to call for emergency services, however all employees are allowed to call emergency services when no designated employee is available.

Supervisors will closely monitor all new employees for the first fourteen days of employment. (Not required if the employee, upon being hired, indicates that he/she has been doing similar work for at least ten of the past thirty days for at least four or more hours per day.)

(In extreme conditions, work will stop for the day.)

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Written Procedures

Written procedures help reduce the risk of heat related illnesses, and ensure that emergency assistance is provided without delay.

3395 (i) The employer shall establish, implement and maintain and effective heat illness prevention plan. The plan shall be in writing, in both English and the language understood by the majority of the employees and shall be made available at the worksite to employees and to representatives of the Division upon request. The plan shall, at a minimum, contain: (1) Procedures for the provision of water, (2) High heat procedures (3) Emergency Response Procedures (4) Acclimatization methods and procedures.

This entire document outlines the company written procedures.

All employees and supervisors shall be trained in Heat illness Prevention, these company procedures, and heat-illness related First Aid techniques prior to working outdoors.

Supervisors or designee shall provide observation of 20 or fewer co-workers to monitor all employees for heat related symptoms.

Supervisors and co-workers will monitor all employees for heat related symptoms.

If heat related symptoms are observed, employees are encouraged to take a break in a designated rest location and to drink water. Supervisors are to constantly monitor employees who are taking heat-related breaks to ensure their well-being.

Supervisors will carry cell phones or radios to ensure that emergency services can be called. These communication devices shall be checked at the worksite for reception prior to beginning each shift.

The supervisor will be the designated person available to ensure that emergency procedures are invoked when appropriate.

If worksite is in an isolated or hard to find location and emergency medical response becomes necessary, the supervisor shall designate a lead person with vehicle to the nearest public road intersection in order to lead emergency responders to the site after calling 911. If it is impossible to lead emergency responders to the location, after consultation with emergency responders or other licensed medical personnel, a vehicle will be used to transport the victim to emergency response units.

The supervisor will predetermine emergency responder guidance start point for each work site, and inform employees in the crew of this start point.

GPS coordinates will be given to emergency responders.

Operations requiring chemical resistant overalls shall cease at 80 degrees Fahrenheit in the day and 85 degrees Fahrenheit in the night.

To reduce the risk of heat-related illness and respond to possible symptoms of Heat Illness, the following steps will be taken:

Water will be provided to employees - 1 quart (4 cups) per person/per hour - onsite, or replenishment procedures noted in "Provision of Water" will apply;

Employees will be encouraged throughout the day to drink potable water to stay hydrated.

Employees will be provided access to shade during breaks and recovery periods using the procedures noted in "Access to Shade".

Employees and Supervisors will be trained in: Heat Illness Prevention, Recognition of Symptoms, Heat Illness First Aid, and Emergency Response Procedures.

These procedures will be in writing and made available to all affected employees.

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Emergency Response Procedures

To ensure that emergency medical services are provided without delay, the following steps will be taken:

To ensure effective communication with emergency services supervisors will carry cell phones. These communication devices shall be checked at the worksite for reception prior to beginning each shift. Radios will be utilized to contact a central office in areas where cell phone reception is unreliable. The central office will then coordinate emergency services.

If a supervisor or employee observes signs or symptoms of heat illness in any employee, the supervisor will take immediate action commensurate with the severity of the symptoms.

If the signs or symptoms are indicators of severe heat illness, emergency responders will be contacted immediately.

As soon as possible after the start of the shift/work period, the Supervisor will obtain/draw a site map of the field, including cross-streets and/or GPS coordinates.

Employees/Supervisors alike will use the mandatory "Buddy System" to assist in monitoring each other's physical condition in regard to heat illness conditions.

Both Employees and Supervisors shall be trained in heat illness prevention, first aid, and emergency response procedures before supervising persons working outside to allow them to better assist potential heat illness victims. If heat related symptoms are observed, employees are encouraged to take a break in a designated rest location and to drink water.

Employees exhibiting signs or symptoms of heat illness will be monitored and evaluated and shall not be left alone or sent home without being offered onsite first aid by a qualified employee and/or being provided with emergency medical services.

If worksite is in an isolated or hard to find location and emergency medical response becomes necessary, the supervisor shall designate a lead person with vehicle to the nearest public road intersection in order to lead emergency responders to the site after calling 911. If it is impossible to lead emergency responders to the location, after consultation with emergency responders or other licensed medical personnel, a vehicle will be used to transport the victim to emergency response units.

Training

Training is critical to help reduce the risk of heat related illnesses and to assist with obtaining emergency assistance without delay.

- **3395 (h) (1) Employee training:** Training in the following topics shall be provided to all supervisory and non-supervisory employees:

  (A) The environmental and personal risk factors for heat illness.

  (B) The employer's procedures for complying with the requirements of this standard, including, but not limited to , the employers responsibility to provide water, shade, cool-down rests, and access to first aid as well as the employees' right to exercise their rights under this standard without retaliation.

  (C) The importance of frequent consumption of small quantities of water, up to one quart (4 cups) per hour, when the work environment is hot and employees are likely to be sweating more than usual in the performance of their duties.

  (D) The concept, importance, and methods of acclimatization.

  (E) The different types of heat illness, the common signs and symptoms of heat illness, and appropriate first aid and/or emergency responses to the different types of heat illness, and in addition, that heat illness may progress quickly from mild symptoms and signs to serious and life-threatening illness.

  (F) The importance to employees of immediately reporting to the employer, directly or through the employee's supervisor, symptoms or signs of heat illness in themselves, or in co-workers.

  (G) The employer's procedures for responding to symptoms of possible heat illness, including how emergency medical services will be provided should they become necessary.

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(H) The employer's procedures for contacting emergency medical services, and if necessary, for transporting employees to a point where they can be reached by an emergency medical service provider.

(I) The employer's procedures for ensuring that, in the event of an emergency, clear and precise direction to the worksite can and will be provided as needed to emergency responders.

(h) (2) Supervisor training: Prior to assignment to supervision of employees, training on the following topics shall be provided:

(A) The information required to be provided by section (h) (1) above.

(B) The procedures the supervisor is to follow to implement the applicable provisions in this section.

(C) The procedures the supervisor is to follow when an employee exhibits signs or reports symptoms consistent with possible heat illness, including emergency response procedures.

(D) How to monitor weather reports and how to respond to hot weather advisories.

To ensure employees are trained, the following steps will be taken:
All personnel both supervisory and non-supervisory shall be trained before working or supervising in an outside high temperature condition.
Supervisors shall be trained in heat illness prevention, first aid, and emergency response procedures before supervising persons working outside in high temperature conditions.
Tailgate meetings will be held when there is a high temperature day to advise employees to take extra care.
This company will evaluate the conditions of temperature, humidity and workload (including PPE) for heat illness training prior to starting work.

Training guidance for supervisors and non-supervisory personnel includes but is not limited to:

- Environmental and personal risk factors
- Procedures for complying with the standard
- Importance of frequent consumption of water (four cups per hour)
- Importance of acclimatization
- Different types of heat illnesses along with the symptoms
- Importance of urging employees to report heat illness symptoms immediately
- Procedures for responding to symptoms
- Procedures for directing emergency medical responders to the work site
- Procedures for transporting victims if responders cannot access the victim

Prior to supervision of employees who will be working outdoors, supervisors are to be trained on the following topics:

- All information employees trained on, as listed above
- Procedures to be followed to implement provisions of Title 8, Section 3395
- Procedures to be followed should an employee show symptoms consistent with possible heat illness, including emergency response procedures.

To ensure supervisors are provided training, the following steps will be taken:

Supervisors will be trained in Heat Illness Prevention, Heat Illness First Aid, and Emergency Response prior to being allowed to supervise employees.

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1. Lock-out/block-out/tag-out (LOBOTO) procedures are essential to prevent accidental movement of machinery or contact with energized electrical equipment.
2. Lock-out is a method of keeping equipment from being set in motion and endangering workers. In lock-out, a disconnected switch, circuit breaker, valve or other energy isolating mechanism is put in the safe, or off position. A device is often placed over the energy isolating mechanism to hold it in the safe position. A lock is attached, so that the equipment can not be energized.
3. Tag-out is the written warning attached to the energy isolating device that is placed in the safe position.
4. All lock-out and tag-out materials are supplied by The Sun Valley Group. Each device must be durable to withstand wear and substantial so it won't come off easily.
5. The Sun Valley Group issues workers authorization to apply lock-out/tag-out with his/her own lock with his/her name, so that anyone is capable of identifying the person who applied it.
6. Two situations that are most likely to need lock-out/tag-out are:
    a. When you must move or bypass a guard or other safety device and;
    b. When you must place any part of your body where you could be caught by moving machinery.
7. Other jobs for which lock-out/tag-out should be used are: repairing electrical circuits, cleaning or oiling machinery with moving parts, or clearing jammed mechanisms.
8. It is The Sun Valley Group responsibility to follow this system that has been chosen.
9. Locks and tags by themselves do not de-energize equipment. Attach them only after the machinery has been isolated from its energy sources.
10. Whether the power switch is on or off, energy of some sort is always present in any powered equipment. Energy will be at least one of two types: kinetic energy, which is the force caused by the motion of an object, or potential energy, which is the force stored in an object that isn't moving.
11. Examples of protective engineering are machine guards, electrical disconnects, mechanical stops such as pins and valves and engineering lock-outs which provide automatic protection against human error. Any engineering safety feature can be defeated if you try.
12. Never bypass an engineering lock-out or let a co-worker do so. Never rely blindly on engineering safety features.
13. There are two methods to make sure employees understand the company's lock-out/tag-out procedure:
    a. Documentation: this written statement of The Sun Valley Group's energy control program.
    b. Employee training: to help The Sun Valley Group employees understand how to use the energy control program.
14. A self inspection or one conducted by CSTC is to be conducted at least once a year to make sure energy control procedures are being carried out.
15. Energy isolation and lock-out/tag-out are to be applied ONLY by trained employees authorized to perform service or maintenance.
16. Before lock-out/tag-out is applied, all employees who work in the affected area must be notified.
17. The Sun Valley Group control of hazardous energy must be done according to:

a. Preparation for shutdown: Before turning off any equipment in order to lock or tag it out, you must know the types and amounts of energy that power it must be known, the hazards of that energy and how the energy can be controlled.

b. Equipment Shutdown: Shut the system down by using its operating controls. Follow whatever procedure is right for the equipment, so that no one will be endangered.

c. Equipment Isolation: Operate all energy isolating devices so that the equipment is isolated from its energy sources. Be sure to isolate all energy sources – including secondary power supplies as well as the main source. Never pull an electrical plug while it is under load. Never remove a fuse instead of disconnecting the electrical source.

d. Applying Lock-out/Tag-out Devices: All energy isolating devices, must be locked out and tagged. Only the standardized devices supplied by The Sun Valley Group are to be used for lock-out/tag-out and they are not to be used for anything else. Use the lock-out device if locks cannot be placed directly on the energy control. When the lock-out is used, every employee in the work crew must attach a personal lock. More than one employee can lock-out a single energy isolating device by using a multiple lock hasp. For big jobs, a lock-out box can be used to maintain control over a large number of keys. Attach tags at the same point as the lock or as close to it as possible**. Fill tags out completely and correctly.**

e. Control of Stored Energy: Take any of the following steps that are necessary to guard against energy left in the equipment after it has been isolated from its energy sources. Inspect the system to make sure all parts have stopped moving. Install ground wires. Relieve trapped pressure. Release the tension on springs or block the movement of spring-driven parts. Block or brace parts in hydraulic and pneumatic systems that could move from the loss of pressure. Bleed the lines and leave vent valves open. Drain process piping systems and close valves to prevent the flow of hazardous materials. If a line must be blocked where there is no valve, use the blank flange. Purge reactor tanks and process lines. Dissipate extreme cold or heat, (wear protective clothing). If stored energy can re-accumulate, monitor it to make sure it stays below hazardous levels.

f. Verify Isolation of Equipment: Make sure all danger areas are clear of personnel. Verify that the main disconnect switch or circuit breaker can't be moved to the "on" position. Use a voltmeter or other equipment to check the switch. Press all start buttons and other activating controls on the equipment itself. Shut off all machine controls when the testing is finished.

18. While performing the work, plan ahead and avoid doing anything that could re-activate the equipment. For example don't bypass the lock-out when putting in new piping or wiring

19. Before removing the lock-out/tag-out, make sure the equipment is safe to operate.

    a. Remove all tools from the work area.

    b. Be sure the system is fully assembled.

    c. Safeguard all employees.

    d. Conduct a head count to make sure everyone is clear of the equipment.

    e. Notify everyone who works in the area that lock-out/tag-out is being removed.

    f. Remove the lock-out/tag-out devices. Except in the emergencies, each device must be removed by the person who put it on.

    g. The last person to remove a lock has extra duties to insure no one is in harms way during restart. Tags should be removed, signed and turned in.

    h. Follow the checklist of required steps to re-energize the system.

20. Special problems may arise when contractors or other outside workers are performing service or maintenance. They are to follow the onsite LOBOTO program.

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21. If it is necessary to temporarily re-activate equipment being worked on:
    a. Remove unnecessary tools from the work area;
    b. Make sure everyone is clear of the equipment;
    c. Remove the lock-out/tag-out devices;
    d. Re-energize the system. As soon as the energy is no longer needed, isolate the equipment and re-apply lock-out/tag-out using the 6-step procedure

RE: Effectiveness of Hazardous Energy Control Procedures Annual Review

To the best of my knowledge, information, and belief formed after reasonable inquiry, the information submitted is true, accurate, and complete in accordance with Title 8 3314.

_____

(Signature) (Date)

_____

(Title)

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A complete list of LOBOTO procedures can be found in the main office of The Sun Valley Group.

LOCK OUT, BLOCK OUT, TAG OUT PROCEDURE

Equipment:_____ **Date** _____

LOBOTO Supervisor Name: _____

LOBOTO Employees Name(s): _____

I) Shut Down Preparation

Type(s) of Energy: (a)_____(b)_____(c)_____(c)

Hazards of Energy: (a)_____(b)_____(c)_____

Controls of Energy: (a)_____(b)_____ _____

II) Equipment Shutdown

Notify Area Personnel

Power off at equipment control switch(es): (a) _____ (b)

(c)

III) Equipment Isolation

Disconnect(s) #_____ in OFF position

Lock and/or Lockout device disconnected in off position:

Tag, Name, Date disconnected (standardized tags & locks only)

IV) Control Stored Energy

Parts have stopped moving _____ Grounding cables/wires have been installed_____ Pressure has been relieved in all lines/pipes _____ Tension/springs have been removed or movement otherwise blocked

V) Verify Isolation of Equipment

Personnel out of area_____ Attempt to start equipment to verify shut down/lock out _____ Return start switch for equipment set to off position

VI) Perform the Work

VII) Repair/Paint/Replace as set forth in the Repair Schedule

VIII) Remove Lock-Out Block-Out Tag-Out

Remove all tools, parts, & chemicals from the area _____ Verify ALL equipment controls are in "Neutral" _____ Notify personnel in the area and make sure the area is clear

Remove LOBOTO devices (The person who applied them is the only person allowed to remove them)

Return Lock-Out locks and devices to Control Area

Pesticide Safety Standard Operating Procedure

ARCATA LAND COMPANY SOP - PESTICIDE SAFETY

Doc. No.:	SOP-OPR-003	Rev.	A
Area:	Arcata Land Company	Date:	3/14/2020
Doc. Owner:	Tim Crockenberg		

1.0 PURPOSE

1.1 To explain the safety precautions and rules for storing, mixing, applying and cleaning of the implements used for pesticide applications at the Arcata Land Company (ALC).

2.0 SCOPE

2.1 This procedure must be observed by any Team Member handling pesticides, mixing, applying or cleaning. Only certified and authorized Team Members can follow any of the steps described in this procedure.

2.2 If you have any doubt about your responsibilities please check and confirm with your Manager before proceeding.

3.0 REFERENCES

3.1 Pesticides Safety Data Sheets (SDS)

3.1.1 Check the ALC pesticides and chemicals SDS binders available throughout the farm.

4.0 DEFINITION

4.1 **Pesticide:** The Food and Agriculture Organization (FAO) has defined pesticide as any substance or mixture of substances intended for preventing, destroying, or controlling any pest, unwanted species of plants or animals, causing harm during or otherwise interfering with the production, processing, storage, transport, or marketing of food, agricultural commodities, wood and wood products or animal feedstuffs. Also used as substances applied to crops either before or after harvest to protect the commodity from deterioration during storage and transport.

4.2 **SDS (formerly known as MSDS: Material Safety Data Sheet):** Safety Data Sheet: Document that contains the information on potential health effects of exposure to chemicals or other potentially dangerous substances and on safe working procedures when handling chemical products.

4.3 **REI (Restricted Entry Interval):** Is the minimum amount of time that must pass between the time a pesticide was applied to an area or crop and the time that people can go into that area without protective clothing and equipment. Durations of REIs are found on pesticide labeling and in regulations.

4.4 **Kleen-it Spray Tank Cleaner:** High concentrated cleaner used to remove pesticide residues from the spray equipment. It is noncorrosive to humans and is safe to use on all internal and external areas of spraying systems. Reduce the chances of cross contamination which could lead to reduced efficacy and other unwanted application results.

4.5 **Terminator II:** Is a highly concentrated silicone-based defoamer. Terminator II is specially designed to prevent foam formation in agricultural spray solutions since excessive foam can lead to inconsistent spray applications.

5.0 SAFETY RECOMMENDATIONS

5.1 No one is allowed to perform any of the activities described in this procedure if they have not received pesticide safety training and a certification by the ALC Safety Department.

5.2 As part of the activity, it is mandatory to entirely read and understand the SDS of the different ingredients to be use for the preparation of the pesticides.

5.3 It is mandatory to always follow all the safety precautions described on the SDS.

5.4 Anyone involve in the preparation, mixing and application of pesticides, must wear the following Personal Protection Equipment:

5.4.1 Boots to protect feet from getting wet with any liquid

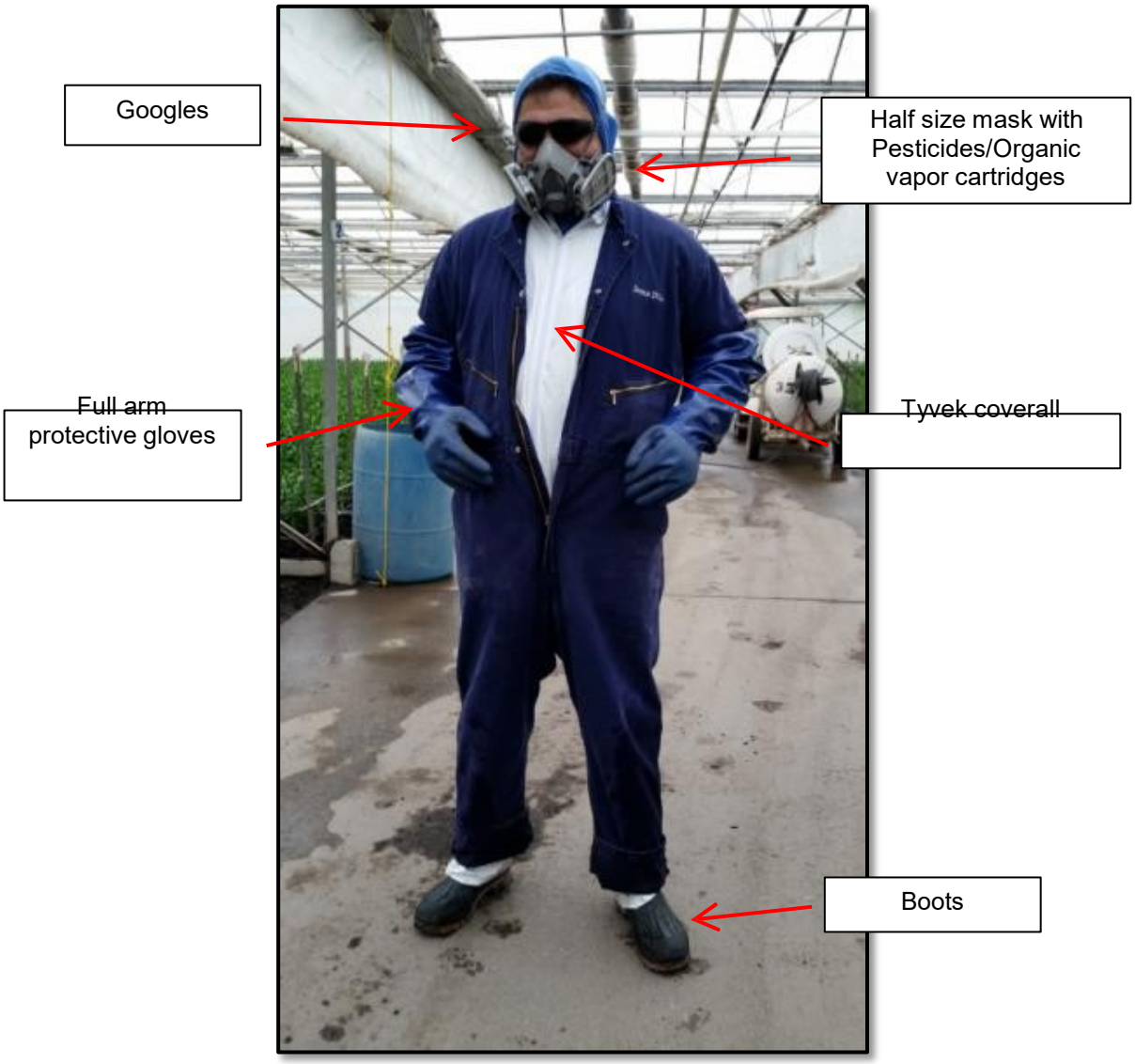
5.4.2 Waterproof coverall Tyvek suites, to protect your body from getting contact with the pesticides.

5.4.3 An overall need to be wear over the Tyvek suite to protect your body from the low temperatures of the surrounds.

5.4.4 Eye protection must be worn to protect eyes from any potential splashing of the pesticides

5.4.5 Gloves are required to be wearing to protect your hands.

5.4.6 Half size mask respiratory protection with cartridge filters specific for pesticides and organic materials vapors like the 3M 6001, use in paint spraying, pesticides and agriculture.



5.5 Always keep the area clean and organize and all the chemicals and pesticides well identified and stored.

5.6 The use of any electronic device, such as cell phones, computers or portable radios while performing any activity with the use of pesticides is not allowed.

5.7 Any Team Members handling, spraying or working with pesticides must take a shower before leaving the farm. There is a designated shower to be used for this group of team members. Use clean cloths.

5.8 Used clothes should not be taken home; these should be wash on the washing room dedicated for the Team members using pesticides. Taking cloths or any implement out of the farm may contaminate your surroundings.

5.9 Any Team Member hired to be part of the Pesticides Team member group should have a Medical check before any operation to verify that is capable to work with pesticides.

5.10 Periodical checks need to be performed and records must be kept in file.

5.11 Always wash your hands before eating, drinking smoking, chewing gum or going to the restroom.

6.0 PROCEDURE

6.1 Pesticides are used in agriculture to keep the crops free from pests and disease; **farmers** utilize crop protection products (herbicides, **insecticides**, fungicides, etc.) to help control the thousands of weed species, harmful insects, and plant diseases that can afflict crops.



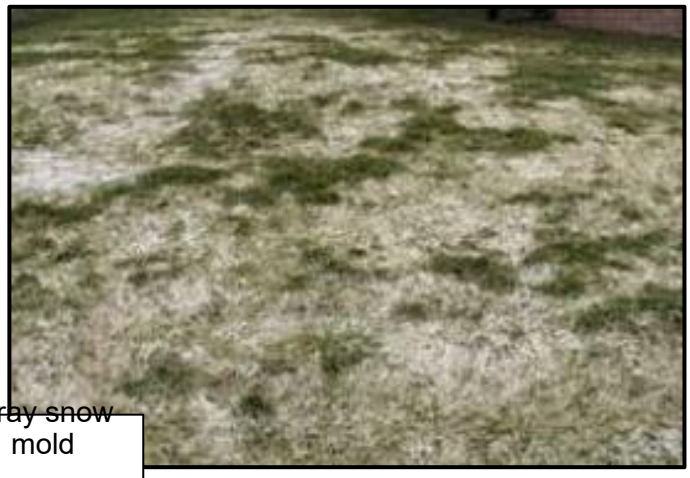
Unwanted weed growing in the middle of planted crops



Aphids



Spider Mites



Gray snow mold



Fungus

PESTICIDES STORAGE

6.2 All pesticides should be stored in a locked container with access only to authorized Team members



6.3 Warning/Danger signs should be posted to identify the storage of pesticides

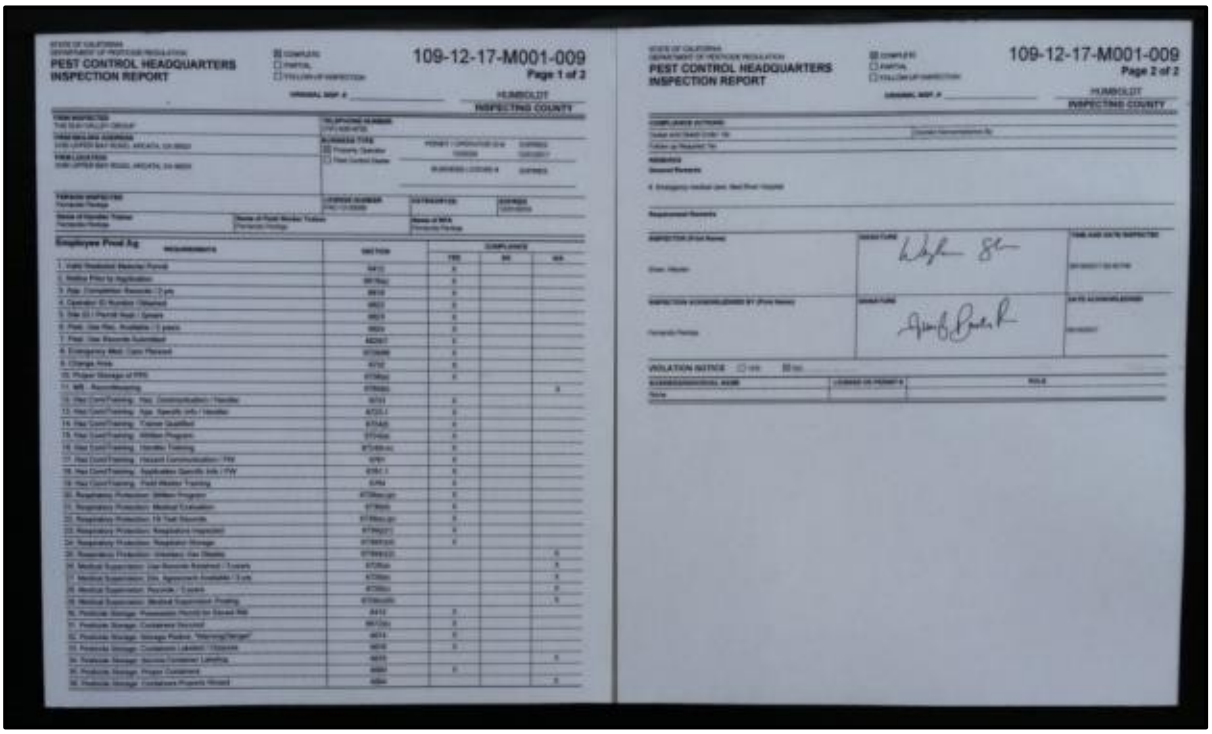
6.4 All stored pesticides containers must be identified, properly labeled and properly closed to prevent any spill or scatter.

6.5 An eye wash station must be near the premise.



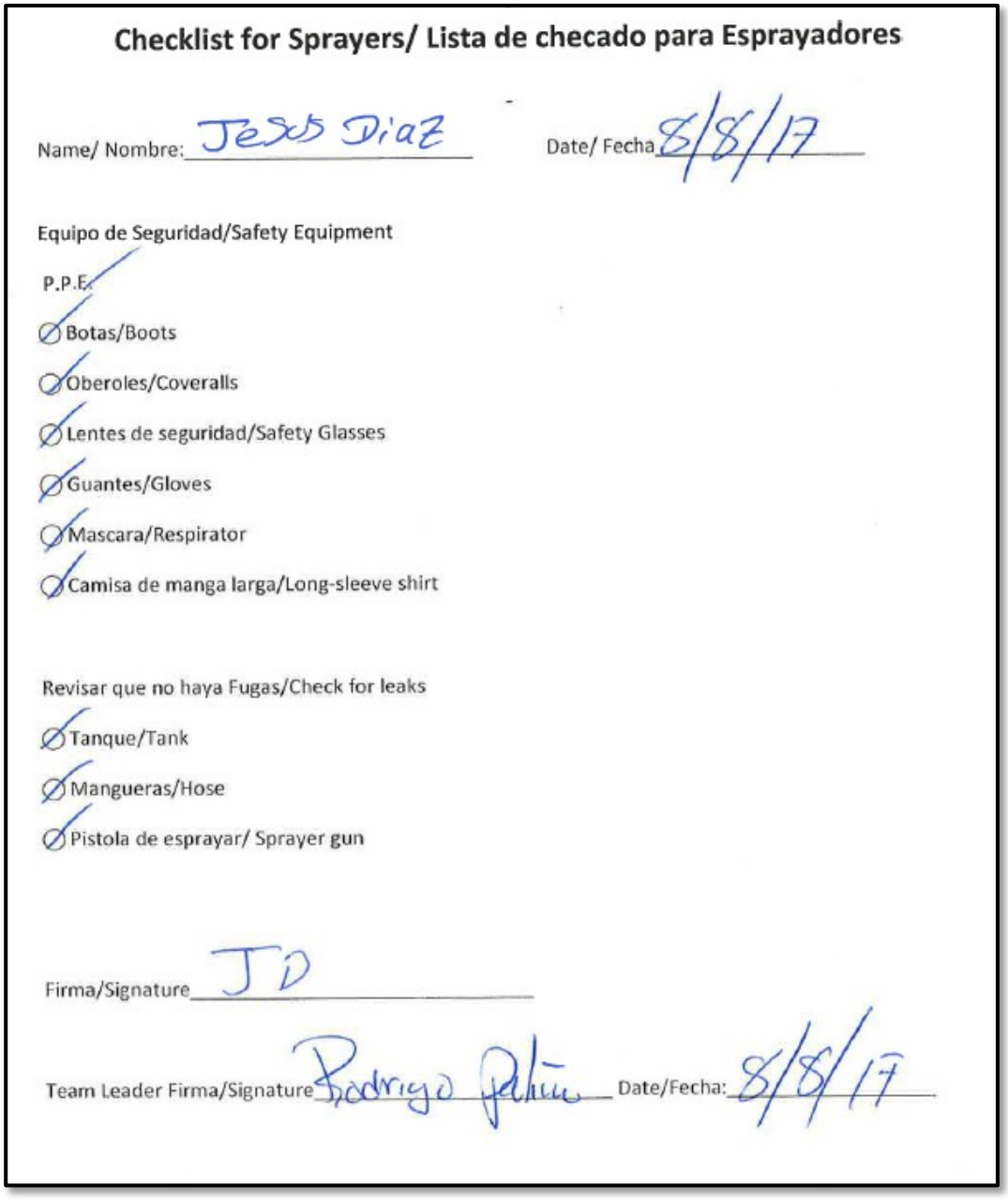
6.6 The storage area should have a list off all the stored pesticides and a binder with all the SDS.

6.7 The pesticides area should have posted a copy of the “Pest Control Headquarters Inspection Report” with an updated expiration date.



PESTICIDES MIXING

6.8 Every day and before staring performing any of the steps described on this procedure, it is mandatory that the Team Members to review the condition of their Personal Protection Equipment (PPE) and the good conditions of the equipment to use. It is require filling the “Checklist for sprayers” and submitting this to the Team Lead at the end of the shift.



Checklist for Sprayers/ Lista de checado para Esprayadores

Name/ Nombre: Jesus Diaz Date/ Fecha 8/8/17

Equipo de Seguridad/Safety Equipment

P.P.E.

- ✓ Botas/Boots
- ✓ Oberoles/Coveralls
- ✓ Lentes de seguridad/Safety Glasses
- ✓ Guantes/Gloves
- ✓ Mascara/Respirator
- ✓ Camisa de manga larga/Long-sleeve shirt

Revisar que no haya Fugas/Check for leaks

- ✓ Tanque/Tank
- ✓ Mangueras/Hose
- ✓ Pistola de esprayar/ Sprayer gun

Firma/Signature JD

Team Leader Firma/Signature Rodrigo Jaime Date/Fecha: 8/8/17

6.9 Not performing the Checklist for sprayer may cause disciplinary action.

6.10 The Grower or the Pesticides Team Leader are responsible to determine the pesticide mix and the amount to prepare for the crop to be irrigated.

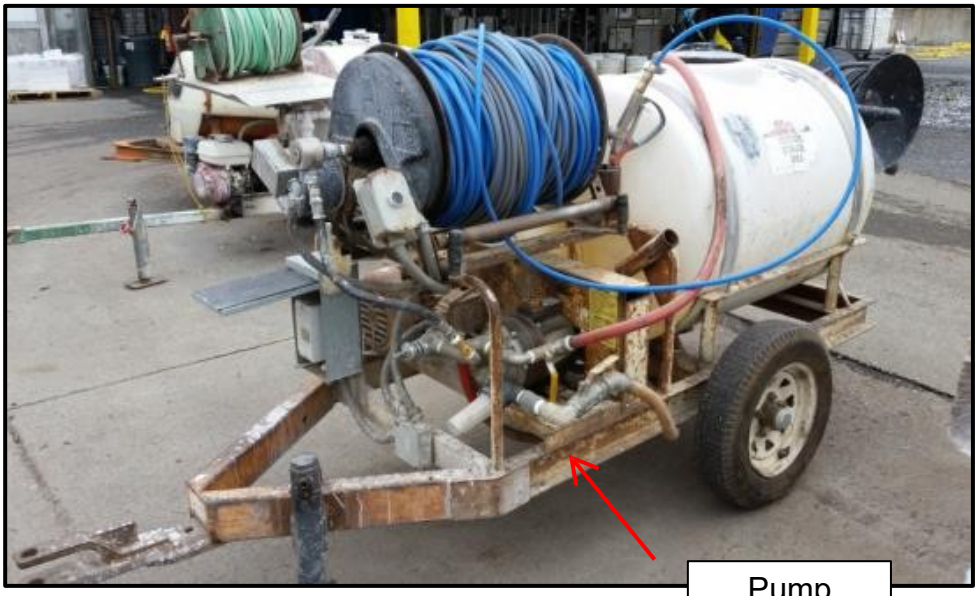
6.11 The pesticides mix ingredients depend on factors like the application purpose (preventive spraying, corrective spraying, herbicides, etc.), the crop to irrigate, the life of the crops, the weather conditions, etc.

6.12 A reference table of the pesticides used in the different Sun Valley crops can be observed in the attachments in this procedure in section 9.1.

6.13 Obtain the formula mix to prepare from the Grower or the Pesticides Team Member and proceed to prepare the solution.

6.14 Remember to wear your PPE (Personal Protection Equipment) before handling the pesticides


Electrical cable cord
Sprayer hose
Tank


Pump


Sprayer nozzle



6.15 Take one of the sprayers cart and drive it into the chemicals area.



6.16 Open the tank lid and add 25 gls of well water



6.17 After weighing the ingredients to use in the solution preparation, slowly add these into the tank.



6.18 Complete the mixture adding the required well water to complete the desired volume of pesticide.

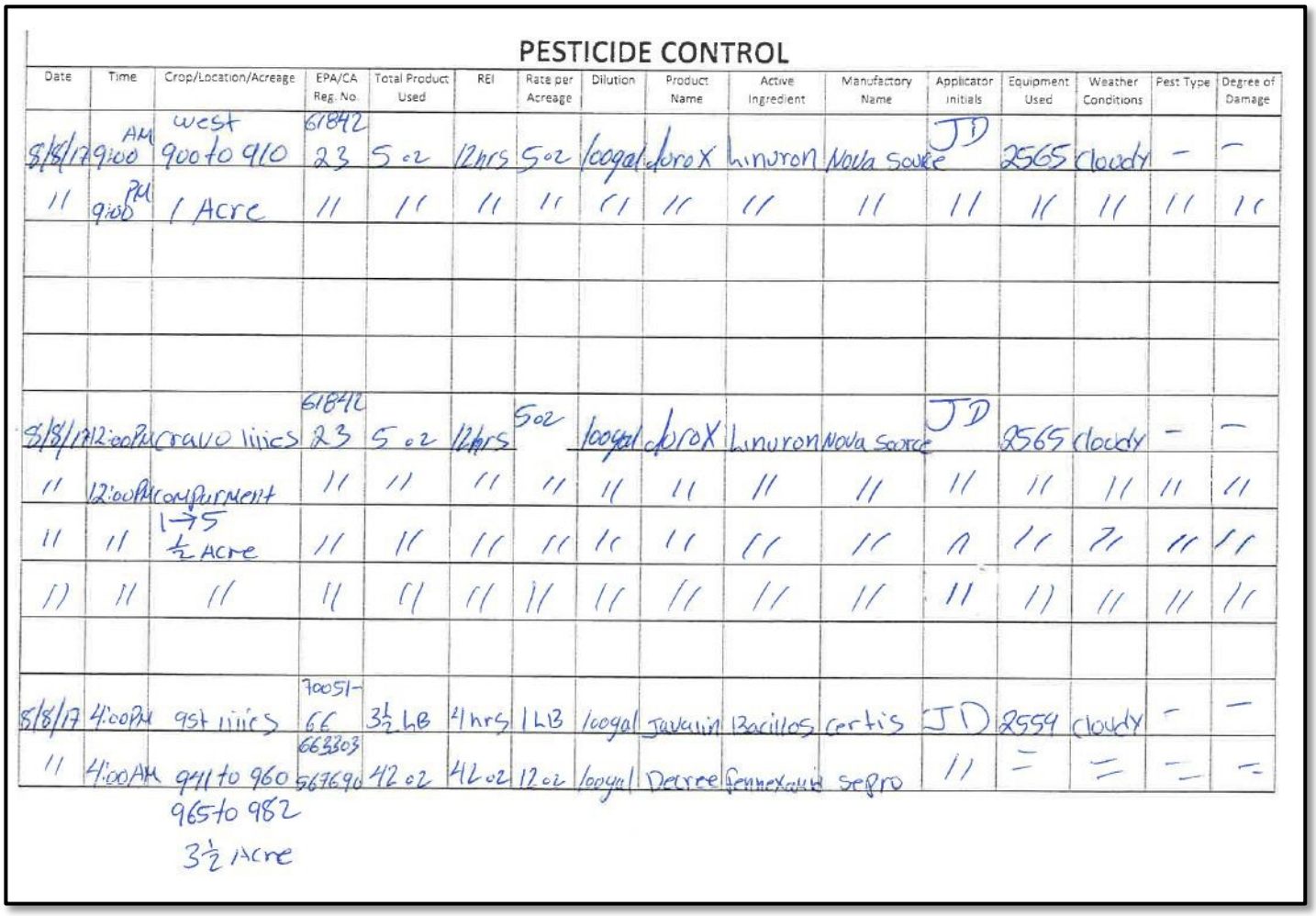
6.19 Move the hose back and forth to help the mixing of the added dry pesticides.



6.20 Once mixture is completed, close the tank and proceed to the area to spray the prepared solution.



6.21 The Grower or the Pesticides Team Leader is responsible to record the mixture, the tank number and all the related information in the “Pesticides Control” log form.



PESTICIDE CONTROL

Date	Time	Crop/Location/Acreage	EPA/CA Reg. No.	Total Product Used	REI	Rate per Acreage	Dilution	Product Name	Active Ingredient	Manufactory Name	Applicator Initials	Equipment Used	Weather Conditions	Pest Type	Degree of Damage
5/8/17	9:00 AM	west 900 to 910	61842 23	5 oz	12hrs	5oz	1oogal	droX	Linuron	Nova Source	JD	2565	cloudy	-	-
11	9:00 PM	1 Acre	11	11	11	11	11	11	11	11	11	11	11	11	11
5/8/17	12:00PM	Cravo lilies	61842 23	5 oz	12hrs	5oz	1oogal	droX	Linuron	Nova Source	JD	2565	cloudy	-	-
11	12:00PM	Conjunment	11	11	11	11	11	11	11	11	11	11	11	11	11
11	11	1→5 ½ Acre	11	11	11	11	11	11	11	11	11	11	11	11	11
11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
5/8/17	4:00PM	9st lilies	70051-66	3½ LB	4hrs	1LB	1oogal	Javelin	Bacillus	certis	JD	2559	cloudy	-	-
11	4:00AM	941 to 960 965 to 982 3½ Acre	66330-3 5676-90	42 oz	42 oz	12 oz	1oogal	Decree	fenhexamid	sepro	11	=	=	-	-

6.22 All documents related to pesticides are auditable by the State of California Department of Pesticides Regulation and by the Environment Protection Authority (EPA); all these documents should be properly filed and maintain.

PESTICIDES SPRAYING

6.23 Isolate the area to be sprayed, with warning signals to prevent the entry to this area by any of the Team members.

6.24 The posted sign needs to include the name of the applied active ingredient and the REI reentry time.





6.25 Park the sprayer in the area.



6.26 Plug the pump to an electrical outlet and extend the spraying hose.



6.27 Open the tank and recirculate the mix for around 5 minutes to assure a proper mixture.



6.28 Walk thru the grown channels uniformly spraying the pesticide.



CLEANING AND DISPOSAL OF MATERIALS AND CONTAINERS

6.29 Do not reuse or refill containers that contained pesticides. "**Triple Rinse"** the container promptly after emptying.

6.30 Empty the remaining contents into the application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or mix tank or store rinsate for later disposal (Cistern). Drain for 10 seconds after the flow begins to drip. Repeat this process two more times. Then puncture and dispose.

CLEANING OF THE APPLICATION EQUIPMENT (SPRAYERS)



6.31 Add 25 gallons of well water to the tank and 4 oz of the “Kleen-it” Spray Tank cleaner (manufactured by Plant Health Technologies PHT).

6.32 To prevent the foam formation during mixing and recirculation of the solution, add 1-2 oz of “Terminator II” defoamer.

6.33 Recirculate solution for 5 minutes and while recirculating, use the sprayer to spray the inside walls of the tank.



6.34 After the 5 minutes recirculation, drain the solution into the cistern.



6.35 Rinse the tank only with well water for two more times and drain the water into the cistern.

6.36 The tank is ready to be use for a new application.

6.37 The water in the cistern is later pumped into a plastic tote and watered into the field.

7.0 TRAINING

7.1 Every Team Member using pesticides at the ALC should have a refresh course at least once a year, covering the safety precautions and risks of using pesticides, personal protection equipment and the process to perform any of the described operations in this procedure. Team Members should be trained by the ALC Safety Manager or anyone qualified in the subject.

7.2 Any training should be documented and signed by the Trainer and the Team Member. Training records should be kept on file on the Human Resources department.

7.3 This procedure should be reviewed with the Team Members every time that there is a Revision change. A signed training record should be maintained on the Human Resources department.

8.0 RECORD KEEPING

8.1 All training records should be maintained on the Human Resources files.

9.0 ATTACHMENTS

9.1 ALC Pesticides chart

Name	Orientals	Lilies	Brasikas	Tulips (regular)	Frensh Tulips	Iris	Files Iris	Hydreneas	Active Ingredient	Appearance
Agromaicen						X				
Avid								X	Abamectin	Yellow to red brown liquid
Bayleton						X	X			
Calmax	X	X			X	X	X			
Conserve	X	X								
Daconil		X							Chlorothalonil	Light grey viscous liquid
Daconil Ultrex						X	X		Chlorothalonil & Kaolin Clay	Brown granules
Decree	X	X	X	X					Fenhexamid, Lignosulfonic acid, Sodium salt	Granular beige powder
Endeuvor	X	X	X	X	X			X		
Endura									Boscalid, Ammonium sulphate	Granules
Exigon								X		
Floramaite										
Iprodione	X	X	X	X		X	X	X	Iprodione	Opaque liquid
Javalin		X	X							
Madallion		X				X	X		Fludioxonil	Beige to brown granules
Palladium				X	X				Cyprodinil	Grey to brown granules
Regalia	X							X	Extract of Reynoutria sachalinensis	Liquid micro emulsion

9.2 Terminator II technical information

Simplot

TERMINATOR® II

TechPack®

version: Dec2011

Antifoaming and Defoaming Agent

Principal Functioning Agents

Polydimethylsiloxane, silicon dioxide.....10%
Constituents Ineffective as spray adjuvants.....90%
TOTAL.....100%

All ingredients are exempt from the requirement of a tolerance under 40 CFR 180.

General Information

This product is a fast, effective defoamer for use in suppressing foam. Controlling foam reduces filling time and lessens overflow waste. This product improves spray performance. The combination of effective ingredients allows for very fast knockdown of troublesome foam if it should occur in the spray tank.

Use Directions

Shake well before using. This product should be added to the spray mixture before the pesticide or any additional surfactant is added. Agitation is recommended to aid in dispersion of the various components. Add 1 to 2 fluid ounces of this product per 100 gallons of spray mixture. For recirculating sprayers add 4 fluid ounces per 100 gallons of spray mixture. If foam has already occurred, add 6 fluid ounces of this product per 100 gallons of spray mixture. **NOT FOR AQUATIC USE.**

KEEP OUT OF REACH OF CHILDREN
CAUTION

Precautionary Statement

CAUTION–Harmful if swallowed, absorbed through the skin or inhaled. Avoid contact with skin, eyes or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or smoking tobacco. Remove and wash contaminated clothing before reuse.

Personal Protective Equipment: Wear chemical-resistant gloves, long-sleeved shirt and long pants, and shoes plus socks.

First Aid

If in eyes: Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If on skin: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.

If swallowed: Call a poison control center or doctor immediately for treatment advice. Have the person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

Storage and Disposal

Store above 45º F. Storage: Do not contaminate water, food or feed by storage or disposal of this product. Disposal: Do not reuse empty container. Triple rinse (or equivalent) during mixing and loading. Recycling decontaminated containers is the best option of container disposal. The Agricultural Container Recycling Council (ACRC) operates the national recycling program. To contact your state and local ACRC recycler visit the ACRC web page at www.acrecycle.org.

Decontaminated containers may also be disposed of in a sanitary landfill.

DISCLAIMER OF WARRANTIES

Seller warrants that the chemical composition of this product conforms to the chemical description given on this label. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES AND REPRESENTATIONS EXPRESSED, IMPLIED, OR STATUTORY, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE. Timing, rate and method of application, weather and crop conditions, mixtures with chemicals not specifically recommended on this label or an accompanying written recommendation are beyond the control of seller. Buyer assumes all risks of use, storage and handling of this material not in strict accordance with directions given herewith. Buyer further agrees in the event of damages arising from the use of this product to accept a replacement of the product or a refund of the purchase price of the product, at buyer's option, as full discharge of seller's liability. No one is authorized to make any other warranty, guarantee or directions concerning this product, and no such warranties, guarantees, or directions shall be valid or binding upon seller.

J. R. Simplot Company

P.O. Box 198
Lathrop, CA 95330

P.O Box 70013
Boise, ID 83707

(800) 635-9444 • www.simplot.com

TERMINATOR II is a trademark of J.R. Simplot Company

CA Reg. No. 7001-50028

Terminator II is available in 1 Qt. bottles

10.0 APPROVEERS

POSITION	NAME	SIGNATURE/DATE
Arcata Farm Manager	Tim Crockenberg	
Arcata Pesticides Team Lead	Rodrigo Patino	
Safety Manager		
CIP Manager	Marisol Marquez	

11.0 CHANGE HISTORY LOG

Rev	DATE	BRIEF DESCRIPTION OF CHANGE	REASON FOR CHANGE
A	August 28, 2017	Standard Operation Procedure Release	N/A

Waste Management Standard Operating Procedure

Title: Waste Management Program

Doc. No.:	SOP-OPR-005	Rev. :	A
Area:	Arcata Land Company	Date:	March 14, 2020
Doc. Owner:	Tim Crockenberg		

1.0 PURPOSE

1.1 To describe the Waste Management Program and policies to be followed by the Arcata Land Company

2.0 SCOPE

2.1 The Arcata Land Company Safety and Environmental Director in conjunction with the Managers of the different areas are responsible for the communication, training and the compliance with the policies and regulations stablished on this program.

3.0 REFERENCES

3.1 No references available

4.0 DEFINITION

4.1 **Waste:** Unwanted or undesired **material** or substance.

4.2 **Waste management:** the processes involved in dealing with the waste including minimization, handling, processing, storage, recycling, transport, and final disposal. Waste Management encompasses management of all processes and resources for proper handling of waste materials, from maintenance of waste transport trucks and dumping facilities to compliance with health codes and environmental regulations.

4.3 **Environmental Protection Agency** (**EPA**): The **EPA** is an independent federal agency of the United States federal government, created in 1970, with the mission to set and enforce rules and standards that protect the environment and control pollution.

4.4 **RCRA** is the acronym for the **Resource Conservation and Recovery Act**. It is the federal law that regulates the management of hazardous waste, non-hazardous wastes, medical wastes, and underground storage tanks.

4.5 **Hazardous waste:** A waste that poses substantial or potential threats to public health or the environment. In the United States, the treatment, storage, and disposal of hazardous waste are regulated under the Resource Conservation and Recovery Act (RCRA) and exhibits one of the four characteristics defined in 40 CFR Part 261 Subpart C - ignitability (D001), corrosivity (D002), reactivity (D003), and toxicity (D004 - D043).

5.0 SAFETY RECOMMENDATIONS

5.1 Although no Personal Protection Equipment (PPE) is required during the handling of the Biodegradable/Non-Hazardous, it is recommended to use gloves for hand protection and googles if liquids or oils are handled.

5.2 Anyone involve in the handling and disposition of the different waste streams generated in Arcata Land Company needs to be trained on this procedure before performing any of the described activities.

5.3 Not following these instructions may incur in sanctions including a job termination.

5.4 Always keep the area clean and organize and all the waste materials properly separated and identified.

5.5 Thoroughly wash your hand after handling waste materials and before eating, drinking, smoking, chewing gum or going to the restroom.

6.0 PROCEDURE

6.1 According to their effect on the Human health and the environment a waste can be classified as:

6.1.1 **Hazardous waste:** Waste with properties that make it potentially dangerous or harmful to. Human health or the environment. Hazardous wastes can be liquids, solids, or contained gases.

6.1.2 **Non-Hazardous waste:** All waste materials not specifically deemed hazardous under federal law are considered nonhazardous wastes. The vast majority of waste produced in the United States is not inherently hazardous. It includes paper, wood, plastics, glass, metals, and chemicals, as well as other materials generated by industrial, commercial, agricultural, and residential sources. Even though these wastes are not defined as hazardous, improper management of them poses significant risks to the environment and human health. Therefore, the handling, transport, and disposal of nonhazardous wastes is regulated by the government, largely at the state and local level. A Non-hazardous substance doesn't have any of the properties listed for the hazardous waste.

6.2 According to their material properties, a waste can be classified as:

6.2.1 **Bio-degradable:** Can be degraded (paper, wood, fruits, others)

6.2.2 **Non-Biodegradable:** Cannot be degraded like plastics, bottles, cans, Styrofoam containers and others

6.3 According to the Environment Protection Authority (EPA) the generated waste can be classified into one of six waste classes.

6.3.1 **Special waste:** Class of waste that has unique regulatory requirements. Classified under this category are the Clinical and related waste, asbestos waste, Waste tires, anything classified as special waste under an EPA gazettal notice.

6.3.2 **Liquid waste:** Any waste (other than special waste) that: is non-solid and becomes free-flowing at or below 60 degrees Celsius or when it is transported, is generally not capable of being picked up by a spade or shovel and is classified as liquid waste under an EPA gazettal notice.

6.3.3 **Hazardous waste**

6.3.4 **Restricted solid waste:** According to the EPA "Waste Classification Guidelines Part 1" if a waste exceeds the specific contaminant concentration (SCC) and the toxicity characteristics leaching procedure (TCLP) test values specified for general solid waste, the waste must be classified as restricted solid waste and special handling procedures should be taken.

6.3.5 **General solid waste (putrescible):** household waste containing putrescible organics, waste from garbage bins collected by the Council, manure, disposable nappies, food waste, animal waste etc.

6.3.6 **General solid waste (non-putrescible):** glass, plastic, rubber, bricks, concrete, paper, cardboard, garden waste, synthetic fiber waste, virgin excavated natural material (VENM) etc.

6.4 The Arcata Land Company Waste Management program is based on the three “R’s” principle:

6.4.1 **Reduce:** Eliminate or minimize as much as possible the generation of waste

6.4.2 **Reuse:** Reuse or find new ways to use the trash so is not thrown away.

6.4.3 **Recycle:** The process of converting waste materials into new materials and objects. It is an alternative to "conventional" waste disposal that can save material.

6.5 Arcata Land Company policy is to Reduce, Reuse and Recycle materials as possible to minimize the waste generation.

6.6 Arcata Land Company waste generation goal is to show an annual reduction of 10% of the actual generation quantities.



6.7 Arcata Land Company waste streams projected to be generated:

Waste	Source	Waste classification	Average Annual generation	Disposition Method
Green waste		Biodegradable / Non-hazardous	8,000 tons	Compost
Wood	Wood pallets, wood totes	Biodegradable / Non-hazardous	4 tons	Repair, reuse and wood disposal
Cardboard	Ship boxes, packaging materials	Biodegradable / Non-hazardous	2 tons	Recycling company
Plastic	Hoops plastic covers, drip tapes, plastic pots.	Non-Biodegradable / Non-hazardous	5 tons	Bailing of plastics and recycle of materials
Batteries	Forklifts, Tenco's, alkaline batteries	Non-Biodegradable / Hazardous	50 batteries	Exchange cores with vendors. Proper disposal of the alkaline batteries.
Scrap metals	Machine shop, obsolete equipment	Non-Biodegradable / Non-hazardous	2 tons	Arcata Scrap and Savage
Tires	Farm vehicles	Non-Biodegradable / Hazardous	16	Tires are sent for recycle to TP Tire/Les Schaub in Arcata CA.
Light bulbs	Illumination	Non-Biodegradable / Hazardous	500 per year	Waste Management Inc.
Glass	Greenhouse panels	Non-Biodegradable / Non-hazardous	2 tons	Humboldt Recycling
Agrochemicals	Fertilizers and pesticides	Non-Biodegradable / Hazardous	Minimal generation	Humboldt waste Management in Eureka
Waste Oil	Machinery and equipment, farm tractors and vehicles	Non-Biodegradable / Hazardous	none	Asbury Environmental
Barrels that contained chemicals	Containers that contained chemical materials such oils, fertilizers, and hydronic conditioners.	Non-Biodegradable / Hazardous	20 barrels a year	Return to vendors getting deposit back, these are stored until completing a truck load to ship these back
General Garbage	Lunchrooms, restrooms, offices, etc.	Biodegradable / Non-hazardous	30 Tons	Land field

GREEN WASTE

6.8 Green waste or agricultural waste is a Biodegradable/Non-Hazardous waste that can be composed such flowers cuttings, leaves and hedge trimmings.

6.9 The green waste due to its biodegradable nature doesn't represent a contamination to the fields; other ways contribute to the enrichment with nutrients to the soil that can be reused for planting.

6.10 The green waste totes or bins from the production areas cannot be mixed with any other materials like plastics (bags, gloves, bottles, etc.), rags, food scraps, hazard waste or chemicals, etc., any green waste container mixed with other waste materials should be returned back to the respective area for them to sorted out and remove the non-green waste materials.

WOOD

6.11 Wood waste is generated from unusable pallets or totes received from vendors with different purchased materials.





6.12 As part of the Arcata Land Company recycling philosophy has established a pallets recycling program.

6.13 Pallets that can be reused and are in bad shape get repaired and reused to move materials around the farm.



6.14 If a pallet cannot be repaired, this is disassembled, the nails removed and the wood sent for recycling to:

EEL RIVER RESOURCE RECOVERY
965 Riverwalk Dr.
Fortuna, CA 95540
Tel: (707) 725-5156

6.15 Arcata Land Company annually repairs broken pallets which are reused. This program reduces the amount of waste wood generated and saves the company money preventing to order additional pallet.

CARDBOARD

6.16 Cardboard waste is generated from the box packages of different materials that are received in Arcata Land Company and/or damaged boxes coming from the packaging area.

6.17 Cardboard waste is keep separated in totes or wood pallets, then after these are consolidated in a big container that is recollected by a recycling company.



6.18 Cardboard boxes should be flattened before disposing into a container to reduce the volume of the waste and to optimize the space of the containers.

6.19 Cardboard is sent for recycling to:

HUMBOLDT SANATION & RECYCLING
2585 Central Ave.
McKinleyville CA 95519
Tel: (707) 839-3285

6.20 Arcata Land Company reuses cardboard boxes

6.21 Pre-pack bunches boxes are kept in inventory until the product is used to ship to the customers, boxes are reused until there are not usable anymore.

PLASTICS

6.22 Plastics waste is generated mainly by 3 different streams: Hoops plastics covers, Water dripping tape and plastic pots.




6.23 These are keep separated in containers and get bailed to be send to recycle to:

RECYCLE ME/GO GREEN RECYCLE
7360 N. Woodrow Ave.
Fresno, CA 93720
Tel: (559) 777-0916



BATTERIES

6.24 Batteries are generated from two streams, the ones generated from the forklifts and Tenco's and the waste batteries coming out of the electronic equipment as PH Meters, Inventory scanners, etc.

6.25 Large batteries are exchanged as cores every time that a unit is replaced on any forklift or Tenco.



6.26 Batteries can be exchanged with Napa Auto Parts or Pape Forklift group:

PAPE MATERIAL HANDLING
2736 Jacobs Ave.
Eureka, CA 95501
Tel: (707) 443-3015

6.27 Batteries cannot be disposal on any of the containers; a well identified temporal container can be used to store the bad batteries before exchanging these with new ones.

6.28 Disposing batteries in an unauthorized way is against the environmental and ecological regulations.

6.29 Alkaline batteries like the ones coming from remote controllers, PH and temperature meters, etc. these are collected in a well identified container and dispose with an authorized company.



Alkaline Batteries

SCRAP METALS

6.30 Scrap metals are mainly generated in the machine shop, these are collected in a well identified container and send for recycle to:

ARCATA SCRAP AND SAVAGE
192 S G St
Arcata, CA 95521
Tel: (707) 822-4881

TIRES

6.31 Waste tires are highly regulated by the Federal and State environmental authorities, tires can hold water and as such, can create a breeding area for mosquitoes, including the Culex mosquito that transmits the West Nile Virus. Tires are often targeted as the prime candidates for mosquito breeding because it is difficult to remove water from them, and they retain heat, which further exacerbates the conditions that attract mosquitoes.

6.32 Tires have potential for tire fires which produce acid smoke harmful to humans and the environment as well as leaves behind an oily residue.

6.33 All states, except for Alaska, have specific management and disposal rules that apply to generators of waste tires. The purpose of the waste tire regulation is to avoid improper storage and disposal of scrap tires while simultaneously encouraging recycling.

6.34 Arcata Land Company disposal the waste tires in:

TP TIRE/LES SCHAUB
1265 Giuntoli Ln.
Arcata, CA 95521
Tel: (707) 822-5191

LIGHT BULBS

6.35 Light bulbs are generated from the defective bulbs discarded from the offices or the entire Arcata Land Company Farm.

6.36 These are kept in a well identified container; no other materials should be place in this container.



6.37 Light bulbs are fragile; the disposition of these should be done carefully to prevent these from breaking.

6.38 Compact fluorescent light bulbs (also known as CFLs), Fluorescent tubes and other bulbs may contain mercury, there the importance of preventing them from breaking.

6.39 Light bulbs are sent to Waste Management Inc. for disposal

GLASS

6.40 Glass is generated from broken greenhouse windows or panels; these are keep separated in tote containers and send for disposal to:

HUMBOLDT SANATION & RECYCLING
2585 Central Ave.
McKinleyville CA 95519
Tel: (707) 839-3285

AGROCHEMICALS

6.41 If necessary, agrochemicals can be taken to the following location for proper disposal:

HUMBOLDT WASTE MANAGEMENT
1059 W. Hawthorne St.
Eureka CA 95501
Tel: (707) 268-8680

WASTE OIL

6.42 Waste oil is considerate as a Non-Biodegradable/Hazardous Waste; this is generated from the maintenance of the machines, hydraulic equipment, forklifts, tractors and compressors and other equipment.

6.43 Waste oils are stored in metallic container well identified and disposal by:

ASBURY ENVIRONMENTAL
200 Dinsmore Dr.
Fortuna CA 95540
Tel: (310) 886-3400

6.44 The waste oil container needs to be properly closed when is not in use to prevent the spilling of materials.

6.45 Waste oils need to be maintained in hazardous waste storage, covering all the requirements specified for these.

BARRELS THAT CONTAINED CHEMICALS

6.46 Barrels generation comes from the boiler chemicals (water treatment) and phosphoric acid (fertilizers).

6.47 Barrels are stored and returned to vendors to receive deposit.

GENERAL TRASH

6.48 Any other wastes not listed in those described above are considered as general waste or garbage.

6.49 General waste is disposal in land fields reason why not all the materials can be thrown in these containers.

6.50 There are certain items that cannot be throw in a dumpster, these because the items in question are potential contaminants to the environmental:

6.50.1 Tires

6.54.2 Paint cans and lacquers

6.50.3 Adhesives

6.50.4 Any type of batteries

6.50.5 Hazardous materials

6.50.6 House hold cleaners

6.50.7 Inks

6.50.8 Printers toners cartridges

6.50.9 Electronic waste or e-waste (computers, televisions, etc.) cannot be thrown away in the garbage; the law prevents heavy metals, acids and other hazardous materials from ending up in soil and drinking water.

6.51 General trash or garbage is handled by:

RECOLOGY ARCATA
30 S St.
Arcata CA 95521
Tel: (707) 822-5951

7.0 TRAINING

7.1 The Arcata Land Company Waste Management Program training is part of the new hires induction
Program taught by the Human Resources Department.

7.2 Every Manager of the area should follow up with his/her Team Members the compliance with the Arcata Land Company Waste Management Program

7.3 The Arcata Land Company Management Program should be part of the Safety topics of the week program.

7.4 Arcata Land Company should keep training records signed by the Trainer and the Team Member about the knowledge of this program.

7.5 This procedure should be reviewed with the Team Members every time that there is a Revision change. A signed training record should be maintained on the Human Resources department.

8.0 RECORD KEEPING

8.1 Training records should be maintained on the Human Resources files.

9.0 APPROVEERS

POSITION	NAME	SIGNATURE/DATE
Arcata Farm Manager	Tim Crockenberg	
Safety Manager		
CIP Manager	Marisol Marquez	

10.0 CHANGE HISTORY LOG

Rev	DATE	BRIEF DESCRIPTION OF CHANGE	REASON FOR CHANGE
A	3/14/2020	Standard Operation Procedure Release	N/A

CalCannabis Cultivation Licensing
Waste Management Plan

Non-Cannabis Waste

Non-cannabis wastes will include empty soil, soil amendment, and fertilizer bags, empty plant pots or containers, and typical refuse. Refuse will be sorted to divert recyclables such as paper, plastic, glass, and metals from the waste stream and taken to a recycling center. The remaining solid wastes will be collected and deposited into a solid waste receptacle for temporary storage, which will be kept covered. The solid waste will be removed from the site as needed and disposed of at an authorized waste transfer facility. The solid waste receptacle will be sized appropriately for the volume of waste generated and may be adjusted in size periodically as conditions warrant. It is anticipated that no more than one dumpster per week will be needed.

Cannabis Waste

Cannabis waste will include stems, stalks, degraded cannabis plant material, and general cannabis biomass. Cannabis waste will be managed through either or a combination of on-site composting and off-site disposal by properly licensed collection and processing providers. collection and processing by a local agency, a waste hauler franchised or contracted by a local agency, or a private waste hauler permitted by a local agency.

For on-site composting, cannabis waste will be stored and managed in a designated compost management area at the site. Composting activities will be conducted in accordance with local and state regulations covering composting activities.

For off-site disposal, collection and processing will be performed by a local agency, a waste hauler franchised or contracted by a local agency, or a private waste hauler permitted by a local agency. The cannabis waste will be made unusable and unrecognizable ("destroyed") prior to leaving the site through a County approved method involving either grinding and/or mixing with other plant materials for composting, or grinding and incorporating the cannabis waste with approved non-consumable solid wastes such that the resulting mixture is at least 50 percent non-cannabis waste.

Recordkeeping

Records of destroyed cannabis waste will be kept and cross-referenced by batch number and SKU and/or another unique identifier. The weight or volume, as appropriate, will be recorded along with the method of disposal.

CalCannabis Cultivation Licensing
Pest Management Plan

Cultural Pest-Management Control Methods

In order to prevent and mitigate any pest infestations we will utilize a number of culture controls to make the crop and/or habitat unacceptable to pests and reduce the survival of any pests on crops by enhancing natural enemies to likely pests through our Integrated Pest Management ("IPM") program. We will use cultural controls such as plant design and management with our plant density and spacing, timing of seeding and planting / proper maintenance of our cultivation area (clean borders, weed control, sanitation) and crops (i.e. pruning, defoliation).

Biological Pest-Management Control Methods

The use of biological controls at the cultivation facility is integral to our pest management program that includes the use of cultural, biological, and beneficial organisms to control plant pests. The use of predators, such as Neoseiulus californicus, as a free-living species will be deployed to consume pests as an alternative to chemical pest-management methods.

Chemical Pest-Management Control Methods

State of CA approved agricultural chemicals (pesticides / fungicides) would be applied to the cannabis plants to control pests and mold. Approved chemicals would be applied at agronomic rates according to manufacturer's specifications. The harvest plan is designed to be a sustainable agricultural operation with limited use of chemical pesticides.

Chemical(s) to Be Applied at any Stage of Plant Growth

Product Name	Active Ingredient(s)
PureCrop1	Soybean oil (10%), Corn oil (5%)
Regalia	Extract of Reynoutria sachalinensis (5%)
Javelin	Bacillus thuringiensis, subspecies kurstaki strain SA-11, and Lepidopteran (85%)
	***Potentially other comparable State of CA approved pesticides

Attach additional sheets of paper as needed.

Phone: (707) 441-8855 Email: info@shn-engr.com Web: shn-engr.com
812 W. Wabash Avenue, Eureka, CA 95501-2138

Reference: 017062.100

June 12, 2020

Rudolf Visser
Arcata Land Company, LLC
3318 Foster Avenue
Arcata, CA 95521

Subject: **Onsite Septic Suitability Investigation and Sewage Disposal System Design Recommendations, Arcata Land Company, LLC, Arcata, California; Parcel D, Portion of Assessor Parcel Number 506-231-011–Revision 1**

1.0 Introduction

This report summarizes the results of an assessment of soil and groundwater conditions conducted by SHN and provides recommendations for the siting and design of an onsite sewage disposal system at the above-referenced project location. The project site vicinity is provided in Figure 1. Included with this report are the design specifications for a low-pressure, shallow distribution system with a hydraulic capacity of up to 4,060 gallons per day (gpd). The hydraulic capacity of the system was determined based on a maximum of 116 employees per day at the facility during peak production periods.

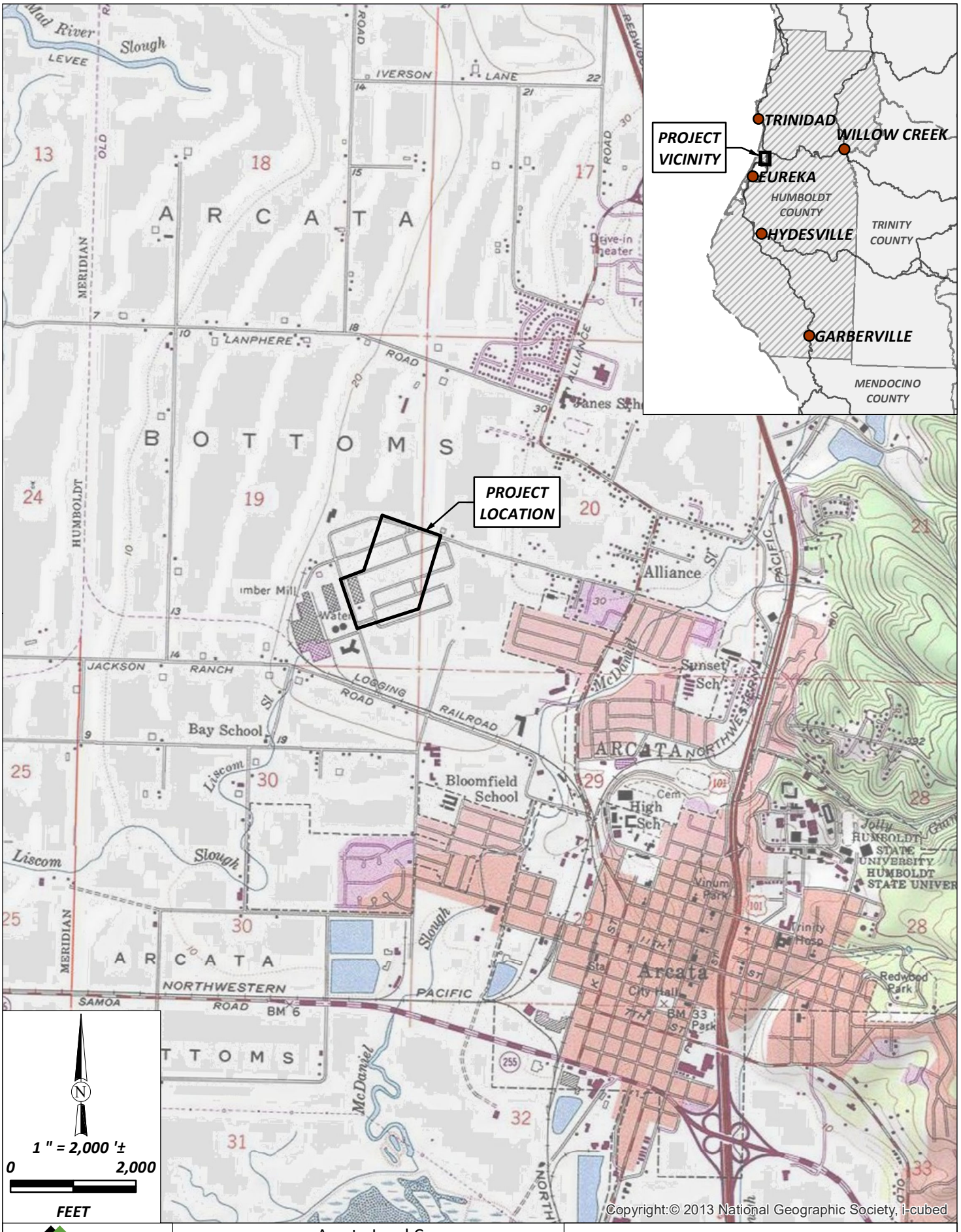
The location of the proposed disposal field was chosen by the client to maximize the area available for construction of greenhouses and cultivation operations as shown on Figure 2, "Plot Plan for Arcata Land Company LLC," prepared by Kelly-O'Hern Associates and dated March 2020. The scope of the current field investigation included percolation testing and laboratory textural analysis of soils collected from the percolation test pits at the locations shown in Figure 3.

SHN's design of the wastewater disposal system is based on soil textural analysis and percolation test data from the current project site in conjunction with data obtained from previous site investigations on the subject parcel and adjoining parcel to the east (APN 507-181-007). As part of these site investigations, SHN installed observation wells during the Humboldt County wet weather testing period to collect depth-to-groundwater measurements, installed backhoe test pits to characterize the soil profile and determine the depth to limiting conditions, performed percolation testing to determine soil application rates of wastewater, and performed laboratory textural analysis of soil samples collected from the test locations. The data obtained from these investigations are provided with this report as Appendix 1 for reference.

2.0 Project Description

2.1 Background

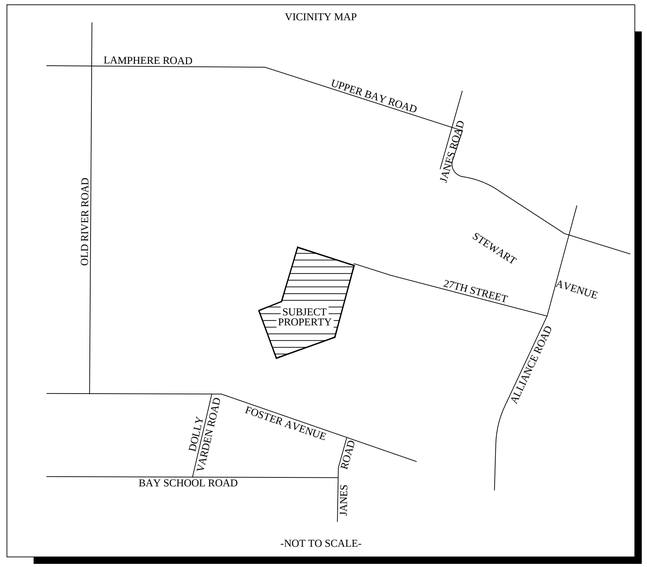
Arcata Land Company, LLC, is proposing to convert the site into an agricultural production and processing facility. Multiple greenhouses will be constructed



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SHN	Arcata Land Co Onsite Septic Suitability Study Arcata, California	Project Location Map SHN 017062.100
	May 2020 | Figure1_ProjectLocationMap	Figure 1

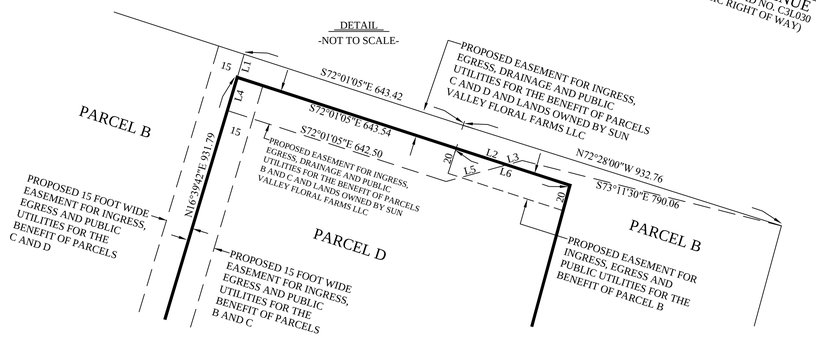
BASIS OF BEARINGS: BOOK 64 OF SURVEYS, PAGES 111 & 112



NOTES

1. ZONING: MH-Q (HEAVY INDUSTRIAL-QUALIFIED)
2. ACCORDING TO FLOOD INSURANCE RATE MAP NO. 06023C0690F, WITH A DATE OF IDENTIFICATION OF NOVEMBER 4, 2016, FOR COMMUNITY NUMBER 060060 IN HUMBOLDT COUNTY, STATE OF CALIFORNIA, A PORTION OF THE SUBJECT PROPERTY IS LOCATED WITHIN FLOOD ZONE A (WITHIN A 100-YEAR FLOOD ZONE) AND A PORTION IS LOCATED WITHIN FLOOD ZONE X (AREAS OF MINIMAL FLOODING). THE APPROXIMATE LOCATION OF THE LINE BETWEEN ZONE A AND ZONE X HAS BEEN LOCATED PER SAID FLOOD INSURANCE RATE MAP NO. 06023C069CF.
   BASED ON FEMA CASE NO. 98-09-088A, REVALIDATED BY CASE NO. 11-09-0847V EFFECTIVE JUNE 22, 2017, ARCATA LAND COMPANY PARCELS ARE NOW IN ZONE X, OUTSIDE OF ZONE A.
3. THE PROPERTY LINES SHOWN ON THIS PLOT PLAN ARE BASED ON BOOK 64 OF SURVEYS, PAGES 111 & 112. PARCEL LETTERS SHOWN HEREON ARE PER A LOT LINE ADJUSTMENT THAT IS CURRENTLY IN PROGRESS.
4. DIRECTIONS OF RUNOFF ARE PER AERIAL MAPPING AND ARE APPROXIMATE.
5. THIS PROPERTY MAY BE ENCUMBERED BY THE FOLLOWING RECORDED INSTRUMENTS:
   [1] BOOK 251 DEEDS, PAGE 372 - EASEMENT GRANTED TO PACIFIC GAS AND ELECTRIC COMPANY FOR PUBLIC UTILITIES - SHOWN HEREON.
7. NO MAJOR VEGETATION REMOVAL PROPOSED.
8. PROPOSED 2 FEET OF FILL ON PROPOSED CULTIVATION AREA.
9. THERE ARE NO SCHOOLS, SCHOOL BUS STOPS, PLACES OF WORSHIP, PUBLIC PARKS, OR TRIBAL CULTURAL RESOURCES WITHIN 600 FEET OF THE CULTIVATION SITE.
10. THERE ARE NO OFF-SITE RESIDENCES WITHIN 300 FEET OF CULTIVATION SITE.
11. THERE ARE NO PERENNIAL & INTERMITTENT WATER COURSES (RIVERS, CREEKS, ETC.), ENGINEERED OR NATURAL PONDS, AND/OR WETLAND AREAS.
12. ACCESS TO THE SUBJECT PROPERTY IS VIA A PROPOSED EASEMENT ACROSS PARCEL C FROM FOSTER AVENUE, SHOWN HEREON. FOSTER AVENUE IS A COUNTY MAINTAINED ROAD WITH AN ASPHALT- PAVED ROAD SURFACE OF 20 FEET IN WIDTH, WITH A GRADUAL GRADE.
13. WATER SOURCE IS A WELL LOCATED ON THE PROPERTY TO THE SOUTH AS SHOWN HEREON.
14. THERE ARE NO WATER DIVERSIONS ON THE SUBJECT PROPERTY.
15. POWER WILL BE VIA CO-GENERATION, LOCATION TO BE DETERMINED.





LINE TABLE

	BEARING	DISTANCE
L1	S16°39'42"W	13.60
L2	S72°28'00"E	125.27
L3	S84°18'30"E	17.54
L4	S16°39'42"W	26.40
L5	S84°18'30"E	128.64
L6	N72°28'00"W	332.85
L7	N66°23'45"W	87.59
L8	S70°22'14"W	75.00
L9	N19°05'03"E	48.35
L10	N70°22'14"E	145.60
L11	S66°23'45"E	87.59
L12	N70°22'14"E	276.33

LICENSED LAND SURVEYOR
MICHAEL J. O'HERN
No. 4829
STATE OF CALIFORNIA

PRELIMINARY

MICHAEL J. O'HERN L.S. 4829

APPLICANT: ARCATA LAND COMPANY LLC
C/O LANE DEVRIES
3318 FOSTER AVENUE
ARCATA, CA 95521
(707)825-4700

APN 505-151-003 (PORTION OF)
APN 506-231-011 (PORTION OF)
APN 507-181-007

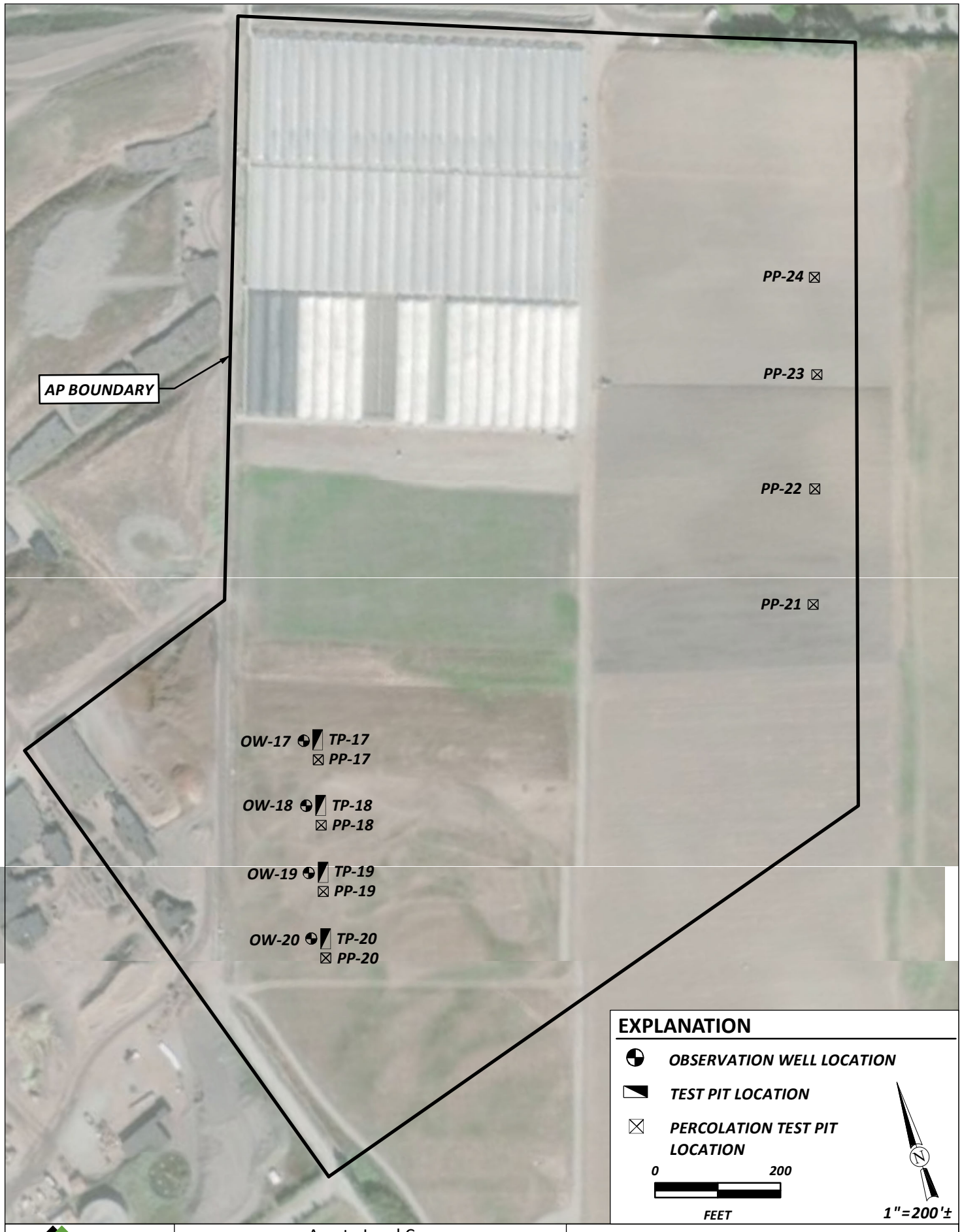
PLOT PLAN
FOR
ARCATA LAND COMPANY LLC
IN
SECTIONS 19, 20, 29 & 30 T6N, R1E, HUMBOLDT MERIDIAN
IN THE UNINCORPORATED AREA OF HUMBOLDT COUNTY
MARCH 2020 SCALE 1" = 200'

HUMBOLDT COUNTY
STATE OF CALIFORNIA

SCALE 1" = 200'
0 100 200

KELLY-O'HERN ASSOCIATES
EUREKA, CALIFORNIA

Figure 2



Path: \\eureka\projects\2017\017062\ArcataLandCo\100-Leachfield\GIS\PROJ_MXD\ParcelD\Figure2_SiteMap.mxd User Name: psundberg DATE: 5/7/20, 4:06PM

SHN	Arcata Land Co Onsite Septic Suitability Study Arcata, California	Site Map showing Test Locations SHN 017062.100
	May 2020 | Figure3_SiteMap	Figure 3

within the open pasture to the west of the proposed disposal field area as shown in Figure 2. The facility will employ up to 116 full-time workers. The worker's bathroom facilities are expected to contain toilets, wash stations, and showers.

The proposed wastewater storage and disposal system is sized to accommodate daily wastewater flows of up to 4,060 gpd. SHN's design is conservatively based on a per person water demand of 35 gpd based on Appendix C-"Expected Daily Wastewater Flows," for factories contained in the *Humboldt County Onsite Wastewater Treatment System (OWTS) Regulations and Technical Manual*, dated November 7, 2017.

The proposed wastewater storage and pumping system will consist of a new 12,000-gallon dual-compartment septic tank and new 4,000-gallon single-compartment pump vault. Effluent will be disposed of in a new subsurface disposal field consisting of a low-pressure pipe-distribution system with a total of 2,240 lineal feet of pressurized distribution lateral contained within shallow gravel-filled trenches. The pressurized distribution system is to be split into four separate distribution cells connected to an automatic distributing valve.

The proposed system is intended to provide for the disposal of low-strength wastewater generated by employee restrooms and break rooms, only. The system is not adequate for high-strength wastewater generated by a commercial kitchen or cafeteria waste, process water, and equipment wash water containing cleaners or solvents.

2.2 Field and Laboratory Investigation

As part of the current site investigation, a project geologist from SHN conducted four percolation tests on March 13, 2020, at the locations shown in Figure 3. Stabilized percolation rates were obtained for the upper B-horizon soils at a depth interval of 30 to 40 inches below ground surface (BGS). A 1-hour presoak of all the test holes was performed prior to conducting the percolation tests. Percolation test results are included in Appendix 2.

Representative bulk soil samples were obtained from each test location at depths of approximately 32 to 36 inches BGS. Samples were analyzed for texture in SHN's certified soils testing laboratory in accordance with the methods prescribed by the North Coast Regional Water Quality Control Board (RWQCB). Laboratory test results are included in Appendix 3.

3.0 Site Conditions

The proposed primary disposal field and 100% replacement area will be located along the newly created eastern property line as shown in Figures 2 and 3. In the past, the area was primarily used for cattle grazing and feed production. The ground surface and shallow loamy soils are mostly undisturbed and retain their original soil morphology and structure. Ground slopes within the proposed disposal field area are nearly level with little to no discernible grade.

3.1 Soil

Field observation from the previous site investigations indicate soil horizonation to be relatively subtle, which we interpret to reflect the youthful age of the sediments. The surficial soils are characterized by a partially disturbed A-horizon composed of dark brown to dark grayish brown, organic-rich silt loam, sandy loam, and gravelly silt loam beginning at the ground surface and continuing to as deep as 1.5 to 2 feet BGS. Below 1.5 and 2 feet, soil texture varies slightly grading from soft, friable, and slightly plastic loam and clay loam to firm, non-plastic clay loam and sandy loam to loamy sand.

In general, the surficial loamy soils are characterized by single grain to weak subangular blocky structure, are friable and have slightly sticky to non-sticky, and non-plastic to slightly plastic wet consistencies. The soils observed at the lower horizons are characterized by weak subangular blocky structure, are friable to firm, with non-sticky to slightly sticky and non-plastic to slightly plastic wet consistencies.

The near-surface soils at the current project site are generally consistent in both texture and consistency as to those described above. A summary of laboratory test results from the current investigation is provided below.

3.2 Percolation Test Data

The stabilized percolation rates for the current site investigation are provided in Appendix 2 and are summarized in Table 1.

Table 1. Soil Percolation Rates

Test Hole No.	Depth (inches)	Soil Texture Suitability Chart	Stabilized Percolation Rate (minutes per inch)
PP-21	34-40	Loam	30
PP-22	30-36	Silt Loam	15
PP-23	32-38	Loam	9
PP-24	32-38	Silty Clay Loam	8

For design purposes, SHN recommends using the slowest percolation rate of 30 minutes per inch to size both the primary disposal field and 100% replacement area. On this basis, we recommend that the disposal system be designed using a soil application rate of 0.363 gpd per square foot (gpd/ft^2) in accordance with application rates set forth in Table 3 (Pressure Distribution Soil Application Rates) of the Humboldt County OWTS Manual.

3.3 Laboratory Textural Analysis

Laboratory textural analysis work sheets prepared by SHN's materials testing laboratory for this current investigation are included in Appendix 3. Table 2 summarizes the laboratory textural analyses results of the bulk soil samples collected from the percolation test pits.

Table 2. Laboratory Soil Textural Analysis Results

Test Hole No.	Depth (inches)	Sand (percent)	Silt (percent)	Clay (percent)	Combined Fines (percent)	Coarse Fragments by Volume (percent)	Soil Suitability Percolation Chart
PP-21	36	33.7	41.5	24.8	66.3	0	Zone 3
PP-22	32	28.1	50.1	21.8	71.9	0	Zone 3
PP-23	32	26.8	46.8	26.4	73.2	0	Zone 3
PP-24	34	16.6	48.5	34.9	83.4	0	Zone 4
TP-25	32	43.5	37.9	18.6	56.5	0	Zone 2

As shown in Table 2, laboratory textural analyses conducted on samples collected from the soil B-horizon at the current project site indicate the presence of Zone 3 loam and silty loam to Zone 4 silty clay loam.

3.4 Groundwater

Depth-to-groundwater measurements for each of the neighboring sites are provided in the observation well data sheets included in Appendix 1. A total of 10 observation wells were installed between March 2018 and March 2019 and monitored during the respective wet-weather testing periods. Groundwater measurements collected during March 2019 from the wells located in the southwest corner of the subject parcel indicated groundwater depths ranging from 3.3 to about 4 feet BGS. Those collected during March and April 2018 from the adjoining parcel to the east (APN 507-181-007) indicated groundwater depths ranging from 6.7 to greater than 8 feet BGS.

Based on the ground surface elevations in the local vicinity, we interpret groundwater conditions at the current project site to be similar to those observed in the observation wells located approximately 300 feet to the east on the adjoining parcel (APN 507-181-007). The observation wells in the southwest corner of the subject parcel are located more than 900 feet from the currently proposed disposal field area and are about 2 feet lower in elevation. For design purposes, we have conservatively estimated a seasonally high groundwater elevation of 5 feet BGS.

4.0 Conclusions and Recommendations

Soil and groundwater conditions are suitable for the construction of a shallow, in-ground dispersal system to serve the proposed developments. The predominantly fine-grained nature of the soils, depth to seasonally-high groundwater, and the relatively large size of the proposed disposal field requires that a shallow, low-pressure pipe distribution system be used to ensure long-term reliability while minimizing the risk of system failure.

SHN recommends sizing the disposal field and 100% replacement area using a soil application rate equal to 0.363 gpd/ft^2 based on the field-measured percolation tests and in accordance with the application rate set forth in "Table 3: Pressure Distribution Soil Application Rates" of the Humboldt

County OWTS technical manual. The recommended depth, spacing, and orientation of the dispersal trenches are intended to promote subsoil aeration while maintaining an acceptable separation from the saturated zone. The configuration of the dispersal system is also intended to facilitate ease of construction without disturbing the near-surface soils adjacent to the trenches.

SHN recommends that a new, 12,000-gallon dual-compartment fiberglass wastewater storage tank and 4,000-gallon single-compartment concrete pump vault be installed in proximity to the location of where the waste line will exit the new facilities. It is recommended that both tanks be traffic rated to protect them from vehicular and truck traffic loads.

5.0 Disposal System Specifications

Calculations to determine the size and layout of the disposal system and pressurized distribution network are included in Appendix 4. A detailed site plan, storage tank and pump tank system details, dispersal system plan view, and trench cross-section view are included in Appendix 5, Sheets G-1, G-2, C-1, C-2, C-3, and C-4. Buoyancy calculations for the fiberglass septic tank provided by Xerxes Corporation are provided in Sheet C-5.

The new wastewater storage and dispersal system is designed to accommodate daily wastewater flows of 4,060 gpd to serve up to 116 full-time workers. The dispersal system will require to be pressurized due to its large size, and distance from the wastewater storage tank location. The overall dimensions and number of distribution laterals will require that the discharged effluent alternate between four separate distribution cells using an automatic distributing valve. The distributing valve is recommended to allow use of a smaller horsepower pump while dispersing the effluent over a greater land area. A summary of design specifications and dispersal system layout is as follows:

- Wastewater from the production facility will flow to a 12,000-gallon, dual-compartment fiberglass septic tank. Effluent will gravity-flow from the effluent compartment of the septic tank to a 4,000-gallon single-compartment concrete pump vault. Effluent from the pump vault will be delivered to the disposal field using a high-head submersible effluent pump and supply line constructed of 3-inch diameter high density polyethylene (HDPE). SHN recommends that the supply line be maintained at a minimum burial depth to protect the line during construction of the greenhouses. Placement and depth should be checked against the greenhouse design to prevent conflicts with the foundation.
- Effluent will be disposed of in the subsurface disposal field by alternating between four separate distribution cells using an automatic distributing valve that is actuated through a combination of pressure and flow.
- Each distribution cell is to consist of 8 pressurized distribution laterals constructed of 1¼-inch diameter Schedule 40 polyvinyl chloride (PVC) with lengths of 70 feet each. The end of each distribution lateral is required to have an upturned clean-out consisting of a PVC female adaptor with a threaded cap for ease of access and periodic cleaning.

  - Each distribution lateral is to contain 1/8-inch orifices spaced 5-feet apart and pointed downward. The orifices are to begin and end 2.5-feet from the ends of each lateral. A total of 14 orifices are to be drilled in each lateral.

- The laterals in each distribution cell are to be connected to an end-feed manifold constructed of 1½-inch diameter Schedule 40 PVC that are supplied by the automatic distributing valve.
  - Trenches in each distribution cell are to be spaced 8 feet on center and excavated to a depth of 36 inches and width of 24 inches.
  - The 1¼-inch distribution laterals are to be constructed on top of 18 inches of washed pea gravel. An additional 6 inches of gravel shall be placed around and on top of the distribution laterals and covered with filter fabric. The remaining 12 inches of trench is to be filled with native loam soil that is mounded above the ground surface to account for future settlement.
- It will be important that only light excavation (low ground impact) equipment (such as, a rubber track-mounted mini-excavator) be used for the trench excavation and pea gravel placement within the disposal field area. Under no circumstances should the native grasses and soil between trenches be disturbed, removed, or compacted. Compromising the soil's natural ability to drain could lead to failure of the system.
- Construction and installation of the entire wastewater storage, pumping, and dispersal system should be performed by a qualified licensed contractor in accordance with the recommendations and specifications contained within this report.

Please call me at (707) 441-8855 if you have any questions or concerns.

Sincerely,

SHN



Giovanni A. Vadurro, CEG 2554
Engineering Geologist

GAV/CMT:lam

Appendices:
1. Previous Site Assessment Data for APNs 506-231-011 and 507-181-007
2. Percolation Test Data (Parcel D)
3. Laboratory Textural Analysis Results (Parcel D)
4. Pressure Distribution System Design Calculations and System Specifications (Parcel D)
5. Civil Plan Sheets G-1, G-2, C-1, C-2, C-3, C-4, and C-5 (Parcel D)

References

Humboldt County Department of Health and Human Services Division of Environmental Health (November 7, 2017). "Humboldt County Onsite Wastewater Treatment System (OWTS) Regulations and Technical Manual." Eureka, CA: HCDEH.

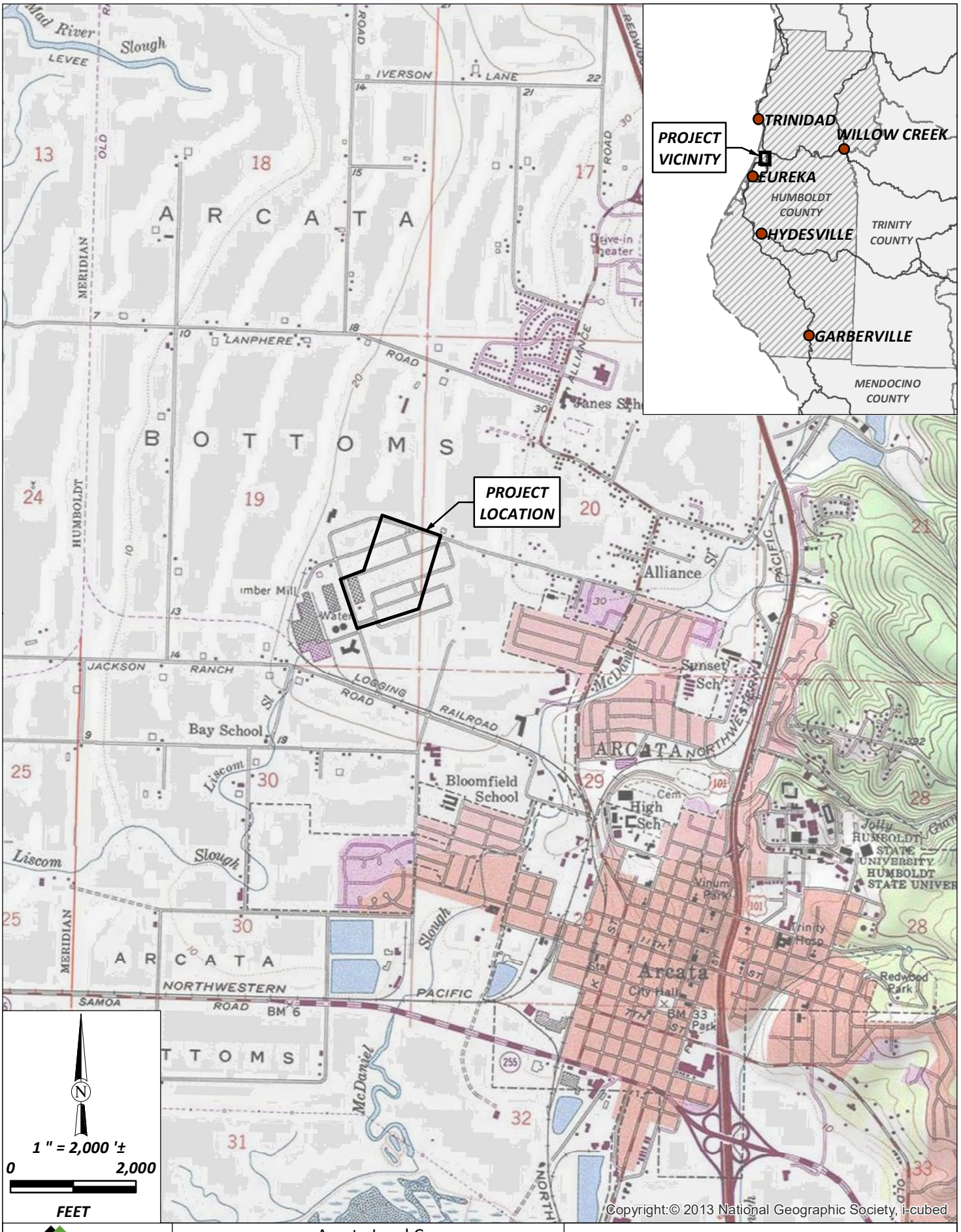
Kelly-O'Hern Associates. (March 2020). "Plot Plan for Arcata Land Company LLC," Eureka, CA:Kelly-O'Hern.

Previous Site Assessment Data for APNs 506-231-011 and 507-181-007

1

SITE ASSESSMENT DATA

APN 506-231-011 (March 2019)



Path: \\Eureka\Projects\2017\017062-ArcataLandCo\100-Leachfield\GIS\PROJ_MXD\APN506231011\Figure1_ProjectLocationMap.mxd User Name: jsousa DATE: 6/7/19, 10:38AM

SHN	Arcata Land Co Onsite Septic Suitability Study Arcata, California	Project Location Map APN: 506-231-011 SHN 017062.100
June 2019	Figure1_ProjectLocationMap	Figure 1



Path: \\eureka\projects\2017\017062-ArcataLandCo\100-Leachfield\GIS\PROJ_MXD\APN506231011\Figure2_SiteMap.mxd User Name: jsousa DATE: 6/7/19, 10:28AM

SHN	Arcata Land Co Onsite Septic Suitability Study Arcata, California	Site Map showing Test Locations APN: 506-231-011 SHN 017062.130
	June 2019 | Figure2_SiteMap	Figure 1

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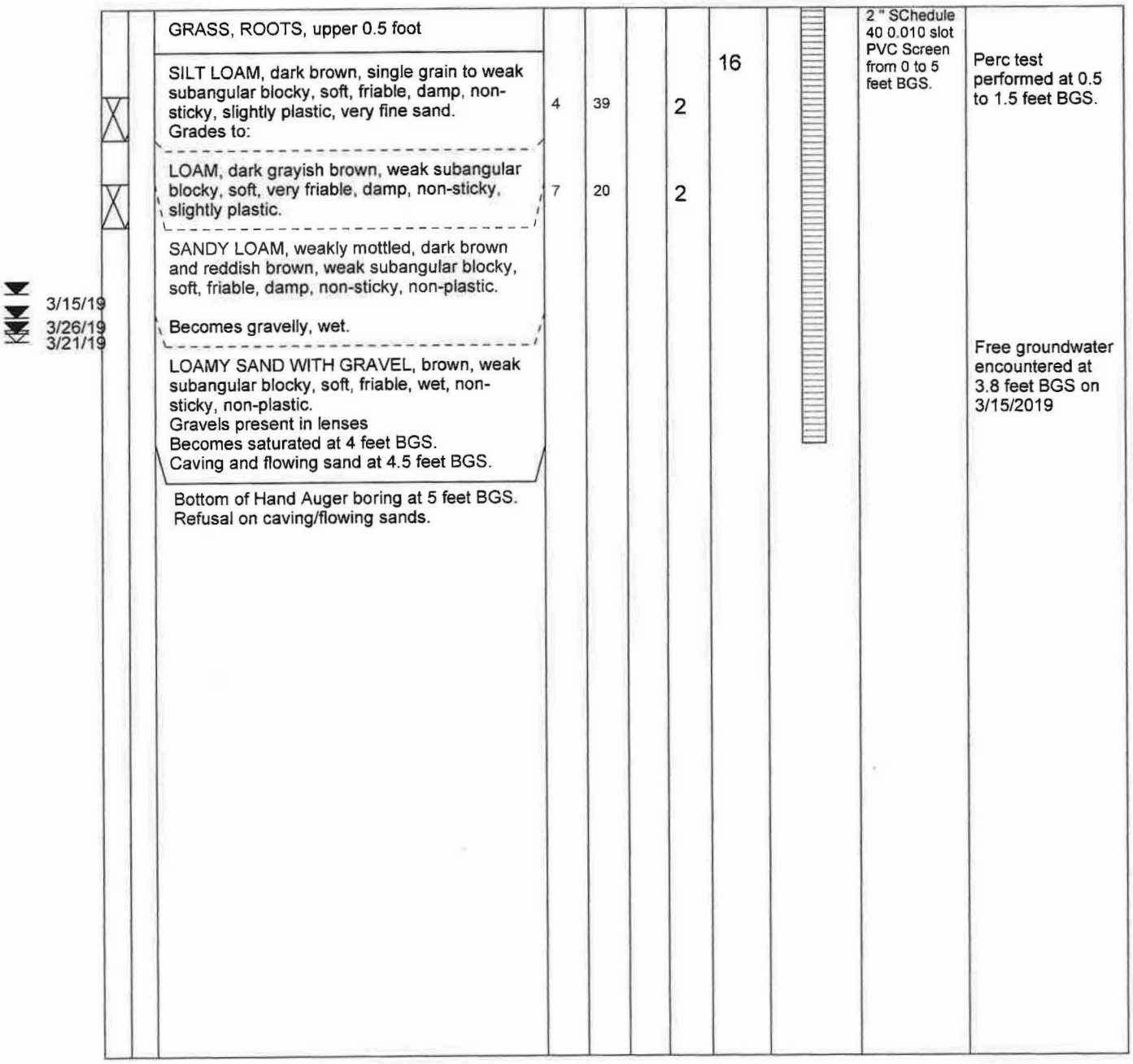
812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT NAME: Arcata Land Company
LOCATION: Parcel D
APN: 506-231-011
EXCAVATION METHOD: Hand Auger
LOGGED BY: A. Call

PROJECT NUMBER: 017062.100
DATE EXCAVATED: 3/15/19
TOTAL DEPTH OF HOLE: 5.0 Feet BGS
SAMPLER TYPE: Bulk

HOLE NUMBER OW-17

DEPTH (ft)	GROUNDWATER LEVEL	DATE	BULK SAMPLE	TUBE SAMPLE	FIELD CLASSIFICATION BASED ON U.S.D.A. CLASSIFICATION SYSTEM TEXTURE, STRUCTURE, CONSISTENCY, MOISTURE, COLOR, REMARKS	Laboratory Data: Coarse Fragments % By Volume	Laboratory Data: % Fines	Laboratory Data: Bulk Density (g/cc)	Laboratory Data: Percolation Suitability Zone	Perc Rate (MPI)	WATER MONITOR CONSTRUCTION	WATER MONITOR DETAILS	REMARKS
0					GRASS, ROOTS, upper 0.5 foot								
-1			X		SILT LOAM, dark brown, single grain to weak subangular blocky, soft, friable, damp, non-sticky, slightly plastic, very fine sand. Grades to:	4	39		2	16			Perc test performed at 0.5 to 1.5 feet BGS.
-2			X		LOAM, dark grayish brown, weak subangular blocky, soft, very friable, damp, non-sticky, slightly plastic.	7	20		2				
-3					SANDY LOAM, weakly mottled, dark brown and reddish brown, weak subangular blocky, soft, friable, damp, non-sticky, non-plastic.								
-4	▼	3/15/19			Becomes gravelly, wet.								
-5	▼	3/26/19			LOAMY SAND WITH GRAVEL, brown, weak subangular blocky, soft, friable, wet, non-sticky, non-plastic. Gravels present in lenses Becomes saturated at 4 feet BGS. Caving and flowing sand at 4.5 feet BGS.								Free groundwater encountered at 3.8 feet BGS on 3/15/2019
-6	▼	3/21/19			Bottom of Hand Auger boring at 5 feet BGS. Refusal on caving/flowing sands.								
-7													
-8													
-9													
-10													
-11													
-12													



The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other

Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT NAME: Arcata Land Company
LOCATION: Parcel D
APN: 506-231-011
EXCAVATION METHOD: Hand Auger
LOGGED BY: A. Call

PROJECT NUMBER: 017062.100
DATE EXCAVATED: 3/15/19
TOTAL DEPTH OF HOLE: 6.0 Feet BGS
SAMPLER TYPE: Bulk

HOLE NUMBER OW-18

DEPTH (ft)	GROUNDWATER LEVEL	DATE	BULK SAMPLE	TUBE SAMPLE	FIELD CLASSIFICATION BASED ON U.S.D.A. CLASSIFICATION SYSTEM — TEXTURE, STRUCTURE, CONSISTENCY, MOISTURE, COLOR, REMARKS	Laboratory Data: Coarse Fragments % By Volume	Laboratory Data: % Fines	Laboratory Data: Bulk Density (g/cc)	Laboratory Data: Percolation Suitability Zone	Perc Rate (MPI)	WATER MONITOR CONSTRUCTION	WATER MONITOR DETAILS	REMARKS
0					GRASS, ROOTS, upper 0.5 foot							2 " SChedule 40 0.010 slot PVC Screen from 0 to 5 feet BGS.	
-1			X		SANDY LOAM, dark grayish brown, single grain to weak subangular blocky, soft, friable, subangular blocky, non-sticky, slightly plastic, damp, very fine sand.	6	31		2	7			Perc test performed at 0.5 to 1.5 feet BGS.
-2			X		SAND WITH GRAVEL, dark grayish brown, massive to weak subangular blocky, moist, slightly hard, very friable, non-sticky, non-plastic, fine to medium sand.	18	11		1				
-3													
-4	▼	3/15/19 3/26/19 3/21/19			GRAVELLY SAND, gray, massive, saturated, slightly hard, friable, non-sticky, non-plastic, fine to coarse sand. Becomes flowing sand.	28	13		1				Free water encountered at 4.0 feet BGS on 3/15/2019.
-5													
-6					Bottom of Hand Auger boring at 6 feet BGS. Refusal on caving/flowing sands.								
-7													
-8													
-9													
-10													
-11													
-12													

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other

Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT NAME: Arcata Land Company
LOCATION: Parcel D
APN: 506-231-011
EXCAVATION METHOD: Hand Auger
LOGGED BY: A. Call

PROJECT NUMBER: 017062.100
DATE EXCAVATED: 3/15/19
TOTAL DEPTH OF HOLE: 5.0 Feet BGS
SAMPLER TYPE: Bulk

HOLE NUMBER OW-19

DEPTH (ft)	GROUNDWATER LEVEL	DATE	BULK SAMPLE	TUBE SAMPLE	FIELD CLASSIFICATION BASED ON U.S.D.A. CLASSIFICATION SYSTEM — TEXTURE, STRUCTURE, CONSISTENCY, MOISTURE, COLOR, REMARKS	Laboratory Data: Coarse Fragments % By Volume	Laboratory Data: % Fines	Laboratory Data: Bulk Density (g/cc)	Laboratory Data: Percolation Suitability Zone	Perc Rate (MPI)	WATER MONITOR CONSTRUCTION	WATER MONITOR DETAILS	REMARKS
0					GRASS, ROOTS, upper 0.5 foot							2 " SChedule 40 0.010 slot PVC Screen from 0 to 5 feet BGS.	
-1			X		SILT LOAM, dark brown, single grain to weak subangular blocky, soft, friable, damp, non-sticky, slightly plastic, few gravels.	15	27		2	6			
-2			X		LOAM, dark brown, subangular blocky, soft, friable, moist, slightly sticky, slightly plastic.	7	32		2				
-3			X		VERY GRAVELLY LOAMY SAND, brownish gray, massive, wet, slightly hard, friable, non-sticky, non-plastic.	32	19		1				
-4	▼	3/15	X		LOAMY SAND TO SAND, gray, massive, slightly hard, friable, wet to saturated, non-sticky, non-plastic.	10	6		1				
-5	▼	3/26 3/21 3/15			Bottom of Hand Auger boring at 5 feet BGS. Refusal on caving/flowing sands.								
-6													
-7													
-8													
-9													
-10													
-11													
-12													

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other

Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT NAME: Arcata Land Company
LOCATION: Parcel D
APN: 506-231-011
EXCAVATION METHOD: Hand Auger
LOGGED BY: A. Call

PROJECT NUMBER: 017062.100
DATE EXCAVATED: 3/15/19
TOTAL DEPTH OF HOLE: 5.0 Feet BGS
SAMPLER TYPE: Bulk

HOLE NUMBER OW-20

DEPTH (ft)	GROUNDWATER LEVEL	DATE	BULK SAMPLE	TUBE SAMPLE	FIELD CLASSIFICATION BASED ON U.S.D.A. CLASSIFICATION SYSTEM — TEXTURE, STRUCTURE, CONSISTENCY, MOISTURE, COLOR, REMARKS	Laboratory Data: Coarse Fragments % By Volume	Laboratory Data: % Fines	Laboratory Data: Bulk Density (g/cc)	Laboratory Data: Percolation Suitability Zone	Perc Rate (MPI)	WATER MONITOR CONSTRUCTION	WATER MONITOR DETAILS	REMARKS
0					GRASS, ROOTS, upper 0.5 foot							2 " SChedule 40 0.010 slot PVC Screen from 0 to 5 feet BGS.	
-1			X		GRAVELLY SILT LOAM, dark brown, weak subangular blocky, soft, friable, damp, slightly sticky, slightly plastic.	11.3	40		2	8			
-2			X		LOAM, dark brownish gray, weak subangular blocky, slightly hard, friable, moist, slightly sticky, slightly plastic.	2.5	47		2				
-3			X		SANDY LOAM, brown, massive, hard, friable, moist, non-sticky, non-plastic.	2.1	29		1				
-4	3/15	3/15			LOAMY SAND, brownish gray, massive, slightly hard, friable, wet, non-sticky, non-plastic. Becomes saturated.	2.1	12		1				
-5	3/26	3/21			Caving at 4.5 feet BGS. Becomes gravelly.								
-6					Bottom of Hand Auger boring at 5 feet BGS. Refusal on caving/flowing sands.								
-7													
-8													
-9													
-10													
-11													
-12													

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other

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Reference: 017062.100

April 3, 2019

Arcata Land Company, LLC
P.O. Box 997
Arcata, CA 95519

SOIL PERCOLATION SUITABILITY / TEXTURAL ANALYSIS RESULTS

Job Name: Arcata Land Company **Sampled By: AC**
Date Sampled: 03/15/19 **Date Tested: 04/03/19**
Date Received: 03/26/19 **AP Number: Not Provided**

Sample ID	Depth	% Sand	% Clay	% Silt	% Coarse Fragments by Volume	Zone	Bulk Density
OW-17	1.0-1.5'	61.1	17.0	21.9	4.2	2	*
	Material: **Sandy Loam**						
OW-17	2.0-2.5'	79.9	8.3	11.8	6.8	2	*
	Material: **Loamy Sand**						
OW-18	0.5-1.0'	68.7	13.0	18.3	6.4	2	*
	Material: **Sandy Loam**						
OW-18	2.0-2.5'	88.9	4.6	6.5	18.4	1	*
	Material: **Sand**						
OW-18	4.5-5.0'	86.6	4.5	8.9	27.5	1	*
	Material: **Sand**						

* = no peds provided

Regional Water Quality Control Board Zone Descriptions:

Zone 1 - Soils in this zone are very high in sand content. They readily accept effluent, but because of their low silt and clay content they provide minimal filtration. These soils demand greater separation distances from groundwater.

Zone 2 - Soils in this zone provide adequate percolation rates and filtration of effluent. They are suitable for use of a conventional system without further testing.

Zone 3 - Soils in this zone are expected to provide good filtration of effluent, but their ability to accept effluent at a suitable rate is questionable. These soils require wet-weather percolation tests to verify their suitability for effluent disposal by conventional leachfield methods.

Zone 4 - Soils in this zone are unsuitable for a conventional leachfield because of their severe limitations for accepting effluent.

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W.Wabash Eureka,CA 95501-2138 Tel:707/441-8855 FAX:707/441-8877 E-mail:shninfo@shn-engr.com

Reference: 017062.100

April 3, 2019

Arcata Land Company, LLC
P.O. Box 997
Arcata, CA 95519

SOIL PERCOLATION SUITABILITY / TEXTURAL ANALYSIS RESULTS

Job Name: Arcata Land Company **Sampled By: AC**
Date Sampled: 03/15/19 **Date Tested: 04/03/19**
Date Received: 03/26/19 **AP Number: Not Provided**

Sample ID	Depth	% Sand	% Clay	% Silt	% Coarse Fragments by Volume	Zone	Bulk Density
OW-19	0.5-1.0'	72.6	9.6	17.8	15.2	2	*
	Material: **Sandy Loam**						
OW-19	1.5-2.0'	67.6	13.5	18.9	7.0	2	*
	Material: **Sandy Loam**						
OW-19	2.5-3.0'	81.1	8.5	10.4	31.8	1	*
	Material: **Sand**						
OW-19	3.5-4.0'	93.6	2.9	3.5	9.8	1	*
	Material: **Sand**						

* = no peds provided

Regional Water Quality Control Board Zone Descriptions:

Zone 1 - Soils in this zone are very high in sand content. They readily accept effluent, but because of their low silt and clay content they provide minimal filtration. These soils demand greater separation distances from groundwater.

Zone 2 - Soils in this zone provide adequate percolation rates and filtration of effluent. They are suitable for use of a conventional system without further testing.

Zone 3 - Soils in this zone are expected to provide good filtration of effluent, but their ability to accept effluent at a suitable rate is questionable. These soils require wet-weather percolation tests to verify their suitability for effluent disposal by conventional leachfield methods.

Zone 4 - Soils in this zone are unsuitable for a conventional leachfield because of their severe limitations for accepting effluent.

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812 W.Wabash Eureka,CA 95501-2138 Tel:707/441-8855 FAX:707/441-8877 E-mail:shninfo@shn-engr.com

Reference: 017062.100

April 3, 2019

Arcata Land Company
P.O. Box 997
Arcata, CA 95519

SOIL PERCOLATION SUITABILITY / TEXTURAL ANALYSIS RESULTS

Job Name: Arcata Land Company **Sampled By: AC**
Date Sampled: 03/15/19 **Date Tested: 04/03/19**
Date Received: 03/26/19 **AP Number: Not Provided**

Sample ID	Depth	% Sand	% Clay	% Silt	% Coarse Fragments by Volume	Zone	Bulk Density
OW-20	0.5-1.0'	60.2	15.6	24.2	11.3	2	*
	Material: **Sandy Loam**						
OW-20	1.5-2.0'	53.1	18.0	28.9	2.5	2	*
	Material: **Sandy Loam**						
OW-20	2.5-3.0'	71.5	11.9	16.6	2.1	2	*
	Material: **Sandy Loam**						
OW-20	3.5-4.0'	88.2	5.2	6.6	2.1	1	*
	Material: **Sand**						

* = no peds provided

Regional Water Quality Control Board Zone Descriptions:

Zone 1 - Soils in this zone are very high in sand content. They readily accept effluent, but because of their low silt and clay content they provide minimal filtration. These soils demand greater separation distances from groundwater.

Zone 2 - Soils in this zone provide adequate percolation rates and filtration of effluent. They are suitable for use of a conventional system without further testing.

Zone 3 - Soils in this zone are expected to provide good filtration of effluent, but their ability to accept effluent at a suitable rate is questionable. These soils require wet-weather percolation tests to verify their suitability for effluent disposal by conventional leachfield methods.

Zone 4 - Soils in this zone are unsuitable for a conventional leachfield because of their severe limitations for accepting effluent.

Observation Well Data

			Project #: 017062.100 Arcata Land Co.						APN: 506-231-011	
Observation Well ID			OW-17		OW-18		OW-19		OW-20	
Total well depth			5.09		5.04		5.09		5.09	
Height of top of casing above ground			0.4		0.25		0.67		0.65	
Well depth below ground surface			4.69		4.79		4.42		4.44	
DATE	PRECIPITATION		TIME							
(dd/mm/yr)	Daily	Total	(am/pm)	Reading	Depth bgs	Reading	Depth bgs	Reading	Depth bgs	Reading	Depth bgs
3/15/2019	0	34.27	1657	3.65	3.25	4.01	3.76	4.11	3.44	4.11	3.46
3/21/2019	0	34.4	1530	4.1	3.7	4.48	4.23	4.56	3.89	4.55	3.9
3/26/2019	1.15	35.81	1204	3.92	3.52	4.31	4.06	4.39	3.72	4.37	3.72

Reading = measured reading of groundwater relative to the top of well casing.

Depth = depth to groundwater below the ground surface.

ND = non-detection of groundwater (dry well).

CONSULTING ENGINEERS & GEOLOGISTS, INC.

SOILS PERCOLATION TEST DATA SHEET

CLIENT	Arcata Land Co.	**DATE**	4/2/2019
JOB REF.	017062.100	**APN**	506-231-011
TEST PIT No.	OW-17	TESTED BY	AC
DEPTH TESTED	6"-18"	DTW	3.52'
PRE-SOAK	1 Hour		

Reading No.	Start Time	Stop Time	Interval (Minutes)	Water Level Drop (Inches)	Percolation Rate (Minutes per Inch)
1	15:45	16:00	15	1 1/10	14
2	16:00	16:15	15	1 1/10	14
3	16:15	16:30	15	1 1/20	14
4	16:30	16:45	15	1 1/20	14
5	16:45	17:00	15	19/20	16
6	17:00	17:15	15	19/20	16
				STABILIZED PERCOLATION RATE =	**16**

TEST PIT No.	OW-18	TESTED BY	AC
DEPTH TESTED	6"-18"	DTW	3.76'
PRE-SOAK	1 Hour		

Reading No.	Start Time	Stop Time	Interval (Minutes)	Water Level Drop (Inches)	Percolation Rate (Minutes per Inch)
1	15:48	16:03	15	2 1/4	7
2	16:03	16:18	15	2 3/10	7
3	16:18	16:33	15	2 1/4	7
4	16:33	16:48	15	2 1/4	7
5	16:48	17:03	15	2 1/5	7
6	17:03	17:18	15	2 1/5	7
				STABILIZED PERCOLATION RATE =	**7**

TEST PIT No.	OW-19	TESTED BY	AC
DEPTH TESTED	6"-18"	DTW	3.44'
PRE-SOAK	1 Hour		

Reading No.	Start Time	Stop Time	Interval (Minutes)	Water Level Drop (Inches)	Percolation Rate (Minutes per Inch)
1	15:36	15:51	15	3 1/4	5
2	15:51	16:06	15	3 1/20	5
3	16:06	16:21	15	2 9/10	5
4	16:21	16:36	15	2 7/10	6
5	16:36	16:51	15	2 13/20	6
6	16:51	17:06	15	2 13/20	6
				STABILIZED PERCOLATION RATE =	**6**

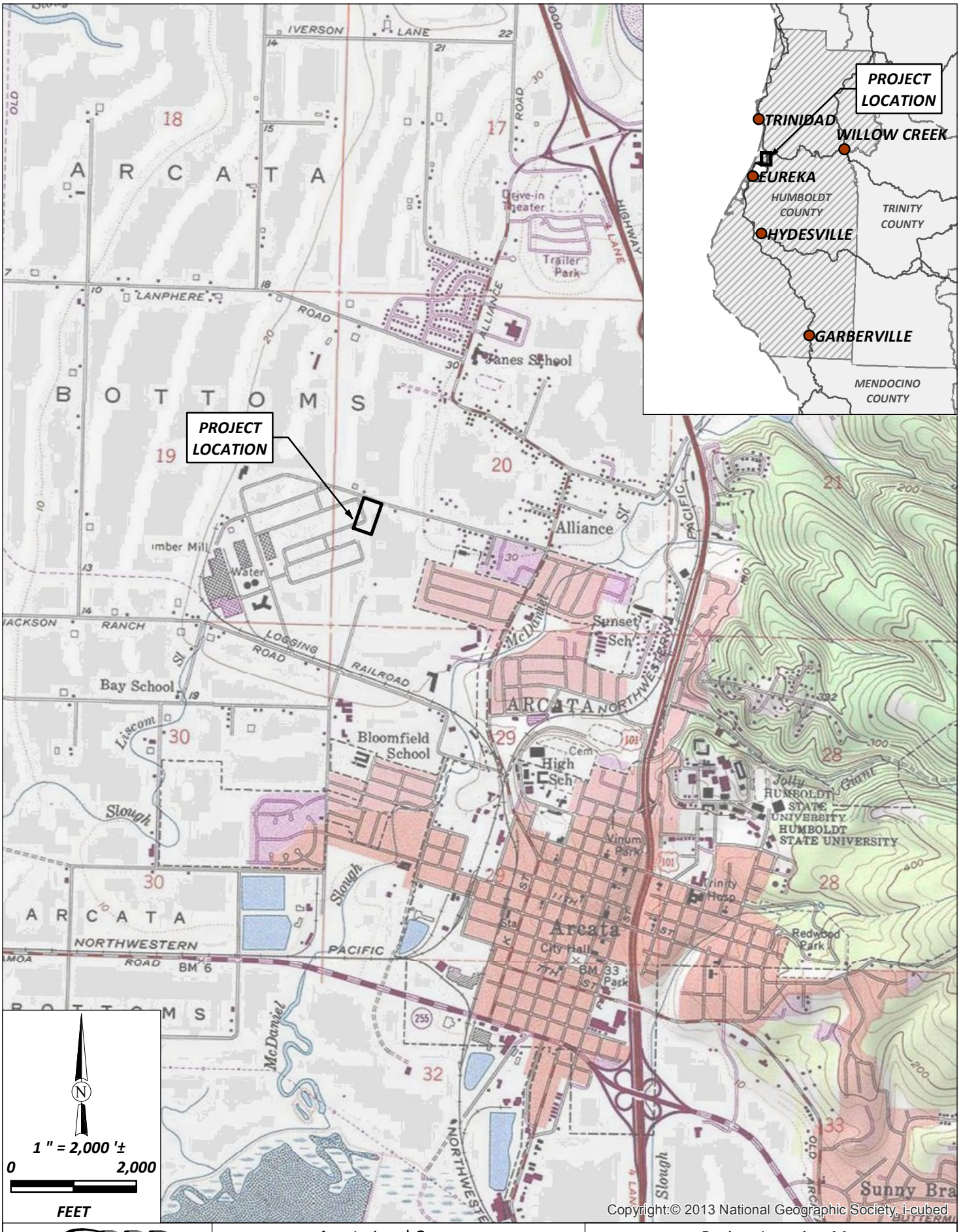
TEST PIT No.	OW-20	TESTED BY	AC
DEPTH TESTED	6"-18"	DTW	3.46'
PRE-SOAK	1 Hour		

Reading No.	Start Time	Stop Time	Interval (Minutes)	Water Level Drop (Inches)	Percolation Rate (Minutes per Inch)
1	15:39	15:54	15	2 1/10	7
2	15:54	16:09	15	2	8
3	16:09	16:24	15	1 9/10	8
4	16:24	16:39	15	1 4/5	8
5	16:39	16:54	15	1 9/10	8
6	16:54	17:09	15	1 4/5	8
			STABILIZED PERCOLATION RATE =		**8**

SITE ASSESSMENT DATA

APN 507-181-007

(March/April 2018)



1 " = 2,000 '±

0 2,000

FEET

Path: \\eureka\projects\2017\017062-ArcataLandCo\100-Leachfield\GIS\PROJ_MXD\Parcel4\Figure1_ProjectLocationMap.mxd User Name: psundberg

SHN Consulting Engineers & Geologists, Inc.	Arcata Land Company Onsite Wastewater Treatment System Design Arcata, California	Project Location Map APN: 507-181-007 SHN 017062.100
	July 2018 | Figure1_ProjectLocationMap	Figure 1



IMAGE SOURCE: GOOGLE EARTH, DATED 5/26/2016

Consulting Engineers & Geologists, Inc.

Arcata Land Company
Onsite Wastewater Treatment System Design
Arcata, California

Site Map Showing Test Locations
APN: 507-181-007
SHN 001283

July 2018 | Figure2_SiteMap | Figure 2

Path: \\eureka\projects\2017\017062-ArcataLandCo\100-Leachfield\GIS\PROJ_MXD\Parcel4\Figure2_SiteMap.mxd User Name: psundberg

Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT NAME: Onsite Wastewater Treatment System Design
PROJECT NUMBER: 017062.100
LOCATION: Arcata, CA
DATE EXCAVATED: 4/3/2018
APN: 507-181-007
TOTAL DEPTH OF HOLE: 8 Feet
EXCAVATION METHOD: Backhoe
SAMPLER TYPE: Bulk
LOGGED BY: PRS

TEST PIT NUMBER
TP-1

DEPTH (ft)	BULK SAMPLE	TUBE SAMPLE	FIELD CLASSIFICATION BASED ON U.S.D.A. CLASSIFICATION SYSTEM TEXTURE, STRUCTURE, CONSISTENCY, MOISTURE, COLOR, REMARKS	Laboratory Data: Coarse Fragments % By Volume	Laboratory Data: % Fines	Laboratory Data: Bulk Density (g/cc)	Laboratory Data: Percolation Suitability Zone	Perc Rate (MPI)	REMARKS
0			LOAM; Dark gray (10YR 4/1), friable, moist, moderate medium sub-angular blocky structure, sticky, slightly plastic, many fine roots.	30	68		3		% Sand = 32.3 % Silt = 38.9 % Clay = 28.8
-1	X	X	CLAY LOAM; Dark grayish-brown (2.5Y 4/2), firm to very firm, moist, moderate coarse sub-angular blocky structure, slightly sticky, plastic.	23	79		3	15	% Sand = 21.3 % Silt = 46.9 % Clay = 31.8
-2	X	X							
-3									
-4			LOAM; Dark grayish-brown (2.5Y 4/2), very friable to friable, moist, weak medium sub-angular blocky structure, slightly sticky, non-plastic, fine sand, common medium distinct mottles.						
-5									
-6									
-7			SANDY LOAM; Grayish-brown, loose, moist, single-grain fine granular structure, non-sticky, non-plastic, approximately 25% fine to coarse sub-rounded gravel.						
-8			Excavation terminated at a depth of 8 feet. Groundwater not encountered. Test pit backfilled with excavated spoils.						
-9									
-10									

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other

Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT NAME: Onsite Wastewater Treatment System Design
PROJECT NUMBER: 017062.100
LOCATION: Arcata, CA
DATE EXCAVATED: 4/3/2018
APN: 507-181-007
TOTAL DEPTH OF HOLE: 8 Feet
EXCAVATION METHOD: Backhoe
SAMPLER TYPE: Bulk
LOGGED BY: PRS

TEST PIT NUMBER
TP-2

DEPTH (ft)	BULK SAMPLE	TUBE SAMPLE	FIELD CLASSIFICATION BASED ON U.S.D.A. CLASSIFICATION SYSTEM TEXTURE, STRUCTURE, CONSISTENCY, MOISTURE, COLOR, REMARKS	Laboratory Data: Coarse Fragments % By Volume	Laboratory Data: % Fines	Laboratory Data: Bulk Density (g/cc)	Laboratory Data: Percolation Suitability Zone	Perc Rate (MPI)	REMARKS
0 to -1	☒		CLAY LOAM; Dark gray (10YR 4/1), friable, moist, moderate medium sub-angular blocky structure, sticky, slightly plastic, many fine roots.	37	68		3	3	% Sand = 32.4 % Silt = 34.0 % Clay = 33.6
-1 to -5			CLAY LOAM; Dark grayish-brown (2.5Y 4/2), firm to very firm, moist, moderate coarse sub-angular blocky structure, slightly sticky, plastic.						
-5 to -8			CLAY LOAM; Dark grayish-brown (2.5Y 4/2), firm, moist, moderate coarse sub-angular blocky structure, slightly sticky, plastic, common fine faint mottles.						
-8 to -10			Excavation terminated at a depth of 8 feet. Groundwater not encountered. Test pit backfilled with excavated spoils.						

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PROJECT NAME: Onsite Wastewater Treatment System Design
PROJECT NUMBER: 017062.100
LOCATION: Arcata, CA
DATE EXCAVATED: 4/3/2018
APN: 507-181-007
TOTAL DEPTH OF HOLE: 8 Feet
EXCAVATION METHOD: Backhoe
SAMPLER TYPE: Bulk
LOGGED BY: PRS

TEST PIT NUMBER
TP-3

DEPTH (ft)	BULK SAMPLE	TUBE SAMPLE	FIELD CLASSIFICATION BASED ON U.S.D.A. CLASSIFICATION SYSTEM TEXTURE, STRUCTURE, CONSISTENCY, MOISTURE, COLOR, REMARKS	Laboratory Data: Coarse Fragments % By Volume	Laboratory Data: % Fines	Laboratory Data: Bulk Density (g/cc)	Laboratory Data: Percolation Suitability Zone	Perc Rate (MPI)	REMARKS
0 to -1	X		SILT LOAM; Very dark gray (10YR3/1), friable, moist, moderate coarse, sub-angular blocky structure, sticky, non-plastic, many fine roots.	37	83		3		% Sand = 17.0 % Silt = 55.3 % Clay = 27.7
-1 to -2	X		CLAY LOAM; Darky grayish-brown (2.5Y 4/2), firm, moist, moderate coarse sub-angular blocky structure, slightly sticky, slightly plastic.	25	83		3	3.75	% Sand = 17.1 % Silt = 52.0 % Clay = 30.9
-2 to -4			common coarse distinct mottles						
-4 to -7			SANDY LOAM; Dark brown, loose to very friable, moist, single-grain fine granular structure, non-sticky, non-plastic.						
-7 to -8			Excavation terminated at a depth of 8 feet. Groundwater not encountered. Test pit backfilled with excavated spoils.						

-9
-10

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other

Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT NAME: Onsite Wastewater Treatment System Design
LOCATION: Arcata, CA
APN: 507-181-007
EXCAVATION METHOD: Backhoe
LOGGED BY: PRS

PROJECT NUMBER: 017062.100
DATE EXCAVATED: 4/3/2018
TOTAL DEPTH OF HOLE: 8 Feet
SAMPLER TYPE: Bulk

TEST PIT NUMBER
TP-4

DEPTH (ft)	BULK SAMPLE	TUBE SAMPLE	FIELD CLASSIFICATION BASED ON U.S.D.A. CLASSIFICATION SYSTEM TEXTURE, STRUCTURE, CONSISTENCY, MOISTURE, COLOR, REMARKS	Laboratory Data: Coarse Fragments % By Volume	Laboratory Data: % Fines	Laboratory Data: Bulk Density (g/cc)	Laboratory Data: Percolation Suitability Zone	Perc Rate (MPI)	REMARKS
0 to -1	X		SILT LOAM; Dark gray (10YR 4/1), friable to firm, moist, moderate coarse sub-angular blocky structure, slightly sticky, plastic, common fine roots.	36	85		3		% Sand = 14.9 % Silt = 56.7 % Clay = 28.4
-1 to -7			LOAM; Dark grayish-brown (2.5Y 4/2), firm, moist, moderate coarse sub-angular blocky structure, slightly sticky, non-plastic.					3.75	
-7 to -8			LOAMY SAND; Dark grayish-brown, loose, single-grain fine granular structure, non-sticky, non-plastic.						
-8 to -10			Excavation terminated at a depth of 8 feet. Groundwater not encountered. Test pit backfilled with excavated spoils.						

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other

Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT NAME: Onsite Wastewater Treatment System Design
LOCATION: Arcata, CA
APN: 507-181-007
EXCAVATION METHOD: Backhoe
LOGGED BY: PRS

PROJECT NUMBER: 017062.100
DATE EXCAVATED: 4/3/2018
TOTAL DEPTH OF HOLE: 8 Feet
SAMPLER TYPE: Bulk

TEST PIT NUMBER
TP-5

DEPTH (ft)	BULK SAMPLE	TUBE SAMPLE	FIELD CLASSIFICATION BASED ON U.S.D.A. CLASSIFICATION SYSTEM TEXTURE, STRUCTURE, CONSISTENCY, MOISTURE, COLOR, REMARKS	Laboratory Data: Coarse Fragments % By Volume	Laboratory Data: % Fines	Laboratory Data: Bulk Density (g/cc)	Laboratory Data: Percolation Suitability Zone	Perc Rate (MPI)	REMARKS
0 to -1	X		LOAM; Very dark gray (10YR 3/1), very friable, moist, moderate coarse sub-angular blocky structure, slightly sticky, non-plastic, many fine roots.	22	77		3		% Sand = 22.8 % Silt = 52.7 % Clay = 24.5
-1 to -2	X		CLAY LOAM; Dark grayish-brown (2.5Y 4/2), friable, moderate coarse sub-angular blocky structure, slightly sticky, slightly plastic.	20	80		3	2.73	% Sand = 19.9 % Silt = 49.5 % Clay = 30.6
-2 to -7			SANDY LOAM; Dark brown, loose to very friable, single-grain fine granular structure, non-sticky, non-plastic.						
-7 to -8			Excavation terminated at a depth of 8 feet. Groundwater not encountered. Test pit backfilled with excavated spoils.						

0 -1 -2 -3 -4 -5 -6 -7 -8 -9 -10

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PROJECT NAME: Onsite Wastewater Treatment System Design
PROJECT NUMBER: 017062.100
LOCATION: Arcata, CA
DATE EXCAVATED: 4/3/2018
APN: 507-181-007
TOTAL DEPTH OF HOLE: 8 Feet
EXCAVATION METHOD: Backhoe
SAMPLER TYPE: Bulk
LOGGED BY: PRS

TEST PIT NUMBER
TP-6

DEPTH (ft)	BULK SAMPLE	TUBE SAMPLE	FIELD CLASSIFICATION BASED ON U.S.D.A. CLASSIFICATION SYSTEM TEXTURE, STRUCTURE, CONSISTENCY, MOISTURE, COLOR, REMARKS	Laboratory Data: Coarse Fragments % By Volume	Laboratory Data: % Fines	Laboratory Data: Bulk Density (g/cc)	Laboratory Data: Percolation Suitability Zone	Perc Rate (MPI)	REMARKS
0 to -1	X		LOAM; Very dark gray (10YR 3/1), friable, moist, moderate coarse sub-angular blocky structure, slightly sticky, slightly plastic, many fine roots.	15	74		3		% Sand = 26.4 % Silt = 47.2 % Clay = 26.4
-1 to -4			LOAM; Dark grayish-brown (2.5Y 4/2), friable to firm, moist, moderate coarse sub-angular blocky structure, slightly sticky, plastic.					5	
-4 to -8			SANDY LOAM; Dark grayish-brown, very friable, weaky medium sub-angular blocky structure, slightly sticky, non-plastic, common fine faint mottles.						
-8 to -10			Excavation terminated at a depth of 8 feet. Groundwater not encountered. Test pit backfilled with excavated spoils.						

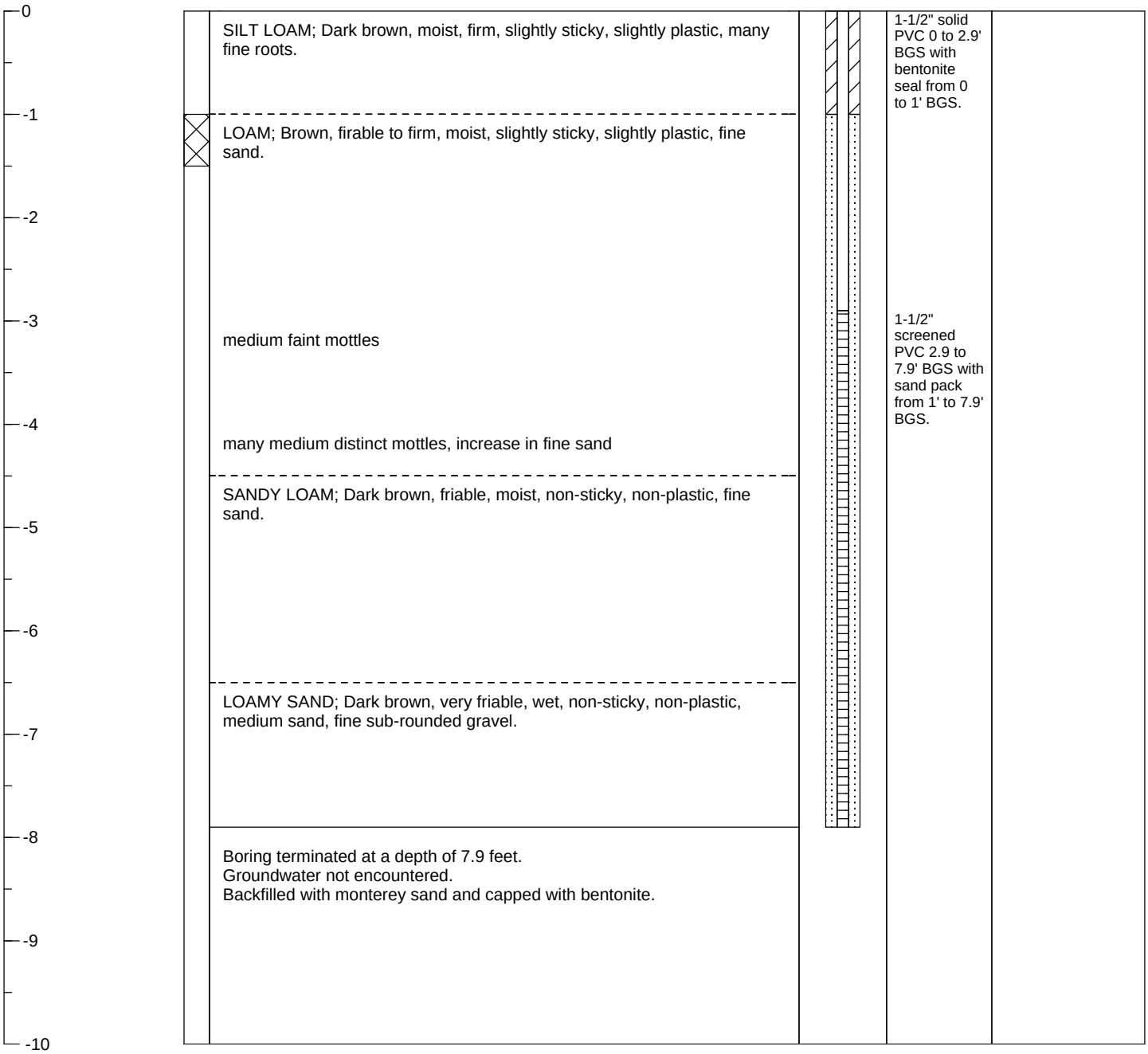
The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other

Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT NAME: Onsite Wastewater Treatment System Design
PROJECT NUMBER: 017062.100
LOCATION: Arcata, CA
DATE EXCAVATED: 3/27/2018
APN: 507-181-007
TOTAL DEPTH OF HOLE: 7.9 Feet
EXCAVATION METHOD: Hand Auger
SAMPLER TYPE: Bulk
LOGGED BY: PRS

HOLE NUMBER
OW-1



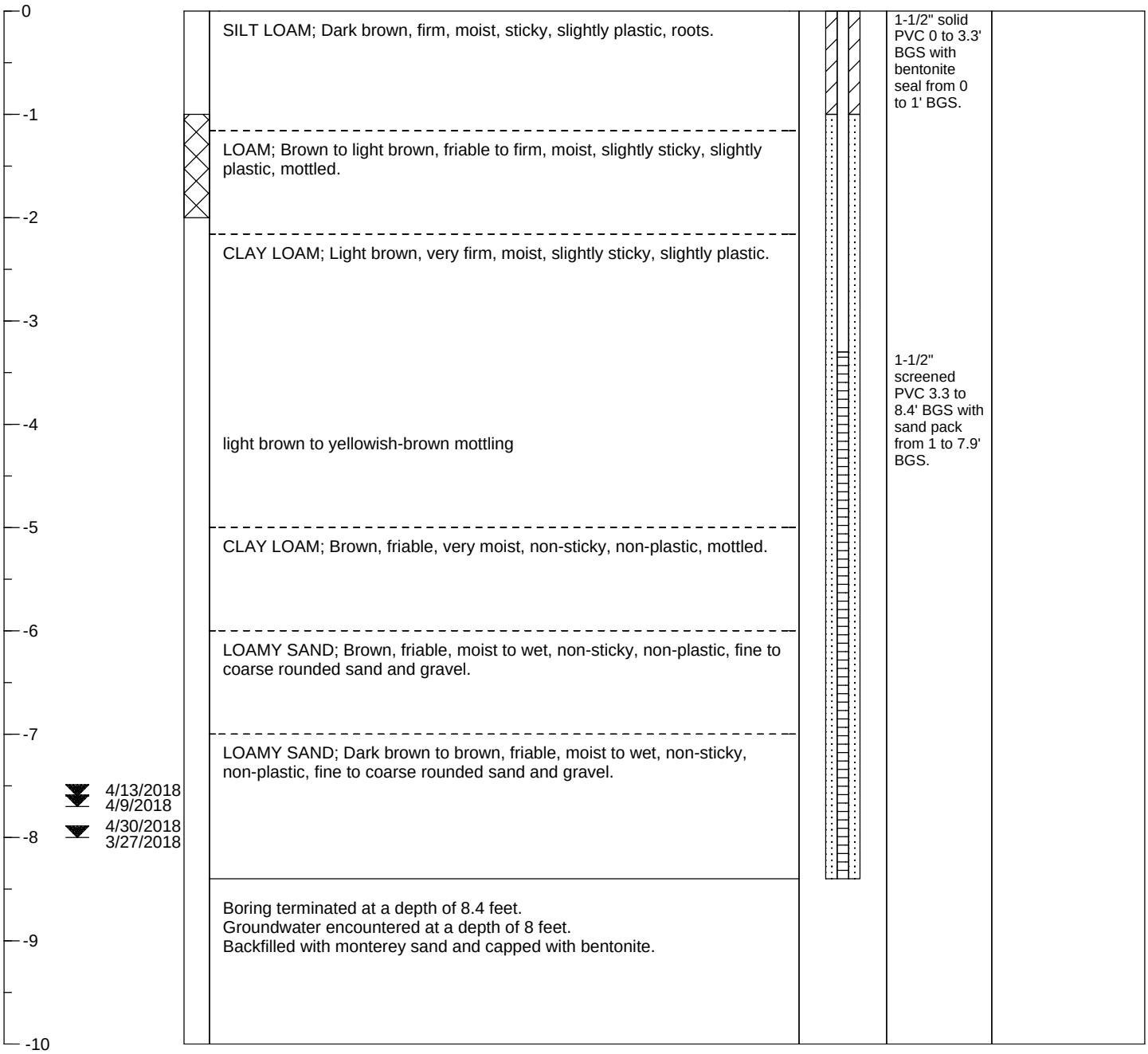
The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT NAME: Onsite Wastewater Treatment System Design
PROJECT NUMBER: 017062.100
LOCATION: Arcata, CA
DATE EXCAVATED: 3/27/2018
APN: 507-181-007
TOTAL DEPTH OF HOLE: 8.4 Feet
EXCAVATION METHOD: Hand Auger
SAMPLER TYPE: Bulk
LOGGED BY: ESP

HOLE NUMBER
OW-2



The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT NAME: Onsite Wastewater Treatment System Design
PROJECT NUMBER: 017062.100
LOCATION: Arcata, CA
DATE EXCAVATED: 3/27/2018
APN: 507-181-007
TOTAL DEPTH OF HOLE: 7.95 Feet
EXCAVATION METHOD: Hand Auger
SAMPLER TYPE: Bulk
LOGGED BY: PRS

HOLE NUMBER
OW-3

DEPTH (ft)	GROUNDWATER LEVEL	DATE	BULK SAMPLE	FIELD CLASSIFICATION BASED ON U.S.D.A. CLASSIFICATION SYSTEM TEXTURE, STRUCTURE, CONSISTENCY, MOISTURE, COLOR, REMARKS	WATER MONITOR CONSTRUCTION	WATER MONITOR DETAILS	REMARKS
0				SILT LOAM; Dark brown, firm, moist, slightly stick, slightly plastic, many fine roots.		1-1/2" solid PVC 0 to 2.95' BGS with bentonite seal from 0 to 1' BGS.	
-1				CLAY LOAM; Brown, friable to firm, moist, common medium faint mottles, slightly sticky, slightly plastic, fine sand.			
-2				decrease in mottling			
-3						1-1/2" screened PVC 2.95 to 7.95' BGS with sand pack from 1 to 7.95' BGS.	
-4							
-5				SANDY LOAM; Brown, friable to firm, moist to wet, slightly sticky, slightly plastic, common coarse faint mottles.			
-6				decrease in fines becomes wet			
-7							
-8				Boring terminated at a depth of 7.95 feet. Groundwater not encountered. Backfilled with monterey sand and capped with bentonite chips.			
-9							
-10							

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT NAME: Onsite Wastewater Treatment System Design
PROJECT NUMBER: 017062.100
LOCATION: Arcata, CA
DATE EXCAVATED: 3/27/2018
APN: 507-181-007
TOTAL DEPTH OF HOLE: 8.25 Feet
EXCAVATION METHOD: Hand Auger
SAMPLER TYPE: Bulk
LOGGED BY: ESP

HOLE NUMBER
OW-4

DEPTH (ft)	GROUNDWATER LEVEL	DATE	BULK SAMPLE	FIELD CLASSIFICATION BASED ON U.S.D.A. CLASSIFICATION SYSTEM — TEXTURE, STRUCTURE, CONSISTENCY, MOISTURE, COLOR, REMARKS	WATER MONITOR CONSTRUCTION	WATER MONITOR DETAILS	REMARKS
0				SILT LOAM; Dark brown, firm, moist, sticky, plastic, roots		1-1/2" solid PVC 0 to 3.25' BGS with bentonite seal from 0 to 1' BGS.	
-1				CLAY LOAM; Brown to light brown, friable, moist, slightly sticky, slightly plastic.			
-2							
-3				CLAY LOAM; Light brown, firm, moist, slightly sticky, plastic, slightly mottled.		1-1/2" screened PVC 3.25 to 8.25' BGS with sand pack from 1' to 8.25' BGS.	
-4							
-5				CLAY LOAM; light brown, very firm, moist, sticky, plastic, mottled.			
-6				SANDY LOAM; Reddish-brown, friable, moist, slightly sticky, non-plastic, mottled.			
-7				LOAMY SAND; Dark brown, very friable, moist, non-sticky, non-plastic, mottled.			
	▼	3/27/2018 4/13/2018					
	▼	4/9/2018					
-8	▼	4/30/2018		CLAY LOAM; Reddish-brown, firm, wet, sticky, slightly plastic, distinct mottling.			
-9				Boring terminated at a depth of 8.25 feet. Groundwater encountered at a depth of 7.25 feet. Backfilled with monterey sand and benonite chips.			
-10							

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

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812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT NAME: Onsite Wastewater Treatment System Design
PROJECT NUMBER: 017062.100
LOCATION: Arcata, CA
DATE EXCAVATED: 3/27/2018
APN: 507-181-007
TOTAL DEPTH OF HOLE: 7.85 Feet
EXCAVATION METHOD: Hand Auger
SAMPLER TYPE: Bulk
LOGGED BY: ESP

HOLE NUMBER
OW-5

DEPTH (ft)	GROUNDWATER LEVEL	DATE	BULK SAMPLE	FIELD CLASSIFICATION BASED ON U.S.D.A. CLASSIFICATION SYSTEM — TEXTURE, STRUCTURE, CONSISTENCY, MOISTURE, COLOR, REMARKS	WATER MONITOR CONSTRUCTION	WATER MONITOR DETAILS	REMARKS
0				SILT LOAM; Dark brown, firm, moist, slightly sticky, slightly plastic, fine roots.		1-1/2" solid PVC 0 to 2.85' BGS with bentonite seal from 0 to 1' BGS.	
-1				CLAY LOAM; Brown, firm, moist, slightly sticky, slightly plastic.			
-2				becomes moist to wet; increase in fine sand; becomes friable			
-3						1-1/2" screened PVC 2.85' to 7.85' BGS with sand pack from 1' to 7.85' BGS.	
-4							
-5				few faint mottles			
-6				SANDY LOAM; Brown, friable, wet, sticky, non-plastic, many fine prominent mottles.			
-7				decrease in fines			
-8	▼	4/9/2018 4/13/2018 4/30/2018		Boring terminated at a depth of 7.85 feet. Groundwater not encountered. Backfilled with monterey sand and capped with bentonite chips.			Groundwater levels were observed at the same depth during each measurement
-9							
-10							

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

Consulting Engineers & Geologists, Inc.

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PROJECT NAME: Onsite Wastewater Treatment System Design
PROJECT NUMBER: 017062.100
LOCATION: Arcata, CA
DATE EXCAVATED: 3/27/2018
APN: 507-181-007
TOTAL DEPTH OF HOLE: 8.15 Feet
EXCAVATION METHOD: Hand Auger
SAMPLER TYPE: Bulk
LOGGED BY: ESP

HOLE NUMBER
OW-6

DEPTH (ft)	GROUNDWATER LEVEL	DATE	BULK SAMPLE	FIELD CLASSIFICATION BASED ON U.S.D.A. CLASSIFICATION SYSTEM — TEXTURE, STRUCTURE, CONSISTENCY, MOISTURE, COLOR, REMARKS	WATER MONITOR CONSTRUCTION	WATER MONITOR DETAILS	REMARKS
0				LOAM; Dark brown, firm, moist, sticky, plastic, roots.		1-1/2" solid PVC 0 to 3.15' BGS with bentonite seal from 0 to 1' BGS.	
-1							
			X	SANDY CLAY LOAM; Light brown, firm, moist, slightly sticky, plastic, slightly mottled.			% Sand = 16.7 % Silt = 52.9 %Clay = 30.4
-2							
-3				CLAY LOAM; Light brown, very firm, moist, sticky, plastic.		1-1/2" screened PVC 3.15 to 8.15' BGS with sand pack from 1' to 8.15' BGS.	
-4				SANDY LOAM; Light brown, friable to firm, moist, slightly stick, slightly plastic.			
-5				LOAMY SAND; Light brown to reddish-brown; very friable to friable, moist, sticky, plastic, distinct mottles.			
-6				CLAY LOAM; Reddish-brown, very firm, moist, sticky, plastic, mottled.			
	▼	4/13/2018					
-7	▼	4/9/2018					
	▼	4/30/2018					
-8				Boring terminated at a depth of 8.15 feet. Groundwater not encountered. Backfilled with monterey sand and capped with bentonite.			
-9							
-10							

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CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W.Wabash Eureka,CA 95501-2138 Tel:707/441-8855 FAX:707/441-8877 E-mail:shninfo@shn-engr.com

Reference: 017062.100

May 2, 2018

Arcata Land Company
P.O. Box 997
Arcata, CA 95519

SOIL PERCOLATION SUITABILITY / TEXTURAL ANALYSIS RESULTS

Job Name: Arcata Land Company **Sampled By: PRS**
Date Sampled: 04/03/18 **Date Tested: 05/02/18**
Date Received: 04/03/18 **AP Number: 507-181-007**

Sample ID	Depth	% Sand	% Clay	% Silt	% Coarse Fragments by Volume	Zone	Bulk Density
TP-1	1-1.5'	32.3	28.8	38.9	30.1	3	*
	Material: **Loam**						
TP-1	1.5-2.0'	21.3	31.8	46.9	22.8	3	*
	Material: **Clay Loam**						
TP-2	1-1.5'	32.4	33.6	34.0	37.0	3	*
	Material: **Clay Loam**						
TP-3	0.5-1'	17.0	27.7	55.3	36.7	3	*
	Material: **Silt Loam**						
TP-3	1.5-2.0'	17.1	30.9	52.0	25.3	3	*
	Material: **Clay Loam**						

* = no peds provided

Regional Water Quality Control Board Zone Descriptions:

Zone 1 - Soils in this zone are very high in sand content. They readily accept effluent, but because of their low silt and clay content they provide minimal filtration. These soils demand greater separation distances from groundwater.

Zone 2 - Soils in this zone provide adequate percolation rates and filtration of effluent. They are suitable for use of a conventional system without further testing.

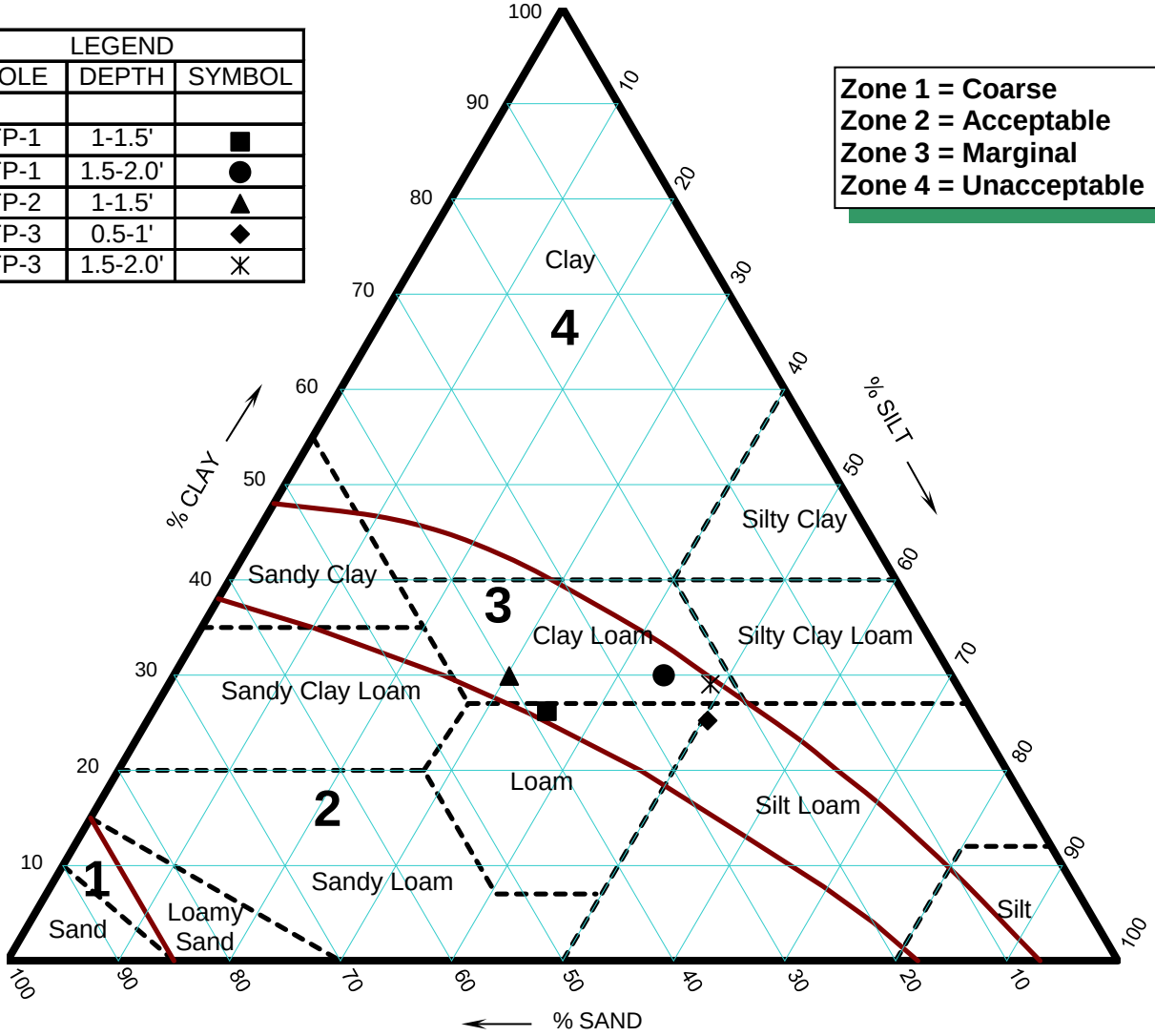
Zone 3 - Soils in this zone are expected to provide good filtration of effluent, but their ability to accept effluent at a suitable rate is questionable. These soils require wet-weather percolation tests to verify their suitability for effluent disposal by conventional leachfield methods.

Zone 4 - Soils in this zone are unsuitable for a conventional leachfield because of their severe limitations for accepting effluent.

SOIL PERCOLATION SUITABILITY CHART

LEGEND		
HOLE	DEPTH	SYMBOL
TP-1	1-1.5'	■
TP-1	1.5-2.0'	●
TP-2	1-1.5'	▲
TP-3	0.5-1'	◆
TP-3	1.5-2.0'	✳

Zone 1 = Coarse
Zone 2 = Acceptable
Zone 3 = Marginal
Zone 4 = Unacceptable



NOTES

1. Soil texture is plotted on triangle based on percent sand, silt, and clay as determined by hydrometer analysis.
2. Adjustment for coarse fragments has been made by moving the plotted point in the sand direction an additional 2% for each 10% (by volume) of fragments greater than 2mm in diameter.
3. Adjustment for compactness of soil has been made by moving the plotted point in the clay direction an additional 15% for soils having a bulk-density greater than 1.7 gm/cc, when analyzed.
4. For soils falling in sand, loamy sand, or sandy loam, classification adjustment for bulk density will generally not affect suitability and a bulk-density analysis was not necessary.

JOB NUMBER: **017062.100** **DATE:** **05/02/18**

JOB NAME: **Arcata Land Company** **APN:** **507-181-007**

Consulting Engineers & Geologists, Inc.

812 W. Wabash
Eureka, CA 95501-2138
(707) 441-8855

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W.Wabash Eureka,CA 95501-2138 Tel:707/441-8855 FAX:707/441-8877 E-mail:shninfo@shn-engr.com

Reference: 017062.100

May 2, 2018

Arcata Land Company
P.O. Box 997
Arcata, CA 95519

SOIL PERCOLATION SUITABILITY / TEXTURAL ANALYSIS RESULTS

Job Name: Arcata Land Company **Sampled By: PRS**
Date Sampled: 04/03/18 **Date Tested: 05/02/18**
Date Received: 04/03/18 **AP Number: 507-181-007**

Sample ID	Depth	% Sand	% Clay	% Silt	% Coarse Fragments by Volume	Zone	Bulk Density
TP-4	0.5-1'	14.9	28.4	56.7	36.0	3	*
	Material: **Silt Loam**						
TP-5	0.5-1'	22.8	24.5	52.7	22.1	3	*
	Material: **Loam**						
TP-5	1.5-2'	19.9	30.6	49.5	20.3	3	*
	Material: **Clay Loam**						
TP-6	0.5-1'	26.4	26.4	47.2	15.2	3	*
	Material: **Loam**						
OW-6	1-2'	16.7	30.4	52.9	0.0	4	*
	Material: **Silty Clay Loam**						

* = no peds provided

Regional Water Quality Control Board Zone Descriptions:

Zone 1 - Soils in this zone are very high in sand content. They readily accept effluent, but because of their low silt and clay content they provide minimal filtration. These soils demand greater separation distances from groundwater.

Zone 2 - Soils in this zone provide adequate percolation rates and filtration of effluent. They are suitable for use of a conventional system without further testing.

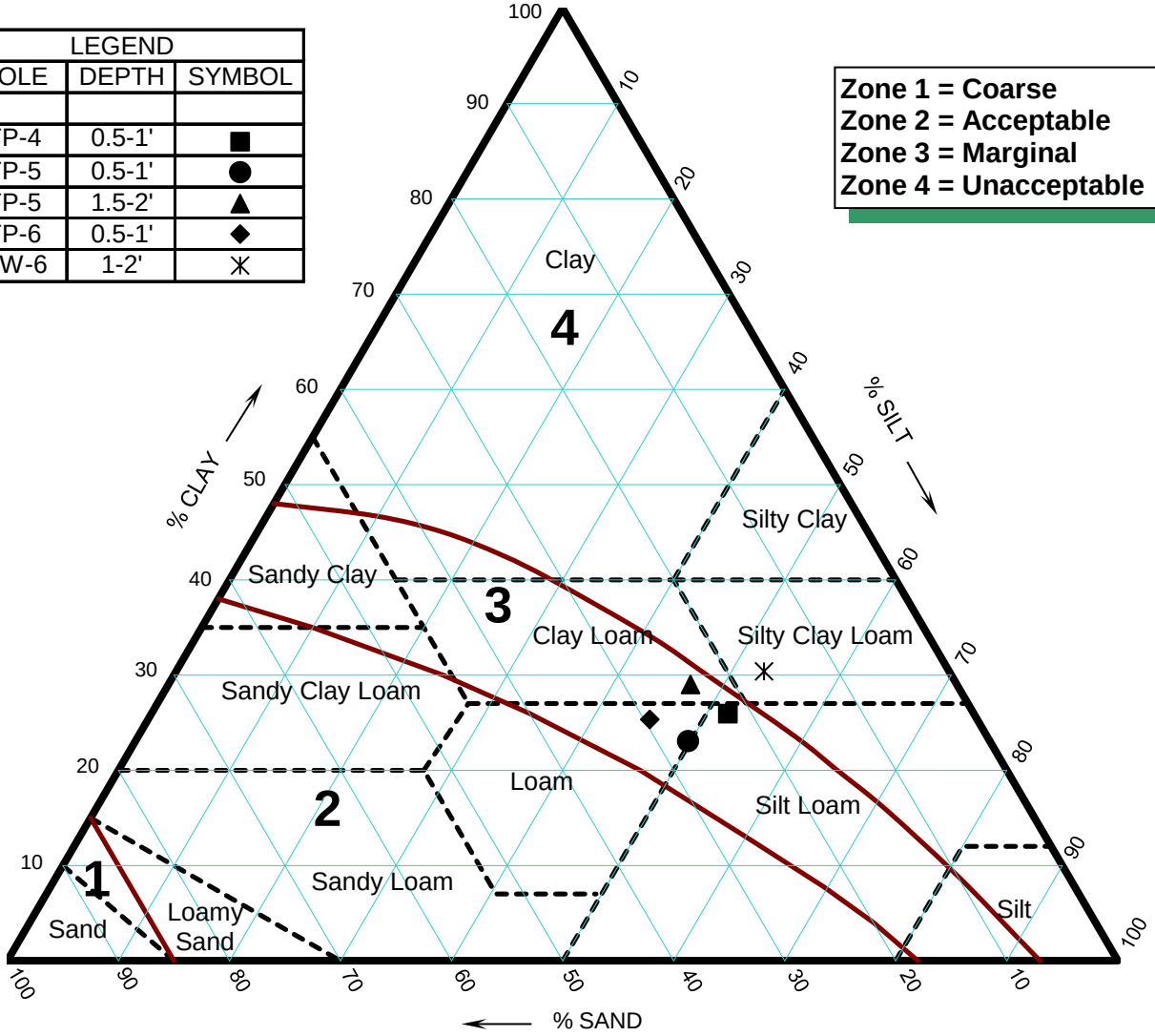
Zone 3 - Soils in this zone are expected to provide good filtration of effluent, but their ability to accept effluent at a suitable rate is questionable. These soils require wet-weather percolation tests to verify their suitability for effluent disposal by conventional leachfield methods.

Zone 4 - Soils in this zone are unsuitable for a conventional leachfield because of their severe limitations for accepting effluent.

SOIL PERCOLATION SUITABILITY CHART

LEGEND		
HOLE	DEPTH	SYMBOL
TP-4	0.5-1'	■
TP-5	0.5-1'	●
TP-5	1.5-2'	▲
TP-6	0.5-1'	◆
OW-6	1-2'	✳

Zone 1 = Coarse
Zone 2 = Acceptable
Zone 3 = Marginal
Zone 4 = Unacceptable



NOTES

1. Soil texture is plotted on triangle based on percent sand, silt, and clay as determined by hydrometer analysis.
2. Adjustment for coarse fragments has been made by moving the plotted point in the sand direction an additional 2% for each 10% (by volume) of fragments greater than 2mm in diameter.
3. Adjustment for compactness of soil has been made by moving the plotted point in the clay direction an additional 15% for soils having a bulk-density greater than 1.7 gm/cc, when analyzed.
4. For soils falling in sand, loamy sand, or sandy loam, classification adjustment for bulk density will generally not affect suitability and a bulk-density analysis was not necessary.

JOB NUMBER: **017062.100** **DATE:** **05/02/18**

JOB NAME: **Arcata Land Company** **APN:** **507-181-007**

Consulting Engineers & Geologists, Inc.

812 W. Wabash
Eureka, CA 95501-2138
(707) 441-8855

CONSULTING ENGINEERS & GEOLOGISTS, INC.

SOILS PERCOLATION TEST DATA SHEET

CLIENT	Arcata Land Company	**DATE**	4/4/2018
JOB REF.	017062.100	**APN**	507-181-007
TEST PIT No.	PP-1	TESTED BY	PRS
DEPTH TESTED	12-24"	DTW	>8'
PRE-SOAK	1 Hour		

Reading No.	Start Time	Stop Time	Interval (Minutes)	Water Level Drop (Inches)	Percolation Rate (Minutes per Inch)
1	11:40	11:55	15	1	15
2	11:55	12:10	15	1	15
3	12:10	12:25	15	1	15
4	12:25	12:40	15	1	15
5	12:40	12:55	15	1	15
6	12:55	1:10	15	1	15
				STABILIZED PERCOLATION RATE =	**15**

TEST PIT No.	PP-2	TESTED BY	ESP
DEPTH TESTED	6"-18"	DTW	>8'
PRE-SOAK	1 Hour		

Reading No.	Start Time	Stop Time	Interval (Minutes)	Water Level Drop (Inches)	Percolation Rate (Minutes per Inch)
1	11:40	11:55	15	5	3
2	11:55	12:10	15	6	2.5
3	12:10	12:25	15	5	3
4	12:25	12:40	15	5	3
5	12:40	12:55	15	5	3
6	12:55	1:10	15	5	3
				STABILIZED PERCOLATION RATE =	**3**

TEST PIT No.	PP-3	TESTED BY	PRS
DEPTH TESTED	12"-24"	DTW	>8'
PRE-SOAK	1Hour		

No.	Time	Time	(Minutes)	Drop (Inches)	(Minutes per Inch)
1	11:42	11:57	15	4	3.75
2	11:57	12:12	15	4	3.75
3	12:12	12:27	15	4	3.75
4	12:27	12:42	15	4	3.75
5	12:42	12:57	15	4	3.75
6	12:57	1:12	15	4	3.75
				STABILIZED PERCOLATION RATE =	**4**

CONSULTING ENGINEERS & GEOLOGISTS, INC.

SOILS PERCOLATION TEST DATA SHEET

CLIENT	Arcata Land Company	**DATE**	4/4/2018
JOB REF.	017062.100	**APN**	507-181-007
TEST PIT No.	PP-4	TESTED BY	ESP
DEPTH TESTED	6"-18"	DTW	7.9'
PRE-SOAK	1 Hour		

Reading No.	Start Time	Stop Time	Interval (Minutes)	Water Level Drop (Inches)	Percolation Rate (Minutes per Inch)
1	11:42	11:57	15	4	3.75
2	11:57	12:12	15	5	3
3	12:12	12:27	15	4	3.75
4	12:27	12:43	15	4	3.75
5	12:43	12:57	15	4	3.75
6	12:57	1:12	15	4	3.75
			STABILIZED PERCOLATION RATE =		**4**

TEST PIT No.	PP-5	TESTED BY	PRS
DEPTH TESTED	12"-24"	DTW	>8'
PRE-SOAK	1 Hour		

Reading No.	Start Time	Stop Time	Interval (Minutes)	Water Level Drop (Inches)	Percolation Rate (Minutes per Inch)
1	11:43	11:58	15	6	2.5
2	11:58	12:13	15	6	2.5
3	12:13	12:28	15	6	2.5
4	12:28	12:43	15	5.5	2.73
5	12:43	12:58	15	5.5	2.73
6	12:58	1:12	15	5.5	2.73
			STABILIZED PERCOLATION RATE =		**3**

TEST PIT No.	PP-6	TESTED BY	ESP
DEPTH TESTED	6"-18"	DTW	7.75'
PRE-SOAK	1Hour		

No.	Time	Time	(Minutes)	Drop (Inches)	(Minutes per Inch)
1	11:43	11:58	15	4	3.75
2	11:58	12:13	15	4	3.75
3	12:13	12:28	15	4	3.75
4	12:28	12:43	15	4	3.75
5	12:43	12:58	15	4	3.75
6	12:58	1:12	15	4	3.75
			STABILIZED PERCOLATION RATE =		**4**

Observation Well Data

				017062.100 Arcata Land Company						APN: 507-181-007					
Observation Well ID				**OW-1**		**OW-2**		**OW-3**		**OW-4**		**OW-5**		**OW-6**	
Total well depth (Feet)				10.00		10.00		10.00		10.00		10.00		10.00	
Height of top of casing above ground (Feet)				2.1		1.6		2.05		1.75		2.15		1.85	
Well depth below ground surface (Feet)				7.90		8.40		7.95		8.25		7.85		8.15	
DATE	**PRECIPITATION (IN)**		**TIME**												
(mm/dd/yr)	**Daily**	**Total**	**(am/pm)**	**Reading**	**Depth bags**	**Reading**	**Depth bags**	**Reading**	**Depth bags**	**Reading**	**Depth bags**	**Reading**	**Depth bags**	**Reading**	**Depth bags**
03/27/18	0.00	33.18	pm	ND	ND	9.6	8	ND	ND	9	7.25	ND	ND	ND	ND
04/09/18	2.52[1]	35.72	pm	ND	ND	9.3	7.7	ND	ND	9.4	7.65	9.8	7.65	8.9	7.05
04/13/18	1.38[2]	37.1	am	ND	ND	9.1	7.5	ND	ND	9.1	7.35	9.8	7.65	8.55	6.7
04/30/18	0.87[3]	38.52	pm	ND	ND	9.6	8	ND	ND	9.8	8.05	9.8	7.65	9.55	7.7

Reading = measured reading of groundwater relative to the top of well casing in feet.

Depth = depth to groundwater below the ground surface in feet.

ND = non-detection of groundwater (dry well).

[1] **2.52 inches of rain over the previous 96 hours**

[2] **1.38 inches of rain over the previous 72 hours**

[3] **0.87 inches of rain in the previous 72 hours**

Percolation Test Data (Parcel D)

2

CONSULTING ENGINEERS & GEOLOGISTS, INC.

SOILS PERCOLATION TEST DATA SHEET

CLIENT	Arcata Land Co.	**DATE**	3/13/2020
JOB REF.	017062.100	**APN**	506-231-011 Parcel D
TEST PIT No.	PP-21	TESTED BY	E. Phillips
DEPTH TESTED	34"-40"	DTW	>6 feet
PRE-SOAK	1 Hour		

Reading No.	Start Time	Stop Time	Interval (Minutes)	Water Level Drop (Inches)	Percolation Rate (Minutes per Inch)
1	11:25	11:40	15	1/2	30
2	11:40	11:55	15	3/4	20
3	11:55	12:10	15	1/2	30
4	12:10	12:25	15	1/2	30
5	12:25	12:40	15	1/2	30
6	12:40	12:55	15	1/2	30
				STABILIZED PERCOLATION RATE =	**30**

TEST PIT No.	PP-22	TESTED BY	E. Phillips
DEPTH TESTED	30"-36"	DTW	>6 feet
PRE-SOAK	1 Hour		

Reading No.	Start Time	Stop Time	Interval (Minutes)	Water Level Drop (Inches)	Percolation Rate (Minutes per Inch)
1	11:30	11:45	15	1 1/4	12
2	11:45	12:00	15	1 1/4	12
3	12:00	12:15	15	1	15
4	12:15	12:30	15	1	15
5	12:30	12:45	15	1	15
6	12:45	13:00	15	1	15
				STABILIZED PERCOLATION RATE =	**15**

TEST PIT No.	PP-23	TESTED BY	E. Phillips
DEPTH TESTED	32"-38"	DTW	>6 feet
PRE-SOAK	1 Hour		

Reading No.	Start Time	Stop Time	Interval (Minutes)	Water Level Drop (Inches)	Percolation Rate (Minutes per Inch)
1	11:35	11:50	15	2	8
2	11:50	12:05	15	2	8
3	12:05	12:20	15	1 3/4	9
4	12:20	12:35	15	1 3/4	9
5	12:35	12:50	15	1 3/4	9
6	12:50	13:05	15	1 3/4	9
				STABILIZED PERCOLATION RATE =	**9**

TEST PIT No.	PP-24	TESTED BY	E. Phillips
DEPTH TESTED	32"-38"	DTW	>6 feet
PRE-SOAK	1 Hour		

Reading No.	Start Time	Stop Time	Interval (Minutes)	Water Level Drop (Inches)	Percolation Rate (Minutes per Inch)
1	14:05	14:20	15	2 3/4	5
2	14:20	14:35	15	2 1/2	6
3	14:35	14:50	15	2 1/4	7
4	14:50	15:05	15	2	8
5	15:05	15:20	15	2	8
6	15:20	15:35	15	2	8
			STABILIZED PERCOLATION RATE =		**8**

Laboratory Textural Analysis (Parcel D)

3

Phone: (707) 441-8855 Email: info@shn-engr.com Web: shn-engr.com
812 W. Wabash Avenue, Eureka, CA 95501-2138

Reference: 017062.100

SOIL PERCOLATION SUITABILITY / TEXTURAL ANALYSIS RESULTS

Job Name: Arcata Land Co. **Sampled By: ESP**
Date Sampled: 03/13/20 **Date Tested: 03/19/20**
Date Received: 03/13/20 **AP Number: 506-231-011**

Sample ID	Depth	% Sand	% Clay	% Silt	% Coarse Fragments by Volume	Zone	Bulk Density
PP-21	36"	33.7	24.8	41.5	0.0	3	*
	Material: **Loam**						
PP-22	32"	28.1	21.8	50.1	0.0	3	*
	Material: **Silt Loam**						
PP-23	32"	26.8	26.4	46.8	0.0	3	*
	Material: **Loam**						
PP-24	34"	16.6	34.9	48.5	0.0	4	*
	Material: **Silty Clay Loam**						
TP-25	32"	43.5	18.6	37.9	0.0	2	*
	Material: **Loam**						

* = no peds provided

Regional Water Quality Control Board Zone Descriptions:

Zone 1 - Soils in this zone are very high in sand content. They readily accept effluent, but because of their low silt and clay content they provide minimal filtration. These soils demand greater separation distances from groundwater.

Zone 2 - Soils in this zone provide adequate percolation rates and filtration of effluent. They are suitable for use of a conventional system without further testing.

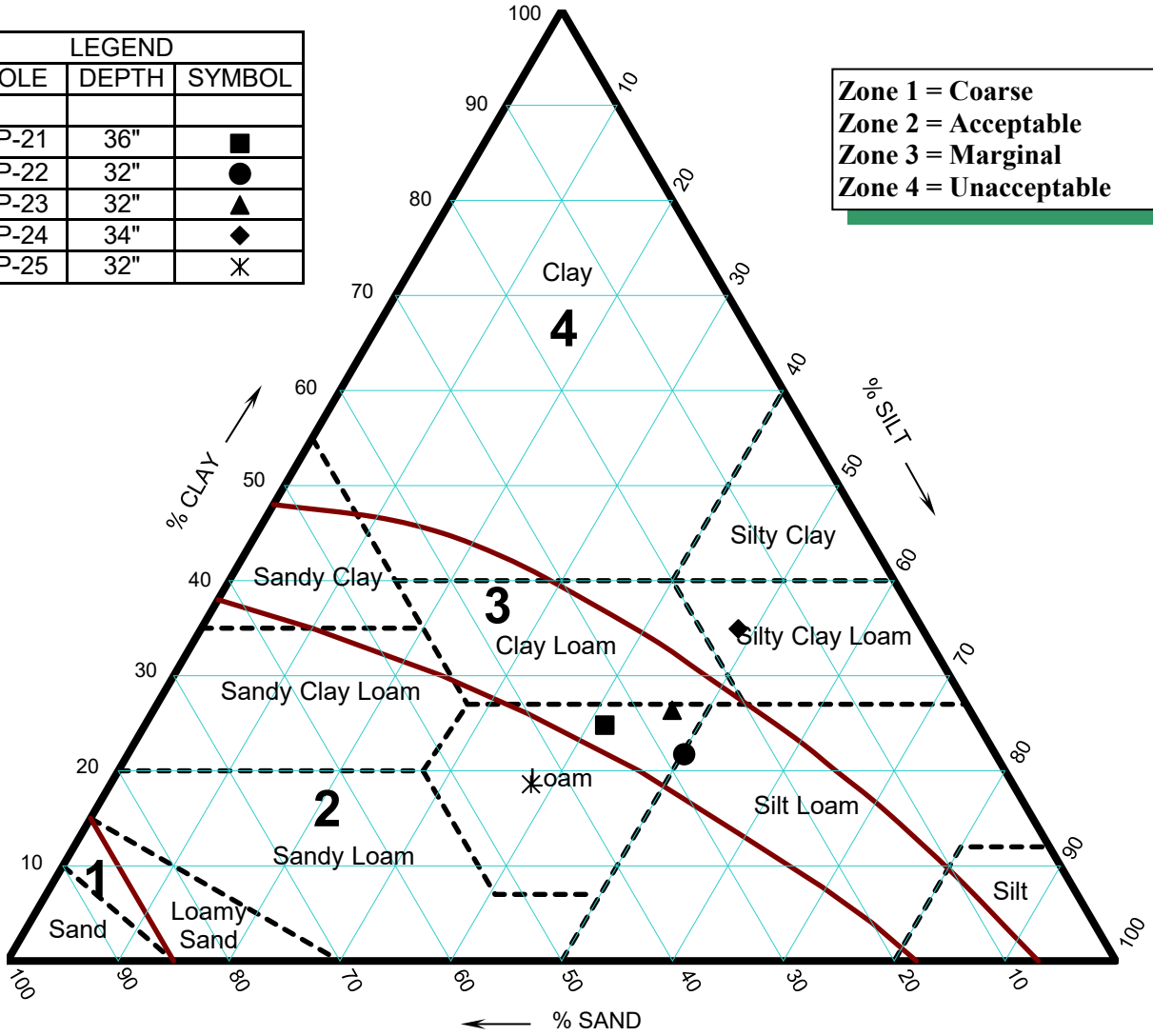
Zone 3 - Soils in this zone are expected to provide good filtration of effluent, but their ability to accept effluent at a suitable rate is questionable. These soils require wet-weather percolation tests to verify their suitability for effluent disposal by conventional leachfield methods.

Zone 4 - Soils in this zone are unsuitable for a conventional leachfield because of their severe limitations for accepting effluent.

SOIL PERCOLATION SUITABILITY CHART

LEGEND		
HOLE	DEPTH	SYMBOL
PP-21	36"	■
PP-22	32"	●
PP-23	32"	▲
PP-24	34"	◆
TP-25	32"	✳

Zone 1 = Coarse
Zone 2 = Acceptable
Zone 3 = Marginal
Zone 4 = Unacceptable



NOTES

1. Soil texture is plotted on triangle based on percent sand, silt, and clay as determined by hydrometer analysis.
2. Adjustment for coarse fragments has been made by moving the plotted point in the sand direction an additional 2% for each 10% (by volume) of fragments greater than 2mm in diameter.
3. Adjustment for compactness of soil has been made by moving the plotted point in the clay direction an additional 15% for soils having a bulk-density greater than 1.7 gm/cc, when analyzed.
4. For soils falling in sand, loamy sand, or sandy loam, classification adjustment for bulk density will generally not affect suitability and a bulk-density analysis was not necessary.

JOB NUMBER:	**017062.100**	**DATE:**	**03/19/20**
JOB NAME:	**Arcata Land Co.**	**APN:**	**506-231-011**

Phone: (707) 441-8855 **Email:** info@shn-engr.com **Web:** shn-engr.com
812 W. Wabash Avenue, Eureka, CA 95501-2138

Pressure Distribution System Design Calculations and Specifications (Parcel D)

4

812 W. Wabash Avenue, Eureka, CA 95501-2138 707-441-8855
Civil Engineering, Environmental Services, Geosciences, Planning & Permitting, Surveying

Low-Pressure Pipe Distribution Network Design Calculations and Specifications

Project No.:	0017062.100
Date:	May 2020
Client:	Arcata Land Co., LLC
Prepared by:	Giovanni Vadurro, CEG 2554
Location:	Arcata, Humboldt County; Portion of APN 506-231-011, Parcel D

Setbacks for Subsurface Disposal Field:
Wetlands: >100 feet
Perennial Stream: >100 feet
Ephemeral Stream: >50 feet
Springs: >50 feet
Wells: >100 feet
Property Line: >10 feet
Foundation of Building: >10 feet
Slope breaks in excess of 25°: >100 feet

Design Criteria:
Depth to seasonal high groundwater: 6± feet below ground surface
USDA Soil Classification: Loam (Zone 2/3), Silt Loam (Zone 3), Silty Clay Loam (Zone 4)
Measured Percolation Rates: 8 to 30 minutes per inch (MPI)
Soil Application Rate: 0.363 gpd/ ft^2 based on slowest percolation rate
Wastewater Flow in gallons per day (gpd): 4,060 gpd

Summary of Pressurized Distribution System Specifications:

- Septic Tank, Pump Vaults, and Pump system:
  - Septic Tank: 12,000-gallon, 2-compartment fiberglass tank with three risers
  - Pump Vault: 4,000-gallon single-compartment pre-cast concrete tank or fiberglass tank with two risers
  - High Head Effluent Pump: Orenco PI5007 High Head Effluent Pump 50 GPM, 3/4HP 220V 1Ø 50Hz
  - Distributing Valve: Orenco V6404A Automatic Distributing Valve 1.5" Inlet & Outlets 15-100 GPM Flow Range 4 Zone
- Pressurized Distribution System:
  - Number of Pressurized Distribution Laterals and Length = 32 x 70 feet
  - Split into 4 separate distribution cells with 8 laterals each connected to end-feed manifolds
- Trench Depth = 36 inches
- Trench Width = 24 inches
- Trench Backfill: 3/8-inch washed pea gravel (18-inches below pipe and 6-inches of pipe cover)

- Spacing between Laterals = **8 feet** (center to center)
- Distribution Lateral Diameter = **1 ¼-inch Sch. 40 PVC**
- Orifice Diameter and Spacing = **1/8-inch with 5-foot spacing**
- End-feed Manifold Length and Diameter = **24 feet of 1 ½-inch Sch. 40 PVC**
- Transport Pipe Length and Diameter = **1,200 feet of 3-inch HDPE Pipe** (contractor to verify length in field based on distance from pump tank to distributing valve)

Low-Pressure Pipe Distribution Network Design Calculations:

(1) Daily flow rate in gallons per day (gpd):
- (116 workers x 35 gpd per person) = **4060 gpd**

(2) Field measured percolation rate in minutes per inch (MPI):
- **8 to 30 MPI**

(3) Soil Application Rate in gallons per day per square foot (gpd/ft^2) based on 30 MPI percolation rate:
- **0.363 gpd/ ft^2**

(4) Total trench sidewall and trench bottom area required below the pressurized pipe:
= Daily design wastewater flow rate / Soil Application Rate:
= (4,060 gpd) ÷ (0.363 gpd/ft^2)
= 11,185 ft^2

(5) Length of pressurized distribution lateral required using 18-inches of pea gravel below the pipe and 24-inch wide trenches (use trench sidewall and bottom area of **5 ft^2 per lineal foot of trench**):
= (11,185 ft^2) ÷ (5 feet)
= 2,237 feet **(Use 2,240 ft)**

(6) Pressurized Distribution Dispersal Field Dimensions:
- **Use thirty-two (32) 70-foot pressurized distribution laterals spaced 8-feet center-to-center**
- **Divide into eight (8) separate cells each containing eight (8) distribution laterals of seventy feet (70) in length**
- **Maintain 10-foot horizontal separation at cell boundaries**
- **The total area required per cell is approximately 3,480 ft^2 (145 feet x 24 feet)**

(7) Orifice diameter and spacing for pressurized laterals:
- Design using 3-feet pressure head at discharge
- Use **1/8-inch diameter orifices with 5-foot spacing** (begin orifice placement 2.5-feet from ends of laterals)
- Number of orifices per 70 feet of pressurized lateral = **14 orifices**

(8) Discharge rate per orifice in gallons per minute (gpm):
- Use 3-foot pressure head with 1/8-inch orifice diameter
- $Q = (A \times (2gh)^{0.5}) \times C_d$
- $Q = (8.52 \times 10^{-5}\ ft^2 \times 13.9\ ft/s) \times 0.61 = 7.22 \times 10^{-4}\ ft^3/s$ = **0.34 gpm**

(9) Discharge rate per lateral:
- Flow rate per orifice = 0.32 gpm
- Flow rate per 70 feet of lateral = 0.34 gpm/orifice x 14 orifices = **4.8 gpm per lateral**

(10) Discharge rate for each distribution cell:
- Eight (8) laterals x 4.8 gpm/lateral = **38 gpm**

(11) Transport Line Diameter and Length:

- **Use solid 3-inch diameter HDPE Pipe** for transport line from pump to six-way automatic distributing valve
- **Use length of approximately 1,200 feet** (Contractor to verify length in field)

(12) Manifold Diameter and Length:

- **Use solid 1 ½-inch diameter Schedule 40 PVC** for end-feed manifolds
- **Use manifold lengths of 24 feet**

(13) Pressurized Lateral Diameter and Length:

- Use **1 ¼-inch -inch diameter Schedule 40 PVC** for each pressurized lateral
- Use **32 pressurized laterals** with length of **70 feet** each
- Split into four (4) separate distribution cells with eight (8) laterals each; each set of laterals to be connected to the end-feed manifold; manifolds are to be connected to the automatic distributing valve assembly.

(14) Friction Head Losses:

- Loss through discharge: **2.8 ft**
- Loss in transport pipe before valve: **4.2 ft**
- Loss through distributing valve: **9.5 ft**
- Loss in transport pipe after valve: **5.3 ft**
- Loss in manifold: **0.5 ft**
- Loss in laterals: **0.1 ft**
- Add-on friction losses: **10 ft**
- Maximum elevation lift: **10 ft**
- Residual head at last orifice: **3 ft**
- **Total Head Loss = 46 ft±**

(15) Pump Selection:

- Size pump for design flow rate of 38 gpm against 46 feet total dynamic head
  - Use Orenco PI5007 High Head Effluent Pump 50 GPM, 3/4HP 220V 1Ø 50Hz

(16) Dose Volume and Frequency:

- Volume of transport line before valve = 460 gallons
- Volume of transport line after valve = 39 gallons
- Volume of manifold = 2.5 gallons
- Volume of laterals per zone = 40.4 gallons
- Total volume before valve = 460 gallons
- Total volume after valve = 82 gallons
- Use dose volume = **500 gallons**
- 4060 gpd/500 gal/dose = **8 doses per day**

Civil Plan Sheets G-1, G-2, C-1, C-2, C-3, C-4 and C-5 (Parcel D)

5

ARCATA LAND COMPANY, LLC
APN 506-231-011, PARCEL D
ONSITE WASTEWATER TREATMENT AND DISPOSAL SYSTEM DESIGN
ARCATA, CALIFORNIA



LOCATION MAP
NTS

PREPARED BY:

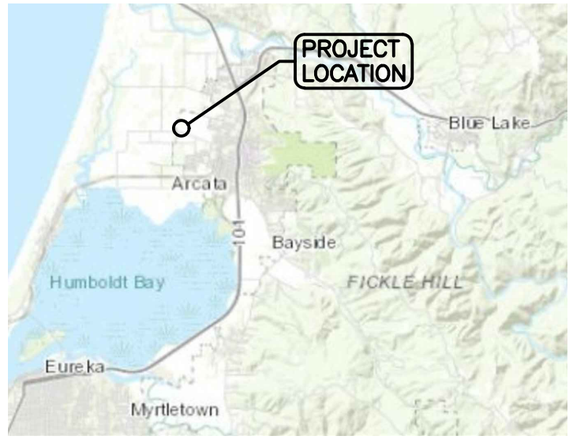
SHN
JUNE 2020

APPROVALS

GIOVANNI A. VADURRO — DATE
SHN CONSULTING ENGINEERS AND GEOLOGISTS
ENGINEERING GEOLOGIST

INDEX OF SHEETS

SEQ	SHEET	TITLE
1	G-1	COVER
2	G-2	STANDARD ABBREVIATIONS AND LEGENDS
3	C-1	SITE PLAN
4	C-2	SEPTIC TANK DETAILS
5	C-3	PUMP TANK DETAILS
6	C-4	DISPOSAL SYSTEM DETAILS
7	C-5	BUOYANCY CALCULATIONS



VICINITY MAP
NTS

811
Know what's below.
Call before you dig.

Contractor shall call Underground Service Alert at 811 two working days prior to excavation.
Landline: 1-800-227-2600

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

812 W. WABASH AVE.
EUREKA, CA. 95501
WWW.SHN-ENGR.COM
707-441-8855

NO.	REVISION	BY	DATE

DSGN GAV
DR CRS
CHK GAV
APVD

ARCATA LAND COMPANY, LLC
ONSITE WASTEWATER TREATMENT AND DISPOSAL SYSTEM
ARCATA, CALIFORNIA
COVER

SHEET G-1
SEQ 1
DATE 06/2020
PROJ. NO. 017062.100

SAVED: 6/12/2020 2:06 PM CSWANSON, PLOTTED: 6/12/2020 2:07 PM CHUCK SWANSON
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ABBREVIATIONS

A

ABN — ABANDON
ABS — ACRYLONITRILE–BUTADIENE–STYRENE
AB — ANCHOR BOLT, AGGREGATE BASE
AC — ASPHALTIC CONCRETE
ACP — ASBESTOS CEMENT PIPE
ACI — AMERICAN CONCRETE INSTITUTE
ADJ — ADJUSTABLE
AGGR — AGGREGATE
AISC — AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AL — ALUMINUM
ALT — ALTERNATE
APPROX — APPROXIMATELY
ARCH — ARCHITECTURAL
ASTM — AMERICAN SOCIETY FOR TESTING & MATERIALS
AUTO — AUTOMATIC
AUX — AUXILIARY
@ — AT

B

BC — BEGIN CURVE
BCR — BEGIN CURB RETURN
BD — BOARD
BF — BLIND FLANGE
BFV — BUTTERFLY VALVE
BK — BOOK OR BACK
BLDG — BUILDING
BM — BENCH MARK, BEAM
BOT — BOTTOM
BRG — BEARING
BTWN — BETWEEN
BV — BALL VALVE
BVC — BEGINNING OF VERTICAL CURVE
BW — BACK OF WALK
BWW — BACKWASH WATER

C

C — CHANNEL (STRUCTURAL SHAPE)
CATV — CABLE TELEVISION
CB — CATCH BASIN
CEIL — CEILING
CFM — CUBIC FEET PER MINUTE
CFS — CUBIC FEET PER SECOND
CHEM — CHEMICAL
CI — CAST IRON
CIP — CAST IRON PIPE
C.I.P. — CAST IN PLACE
CJ — CONSTRUCTION JOINT
CL2 — CHLORINE
CLR — CLEAR
℄ — CENTERLINE
CMP — CORRUGATED METAL PIPE
CMU — CONCRETE MASONRY UNIT
CTSK — COUNTERSINK
CO — CLEANOUT
COL — COLUMN
CONC — CONCRETE
CONT — CONTINUOUS OR CONTINUED
COORD — COORDINATE
CPLG — COUPLING
CRS — COLD ROLLED STEEL
CTR — CENTER
CU — CUBIC
CU FT — CUBIC FEET
CV — CHECK VALVE
CW — COLD WATER
CY — CUBIC YARD

D

O — DEGREE (ANGLE)
d — PENNY (NAIL SIZE)
DB — DISTRIBUTION BOX
DBL — DOUBLE
DF — DOUGLAS FIR
DI — DROP INLET OR DUCTILE IRON
DIA — DIAMETER
DIAG — DIAGONAL
DIM — DIMENSION
DIMJ — DUCTILE IRON MECHANICAL JOINT
DIP — DUCTILE IRON PIPE
DET — DETAIL
DWG — DRAWING
D/W — DRIVEWAY

E

(E) — EXISTING
EA — EACH
EC — END CURVE
ECR — END CURB RETURN
EF — EACH FACE
EFL — EFFLUENT
EL — ELBOW
ELEC — ELECTRIC OR ELECTRICAL
ELEV — ELEVATION
ENGR — ENGINEER
EP — EDGE OF PAVING
EQ — EQUAL
EQUIP — EQUIPMENT
ER — EDGE OF ROAD
EVC — END OF VERTICAL CURVE
EW — EACH WAY
EWEF — EACH WAY, EACH FACE
EXC — EXCAVATE
EXP — EXPOSED OR EXPANSION
EXP JT — EXPANSION JOINT
EXST — EXISTING
EXT — EXTERIOR

F

FC — FLEXIBLE COUPLING OR FACE OF CURB
FCA — FLANGED COUPLING ADAPTER
FD — FLOOR DRAIN
FDN — FOUNDATION
FF — FINISH FLOOR
FG — FINISHED GRADE
FH — FIRE HYDRANT
FIG — FIGURE
FIN — FINISH
FL — FLOW LINE
FLG — FLANGE
FLR — FLOOR
FLTR — FILTER
FM — FORCEMAIN
FOC — FACE OF CONCRETE
FT — FOOT OR FEET
FT^2 — SQUARE FEET
FT^3 — CUBIC FEET
FTG — FOOTING
FW — FINISH WATER

G

G — GAS
GA — GAGE
GALV — GALVANIZED
GIP — GALVANIZED IRON PIPE
GPD — GALLONS PER DAY
GPH — GALLONS PER HOUR
GPM — GALLONS PER MINUTE
GRD — GRADE OR GROUND
GSP — GALVANIZED STEEL PIPE
GV — GATE VALVE
GYP — GYPSUM

H

HB — HOSE BIBB
HDR — HEADER
HDW — HARDWARE
HP — HORSEPOWER, HIGH POINT
HORIZ — HORIZONTAL
HR — HOUR
HT — HEIGHT
HW — HOT WATER
HWR — HOT WATER RETURN
HWS — HOT WATER SUPPLY

I

ID — INSIDE DIAMETER
IN — INCH
INFL — INFLUENT
INSUL — INSULATE OR INSULATION
INT — INTERIOR
INV — INVERT

J

JT — JOINT
JP — JOINT POLE

K

KIP — THOUSAND POUNDS
KW — KILOWATT

L

∠ — ANGLE (DEGREES)
L — ANGLE (STRUCTURAL SHAPE)
LB — POUND
LF — LINEAR FEET
LG — LONG
LH — LEFT HAND
LP — LOW POINT
LPG — LIQUIFIED PETROLEUM GAS
LR — LONG RADIUS
LT — LEFT
LONG — LONGITUDINAL

M

MATL — MATERIAL
MAX — MAXIMUM
MECH — MECHANICAL
MF — MEGA–FLANGE PIPE JOINT
MFR — MANUFACTURER
MGD — MILLION GALLONS PER DAY
MH — MANHOLE
MIN — MINIMUM OR MINUTE
MISC — MISCELLANEOUS
MJ — MECHANICAL JOINT
MTL — METAL
MWS — MAXIMUM WATER SURFACE

N

(N) — NEW
NC — NORMALLY CLOSED
NIC — NOT IN CONTRACT
NF — NON–FREEZE
NO — NUMBER OR NORMALLY OPEN
NOM — NOMINAL
NPT — NATIONAL PIPE THREAD
NTS — NOT TO SCALE
— NUMBER

O

OC — ON CENTER
OD — OUTSIDE DIAMETER
OG — ORIGINAL GROUND
OVFL — OVERFLOW
OZ — OUNCE
OH — OVERHEAD

P

PC — POINT OF CURVE
PCF — POUNDS PER CUBIC FOOT
PE — PLAIN END
PERF — PERFORATED
PEP — POLYETHELENE PIPE
PI — POINT OF INTERSECTION
PL — PLATE
R — PROPERTY LINE
PLCS — PLACES
PLYWD — PLYWOOD
PMP — PERFORATED METAL PIPE
PO — POLYMER
POC — POINT ON CURVE
PP — POWER POLE
PRC — POINT OF REVERSE CURVE
PREFAB — PREFABRICATED
PRELIM — PRELIMINARY
PRESS — PRESSURE
PROP — PROPERTY
PSF — POUNDS PER SQUARE FOOT
PSI — POUNDS PER SQUARE INCH
PSIG — POUNDS PER SQUARE INCH, GAUGE
PT — POINT OF TANGENCY, POINT
PV — PLUG VALVE
PVC — POLYVINYL CHLORIDE PLASTIC
PVMT — PAVEMENT

Q

QTY — QUANTITY

R

R — RADIUS
RCP — REINFORCED CONCRETE PIPE
RD — ROAD
RDCR — REDUCER
RWD — REDWOOD
REF — REFER OR REFERENCE
REINF — REINFORCED, REINFORCING OR REINFORCE
REQD — REQUIRED
RET — RETURN
RH — RIGHT HAND
RM — ROOM
RO — ROUGH OPENING
RSP — ROCK SLOPE PROTECTION
RT — RIGHT OR RING TIGHT
R/W — RIGHT OF WAY
RW — RAW WATER
RWL — RAIN WATER LEADER

S

S — SEWER
SL — SLOPE
SCHED — SCHEDULE
SD — STORM DRAIN
SECT — SECTION
SHT — SHEET
SIM — SIMILAR
SP — SPACE OR SPACES
SPEC — SPECIFICATIONS
SQ — SQUARE
SQ FT — SQUARE FOOT
SQ IN — SQUARE INCH
SS — SANITARY SEWER
SST — STAINLESS STEEL
STA — STATION
STD — STANDARD
STL — STEEL
STR — STRUCTURAL
STRUCT — STRUCTURE
SUSP — SUSPENDED
SYMM — SYMMETRICAL

T

TAN — TANGENT
T&B — TOP AND BOTTOM
T&G — TONGUE AND GROOVE
TBM — TEMPORARY BENCH MARK
TC — TOP OF CURB
TCE — TEMPORARY CONSTRUCTION EASEMENT
TEL — TELEPHONE
TELEM — TELEMETRY
TEMP — TEMPERATURE OR TEMPORARY
THD — THREAD
TOC — TOP OF CONCRETE
TOG — TOP OF GRATE
TOW — TOP OF WALL
TP — TURNING POINT, TOP OF PAVEMENT OR TELEPHONE POLE
TRANSV — TRANSVERSE
TS — TUBE, STRUCTURAL
TYP — TYPICAL

U

UBC — UNIFORM BUILDING CODE
UOS — UNLESS OTHERWISE SPECIFIED
UG — UNDERGROUND
UTIL — UTILITY

V

V — VOLT
VAC — VACUUM
VC — VERTICAL CURVE
VCP — VITRIFIED CLAY PIPE
VERT — VERTICAL
VPI — VERTICAL POINT OF INTERSECTION

W

W — WATER OR WIDE FLANGE
W/ — WITH
W/O — WITHOUT
WP — WORK POINT
WS — WATER SURFACE, WATER STOP
WWF — WELDED WIRE FABRIC
W1 — POTABLE WATER
W2 — NON–POTABLE WATER

X

XFMR — TRANSFORMER

Y

YD — YARD
YD^2 — SQUARE YARD
YD^3 — CUBIC YARD

UTILITIES LEGEND

PROPOSED	EXISTING	
	⊗	GATE VALVE
	⊗ PV	PLUG VALVE
	⊗ BV	BALL VALVE
	⊗ BFV	BUTTERFLY VALVE
P	P	AUTOMATICALLY OPERATED VALVE (P= PNEUMATIC, E= ELECTRIC, S= SOLENOID, H= HYDRAULIC, D= DIAPHRAGM ACTUATOR)
		3–WAY VALVE
		GLOBE VALVE
		ANGLE VALVE
		PRESSURE REGULATING VALVE
		PRESSURE RELIEF VALVE
		CHECK VALVE
		AIR OR VACUUM RELEASE VALVE
AV	AV	AIR AND VACUUM VALVE
CA	CA	COMBINATION AIR VALVE
		FLOW METER
	NF	HOSE BIBB (NF= NON–FREEZE)
		REDUCER
		FIRE HYDRANT
		DROP INLET
		MANHOLE
		CLEANOUT
E	E	UNDERGROUND ELECTRICAL
OH E	OH E	OVERHEAD ELECTRICAL
TV	TV	CABLE TELEVISION
J	J	JOINT UTILITIES
TM	TM	UNDERGROUND TELEMETRY LINE
OH TM	OH TM	OVERHEAD TELEMETRY LINE
T	T	UNDERGROUND TELEPHONE LINE
OH T	OH T	OVERHEAD TELEPHONE LINE
W	W	WATER LINE
SS	SS	SANITARY SEWER LINE
SD	SD	STORM DRAIN LINE
G	G	GAS LINE
FM	FM	FORCE MAIN AND DIRECTION OF FLOW

SIZE AND MATERIAL OF EXISTING PIPING MAY BE SHOWN WHEN KNOWN.

SIZE AND MATERIAL OF NEW PIPING MAY BE SHOWN ON PLAN OR IN PROFILE.

		CULVERT
		POLE MOUNTED ROADWAY LUMINAIRE
	NOT USED	ITEM TO BE REMOVED
		ITEM TO BE ABANDONED IN PLACE
		WATER SERVICE
3	PB	PULL BOX AND DESIGNATION
R4–4		SIGN AND DESIGNATION

NOTES

1. CONTACT THE ENGINEER FOR SYMBOLS NOT LISTED
2. THIS IS A STANDARD SHEET, THEREFORE, SOME SYMBOLS OR ABBREVIATIONS MAY APPEAR ON THIS SHEET WHICH DO NOT APPEAR ON THE PLANS.
3. SITE AND UTILITY SYMBOLS SHOWN ON THIS SHEET ARE NOT INTENDED TO REPRESENT THE PHYSICAL SCALE OR SHAPE OF ANY ITEMS. WHERE LARGE–SCALE PLANS ARE PRESENTED, THE SYMBOLS SHOWN HEREON MAY BE REPLACED BY DETAILS MORE SUITED TO THE DRAWING SCALE.

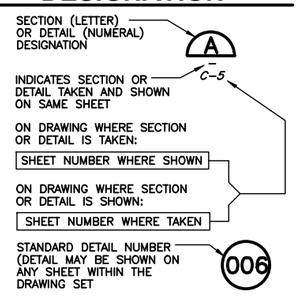
CURVE DATA

R (RADIUS)
L (LENGTH)
△ (DELTA)
T (TANGENT)

TOPOGRAPHIC LEGEND

PROPOSED	EXISTING	
		P.I. (POINT OF INTERSECTION)
NOT USED		TEMPORARY BENCH MARK
47.55	NOT USED	FINISH GRADE ELEVATON
NOT USED	42.6	ELEVATION OF ORIGINAL GROUND
		RADIAL POINT
		FLOW LINE AND DIRECTION
		TOP OF CUT
		TOP OF FILL
		TOE OF CUT OR FILL
200	180	CONTOUR LINE
		CONCRETE (IN PLAN)
		CONCRETE (IN SECTION)
		PAVEMENT
NOT USED		ROCKS
NOT USED		STUMPS
		TREES
		ROADS
	TP	UTILITY POLE (PP=POWER POLE, TP= TEL POLE, JP=JOINT POLE)
		GUY WIRE
		FENCE
		BOUNDARY LIMITS, W/DESIGNATION
		CENTERLINE
NOT USED		MARSH
		WETLAND
NOT USED		SPRING
TP–4	TP–4	TEST PIT AND DESIGNATION
		EXPLORATION BORE HOLE
		PROPERTY CORNER
		SURVEY MONUMENT
		CONTROL POINT
		DRIVEWAY

DETAIL AND SECTION DESIGNATION



VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING 0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

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EUREKA, CA. 95501
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707–441–8855

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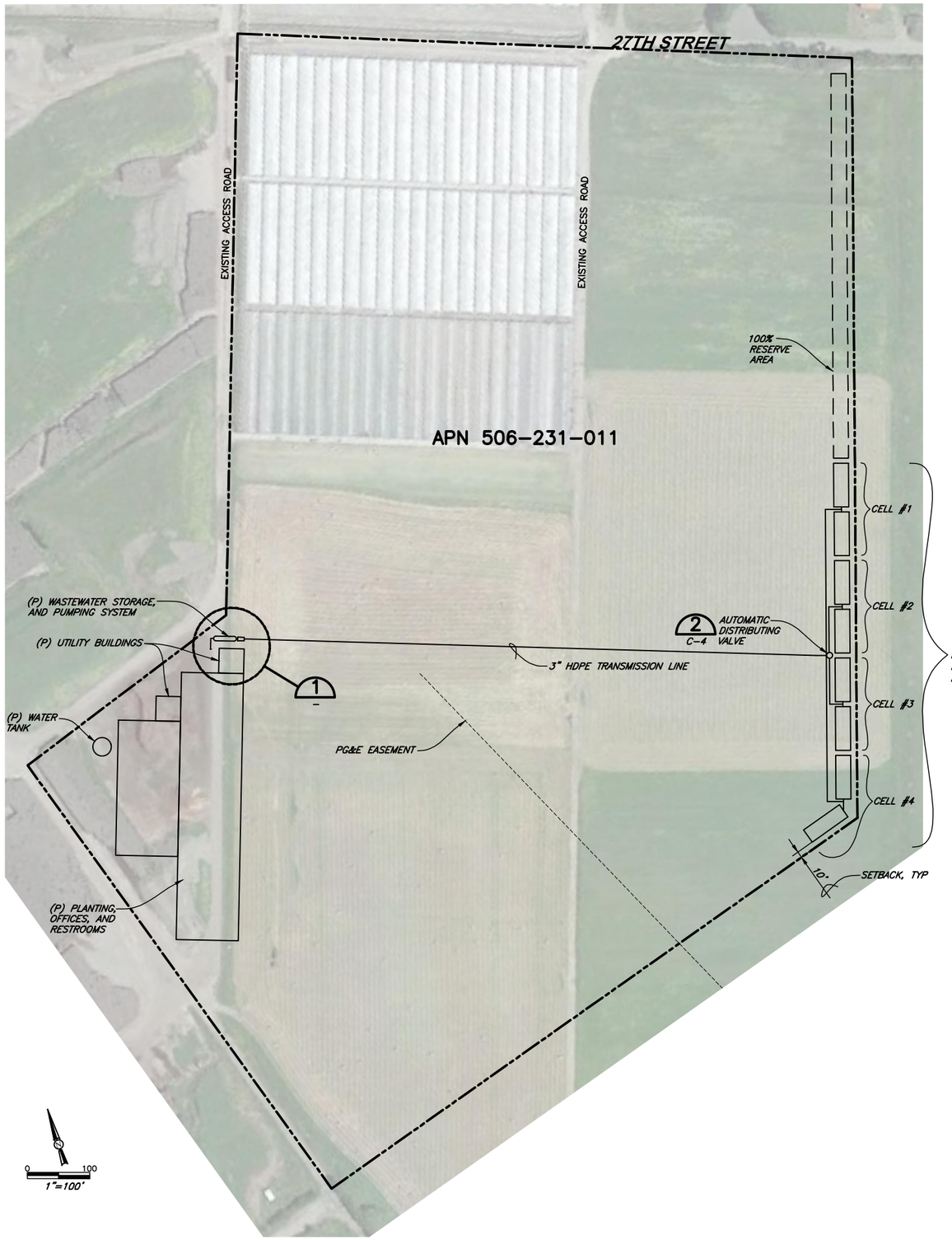
DSGN GAV | DR CRS | CHK GAV | APVD

ARCATA LAND COMPANY, LLC
ONSITE WASTEWATER TREATMENT AND DISPOSAL SYSTEM
ARCATA, CALIFORNIA

STANDARD ABBREVIATIONS AND LEGENDS

SHEET G–2
SEQ 2
DATE 06/2020
PROJ. NO. 017062.100

SAVED: 6/12/2020 2:06 PM CSWANSON, PLOTTED: 6/12/2020 2:06 PM CHUCK SWANSON
\\Eureka\Projects\2017\017062–ArcataLandCo\100–Leasfield\Dwgs\506–231–011\017062–100–STND–ABBR.dwg



GENERAL NOTES:

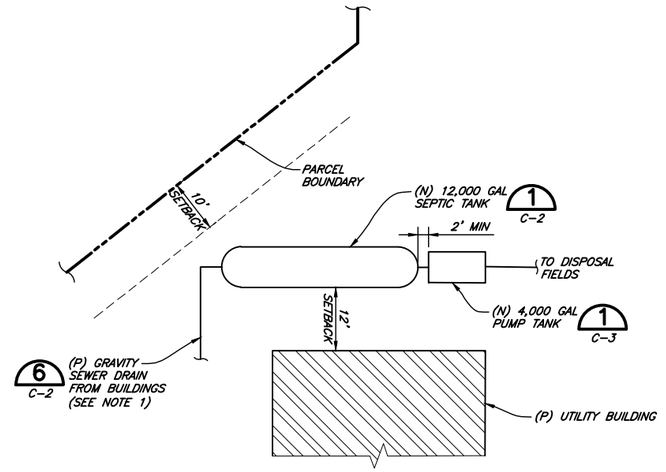
1. THE WORKING DRAWINGS ARE GENERALLY DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND OR ELBOW REQUIRED FOR INSTALLATION IN THE SPACE PROVIDED. THEY DO NOT SHOW EVERY DIMENSION, COMPONENT PIECE, SECTION, JOINT OR FITTING REQUIRED TO COMPLETE THE PROJECT. ALL LOCATIONS FOR WORK SHALL BE CHECKED AND COORDINATED WITH EXISTING CONDITIONS IN THE FIELD BEFORE BEGINNING CONSTRUCTION. EXISTING UNDERGROUND UTILITIES WITHIN THE LIMITS OF EXCAVATION SHALL BE VERIFIED AS TO CONDITION, SIZE AND LOCATION BY UNCOVERING, PROVIDED SUCH IS PERMITTED BY LOCAL PUBLIC AUTHORITIES WITH JURISDICTION, BEFORE BEGINNING CONSTRUCTION. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. THE CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
3. THE CONTRACTOR SHALL PROVIDE A COPY OF THE TRENCH PERMIT FROM THE CALIFORNIA DIVISION OF INDUSTRIAL SAFETY PRIOR TO THE EXCAVATION OF ANY TRENCH OVER FIVE FEET IN DEPTH.
4. CONTRACTOR SHALL PERFORM TRENCH WORK IN CONFORMANCE WITH THE CALIFORNIA DIVISION OF INDUSTRIAL SAFETY REQUIREMENTS. SAID SHALL CONFORM TO ALL APPLICABLE OCCUPATIONAL SAFETY AND HEALTH STANDARDS, RULES, REGULATIONS AND ORDERS ESTABLISHED BY THE STATE OF CALIFORNIA AND OTHER APPLICABLE AGENCIES.
5. CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, GENERAL CONTRACTOR WILL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. ALL WORK AND EQUIPMENT SHALL COMPLY WITH THE CALIFORNIA DIVISION OF INDUSTRIAL SAFETY REQUIREMENTS. THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY, AND NOT BE LIMITED TO NORMAL WORKING HOURS. CONTRACTOR FURTHER AGREES TO HOLD HARMLESS, INDEMNIFY AND DEFEND THE OWNER, THE ENGINEER AND HIS/HER CONSULTANTS.
6. THE CONTRACTOR SHALL INDEPENDENTLY REVIEW GROUND, TOPOGRAPHY THROUGHOUT THE SITE, AND ASSUME THE RISK OF COMPLETING THE WORK SET OUT ON THESE PLANS, REGARDLESS OF ROCK, WATER TABLE OR OTHER CONDITIONS WHICH MAY BE ENCOUNTERED IN THE COURSE OF THE WORK.
7. ANY DISCREPANCY DISCOVERED BY THE CONTRACTOR IN THESE PLANS, OR ANY FIELD CONDITIONS DISCOVERED BY THE CONTRACTOR THAT MAY DELAY OR OBSTRUCT THE PROPER COMPLETION OF THE WORK SHOWN HEREIN SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND THE ENGINEER IMMEDIATELY UPON DISCOVERY. SAID NOTIFICATION SHALL BE IN WRITING.
8. PAVED AREAS AT THE ACCESS POINTS SHALL BE SWEPT OR VACUUMED AS OFTEN AS EACH DAY TO ELIMINATE TRACKING SOIL AND DEBRIS ONTO THE PUBLIC STREETS. ANY SOILS AND/OR DEBRIS, ROCK, GRAVEL, ETC. TRACKED ONTO PUBLIC STREET AS A RESULT OF THIS PROJECT SHALL BE REMOVED IMMEDIATELY. PAVED AREAS WITHIN THE RIGHT OF WAY SHALL BE LEFT IN A CLEANED CONDITION AT THE END OF EACH WORK DAY.
9. ALL UNDERGROUND IMPROVEMENTS SHALL BE INSTALLED TESTED AND APPROVED PRIOR TO PAVING OR BACKFILLING.
10. THE CONTRACTOR SHALL NOT BEGIN EXCAVATING UNTIL ALL EXISTING UTILITIES HAVE BEEN MARKED IN THE FIELD. THE CONTRACTOR SHALL NOTIFY EACH APPLICABLE ENTITY AT LEAST 48 HOURS PRIOR TO COMMENCING WORK. CALL UNDERGROUND SERVICE ALERT (USA) TWO WORKING DAYS BEFORE DIGGING AT (800) 227-2600 FOR LOCATES.
11. GRADING AND CONSTRUCTION CONTRACTORS SHALL STOP WORK IF CULTURAL RESOURCES ARE DISCOVERED DURING CONSTRUCTION.
13. THE CONTRACTOR SHALL GIVE THE INSPECTOR 48 HOURS ADVANCE NOTICE OF ANY CONSTRUCTION OR REQUIRED TESTING.
14. THE CONTRACTOR SHALL INSTALL APPROVED PHYSICAL BARRIERS TO ENSURE THAT ALL DEBRIS IS CAPTURED AND REMOVED FROM SURFACE RUNOFF PRIOR TO RELEASING SITE RUNOFF.
15. ALL SITE GRADING WILL BE INSPECTED BY THE ENGINEER. COMPACTION TESTING WILL BE CONDUCTED AFTER SUFFICIENT DENSITIES HAVE BEEN ACHIEVED IN THE CONTRACTOR'S OPINION. THE CONTRACTOR SHALL MAKE ALL REQUESTS FOR MATERIALS TESTING AT LEAST 48 HOURS IN ADVANCE. ANY SOILS THAT FAIL TO MEET THE REQUIRED COMPACTION LEVELS SHALL BE REWORKED, AND RECOMPACTED. ALL COSTS ASSOCIATED WITH ACHIEVING COMPACTION STANDARDS SHALL BE INCLUDED IN THE CONTRACTOR'S ORIGINAL BID.
16. THE TOPSOIL SHALL BE REMOVED FROM CUT AND FILL AREAS AND SHALL NOT BE USED FOR ENGINEERED FILL. TOPSOIL SHALL BE STOCKPILED SEPARATELY AND REPLACED OVER AREAS OF EXPOSED SUBGRADE TO A MINIMUM DEPTH OF 6 INCHES.
17. NO CHANGES OR MODIFICATIONS SHALL BE MADE TO THESE PLANS WITHOUT WRITTEN APPROVAL BY THE ENGINEER.
18. TOPSOIL AND VEGETATION OUTSIDE OF CONSTRUCTION SHALL NOT BE DISTURBED.

DISPOSAL FIELD NOTES:

1. PRESSURE HEAD OF 3FT SHALL BE MAINTAINED AT END OF FURTHEST LINE IN DISTRIBUTION SYSTEM. CONTRACTOR TO VERIFY THIS REQUIREMENT IS MET IN THE FIELD.
2. ALL VALVE AND IRRIGATION BOXES ARE TO BE RATED FOR INCIDENTAL H-20 TRAFFIC LOADING.
3. DISPOSAL FIELD SHALL BE CONSTRUCTED USING ONLY HAND TOOLS OR LIGHTWEIGHT TRACK-MOUNTED EQUIPMENT APPROVED BY THE ENGINEER. NO HEAVY EQUIPMENT WILL BE PERMITTED IN THE AREA OF THE DISPOSAL FIELD.
4. EXISTING GROUND OUTSIDE OF THE IMMEDIATE LIMITS OF THE INDIVIDUAL DISPOSAL FIELD AND TRENCHES SHALL REMAIN UNDISTURBED.

EROSION CONTROL NOTES:

1. BMP'S TO BE INSTALLED PRIOR TO SITE BEING DISTURBED AND MAINTAINED SUCH THAT NO VISIBLE SEDIMENT LEAVES THE SITE.
2. TRACKING CONTROLS: ENTRANCE/EXIT.
3. DISTURBED AREAS PROTECTED TO EXTENT PRACTICAL DURING CONSTRUCTION.
4. STOCKPILE MANAGEMENT TO BE IMPLEMENTED.
5. DISTURBED AREA STABILIZED AS SOON AS POSSIBLE.



DETAIL 1 (NTS)

(ENLARGED WASTEWATER SYSTEM PLAN)

NOTES:

1. GRAVITY SEWER LATERAL FROM (P) BUILDINGS SHALL MAINTAIN MINIMUM 2% SLOPE, DRAIN FREELY TO (N) SEPTIC TANK, BE 4" DIA MIN. SCHED 80 PVC, HAVE CLEANOUTS INSTALLED NO MORE THAN 100 FT APART, AND HAVE CLEANOUTS INSTALLED AT ALL PIPE ENDS AND BENDS.

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING 0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

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WWW.SHN-ENGR.COM
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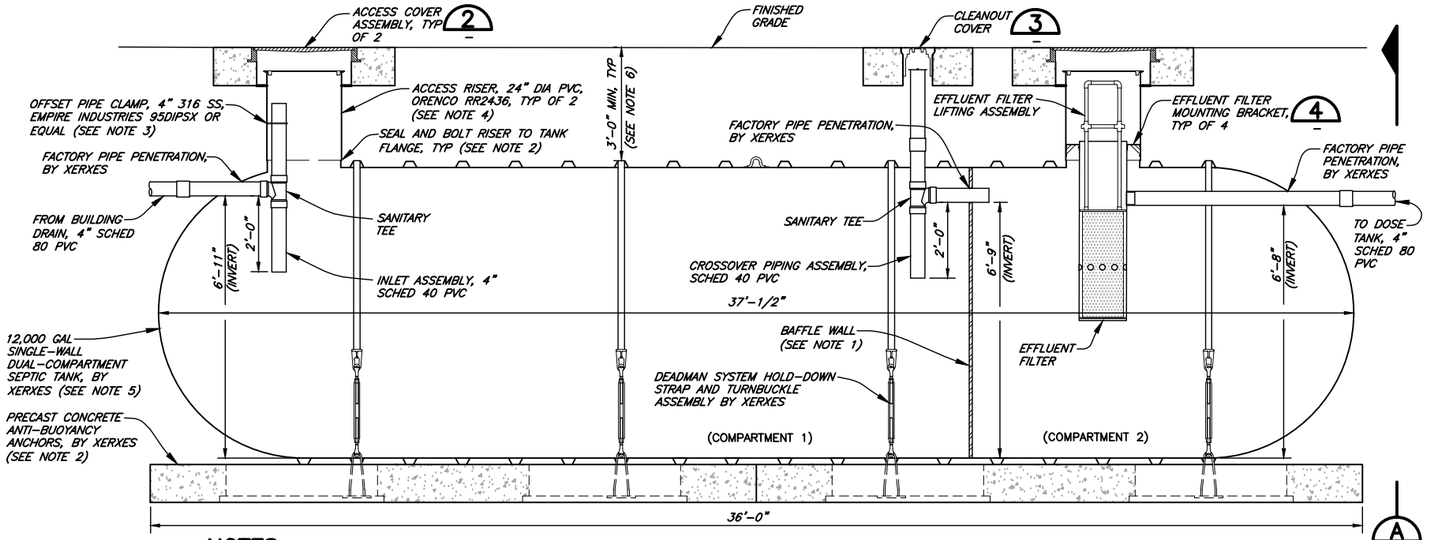
DSGN GAV
DR CRS
CHK GAV
APVD

ARCATA LAND COMPANY, LLC
ONSITE WASTEWATER TREATMENT AND DISPOSAL SYSTEM
ARCATA, CALIFORNIA

SITE PLAN

SHEET C-1
SEQ 3
DATE 06/2020
PROJ. NO. 017062.100

SAVED: 6/12/2020 2:05 PM CSWANSON, PLOTTED: 6/12/2020 2:05 PM CHUCK SWANSON
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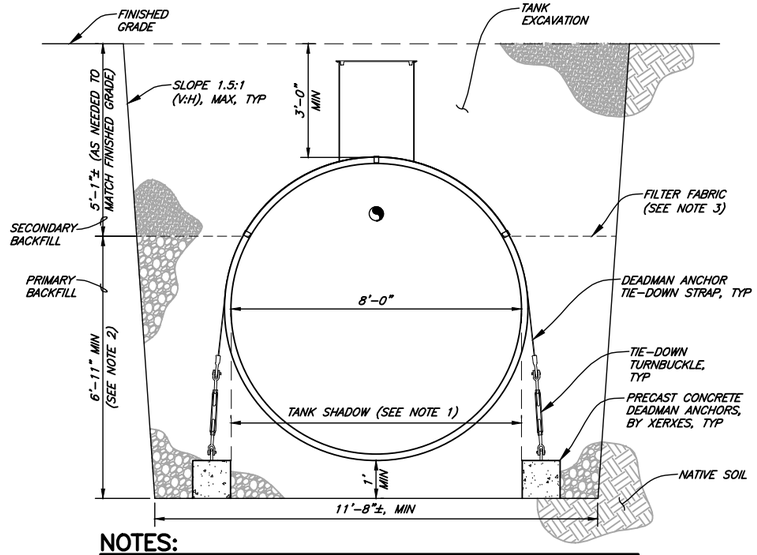


NOTES:

1. SEPTIC TANK COMPARTMENT 1 MUST BE TWICE THE VOLUME OF COMPARTMENT 2, AT A MINIMUM.
2. XERXES TANK, ANCHORS, AND ALL APPURTENANCES SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. SEE SHEET C-5 FOR XERXES ANTI-FLOATATION ANCHOR CALCULATIONS.
3. ALL BOLT HOLES IN TANK RISERS SHALL BE SEALED WATERTIGHT WITH EXTERIOR-GRADE SILICONE SEALANT.
4. RISER LENGTH, INLET PIPE VERTICAL EXTENSION LENGTH, CROSSOVER PIPE VERTICAL EXTENSION LENGTH, AND EFFLUENT FILTER HANDLE ASSEMBLY LENGTH MAY NEED TO BE LONGER OR CUT TO LENGTH AS-NEEDED TO ALLOW EASY ACCESS FROM FINISHED GRADE. CONTRACTOR TO VERIFY FINISHED GRADE AND DEPTH OF TANK COVER PRIOR TO ORDERING MATERIALS.
5. DRY TANK WEIGHT IS APPROXIMATELY 7,600 POUNDS.
6. TANK SHALL BE INSTALLED LEVEL TO ENSURE PROPER GRAVITY PIPE FLOW AND PREVENT BACKFLOW OF SEWAGE INTO THE GRAVITY DRAIN FROM BUILDINGS.

SEPTIC TANK DETAIL 1

NTS — C-1

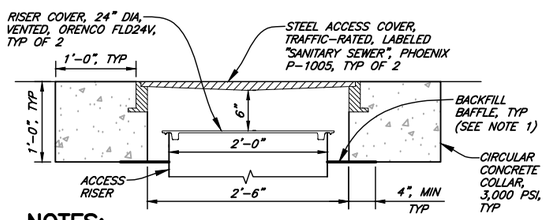


NOTES:

1. DEADMAN ANCHORS SHALL NOT BE PLACED INSIDE THE TANK SHADOW.
2. PRIMARY BACKFILL SHALL EXTEND TO 75% OF THE TANK DIAMETER FROM THE BOTTOM OF THE TANK, AT A MINIMUM.
3. FILTER FABRIC SEAMS SHALL OVERLAP 12" AT A MINIMUM.
4. USE HAND-GUIDED VIBRATING PLATE MECHANICAL COMPACTOR FOR SOIL COMPACTION.

SECTION A

NTS

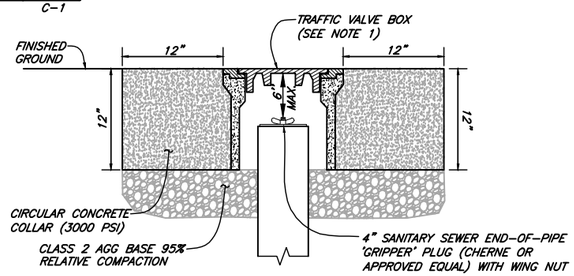


NOTES:

1. CIRCULAR BACKFILL BAFFLE SHALL BE CUT TO FIT ACCESS RISER OUTSIDE DIAMETER SNUGLY, AND EXTEND BELOW CONCRETE COLLAR 4" AT A MINIMUM.

ACCESS COVER ASSEMBLY DETAIL 2

NTS

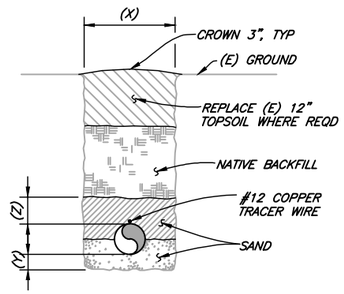


NOTES:

1. INSTALL CHRISTY MODEL G5 TRAFFIC VALVE BOX (OR APPROVED EQUAL) AND CAST IRON LID MARKED "SEWER". CENTER THE BOX OVER THE RISER, AND SET THE LID TO FINISHED GRADE.

CLEANOUT COVER DETAIL 3

NTS



NOTES:

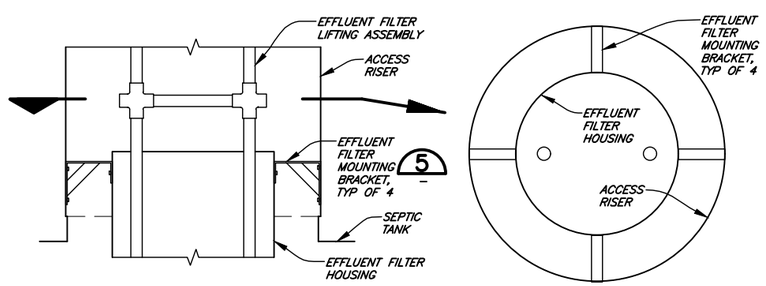
1. CROWN AS DIRECTED BY ENGINEER
2. PROVIDE NECESSARY DRAINAGE AS REQD
3. REPLACE TOPSOIL AND RESEED PER SPECIFICATIONS
4. CLEAN UP ALL GRAVEL AND SPOILS

TRENCH DIMENSION CHART

PIPE SIZE	(X) TRENCH WIDTH (MIN)	(X) TRENCH WIDTH (MAX)	(Y) BEDDING (MIN)	(Z) COVER (MIN)
4"	18"	30"	4"	6"
6"	18"	30"	6"	8"
8"	21"	32"	6"	10"
10"	24"	36"	8"	12"
12"	26"	36"	8"	12"
15"	30"	42"	8"	12"
18"	32"	44"	8"	12"
21"	36"	48"	8"	12"
24"	42"	48"	8"	12"

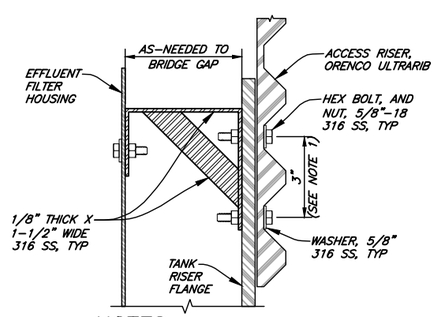
TYPICAL TRENCH DETAIL 6

NTS — C-1



EFFLUENT FILTER MOUNTING BRACKET DETAIL 4

NTS



NOTES:

1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN FIELD.

DETAIL 5

NTS

NOTES:

1. ALL TANKS, RISERS, COVERS, VALVE BOXES, AND PIPE TRENCHES SHALL BE H-20 TRAFFIC RATED.

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" — IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

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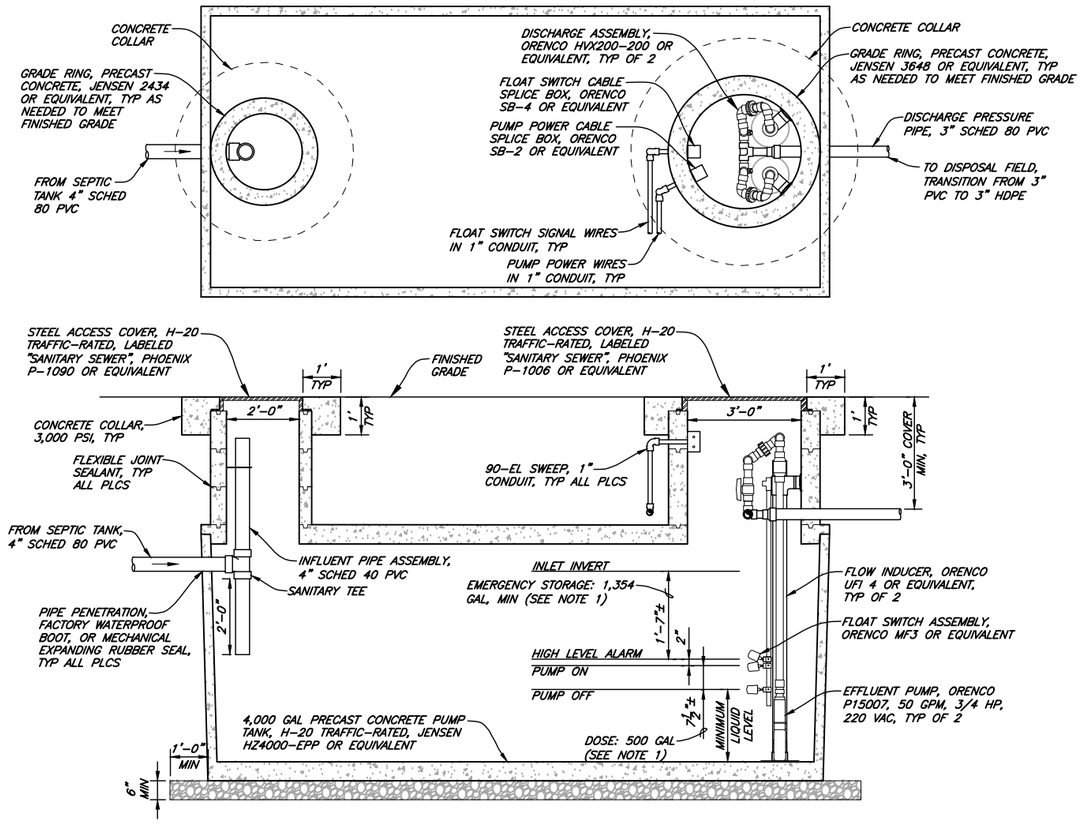
DSGN GAV | DR CRS | CHK GAV | APVD

ARCATA LAND COMPANY, LLC
ONSITE WASTEWATER TREATMENT AND DISPOSAL SYSTEM
ARCATA, CALIFORNIA

SEPTIC TANK DETAILS

SHEET C-2
SEQ 4
DATE 06/2020
PROJ. NO. 017062.100

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\\Eureka\Projects\2017\017062-ArcataLandCo\100-Leachfield\Dwgs\506-231-011\017062_100-TANK-DETLS.dwg



NOTES:

1. VOLUME DIMENSIONS ARE APPROXIMATE AND MAY VARY BASED ON THE ACTUAL DIMENSIONS OF THE TANK. EMERGENCY STORAGE VOLU,ME AND DOSE VOLUME SHALL BE CONFIRMED BASED ON THE ACTUAL DIMENSIONS OF THE TANK INSTALLED.
2. TANK SHALL BE LEAK TESTED IN ACCORDANCE WITH HUMBOLDT COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH ONSITE WASTEWATER TREATMENT SYSTEM GUIDELINES.(2017) SECTION 4.3.
3. VALVE VAULT LID SHALL BE INSTALLED IN PRECAST CONCRETE VAULT COVER IN ACCORDANCE WITH MANUFACTURER INSTRUCTIONS.

PUMP TANK DETAIL 1

NTS C-1

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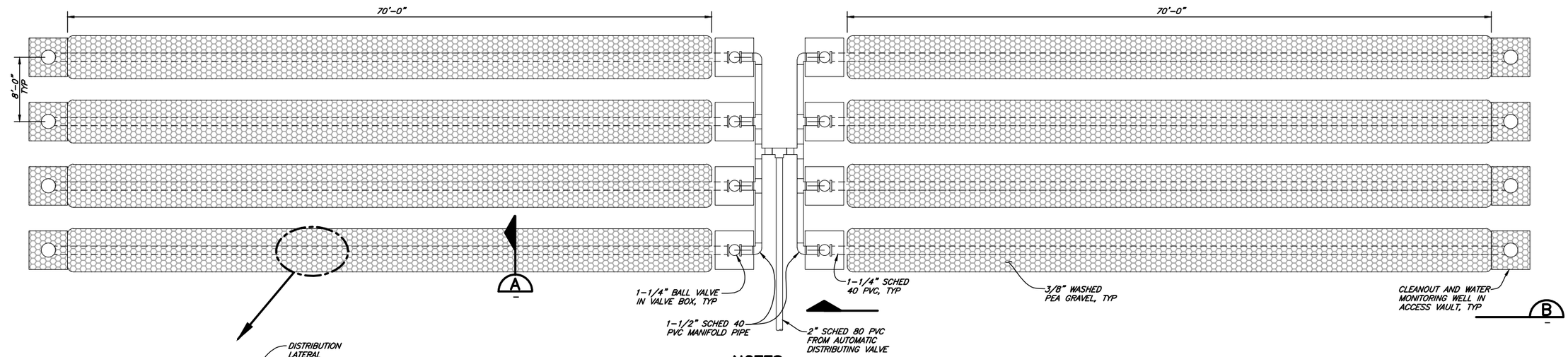
DSGN	GAV
DR	CRS
CHK	GAV
APVD	

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ONSITE WASTEWATER TREATMENT AND DISPOSAL SYSTEM
ARCATA, CALIFORNIA

DOSE TANK DETAILS

SHEET C-3
SEQ 5
DATE 06/2020
PROJ. NO. 017062.100

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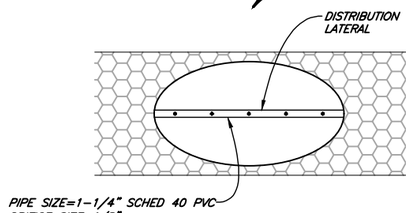


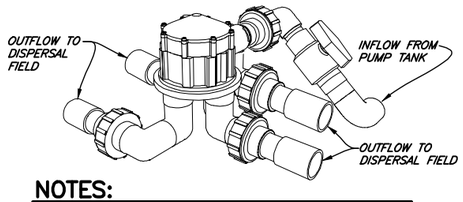
NOTES:

1. TYP OF 4.

DETAIL 1
NTS –

(DISTRIBUTION SYSTEM LAYOUT)



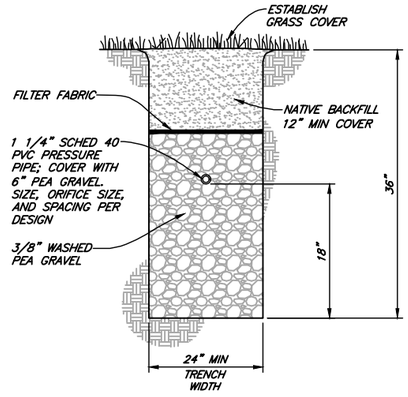


NOTES:

HYDROTEK VALVE, MODEL #V6404A, BY ORENCO SYSTEMS, LLC.

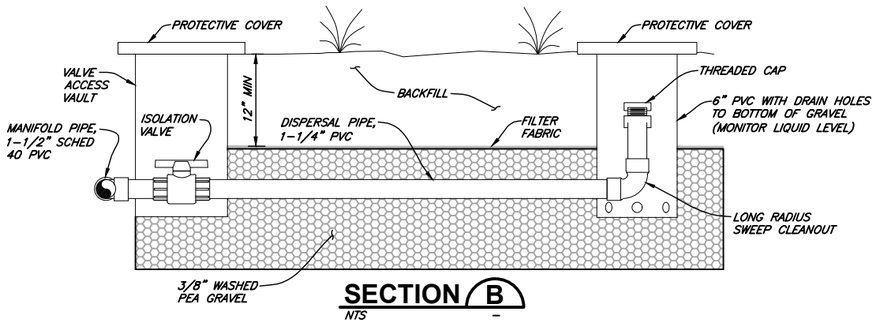
DETAIL 2
NTS C-1

(AUTOMATIC DISTRIBUTING VALVE)



SECTION A
NTS –

(TRENCH SECTION)



SECTION B
NTS –

(LONGITUDINAL TRENCH SECTION)

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CHK GAV
APVD

ARCATA LAND COMPANY, LLC
ONSITE WASTEWATER TREATMENT AND DISPOSAL SYSTEM
ARCATA, CALIFORNIA

DISPOSAL FIELD DETAILS

SHEET C-4
SEQ 6
DATE 06/2020
PROJ. NO. 017062.100

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XERXES
CORPORATION

May 19, 2020

David Holmes
E-mail: david.holmes@shawcor.com

CC: Bill Robbins

Re: One 8-foot-diameter 12,000-gallon Single-Wall Tank
Buoyancy Calc – Arcata Land Co

Dear David:

We have summarized the buoyancy data you requested. All of the calculations are based on the site data you have provided to us and on nominal engineering values for the physical parameters.

All of the calculations are based on standard engineering practice. We use approaches in a manner similar to the protocols presented in the PEI/RP 100-17 manual to calculate the underground tank Buoyancy Safety Factors.

It is the tank owner's responsibility to determine the suitability and applicability of installation. Our sole responsibility in any installation is as stated in our Limited Warranty.

Our calculations show that, given the installation parameters that you have provided to us (calculated with the tank empty, the water table at the same elevation as the top of the tank, burial depth of 3 feet, and using factory-supplied deadmen) the Buoyancy Safety Factor is **1.73:1**. We recommend a minimum Buoyancy Safety Factor of 1.20:1. I have included a copy of the worksheet for your files.

If we can be of additional assistance, please feel free to contact us.

Sincerely,

Jeffrey Lexvold
Sales Support Manager

Attachment

7901 Xerxes Avenue South • Minneapolis • Minnesota • United States • 55431-1288
Ph: 952-887-1890 • **Fax:** 952-887-1870 • **Web:** www.zcl.com

XERXES CORPORATION

DEADMAN BURIAL WATER AT TANK TOP

Arcata Land Co

05/19/20

TANK DATA

NOM. CAP. (GAL.)	12000
TYPE (SINGLEWALL=1;DW=3)	1
DRY=1; WET=2	1
NOM. TANK DIA. (FT.)	8
**********	**********
PROD. STORED (GAL)	0
SPEC. GRAV. USED	1.00

INSTALLATION

TOTAL COVER INCLUDING SOIL & TOP SLAB (FT)	3.00
TOP SLAB THICKNESS (IN)	0.00
TOP SLAB LENGTH (FT)	0.00
TOP SLAB WIDTH (FT)	0.00
DEADMAN LNG (FT)	36.00
DEADMAN WID (IN)	12.00
DEADMAN THK (IN)	12.00
# OF 30" DIAMETER RISERS	3

SAFETY FACTOR

DOWN FORCE/UP FORCE = **1.73 :1**

TOTAL WEIGHTS

DOWN FORCES

CONCRETE WEIGHT	6336.00	LBS.	
BACKFILL WEIGHT	162729.82	LBS.	
TANK WEIGHT	5100.00	LBS.	
PRODUCT WEIGHT	0.00	LBS.	
TOTAL DOWN FORCE-----			174165.82 LBS.

UP FORCES

TANK DISP. FORCE	100924.32	LBS.	
TOTAL UP FORCE-----			100924.32 LBS.

WORKSHEET

TANK DATA

SHELL DIAMETER----------	7.67	FT.	*	ACTUAL CAP (GAL)	11682.00
SHELL LENGTH----------	29.38	FT.	*	TANK WT. (LBS.)	5100.00
DOME PROJECTION----------	3.83	FT.	*	O.A.L. (FT.)	37.04
MID POINT HEIGHT----------	6.83	FT.	*	NUMBER OF RIBS	22.00
COLUMN HEIGHT----------	10.67	FT.	*	**********	**********
RIB VOLUME----------	2026.00	CU. IN.		DOME A. (SQ FT)	46.16
				DOME VOL. (CU FT)	235.95

REINFORCED CONCRETE VOLUMES (CU. FT.)

TOP SLAB----------	0.00	DEADMEN	72.00
FORCE = VOL. X 150 LBS/CF	0.00	**FORCE (LBS) = VOL. X 88 LBS/CF**	6336.00

TOP SLAB & DEADMEN FORCE 6336.00 LBS.

BACKFILL VOLUMES (CU. FT.)

OVER TANK SHELL----------	631.45	DRY	185.27	WET
OVER TANK DOMES----------	138.49	DRY	58.99	WET
OVER DEADMEN----------	216.00	DRY	552.00	WET
END WEDGE----------	99.69	DRY	106.53	WET
SUBTOTAL VOL (CU. FT.)	1085.63	DRY	902.79	WET
SUBTOTAL WTS (LBS.)	108562.57	DRY	54167.25	WET
TOTAL BACKFILL WEIGHT	162729.82	LBS.		

BUOYANCY

SHELL VOLUME----------	1356.07	CUBIC FT.
DOME VOLUME----------	235.95	CUBIC FT.
RIB VOLUME----------	25.79	CUBIC FT.
TOTAL VOLUME	1617.81	CUBIC FT.
VOL X 7.48 GAL/CU.FT.	12101.24	GALLONS

FORCE = GAL X 8.34 (LBS./GAL) 100924.32 LBS.

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ARCATA LAND COMPANY, LLC
ONSITE WASTEWATER TREATMENT AND DISPOSAL SYSTEM
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BUOYANCY-CALCS

SHEET C-5
SEQ 7
DATE 06/2020
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ARCATA LAND COMPANY CULTIVATION PROJECT AIR QUALITY & GREENHOUSE GAS EMISSIONS ASSESSMENT

Humboldt County, California

September 25, 2020

Prepared for:

Jordan Main
3140 Peacekeeper Way
McClellan, CA 95652

Prepared by:

Jay Witt
James A. Reyff

ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality
429 E. Cotati Avenue
Cotati, CA 94931
(707) 794-0400
I&R Job #: 20-111

Introduction

The purpose of this report is to address air quality and greenhouse gas (GHG) emissions impacts associated with the proposed development of Arcata Land Company's commercial cannabis cultivation project on 38 acres located between 27th Street and Foster Avenue, west of the City of Arcata, in an unincorporated area of Humboldt County, California ("Project"). The air quality impacts and GHG emissions associated with the project would be from the construction and operation of a new administrative office and planting building, utility rooms, full sun and mixed light hoop-house structures, employee parking lot, septic system leach fields, security fencing, and storm water management features (e.g., detention basin). Air pollutant and GHG emissions associated with the project were predicted using appropriate computer models. In addition, the potential odor impacts to nearby residents were evaluated. This analysis addresses those issues following the guidance provided by the North Coast Unified Air Quality Management District (NCUAQMD).[1]

Project Description

The project site has a long history of heavy industrial and agricultural use and is currently used for agriculture. Approximately 287,500 square feet (sf) of existing greenhouses are used to grow flowers, while the open fields have been used to grow both flowers and mixed row crops. It is adjacent to an existing, permitted cultivation, processing, manufacturing, and distribution site. The project proposes to merge portions of three parcels, grade the site using sand stockpiled on an adjacent parcel under common ownership, construct, and operate:

- A new administrative office, planting building, and two attached utility buildings with an aggregate square feet (sf) of 67,330.
- 193 hoop house-style greenhouses totaling approximately 726,530 sf of new hoop structures, and one million sf total (287,500 sf of hoop houses currently exist).
    - Of the one million total sf of operating hoop houses proposed, approximately 75% will operate as "full sun" (i.e., no artificial light) and the remainder, 25%, will operate in mixed light (i.e., sunlight and artificial light).
- A new 22,725 sf asphalt/concrete parking lot with 66 total spaces.
- New security fencing, on-site aggregate-based access roadways, and concrete pathways.
- Two new stormwater detention basins.
- New septic, pump tank, and leach fields.

Setting

The project is in Humboldt County, which is in the North Coast Air Basin, which includes all of Humboldt, Del Norte, Trinity, and Mendocino counties, as well as a portion of Sonoma County. Ambient air quality standards have been established at both the State and federal level. The area is listed as "attainment" or "unclassified" for all the federal and state ambient air quality standards except for the state 24-hour particulate (PM_{10}) standard in Humboldt County only. The District has not exceeded the federal annual standard for particulate matter during the last five-year period.

[1] North Coast Unified Air Quality Management District website, *Planning & CEQA*, September 2020. http://www.ncuaqmd.org

Air Pollutants of Concern

High ozone levels are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NO_X) and aggravate respiratory and cardiovascular diseases, reduce lung function, and increase coughing and chest discomfort. These precursor pollutants react under certain meteorological conditions to form high ozone levels. Controlling the emissions of these precursor pollutants is the focus of the North Coast's attempts to maintain ozone levels below federal and state standards.

Particulate matter is another problematic air pollutant in the area. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less (PM_{10}) and fine particulate matter where particles have a diameter of 2.5 micrometers or less ($PM_{2.5}$). Elevated concentrations of PM_{10} and $PM_{2.5}$ are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter levels aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

Regulatory Agencies

CARB has adopted and implemented several regulations for stationary and mobile sources to reduce emissions of diesel particulate matter (DPM). Several of these regulatory programs affect medium and heavy-duty diesel trucks that represent the bulk of DPM emissions from California highways. These regulations include the solid waste collection vehicle (SWCV) rule, in-use public and utility fleets, and the heavy-duty diesel truck and bus regulations. In 2008, CARB approved a new regulation to reduce emissions of DPM and NO_X from existing on-road heavy-duty diesel fueled vehicles.[2] The regulation requires affected vehicles to meet specific performance requirements between 2014 and 2023, with all affected diesel vehicles required to have 2010 model-year engines or equivalent by 2023. These requirements are phased in over the compliance period and depend on the model year of the vehicle.

The NCUAQMD is the agency tasked with managing air quality in the region. At the State level, the CARB (a part of the California Environmental Protection Agency [EPA]) oversees regional air district activities and regulates air quality at the State level. The NCUAQMD has not published California Environmental Quality Act (CEQA) Air Quality Guidelines. However, when applicable, the NCUAQMD follows environmental review procedures and guidelines as outlined in their Rules & Regulations, Appendix A, *Procedures for Environmental Impact Review*.[3]

NCUAQMD has established rules for the control of air pollutants within their district. The rules most applicable to this project include:

- *Regulation 1, Rule 102 – Required Permits*. The project plans on installing boilers which may be subject to new source review rules and regulations and could require an air permit.
- *Regulation 1, Rule 104 – Prohibitions*. Section D outlines the rules for compliance with fugitive dust control.

[2] Available online: http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm. Accessed: November 21, 2014.
[3] North Coast Air Quality Management District. 2015. *Appendix A Procedures for Environmental Impact Review*. September.

- *Regulation 1, Rule 110 – New Source Review (NSR) And Prevention of Significant Deterioration (PSD)*. Section provides the Best Available Control Technology (BACT) significance thresholds applied for CEQA analysis purposes.

Humboldt 21st Century – General Plan

Humboldt County updated its General Plan in October 2017 and included an Air Quality Element (Chapter 15) to it. The following goals, policies, and actions are applicable to the proposed project:

Applicable Goals

AQ-G1 *Improved Air Quality.* Air quality that meets state and federal ambient air quality standards.

AQ-G2 *Particulate Emissions.* Successful attainment of California Ambient Air Quality Standards for particulate matter.

AQ-G2 *Other Criteria Pollutants.* Maintain attainment of Ambient Air Quality Standards for ozone and other criteria pollutants which may be subject to tightening standards.

Applicable Policies

AQ-P4 *Construction and Grading Dust Control*. Dust control practices on construction and grading sites shall achieve compliance with NCUAQMD fugitive dust emission standards.

AQ-P5 *Air Quality Impacts from New Development*. During environmental review of discretionary permits, reduce emissions of air pollutants from new commercial and industrial development by requiring feasible mitigation measures to achieve the standards of the NCUAQMD.

AQ-P6 *Buffering Land Uses*. During environmental review of discretionary commercial and industrial projects, consider the use of buffers between new sources of emissions and adjacent land uses to minimize exposure to air pollution.

Applicable Standards

AQ-S1 *Construction and Grading Dust Control.* Ground disturbing construction and grading shall employ fugitive dust control strategies to prevent visible emissions from exceeding NCUAQMD regulations and prevent public nuisance.

AQ-S3 *Evaluate Air Quality Impacts.* During environmental review of discretionary projects, evaluate new commercial and industrial sources of emissions using analytical methods and significance criteria used, or recommended by, the NCUAQMD.

AQ-S4 *Buffering Land Uses.* When considering buffers between new commercial and industrial sources of emissions and adjacent land uses follow the California Air Resources Board's Air Quality and Land Use Handbook: A Community Health Perspective and NCUAQMD recommendations.

Implementation Measures

AQ-IM2 *North Coast Air Quality Management Permitting Coordination.* The County shall maintain efficient and timely procedures for project referral to the North Coast Air Quality Management District for review and consultation.

Humboldt County Code Regulating Commercial Cannabis Activities

In 2018, Humboldt County amended their code regulating to commercial cannabis activities.[4] As part of the amendment process, and as required by CEQA, the county prepared an environmental impact report (EIR). The Draft EIR (DEIR) contained an analysis of air quality that found construction-generated emissions of criteria air pollutants and precursors from cannabis cultivation projects would be less than significant. Thus, the short-term construction generated emissions would not exceed NCUAQMD's recommended daily emissions threshold for PM_{10}.[5]

The DEIR did find that long-term operation of commercial cannabis cultivation in the County would result in significant PM_{10} emissions during the harvest season, primarily from vehicle travel on unpaved roadways. However, the DEIR found there was no feasible mitigation measure available to address this impact. Routine watering of roadways, the use of dust suppressants, and paving of roadways were considered as mitigation measures. It is important to note that harvest season lasts approximately four to six weeks and annual emissions of PM_{10} from an individual cultivation operation are below significance thresholds.

Significance Thresholds

NCUAQMD has not formally adopted significance thresholds and instead recommends using the Best Available Control Technology (BACT) emission rate thresholds for stationary sources as defined and listed in the NCUAQMD Regulation I, Rule 110, *New Source Review And Prevention of Significant Deterioration*, Section E (Requirements), Item 1 (Best Available Control Technology [BACT]). These rates are summarized in Table 1.

[4] Ordinance No. 2599, Board of Supervisors, County of Humboldt, State of California. May 2018. https://humboldtgov.org/DocumentCenter/View/63734/Ord-No-2599-CCLUO-inland-certified-copy-PDF

[5] Humboldt County, 2017. Draft Environmental Impact Report for the Amendments to Humboldt County Code Regulating Commercial Cannabis Activities, SCH#2017042022.September.https://humboldtgov.org/2308/Cannabis-EIR

Table 1. NCUAQMD BACT Significance Thresholds

Criteria Air Pollutant	Daily Emissions (lbs./day)	Annual Emissions (tons/year)
CO	500	100
Fluorides	15	3
Hydrogen sulfide	50	10
Lead	3.2	0.6
NOx	50	40
PM_{10}	80	15
$PM_{2.5}$	50	10
ROG	50	40
Reduced sulfur compounds	50	10
Sulfur oxides	80	40
Sulfuric acid mist	35	7
Total Reduced sulfur compounds	50	10

AIR QUALITY IMPACTS AND MITIGATION MEASURES

Impact: Conflict with or obstruct implementation of the applicable air quality plan?

NCUAQMD is one of three air districts responsible for overseeing compliance with State and Federal laws, regulations, and programs within the North Coast Air Basin. NCUAQMD includes Del Norte, Humboldt, and Trinity Counties. NCUAQMD is listed as "attainment" or "unclassified" for all the federal and state ambient air quality standards except for the state 24-hour PM_{10} standard in Humboldt County only. In 1995, NCUAQMD provided a study to identify the major contributors of PM_{10}, which were summarized in the *Particulate Matter PM_{10} Attainment Plan*. PM_{10} emissions in Humboldt County are generated by a variety of sources and the PM_{10} Attainment Plan includes control strategies that are intended to achieve attainment of the state's air quality standard. Control strategies include transportation control measures such as encouraging the use of public transit and replacing the diesel powered bus fleet with natural gas fueled models, encouraging car-pooling and bicycle commuting, removal or repair of vehicles with inefficient emission control systems, and traffic flow improvements that reduce idling and VMT. Land use control measures encourage mixed use or more dense development. The PM_{10} Attainment Plan also includes measures that limit residential burning as well as various measures to encourage the installation of EPA certified woodstoves.

The proposed project would not conflict with the PM_{10} Attainment Plan since the construction and operation of the project would have emissions below the BACT thresholds. Additionally, the project is required to comply with the rules and regulations established by the NCUAQMD as previously described. This project is consistent with the County's General Plan and was found to be less than significant by the DEIR for the Amendments to the Humboldt County Code Regulating Commercial Cannabis Activities. Thus, the project is not required to incorporate the control strategies listed in the PM_{10} Attainment Plan.

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

As previously described, Humboldt County is considered a non-attainment area for the 24-hour PM_{10} standard under the California Clean Air Act. The area is in attainment or "unclassified" for all other criteria pollutants. In order to maintain ambient air quality in the County, NCUAQMD uses their BACT thresholds of significance for the applicable air pollutants and their precursors. Criteria pollutant thresholds include O_3 precursor pollutants (ROG and NOx), PM_{10}, and $PM_{2.5}$, which apply to both the construction and operation of the proposed project.

Construction Period Emissions

The California Emissions Estimator Model (CalEEMod) Version 2016.3.2 was used to estimate emissions from on-site construction activity, construction vehicle trips, and evaporative emissions. The project land use types and size, and anticipated construction schedule were input to CalEEMod using the information provided by the applicant or using CalEEMod default values in the absence of information. The CARB EMission FACtors 2017 (EMFAC2017) model was used to predict emissions from construction traffic, which includes worker travel, vendor trucks and haul trucks.[6] The model output from CalEEMod along with construction inputs are included as *Attachment 1* and EMFAC2017 vehicle emissions modeling outputs are included in *Attachment 2*.

Land Use Inputs

The proposed project land uses were modeled with two separate CalEEMod runs; one for each construction stage as follows:

- Stage 1
  - 67,330 sf entered as "Industrial- General Light Industry" on 38.2 acres.
  - 66 parking stalls and 22,725 sf entered as "Parking – Parking Lot"
- Stage 2
  - 726,530 sf (new hoop structures) entered as "Industrial – Unrefrigerated Warehouse-No Rail" on 16.7 acres.

Stage 1 includes the construction of the utility buildings, administration building, employee parking lot, and site grading/improvements needed for Stage 2. Stage 2 includes the assembly of the new hoop-style greenhouse structures. A land use type of Industrial – Unrefrigerated Warehouse was selected as it most closely represents the open space provided by the greenhouses and the industrial nature of the project.

Construction Inputs

CalEEMod computes annual emissions for construction that are based on the project type, size and acreage. The model provides emission estimates for both on-site and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-

[6] See CARB's EMFAC2017 Web Database at https://www.arb.ca.gov/emfac/2017/

site activity includes worker, hauling, and vendor traffic. The construction build-out scenario for Stage 1, including equipment list and schedule, were based on CalEEMod defaults for a project of this type and size. Stage 2 build-out scenario equipment list and schedule are based on the information provided by the applicant that was approved by the applicant.

CalEEMod defaults were used for Stage 1 equipment quantities, average hours of equipment use per day, and work schedule for each phase with the client-provided construction start date of January 2021. Stage 2 equipment quantities and average hours of equipment use per day were provided by the applicant with the anticipated start date of September 2021. The default construction schedule produced for Stage 1 was approximately 11 months, or 238 construction workdays while Stage 2 was estimated to be 3 months, or 63 construction workdays. The first full year of site operation would be 2022.

Construction Truck Traffic Emissions

Construction would produce traffic in the form of worker trips and truck traffic. The traffic-related emissions are based on worker and vendor trip estimates produced by CalEEMod and haul trips that were estimated for importing sand to the site for the base of the hoop houses. Concrete and asphalt truck trips were estimated using the project plans provided by the applicant. CalEEMod provides daily estimates of worker and vendor trips for each applicable phase. The total trips for those were computed by multiplying the daily trip rate by the number of days in that phase. Haul trips for sand import were estimated using CalEEMod defaults for trips per cubic yard (CY) of material. The project will import 35,000 CY of sand material to the site from an adjacent parcel. The square feet for each of the existing structures on site was provided by the applicant. The number of concrete and asphalt total round haul trips were estimated using the project plans provided by the applicant to estimate material volumes and an assumed 10 cubic yards (CY) per material delivery for the project. Concrete/asphalt deliveries were converted to total one-way trips by assuming two trips per delivery.

The latest version of the CalEEMod model is based on the older version of the CARB EMFAC2014 motor vehicle emission factor model. This model has been superseded by the EMFAC2017 model. However, CalEEMod has not been updated to include EMFAC2017. The construction traffic information was combined with EMFAC2017 motor vehicle emissions factors. EMFAC2017 provides aggregate emission rates in grams per mile for each vehicle type. The construction traffic vehicle mix for this study was based on CalEEMod default assumptions, where worker trips are assumed to be comprised of light-duty autos (EMFAC category LDA) and light duty trucks (EMFAC category LDT1and LDT2). Vendor trips are comprised of delivery and large trucks (EMFAC category MHDT and HHDT) and haul trips, including cement trucks, are comprised of large trucks (EMFAC category HHDT). Travel distances are based on CalEEMod default lengths, which, for Humboldt County, are 16.8 miles for worker travel, 6.6 miles for vendor trips. Since CalEEMod does not address cement or asphalt trucks, these were treated as vendor travel distances. Each trip was assumed to include an idle time of 5 minutes and emissions associated with vehicle starts were also included. EMFAC2017 emission rates for Humboldt County were used from the appropriate calendar year (2021 for Stage 1 work and 2022 for Stage 2 work). Table 2 provides the traffic inputs that were combined with the EMFAC2017 emission factors to compute vehicle emissions.

Table 2. Construction Traffic Data Used for EMFAC2017 Model Runs

Stage 1 CalEEMod Run/Land Uses and Construction Phase	Trips by Trip Type			Notes
	Total Worker	Total Vendor	Total Haul	
Vehicle mix	62.4% LDA 9.1% LDT1 28.6% LDT2	28.1% MHDT 71.9% HHDT	100% HHDT	
Trip Length (miles)	16.8	6.6	6.6 Concrete/Asphalt 1 Grading (Sand)	5 Minute Truck Idle Time
Site Preparation	150	-	-	CalEEMod Default
Grading	600	-	4,375	35,000 CY Sand Import
Trenching	375	-	-	CalEEMod Default
Building Construction	7,80	3,000	500	250 Concrete Deliveries
Architectural Coating	80	-	-	CalEEMod Default
Paving	150	-	56	28 Asphalt Deliveries
Stage 2 CalEEMod Run/Land Uses and Construction Phase	**Total Worker**	**Total Vendor**	**Total Haul**	
Vehicle mix	63.0% LDA 8.8% LDT1 28.2% LDT2	27.5% MHDT 72.5% HHDT	100% HHDT	
Trip Length (miles)	16.8	6.6	NA	5 Minute Truck Idle Time
Hoop House Construction	19,215	7,497	-	
Architectural Coating	61	-	-	

Summary of Computed Construction Period Emissions

Annual emissions were predicted using CalEEMod and EMFAC2017. Average daily emissions were computed by dividing the total construction emissions each year by the number of construction days in that year; 238 in 2021 and 63 in 2022. Table 3 shows daily construction emissions of ROG, NO_X, PM_{10} exhaust, and $PM_{2.5}$ exhaust estimated during construction of the project. As indicated in Table 3, predicted construction period emissions would not exceed the NCUAQMD BACT significance thresholds.

Table 3. Construction Period Emissions - Unmitigated

Scenario	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
2021Construction Emissions (tons)	1.34 tons	4.03 tons	0.21 tons	0.18 tons
BACT Thresholds (tons per year)	***40 tons***	***40 tons***	***15 tons***	***10 tons***
Exceed Threshold?	No	No	No	No
2021 Daily Construction Emissions (pounds)	8.91 lbs./day	26.76 lbs./day	1.41 lbs./day	1.20 lbs./day
BACT Thresholds (pounds per day)	***50* lbs./day**	***50* lbs./day**	***80* lbs./day**	***50* lbs./day**
Exceed Threshold?	No	No	No	No

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. Sources of fugitive dust would include

disturbed soils at the construction site and trucks carrying uncovered loads of sand. In addition, unless properly controlled, vehicles entering and leaving the site would have the potential to deposit track out material on local streets, which could be an additional source of airborne dust after it dries. These impacts are less-than-significant if NCUAQMD Rule 104, Section D (Fugitive Dust Emissions) are followed. The rule requires best management practices be implemented to reduce these emissions. These include:

a. Covering open bodied trucks when used for transporting materials likely to give rise to airborne dust.
b. Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials. Containment methods can be employed during sandblasting and other similar operations.
c. Conduct agricultural practices in such a manner as to minimize the creation of airborne dust.
d. The use of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads or the clearing of land.
e. The application of asphalt, oil, water or suitable chemicals on dirt roads, materials stockpiles, and other surfaces which can give rise to airborne dusts.
f. The paving of roadways and their maintenance in a clean condition.
g. The prompt removal of earth or other track out material from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water, or other means.

The project is required to follow Rule 104 during construction and operation of the site which will reduce fugitive dust (i.e., PM_{10} and $PM_{2.5}$) emissions. Specifically, using water twice daily to control dust from on-site construction operations including during grading and excavation, and limiting the speed of vehicles onsite to 15 miles per hour or less will reduce PM_{10} and $PM_{2.5}$ emissions by approximately 55%.[7]

Operational Period Emissions

Operational air emissions from the project would be generated primarily from autos driven by employees and by delivery vehicles. Evaporative emissions from architectural coatings and maintenance products (classified as consumer products) are typical emissions from the type of administrative/office building planned for the site. However, the hoop-style greenhouses are not expected to have emissions from architectural coatings. The project includes the installation and operation of three natural gas boilers rated at 1 million British thermal units per hour (MMBTU/hr) for temperature control within the hoop houses. CalEEMod was used to estimate emissions from operation of the proposed project assuming full build-out.

Land Uses

The project land uses were input to CalEEMod as described above for the construction period modeling.

[7] Estimated using CalEEMod.

Model Year

Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by CalEEMod. The earliest full year of operation would be 2022 if construction begins in January of 2021. Emissions associated with operation later than 2022 would be lower than those estimated for 2022.

Trip Generation Rates

CalEEMod allows the user to enter specific vehicle trip generation rates. Therefore, the project-specific weekday trip generation rate of 232 was used based on the Institute of Transportation Engineers "General Light Industry" Land Use (Code 110) as provided by the applicant's traffic consultant.[8] To account for the seasonal nature of the employees, trips were assumed to occur seven months out of the year. Thus, the adjusted trip rate was 135 trips per weekday on an annual basis to estimate annual operating emissions. Default trip lengths and trip types specified by CalEEMod for each input land use were used for the emissions estimates.

EMFAC2017 Adjustment

As previously described, the vehicle emission factors and fleet mix used in CalEEMod are based on EMFAC2014, which is an older CARB emission model for on-road and off-road mobile sources. Since the release of CalEEMod Version 2016.3.2, a new emission model has been produced by CARB. EMFAC2017 became available for use in March 2018 and approved by the EPA in August 2019. It includes the latest data on California's car and truck fleets and travel activity. Additionally, CARB has recently released EMFAC off-model adjustment factors to account for the Safer Affordable Efficient (SAFE) Vehicle Rule Part one.[9] The SAFE vehicle Rule Part One revoked California's authority to set its own GHG emission standards and set zero emission vehicle mandates in California. As a result of this ruling, mobile criteria pollutant emissions would increase for light-duty vehicles. Therefore, the CalEEMod vehicle emission factors and fleet mix were updated with the emission rates and fleet mix from EMFAC2017, which were adjusted with the CARB EMFAC off-model adjustment factors. On-road emission rates for Humboldt County, calendar year 2023 were used. More details about the updates in emissions calculation methodologies and data are available in the EMFAC2017 Technical Support documents.[10]

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[8] Trip rates provided by W-Trans via memo to the County of Humboldt; *Traffic Impact Study Assumptions for the Arcata Land Company Commercial Cannabis Project*, July 7, 2020.

[9] California Air Resource Board, 2019. *EMFAC Off-Model Adjustment Factors to Account for the SAFE Vehicle Rule Part One*. November 2019 and June 26, 2020. Web: https://ww3.arb.ca.gov/msei/emfac_off_model_adjustment_factors_final_draft.pdf and https://content.govdelivery.com/accounts/CARB/bulletins/292af9a

[10] See CARB 2018: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/road-documentation/msei-modeling-tools-emfac

Energy

CalEEMod defaults for energy use were used for the operation of the new administration/office building, which include the 2016 Title 24 Building Standards. However, the energy use associated with the operation of the mixed light hoop-style greenhouses was estimated using the results of a 2018 energy use survey conducted by the Northwest Power and Conservation Council.[11] The memo provides provides a listing of the grow site types and their electricity consumption rates. Mixed-light facilities averaged 27 kilowatt hours (kWh) per sf of canopy for lighting. Full sun hoop structures do not require energy for lighting. Thus, the annual energy consumption from the mixed light hoop houses proposed by the project is estimated at 6,750,000 kWh (or 6,750 MWh). Based on the total square footage of the new hoop houses proposed by the project (726,530 sf), an energy use factor of 9.29 kWhr/sf/year was input into CalEEMod to account for the project's energy use during operation.

Emissions related to natural gas usage by the mixed-light cultivation project was estimated using Appendix B of the Humboldt County Commercial Cannabis DEIR.[12] For the purposes of this analysis, the project is estimated to use 0.34 KBTU/sf/year.

GHG emissions modeling includes indirect emissions from electricity production and consumption. CalEEMod has a default emission factor of 641.3 pounds of CO_2 per megawatt of electricity produced, which is based on Pacific Gas and Electric's (PG&E) 2008 emissions rate. However, PG&E published in 2019 emissions rates for 2010 through 2017, which showed the emission rate for delivered electricity had been reduced to 210 pounds CO_2 per megawatt of electricity delivered in the year 2017.[13] This intensity factor was used in the model and it was assumed that all powered was supplied by PG&E. It is noted that the current Humboldt County Code Regulating Commercial Cannabis Activities requires cultivation projects receive 100% of their electricity from renewable sources. However, this was not accounted for in the analysis.

Project Boilers

The project will include the installation and operation of three boilers rated at approximately 1 MMBTU/hr. Based on information provided by the applicant, the boilers are only need during a portion of the growing season, approximately 175 days per year. Thus, the three boilers were input into CalEEMod and emissions estimated using default emissions factors and operation of five hours per day for 175 days per year.

Other Inputs

It is anticipated the building will generate less than 42 tons per year of solid waste sent offsite to a landfill per year. The outdoor and mixed-light cultivation spaces (hoop-style greenhouses) are

[11] Northwest Power and Conservation Council, 2018. Memorandum: Cannabis Production impact on Load (Results of Survey), June 5, 2018.
[12] DEIR and its Appendices available at https://humboldtgov.org/2308/Cannabis-EIR
[13] PG&E, 2019. *Corporate Responsibility and Sustainability Report*. Web: http://www.pgecorp.com/corp_responsibility/reports/2019/assets/PGE_CRSR_2019.pdf

anticipated to generate less than a ton of waste sent to the landfill, as all the plant waste generated will be composted and reused onsite.

Water will be supplied to the development using an on-site well and a pump, which is accounted for in the default energy use for the administration/office building. Wastewater from indoor use will be treated using a new septic system with on-site leach fields developed as part of the project. Thus, the project will not use municipal sources of water or municipal treatment of wastewater. Most water use would be for cultivation that does not require wastewater treatment.

Existing Uses

The 38 acres proposed for the project is currently used to grow flowers and other row crops. Therefore, no existing land use model was included.

Summary of Computed Operational Period Emissions

Annual emissions were predicted using CalEEMod and daily emissions were estimating assuming 365 days of operation for the administration/office building and 213 days of operation per year for the greenhouses. Table 4 shows average daily emissions of ROG, NO_X, total PM_{10}, and total $PM_{2.5}$ during operation of the project. The operational period emissions would not exceed the NCUAQMD BACT thresholds.

Table 4. Operational Period Emissions

Scenario	ROG	NOx	PM_{10}	$PM_{2.5}$
2022 Project Operational Emissions (*tons/year*)	0.5 tons	0.3 tons	0.2 tons	0.1 tons
2022 Existing Site Operational Emissions (*tons/year*)	0.0 tons	0.0 tons	0.0 tons	0.0 tons
Net Annual Emissions (*tons/year*)	0.5 tons	0.3 tons	0.2 tons	0.1 tons
BACT Thresholds (tons /year)	*40 tons*	*40 tons*	*15 tons*	*10 tons*
Exceed Threshold?	No	No	No	No
2022 Project Operational Emissions (*lbs./day*)[1]	3.4 lbs.	4.2 lbs.	2.5 lbs.	0.8 lbs.
BACT Thresholds (lbs./day)	*50 lbs.*	*50 lbs.*	*80 lbs.*	*50 lbs.*
Exceed Threshold?	No	No	No	No

Notes: [1] Assumes 365-day operation for Stage 1 and 213 days of operation for Stage 2.

Impact: Create objectionable odors affecting a substantial number of people?

There is the potential for odors from both construction and operation of the project. During construction, the project would generate localized emissions of diesel exhaust during construction equipment operation and truck activity. These emissions may be noticeable from time to time by adjacent receptors. However, they would be localized and are not likely to adversely affect people off-site by resulting in confirmed odor complaints. The project's construction activities would not include any sources of significant odors that would cause complaints from surrounding uses.

The cultivation of cannabis is a potential source of odors. The odor of cannabis could be described by some as an offensive skunk-like smell. This odor is produced by terpenes, which are volatile

unsaturated hydrocarbons found in the oils of various plants. Naturally, these oils are most present late in the budding cycle and at harvest and processing. Without proper controls, greenhouse cultivation can lead to a buildup of these odors because of the reduced ventilation, heat and humidity conditions created within the facilities. Generally, the larger the size of the canopy area, the greater the potential for odor to be evident to off-site receptors. To reduce odors, the exhaust air from these facilities is often controlled and treated. In this case, control means to ventilate greenhouse exhaust air through activated carbon filters that are changed on a regular basis.

Humboldt County has established ordinances addressing cannabis cultivation operations.[14] The latest ordinance requires property setbacks and prohibits the burning of excess plant material associated with the cultivation and processing of commercial cannabis. It also requires cultivation within enclosed structures to be mechanically ventilated with a carbon filter or other feature to prevent the odor from escaping the structure.

The Humboldt County Commercial Cannabis DEIR found that cannabis-related odors would result in a significant and unavoidable impact, despite the use of setback, odor prevention equipment, and prohibition on burning plant materials.

Mitigation Measure AQ-1: Implement Odor Control Plan
To ensure adequate odor control, the applicant should develop a detailed odor control plan that includes:

- A description of the odor abatement system and procedures for ongoing maintenance of the system.
- A designated staff member to receive, document, and follow-up on odor complaints.
- Procedures to document and respond to any odor complaints that include:
  - A contact name and phone number to report odor complaints.
  - The source or cause of any odor complaints.
  - Action(s) taken to mitigate the odors.

Complaint records should be for a minimum of five years from the date the complaint is received and be provided to the County or NCUAQMD upon request.

Conclusions

Unmitigated construction activities would not result in exceedances of the NCUAQMD BACT thresholds for ROG, NO_X, PM_{10}, or $PM_{2.5}$. Nor would the operation of the proposed project result in exceedances of the NCUAQMD BACT thresholds for ROG, NOX, PM_{10}, or $PM_{2.5}$. Operation of the project would result in odor impacts, but they can be managed using required odor control, setbacks, and implementation of an odor control plan.

[14] Ordinance No. 2559, Board of Supervisors, County of Humboldt, State of California

GREENHOUSE GAS EMISSIONS

Setting

Gases that trap heat in the atmosphere, GHGs, regulate the earth's temperature. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate. The most common GHGs are carbon dioxide (CO_2) and water vapor but there are also several others, most importantly methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). These are released into the earth's atmosphere through a variety of natural processes and human activities. Sources of GHGs are generally as follows:

- CO_2, CH_4, and N_2O are byproducts of fossil fuel combustion.
- N_2O is associated with agricultural operations such as fertilization of crops.
- CH_4 is commonly created by off-gassing from agricultural practices (e.g., keeping livestock) and landfill operations.
- Chlorofluorocarbons (CFCs) were widely used as refrigerants, propellants, and cleaning solvents but their production has been stopped by international treaty.
- HFCs are now used as a substitute for CFCs in refrigeration and cooling.
- PFCs and sulfur hexafluoride emissions are commonly created by industries such as aluminum production and semi-conductor manufacturing.

Each GHG has its own potency and effect upon the earth's energy balance. This is expressed in terms of a global warming potential (GWP), with CO_2 being assigned a value of 1 and sulfur hexafluoride being several orders of magnitude stronger. In GHG emission inventories, the weight of each gas is multiplied by its GWP and is measured in units of CO_2 equivalents (CO_2e).

An expanding body of scientific research supports the theory that global climate change is currently affecting changes in weather patterns, average sea level, ocean acidification, chemical reaction rates, and precipitation rates, and that it will increasingly do so in the future. The climate and several naturally occurring resources within California are adversely affected by the global warming trend. Increased precipitation and sea level rise will increase coastal flooding, saltwater intrusion, and degradation of wetlands. Mass migration and/or loss of plant and animal species could also occur. Potential effects of global climate change that could adversely affect human health include more extreme heat waves and heat-related stress; an increase in climate-sensitive diseases; more frequent and intense natural disasters such as flooding, hurricanes and drought; and increased levels of air pollution.

Recent Regulatory Actions for GHG Emissions

Executive Order S-3-05 – California GHG Reduction Targets

Executive Order (EO) S-3-05 was signed by Governor Arnold Schwarzenegger in 2005 to set GHG emission reduction targets for California. The three targets established by this EO are as follows: (1) reduce California's GHG emissions to 2000 levels by 2010, (2) reduce California's GHG emissions to 1990 levels by 2020, and (3) reduce California's GHG emissions by 80 percent below 1990 levels by 2050.

Assembly Bill 32 – California Global Warming Solutions Act (2006)

Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, codified the State's GHG emissions target by directing CARB to reduce the State's global warming emissions to 1990 levels by 2020. AB 32 was signed and passed into law by Governor Schwarzenegger on September 27, 2006. Since that time, the CARB, CEC, California Public Utilities Commission (CPUC), and Building Standards Commission have all been developing regulations that will help meet the goals of AB 32 and Executive Order S-3-05, which has a target of reducing GHG emissions 80 percent below 1990 levels.

A Scoping Plan for AB 32 was adopted by CARB in December 2008. It contains the State's main strategies to reduce GHGs from business-as-usual emissions projected in 2020 back down to 1990 levels. Business-as-usual (BAU) is the projected emissions in 2020, including increases in emissions caused by growth, without any GHG reduction measures. The Scoping Plan has a range of GHG reduction actions, including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system.

As directed by AB 32, CARB has also approved a statewide GHG emissions limit. On December 6, 2007, CARB staff resolved an amount of 427 million metric tons (MMT) of CO_2e as the total statewide GHG 1990 emissions level and 2020 emissions limit. The limit is a cumulative statewide limit, not a sector- or facility-specific limit. CARB updated the future 2020 BAU annual emissions forecast, due to the economic downturn, to 545 MMT of CO_2e. Two GHG emissions reduction measures currently enacted that were not previously included in the 2008 Scoping Plan baseline inventory were included, further reducing the baseline inventory to 507 MMT of CO_2e. Thus, an estimated reduction of 80 MMT of CO_2e is necessary to reduce statewide emissions to meet the AB 32 target by 2020.

Executive Order B-30-15 & Senate Bill 32 GHG Reduction Targets – 2030 GHG Reduction Target

In April 2015, Governor Brown signed EO B-30-15, which extended the goals of AB 32, setting a greenhouse gas emissions target at 40 percent of 1990 levels by 2030. On September 8, 2016, Governor Brown signed Senate Bill (SB) 32, which legislatively established the GHG reduction target of 40 percent of 1990 levels by 2030. In November 2017, CARB issued *California's 2017 Climate Change Scoping Plan*.[15] While the State is on track to exceed the AB 32 scoping plan 2020 targets, this plan is an update to reflect the enacted SB 32 reduction target.

SB 32 was passed in 2016, which codified a 2030 GHG emissions reduction target of 40 percent below 1990 levels. CARB is currently working on a second update to the Scoping Plan to reflect the 2030 target set by Executive Order B-30-15 and codified by SB 32. The proposed Scoping Plan Update was published on January 20, 2017 as directed by SB 32 companion legislation AB 197. The mid-term 2030 target is considered critical by CARB on the path to obtaining an even deeper GHG emissions target of 80 percent below 1990 levels by 2050, as directed in Executive Order S-3-05. The Scoping Plan outlines the suite of policy measures, regulations, planning efforts,

[15] California Air Resource Board, 2017. *California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Targets.* November. Web: https://ww2.arb.ca.gov/sites/default/files/classic//cc/scopingplan/scoping_plan_2017.pdf

and investments in clean technologies and infrastructure, providing a blueprint to continue driving down GHG emissions and obtain the statewide goals.

The new Scoping Plan establishes a strategy that will reduce GHG emissions in California to meet the 2030 target (note that the AB 32 Scoping Plan only addressed 2020 targets and a long-term goal). Key features of this plan are:

- Cap and Trade program places a firm limit on 80 percent of the State's emissions;
- Achieving a 50-percent Renewable Portfolio Standard by 2030 (currently at about 29 percent statewide);
- Increase energy efficiency in existing buildings;
- Develop fuels with an 18-percent reduction in carbon intensity;
- Develop more high-density, transit-oriented housing;
- Develop walkable and bikeable communities;
- Greatly increase the number of electric vehicles on the road and reduce oil demand in half;
- Increase zero-emissions transit so that 100 percent of new buses are zero emissions;
- Reduce freight-related emissions by transitioning to zero emissions where feasible and near-zero emissions with renewable fuels everywhere else; and
- Reduce "super pollutants" by reducing methane and hydrofluorocarbons or HFCs by 40 percent.

In the updated Scoping Plan, CARB recommends statewide targets of no more than 6 metric tons CO_2e per capita (statewide) by 2030 and no more than 2 metric tons CO_2e per capita by 2050. The statewide per capita targets account for all emissions sectors in the State, statewide population forecasts, and the statewide reductions necessary to achieve the 2030 statewide target under SB 32 and the longer-term State emissions reduction goal of 80 percent below 1990 levels by 2050.

Executive Order B-55-18 – Carbon Neutrality

In 2018, a new statewide goal was established to achieve carbon neutrality as soon as possible, but no later than 2045, and to maintain net negative emissions thereafter. CARB and other relevant state agencies are tasked with establishing sequestration targets and create policies/programs that would meet this goal.

Senate Bill 375 – California's Regional Transportation and Land Use Planning Efforts (2008)

California enacted legislation (SB 375) to expand the efforts of AB 32 by controlling indirect GHG emissions caused by urban sprawl. SB 375 provides incentives for local governments and applicants to implement new conscientiously planned growth patterns. This includes incentives for creating attractive, walkable, and sustainable communities and revitalizing existing communities. The legislation also allows applicants to bypass certain environmental reviews under CEQA if they build projects consistent with the new sustainable community strategies. Development of more alternative transportation options that would reduce vehicle trips and miles traveled, along with traffic congestion, would be encouraged. SB 375 enhances CARB's ability to reach the AB 32 goals by directing the agency in developing regional GHG emission reduction targets to be achieved from the transportation sector for 2020 and 2035. CARB works with the metropolitan

planning organizations (e.g. Association of Bay Area Governments [ABAG] and Metropolitan Transportation Commission [MTC]) to align their regional transportation, housing, and land use plans to reduce vehicle miles traveled and demonstrate the region's ability to attain its GHG reduction targets. A similar process is used to reduce transportation emissions of ozone precursor pollutants in the Bay Area.

Senate Bill 350 - Renewable Portfolio Standards

In September 2015, the California Legislature passed SB 350, which increases the states Renewables Portfolio Standard (RPS) for content of electrical generation from the 33 percent target for 2020 to a 50 percent renewables target by 2030.

Senate Bill 100 – Current Renewable Portfolio Standards

In September 2018, SB 100 was signed by Governor Brown to revise California's RPS program goals, furthering California's focus on using renewable energy and carbon-free power sources for its energy needs. The bill would require all California utilities to supply a specific percentage of their retail sales from renewable resources by certain target years. By December 31, 2024, 44 percent of the retails sales would need to be from renewable energy sources, by December 31, 2026 the target would be 40 percent, by December 31, 2017 the target would be 52 percent, and by December 31, 2030 the target would be 60 percent. By December 31, 2045, all California utilities would be required to supply retail electricity that is 100 percent carbon-free and sourced from eligible renewable energy resource to all California end-use customers.

California Building Standards Code – Title 24 Part 11 & Part 6

The California Green Building Standards Code (CALGreen Code) is part of the California Building Standards Code under Title 24, Part 11.[16] The CALGreen Code encourages sustainable construction standards that involve planning/design, energy efficiency, water efficiency resource efficiency, and environmental quality. These green building standard codes are mandatory statewide and are applicable to residential and non-residential developments. The most recent CALGreen Code (2019 California Building Standard Code) was effective as of January 1, 2020.

The California Building Energy Efficiency Standards (California Energy Code) is under Title 24, Part 6 and is overseen by the California Energy Commission (CEC). This code includes design requirements to conserve energy in new residential and non-residential developments, while being cost effective for homeowners. This Energy Code is enforced and verified by cities during the planning and building permit process. The current energy efficiency standards (2019 Energy Code) replaced the 2016 Energy Code as of January 1,2020. Under the 2019 standards, single-family homes are predicted to be 53 percent more efficient than homes built under the 2016 standard due more stringent energy-efficiency standards and mandatory installation of solar photovoltaic systems. For nonresidential developments, it is predicted that these buildings will use 30 percent less energy due to lightening upgrades.[17]

[16] See: https://www.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-Commission-Resources-List-Folder/CALGreen#:~:text=CALGreen%20is%20the%20first%2Din,to%201990%20levels%20by%202020.
[17] See: https://www.energy.ca.gov/sites/default/files/2020-03/Title_24_2019_Building_Standards_FAQ_ada.pdf

Federal and Statewide GHG Emissions

The U.S. EPA reported that in 2018, total gross nationwide GHG emissions were 6,676.6 million metric tons (MMT) carbon dioxide equivalent (CO_2e).[18] These emissions were lower than peak levels of 7,416 MMT that were emitted in 2007. CARB updates the statewide GHG emission inventory on an annual basis where the latest inventory includes 2000 through 2017 emissions.[19] In 2017, GHG emissions from statewide emitting activities were 424 MMT. The 2017 emissions have decreased by 14 percent since peak levels in 2004 and are 7 MMT below the 1990 emissions level and the State's 2020 GHG limit. Per capita GHG emissions in California have dropped from a 2001 peak of 14.1 MT per person to 10.7 MT per person in 2017.

Humboldt County

Humboldt 21st Century – General Plan

Humboldt County updated its General Plan in October 2017 and included an Air Quality Element (Chapter 15) to it. The following goals, policies, and actions are applicable to the GHG Emissions attributed to the proposed project:

Applicable Goals

AQ-G4 *Greenhouse Gas Emissions.* Successful mitigation of greenhouse gas emissions associated with this Plan to levels of non-significance as established by the Global Warming Solutions Act and subsequent implementation of legislation and regulations.

Applicable Policies

AQ-P9 *County Climate Action Plan*. Through public input and review, develop and implement a multi-jurisdictional Climate Action Plan to achieve reductions in greenhouse gas emissions consistent with the state Global Warming Solutions Act and subsequent implementing legislation and regulations.

AQ-P11 *Review of Projects for Greenhouse Gas Emission Reductions*. The County shall evaluate the GHG emissions of new large scale residential, commercial and industrial projects for compliance with state regulations and require feasible mitigation measures to minimize GHG emissions.

AQ-P14 *Solar Electric System Capacity*. Encourage and provide incentives to increase solar-electric capacity in residential, commercial, and industrial sectors.

[18] United States Environmental Protection Agency, 2020. *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2018*. April. Web: https://www.epa.gov/sites/production/files/2020-04/documents/us-ghg-inventory-2020-main-text.pdf

[19] CARB. 2019. *2019 Edition, California Greenhouse Gas Emission Inventory: 2000 – 2017*. Web: https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2017/ghg_inventory_trends_00-17.pdf

AQ-P15 *Energy Efficient Building Design*. Encourage and provide incentives for construction of buildings and energy saving measures beyond Title 24 requirements for residential and commercial projects.

Applicable Standards

AQ-S2 *Evaluate Greenhouse Gas Emission Impacts.* During environmental review of large scale residential, commercial and industrial projects, include an assessment of the project's GHG emissions and require feasible mitigation consistent with best practices documented by the California Air Pollution Control Officers Association in their 2008 white paper "CEQA & Climate Change" or successor documents.

Implementation Measures

AQ-IM3 *County-wide Climate Action Plan.* Develop and implement a Climate Action Plan that effectively mitigates the carbon emissions attributable to this Plan, consistent with the requirements of the state Global Warming Solutions Act and subsequent implementing legislation and regulations.

AQ-IM6 *Review of Greenhouse Gas Emissions Impacts of New Development.* Modify the Zoning and Subdivision Ordinances to assess GHG emissions of discretionary large scale residential, commercial and industrial projects, and require feasible mitigation.

Humboldt County Climate Action Plan

Humboldt County is in the process of developing a regional Climate Action Plan (CAP) along with the Redwood Coast Energy Authority (RCEA) and the cities of Arcata, Eureka, Blue Lake, Ferndale, Fortuna, Rio Dell and Trinidad. Together, these local governments are working to develop strategies to reduce emissions throughout the region. In support of the CAP's development, the RCEA conducted an inventory of GHG emissions in Humboldt County for the year 2015. Total county-wide GHG emissions in 2015 were estimated to be 822,509 MT of CO_2e, with 51% coming from mobile source fuel combustion and 23% coming from livestock. Electricity consumption accounted for les than 10% of GHG emissions in the county.[20] Based on the 2015 GHG inventory, the county has proposed GHG targets to the level specified in EO B-30-15; 40% below 1990 levels by 2030 and 60% below 1990 levels. These targets incorporate the statewide targets to reach 50% renewable electricity by 2025 and the local RCEA goal to source 100% of the county's electricity from renewable sources by 2025.

*Humboldt County Code Regulating Commercial Cannabis Activitie*s

In 2018, Humboldt County amended their code regulating commercial cannabis activities. As part of the amendment process, and as required by CEQA, the county prepared an environmental impact report (EIR). The Draft EIR (DEIR) contained an analysis of air quality and GHG emissions

[20] From Emissions Inventory Overview Presentation and forecast results. Access on September 16, 2020. Website: https://humboldtgov.org/DocumentCenter/View/79805/PowerPoint-Presentation?bidId=

that found construction and operation of commercial cannabis cultivation operations permitted under the county's ordinance regulating such activities would be less than significant. The ordinance includes a renewable energy requirement for all permitted commercial cannabis operations. As a result, the DEIR did not establish any Mitigation Measures for GHG emissions.

NCUAQMD Significance Thresholds

The NCUAQMD has not established any GHG significance thresholds for CEQA purposes, nor has Humboldt County. In 2011, the NCUAQMD adopted Rule 111 (Federal Permitting Requirements for Sources of Greenhouse Gases) to establish a threshold above which New Source Review and federal Title V permitting applies, and to establish federally enforceable limits on potential to emit GHGs for stationary sources. However, Rule 111 are requirements for stationary sources and should not be used as a threshold of significance for CEQA evaluations.

Since there are no applicable thresholds for projects in the Air District or Humboldt County, the NCUAQMD recommends the use of thresholds and guidance provided by other air districts in the State such as the Bay Area Air Quality Management District (BAAQMD). The BAAQMD has developed project screening criteria to provide lead agencies and project applicants with a conservative indication of whether a project could result in potentially significant impacts related to greenhouse gas emissions. Projects below the applicable screening criteria would not exceed the 1,100 metric tons (MT) of CO2e/yr GHG threshold established by the BAAQMD for land use projects, other than permitted stationary sources. The BAAQMD has not established a screening threshold for this type of project as it is primarily agricultural. Therefore, the BAAQMD threshold of 1,100 metric tons per year was chosen as the significance threshold for this analysis.

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

GHG emissions associated with proposed project would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust, worker and vendor trips, and material haul trips. There would also be long-term operational emissions associated with vehicular traffic within the project vicinity, energy and water usage, solid waste disposal, and operation of the proposed boilers. Emissions for the proposed project are discussed below and were analyzed using the significance threshold of 1,100 MT CO2e/year.

CalEEMod Modeling

CalEEMod was used to predict GHG emissions from operation of the site assuming full build-out of the project. The project land use types and size and other project-specific information were input to the model, as described above within the operational period emissions. CalEEMod output is included in *Attachment 1*.

Construction Emissions

GHG emissions associated with construction were computed to be 717 MT of CO_2e. These are the emissions from on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. Neither the County nor NCUAQMD have an adopted threshold of significance for

construction related GHG emissions, however, emissions are being quantified and disclosed for informational purposes. The incorporation of best management practices to reduce GHG emissions during construction are recommended where feasible and applicable.

Operational Emissions

The CalEEMod model, along with the project vehicle trip generation rate, was used to estimate daily emissions associated with operation of the proposed project. As shown in Table 5, the net annual emissions resulting from operation of the proposed project are predicted to be 1,031 MT of CO_{2e} in 2022 and 1,000 MT of CO_2e in 2030. Thus, the project would not exceed the 1,100 MT CO_2e/year threshold in either 2022 or 2030.

Table 5. Annual Project GHG Emissions (CO_2e) in Metric Tons

Source Category	Proposed Project (MT CO2e/yr)	
	2022	**2030**
Area	0	0
Energy Consumption	705	705
Mobile	164	133
Solid Waste Generation	21	21
Water Usage	0	0
Stationary (Boilers)	141	141
Total Emissions (MT CO2e/yr)	1,031	1,000
Significance Threshold	***1,100 MT CO_2e/year***	
Exceed threshold?	*No*	*No*

Impact: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The proposed project would not conflict or otherwise interfere with the statewide GHG reduction measures identified in CARB's Scoping Plan. For example, proposed buildings would be constructed in conformance with CALGreen and the Title 24 Building Code, which requires high-efficiency water fixtures and water-efficient irrigation systems. The project would also be subject to Humboldt County's Commercial Cultivation, Processing, Manufacturing, and Distribution ordinance, which requires the use of renewable energy sources.

Conclusions

The proposed project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. Neither the County nor NCUAQMD have adopted threshold of significance for GHG emissions. However, using the BAAQMD significance threshold for GHG emissions, the project would not be considered significant. Additionally, the EIR for the Humboldt County Code Regulating Commercial Cannabis Activities found construction and operation of commercial cannabis cultivation operations permitted under the County's ordinance would be less than significant.

Supporting Documentation

Attachment 1 includes the CalEEMod modeling assumptions and output for project construction and operational criteria air pollutant and GHG emissions.

Attachment 2 includes the EMFAC2017 emissions modeling. The input files for these calculations are voluminous and are available upon request in digital format.

Attachment 1: CalEEMod Modeling Output

Arcata Land Co. Cultivation Project - Phase1

Humboldt County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	67.33	1000sqft	38.20	67,330.00	0
Parking Lot	66.00	Space	0.00	26,400.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	103
Climate Zone	1			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Curent Intensity Factor

Land Use - Phase 1 = New Admin Buildings and infrastructure

Construction Phase - Based on CalEEMod defaults for buildings (67,332 sf) and site (38.2 ac). Assume no demo given existing greenhouse structures will be used and the remaining land is undeveloped

Off-road Equipment - CalEEMod Default

Off-road Equipment - CalEEMod Default

Off-road Equipment - No Demo

Off-road Equipment - Per Equipment Input Assumptions Provided

Off-road Equipment - CalEEMod Default

Off-road Equipment - Dumptrucks included in Haul trips

Off-road Equipment - Per Equipment Assumptions Provided

Trips and VMT - Based on 35,000 CY sand sourced 1 mile from site. Concrete and asphalt = vendor trips w/ amounts based off of plans provided

Demolition - No Demolition

Grading - Per project description, 35,000 CY of sand to elevate and prep the ground

Architectural Coating - Size of Parking area

Vehicle Trips - Based on 135 trips per day (232 trips per day for seven months a year) and 67,332 building sq ft; info provided by the client

Vehicle Emission Factors - From EMFAC2017 for Humbolt Co 2022

Vehicle Emission Factors -

Vehicle Emission Factors -

Area Coating - Size of Parking lot

Energy Use -

Water And Wastewater - The project will have it's own leach fields for SS and use an on-site well to supply water. The pump energy use is included in building energy use

Solid Waste - Assume waste generation will be half of the CalEEMod Default of 83.49 ton/yr

Construction Off-road Equipment Mitigation - T3L3 Equipment Mitigation with Dust BMPs

Stationary Sources - Process Boilers - Per the list of operating equipment provided and Manufactuer's Specs, 175 days per year

Table Name	Column Name	Default Value	New Value
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tblConstructionPhase	NumDays	55.00	10.00

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tblOffRoadEquipment	UsageHours	8.00	4.00
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tblVehicleEF	LHD1	0.13	0.11
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.0690e-003	8.7200e-004
tblVehicleEF	LHD1	0.31	0.25

tblVehicleEF	LHD1	0.62	1.02
tblVehicleEF	LHD1	0.37	0.07
tblVehicleEF	LHD2	2.7860e-003	1.8190e-003
tblVehicleEF	LHD2	0.01	8.5920e-003
tblVehicleEF	LHD2	6.8350e-003	4.8190e-003
tblVehicleEF	LHD2	0.11	0.10
tblVehicleEF	LHD2	0.94	0.87
tblVehicleEF	LHD2	0.98	0.35
tblVehicleEF	LHD2	15.92	16.37
tblVehicleEF	LHD2	704.69	730.40
tblVehicleEF	LHD2	14.45	3.94
tblVehicleEF	LHD2	0.15	0.16
tblVehicleEF	LHD2	2.28	1.86
tblVehicleEF	LHD2	0.44	0.10
tblVehicleEF	LHD2	1.6660e-003	1.8140e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.03	0.03
tblVehicleEF	LHD2	2.5000e-004	7.0000e-005
tblVehicleEF	LHD2	1.5940e-003	1.7350e-003
tblVehicleEF	LHD2	2.8050e-003	2.8460e-003
tblVehicleEF	LHD2	0.03	0.03
tblVehicleEF	LHD2	2.3000e-004	6.5000e-005
tblVehicleEF	LHD2	5.1900e-004	5.0600e-004
tblVehicleEF	LHD2	0.03	0.03
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	2.8400e-004	2.6400e-004
tblVehicleEF	LHD2	0.16	0.15
tblVehicleEF	LHD2	0.10	0.26
tblVehicleEF	LHD2	0.09	0.02
tblVehicleEF	LHD2	1.5400e-004	1.5500e-004

tblVehicleEF	LHD2	6.8100e-003	6.9850e-003
tblVehicleEF	LHD2	1.6300e-004	3.9000e-005
tblVehicleEF	LHD2	5.1900e-004	5.0600e-004
tblVehicleEF	LHD2	0.03	0.03
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	2.8400e-004	2.6400e-004
tblVehicleEF	LHD2	0.19	0.18
tblVehicleEF	LHD2	0.10	0.26
tblVehicleEF	LHD2	0.10	0.03
tblVehicleEF	MCY	0.42	0.35
tblVehicleEF	MCY	0.19	0.29
tblVehicleEF	MCY	24.20	23.43
tblVehicleEF	MCY	10.74	9.55
tblVehicleEF	MCY	164.72	215.60
tblVehicleEF	MCY	49.91	66.28
tblVehicleEF	MCY	1.25	1.24
tblVehicleEF	MCY	0.34	0.28
tblVehicleEF	MCY	1.9640e-003	1.9020e-003
tblVehicleEF	MCY	4.8830e-003	3.7820e-003
tblVehicleEF	MCY	1.8500e-003	1.7880e-003
tblVehicleEF	MCY	4.6350e-003	3.5830e-003
tblVehicleEF	MCY	0.70	1.33
tblVehicleEF	MCY	1.03	0.94
tblVehicleEF	MCY	0.43	0.80
tblVehicleEF	MCY	2.56	2.51
tblVehicleEF	MCY	1.25	2.92
tblVehicleEF	MCY	2.62	2.29
tblVehicleEF	MCY	2.1140e-003	2.1340e-003
tblVehicleEF	MCY	7.5300e-004	6.5600e-004
tblVehicleEF	MCY	0.70	1.33

tblVehicleEF	MCY	1.03	0.94
tblVehicleEF	MCY	0.43	0.80
tblVehicleEF	MCY	3.07	3.02
tblVehicleEF	MCY	1.25	2.92
tblVehicleEF	MCY	2.85	2.49
tblVehicleEF	MDV	0.02	6.3920e-003
tblVehicleEF	MDV	0.04	0.12
tblVehicleEF	MDV	2.04	1.22
tblVehicleEF	MDV	7.57	4.27
tblVehicleEF	MDV	492.76	424.31
tblVehicleEF	MDV	113.18	91.66
tblVehicleEF	MDV	0.40	0.16
tblVehicleEF	MDV	0.76	0.50
tblVehicleEF	MDV	2.2220e-003	1.8530e-003
tblVehicleEF	MDV	3.2370e-003	2.4820e-003
tblVehicleEF	MDV	2.0520e-003	1.7150e-003
tblVehicleEF	MDV	2.9770e-003	2.2830e-003
tblVehicleEF	MDV	0.09	0.09
tblVehicleEF	MDV	0.37	0.27
tblVehicleEF	MDV	0.08	0.09
tblVehicleEF	MDV	0.06	0.03
tblVehicleEF	MDV	0.29	1.11
tblVehicleEF	MDV	0.57	0.64
tblVehicleEF	MDV	4.9490e-003	4.1650e-003
tblVehicleEF	MDV	1.2670e-003	9.0100e-004
tblVehicleEF	MDV	0.09	0.09
tblVehicleEF	MDV	0.37	0.27
tblVehicleEF	MDV	0.08	0.09
tblVehicleEF	MDV	0.09	0.04
tblVehicleEF	MDV	0.29	1.11

tblVehicleEF	MDV	0.62	0.70
tblVehicleEF	MH	0.13	0.02
tblVehicleEF	MH	0.06	0.03
tblVehicleEF	MH	8.83	3.07
tblVehicleEF	MH	13.45	2.73
tblVehicleEF	MH	1,238.23	1,579.01
tblVehicleEF	MH	59.34	19.28
tblVehicleEF	MH	3.02	2.62
tblVehicleEF	MH	1.82	0.23
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.05	0.05
tblVehicleEF	MH	2.0900e-003	3.7000e-004
tblVehicleEF	MH	3.2380e-003	3.3230e-003
tblVehicleEF	MH	0.05	0.05
tblVehicleEF	MH	1.9220e-003	3.4100e-004
tblVehicleEF	MH	1.27	0.87
tblVehicleEF	MH	0.16	0.11
tblVehicleEF	MH	0.44	0.31
tblVehicleEF	MH	0.35	0.16
tblVehicleEF	MH	0.06	3.24
tblVehicleEF	MH	0.77	0.12
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	8.2900e-004	1.9100e-004
tblVehicleEF	MH	1.27	0.87
tblVehicleEF	MH	0.16	0.11
tblVehicleEF	MH	0.44	0.31
tblVehicleEF	MH	0.50	0.22
tblVehicleEF	MH	0.06	3.24
tblVehicleEF	MH	0.85	0.13
tblVehicleEF	MHD	0.02	4.5020e-003

tblVehicleEF	MHD	0.01	7.9310e-003
tblVehicleEF	MHD	0.10	0.01
tblVehicleEF	MHD	0.53	0.43
tblVehicleEF	MHD	0.74	0.74
tblVehicleEF	MHD	9.90	1.91
tblVehicleEF	MHD	159.35	75.71
tblVehicleEF	MHD	1,224.87	1,191.74
tblVehicleEF	MHD	53.09	13.54
tblVehicleEF	MHD	0.97	0.66
tblVehicleEF	MHD	2.57	2.77
tblVehicleEF	MHD	12.59	1.13
tblVehicleEF	MHD	8.0550e-003	1.6500e-003
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	1.1580e-003	2.2400e-004
tblVehicleEF	MHD	7.7070e-003	1.5790e-003
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	1.0650e-003	2.0600e-004
tblVehicleEF	MHD	1.1540e-003	7.3600e-004
tblVehicleEF	MHD	0.08	0.05
tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	5.9800e-004	3.7700e-004
tblVehicleEF	MHD	0.11	0.11
tblVehicleEF	MHD	0.07	0.39
tblVehicleEF	MHD	0.64	0.09
tblVehicleEF	MHD	1.5320e-003	7.1900e-004
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	7.0600e-004	1.3400e-004
tblVehicleEF	MHD	1.1540e-003	7.3600e-004
tblVehicleEF	MHD	0.08	0.05
tblVehicleEF	MHD	0.07	0.03

tblVehicleEF	MHD	5.9800e-004	3.7700e-004
tblVehicleEF	MHD	0.13	0.13
tblVehicleEF	MHD	0.07	0.39
tblVehicleEF	MHD	0.70	0.09
tblVehicleEF	OBUS	0.02	7.6730e-003
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	0.05	0.03
tblVehicleEF	OBUS	0.31	0.55
tblVehicleEF	OBUS	0.74	1.20
tblVehicleEF	OBUS	8.69	3.02
tblVehicleEF	OBUS	170.92	87.93
tblVehicleEF	OBUS	1,296.14	1,405.82
tblVehicleEF	OBUS	61.10	19.95
tblVehicleEF	OBUS	0.78	0.42
tblVehicleEF	OBUS	1.95	1.81
tblVehicleEF	OBUS	5.56	0.86
tblVehicleEF	OBUS	1.6600e-004	7.2000e-004
tblVehicleEF	OBUS	7.3830e-003	0.02
tblVehicleEF	OBUS	6.7000e-004	1.9600e-004
tblVehicleEF	OBUS	1.5800e-004	6.8900e-004
tblVehicleEF	OBUS	7.0550e-003	0.02
tblVehicleEF	OBUS	6.1600e-004	1.8100e-004
tblVehicleEF	OBUS	1.3560e-003	1.6890e-003
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	0.05	0.05
tblVehicleEF	OBUS	6.2100e-004	7.3300e-004
tblVehicleEF	OBUS	0.09	0.09
tblVehicleEF	OBUS	0.06	0.63
tblVehicleEF	OBUS	0.56	0.14
tblVehicleEF	OBUS	1.6420e-003	8.3700e-004

tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.6500e-004	1.9700e-004
tblVehicleEF	OBUS	1.3560e-003	1.6890e-003
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	0.06	0.07
tblVehicleEF	OBUS	6.2100e-004	7.3300e-004
tblVehicleEF	OBUS	0.10	0.11
tblVehicleEF	OBUS	0.06	0.63
tblVehicleEF	OBUS	0.61	0.16
tblVehicleEF	SBUS	1.01	0.01
tblVehicleEF	SBUS	9.8520e-003	0.01
tblVehicleEF	SBUS	0.10	2.1640e-003
tblVehicleEF	SBUS	4.09	0.85
tblVehicleEF	SBUS	0.58	0.90
tblVehicleEF	SBUS	4.30	0.39
tblVehicleEF	SBUS	1,374.41	328.70
tblVehicleEF	SBUS	1,204.46	1,138.41
tblVehicleEF	SBUS	22.44	1.32
tblVehicleEF	SBUS	13.96	3.85
tblVehicleEF	SBUS	5.54	7.46
tblVehicleEF	SBUS	17.49	0.65
tblVehicleEF	SBUS	0.01	5.1270e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.03	0.04
tblVehicleEF	SBUS	2.1800e-004	1.9000e-005
tblVehicleEF	SBUS	0.01	4.9050e-003
tblVehicleEF	SBUS	2.8590e-003	2.9190e-003
tblVehicleEF	SBUS	0.03	0.04
tblVehicleEF	SBUS	2.0000e-004	1.7000e-005
tblVehicleEF	SBUS	1.4580e-003	2.2900e-004

tblVehicleEF	SBUS	0.02	4.3900e-003
tblVehicleEF	SBUS	0.51	0.08
tblVehicleEF	SBUS	6.3900e-004	9.2000e-005
tblVehicleEF	SBUS	0.12	0.14
tblVehicleEF	SBUS	0.01	0.03
tblVehicleEF	SBUS	0.23	0.01
tblVehicleEF	SBUS	0.01	3.1110e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	2.9900e-004	1.3000e-005
tblVehicleEF	SBUS	1.4580e-003	2.2900e-004
tblVehicleEF	SBUS	0.02	4.3900e-003
tblVehicleEF	SBUS	0.72	0.10
tblVehicleEF	SBUS	6.3900e-004	9.2000e-005
tblVehicleEF	SBUS	0.14	0.16
tblVehicleEF	SBUS	0.01	0.03
tblVehicleEF	SBUS	0.26	0.01
tblVehicleEF	UBUS	0.13	2.84
tblVehicleEF	UBUS	0.08	0.02
tblVehicleEF	UBUS	4.51	21.64
tblVehicleEF	UBUS	14.09	1.13
tblVehicleEF	UBUS	2,046.25	1,708.44
tblVehicleEF	UBUS	137.44	11.78
tblVehicleEF	UBUS	7.17	0.66
tblVehicleEF	UBUS	13.66	0.12
tblVehicleEF	UBUS	0.53	0.09
tblVehicleEF	UBUS	0.01	0.03
tblVehicleEF	UBUS	0.13	3.8290e-003
tblVehicleEF	UBUS	8.3200e-004	6.1000e-005
tblVehicleEF	UBUS	0.23	0.04
tblVehicleEF	UBUS	3.0000e-003	6.3580e-003

tblVehicleEF	UBUS	0.12	3.6570e-003
tblVehicleEF	UBUS	7.6500e-004	5.7000e-005
tblVehicleEF	UBUS	3.5000e-003	5.6700e-004
tblVehicleEF	UBUS	0.08	0.01
tblVehicleEF	UBUS	2.0260e-003	3.6000e-004
tblVehicleEF	UBUS	0.44	0.04
tblVehicleEF	UBUS	0.02	0.08
tblVehicleEF	UBUS	1.13	0.07
tblVehicleEF	UBUS	0.02	7.5040e-003
tblVehicleEF	UBUS	1.6300e-003	1.1700e-004
tblVehicleEF	UBUS	3.5000e-003	5.6700e-004
tblVehicleEF	UBUS	0.08	0.01
tblVehicleEF	UBUS	2.0260e-003	3.6000e-004
tblVehicleEF	UBUS	0.61	2.90
tblVehicleEF	UBUS	0.02	0.08
tblVehicleEF	UBUS	1.23	0.08
tblVehicleTrips	ST_TR	1.32	0.73
tblVehicleTrips	SU_TR	0.68	0.21
tblVehicleTrips	WD_TR	6.97	2.01
tblWater	AerobicPercent	87.46	0.00
tblWater	AerobicPercent	87.46	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00

tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	15,570,062.50	0.00
tblWater	SepticTankPercent	10.33	100.00
tblWater	SepticTankPercent	10.33	100.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	1.2489	3.3394	2.7783	4.8500e-003	0.1803	0.1660	0.3463	0.0894	0.1547	0.2440	0.0000	421.5136	421.5136	0.1170	0.0000	424.4378
Maximum	**1.2489**	**3.3394**	**2.7783**	**4.8500e-003**	**0.1803**	**0.1660**	**0.3463**	**0.0894**	**0.1547**	**0.2440**	**0.0000**	**421.5136**	**421.5136**	**0.1170**	**0.0000**	**424.4378**

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					
2021	1.0740	2.7243	3.0001	4.8500e-003	0.0811	0.0484	0.1296	0.0402	0.0459	0.0861	0.0000	421.5131	421.5131	0.1170	0.0000	424.4373
Maximum	**1.0740**	**2.7243**	**3.0001**	**4.8500e-003**	**0.0811**	**0.0484**	**0.1296**	**0.0402**	**0.0459**	**0.0861**	**0.0000**	**421.5131**	**421.5131**	**0.1170**	**0.0000**	**424.4373**

	ROG	NOx	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	**14.00**	**18.42**	**-7.98**	**0.00**	**55.00**	**70.83**	**62.59**	**55.00**	**70.31**	**64.71**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-4-2021**	**4-3-2021**	1.2168	0.9450
2	**4-4-2021**	**7-3-2021**	1.4923	1.1973
3	**7-4-2021**	**9-30-2021**	0.6145	0.4736
		Highest	1.4923	1.1973

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	0.3560	1.0000e-005	1.2300e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3800e-003	2.3800e-003	1.0000e-005	0.0000	2.5400e-003
Energy	1.2700e-003	0.0116	9.7300e-003	7.0000e-005		8.8000e-004	8.8000e-004		8.8000e-004	8.8000e-004	0.0000	40.9412	40.9412	4.1500e-003	1.0400e-003	41.3552
Mobile	0.0882	0.2325	0.6824	1.9700e-003	0.1486	2.5300e-003	0.1511	0.0400	2.3900e-003	0.0424	0.0000	163.7673	163.7673	7.1900e-003	0.0000	163.9471
Stationary	7.1100e-003	0.0316	0.1266	7.8000e-004		9.8200e-003	9.8200e-003		9.8200e-003	9.8200e-003	0.0000	140.6427	140.6427	2.7000e-003	0.0000	140.7101
Waste						0.0000	0.0000		0.0000	0.0000	8.4728	0.0000	8.4728	0.5007	0.0000	20.9911
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.4525**	**0.2757**	**0.8200**	**2.8200e-003**	**0.1486**	**0.0132**	**0.1618**	**0.0400**	**0.0131**	**0.0531**	**8.4728**	**345.3536**	**353.8265**	**0.5148**	**1.0400e-003**	**367.0061**

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	0.3560	1.0000e-005	1.2300e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3800e-003	2.3800e-003	1.0000e-005	0.0000	2.5400e-003
Energy	1.2700e-003	0.0116	9.7300e-003	7.0000e-005		8.8000e-004	8.8000e-004		8.8000e-004	8.8000e-004	0.0000	40.9412	40.9412	4.1500e-003	1.0400e-003	41.3552
Mobile	0.0882	0.2325	0.6824	1.9700e-003	0.1486	2.5300e-003	0.1511	0.0400	2.3900e-003	0.0424	0.0000	163.7673	163.7673	7.1900e-003	0.0000	163.9471
Stationary	7.1100e-003	0.0316	0.1266	7.8000e-004		9.8200e-003	9.8200e-003		9.8200e-003	9.8200e-003	0.0000	140.6427	140.6427	2.7000e-003	0.0000	140.7101
Waste						0.0000	0.0000		0.0000	0.0000	8.4728	0.0000	8.4728	0.5007	0.0000	20.9911
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.4525**	**0.2757**	**0.8200**	**2.8200e-003**	**0.1486**	**0.0132**	**0.1618**	**0.0400**	**0.0131**	**0.0531**	**8.4728**	**345.3536**	**353.8265**	**0.5148**	**1.0400e-003**	**367.0061**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/4/2021	1/4/2021	5	1	
2	Site Preparation	Site Preparation	1/4/2021	2/12/2021	5	30	
3	Grading	Grading	2/12/2021	5/27/2021	5	75	
4	Trenching	Trenching	2/12/2021	5/27/2021	5	75	
5	Building Construction	Building Construction	2/12/2021	11/18/2021	5	200	
6	Paving	Paving	5/27/2021	6/9/2021	5	10	
7	Architectural Coating	Architectural Coating	11/18/2021	12/1/2021	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 38.2

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 100,995; Non-Residential Outdoor: 33,665; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	1	4.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	1	4.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Skid Steer Loaders	1	8.00	65	0.37
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Trenching	Excavators	1	8.00	158	0.38
Trenching	Rubber Tired Dozers	1	4.00	247	0.40
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	5	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	2	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2021

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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0107	0.1107	0.0642	1.1000e-004		5.6700e-003	5.6700e-003		5.2200e-003	5.2200e-003	0.0000	9.7238	9.7238	3.1400e-003	0.0000	9.8024
Total	**0.0107**	**0.1107**	**0.0642**	**1.1000e-004**	**0.0452**	**5.6700e-003**	**0.0508**	**0.0248**	**5.2200e-003**	**0.0301**	**0.0000**	**9.7238**	**9.7238**	**3.1400e-003**	**0.0000**	**9.8024**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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					0.0203	0.0000	0.0203	0.0112	0.0000	0.0112	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7100e-003	0.0563	0.0691	1.1000e-004		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	9.7238	9.7238	3.1400e-003	0.0000	9.8024
Total	**2.7100e-003**	**0.0563**	**0.0691**	**1.1000e-004**	**0.0203**	**4.5000e-004**	**0.0208**	**0.0112**	**4.5000e-004**	**0.0116**	**0.0000**	**9.7238**	**9.7238**	**3.1400e-003**	**0.0000**	**9.8024**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1352	0.0000	0.1352	0.0646	0.0000	0.0646	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1008	1.1268	0.7759	1.5700e-003		0.0467	0.0467		0.0429	0.0429	0.0000	137.7749	137.7749	0.0446	0.0000	138.8889
Total	**0.1008**	**1.1268**	**0.7759**	**1.5700e-003**	**0.1352**	**0.0467**	**0.1818**	**0.0646**	**0.0429**	**0.1075**	**0.0000**	**137.7749**	**137.7749**	**0.0446**	**0.0000**	**138.8889**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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					0.0608	0.0000	0.0608	0.0291	0.0000	0.0291	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0803	1.0142	0.8161	1.5700e-003		0.0328	0.0328		0.0303	0.0303	0.0000	137.7748	137.7748	0.0446	0.0000	138.8887
Total	**0.0803**	**1.0142**	**0.8161**	**1.5700e-003**	**0.0608**	**0.0328**	**0.0936**	**0.0291**	**0.0303**	**0.0593**	**0.0000**	**137.7748**	**137.7748**	**0.0446**	**0.0000**	**138.8887**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Trenching - 2021

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	0.0282	0.2865	0.1984	3.5000e-004		0.0139	0.0139		0.0128	0.0128	0.0000	31.0893	31.0893	0.0101	0.0000	31.3406
Total	**0.0282**	**0.2865**	**0.1984**	**3.5000e-004**		**0.0139**	**0.0139**		**0.0128**	**0.0128**	**0.0000**	**31.0893**	**31.0893**	**0.0101**	**0.0000**	**31.3406**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	8.6900e-003	0.1679	0.2319	3.5000e-004		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003	0.0000	31.0892	31.0892	0.0101	0.0000	31.3406
Total	**8.6900e-003**	**0.1679**	**0.2319**	**3.5000e-004**		**1.1000e-003**	**1.1000e-003**		**1.1000e-003**	**1.1000e-003**	**0.0000**	**31.0892**	**31.0892**	**0.0101**	**0.0000**	**31.3406**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Building Construction - 2021

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	0.1901	1.7432	1.6575	2.6900e-003		0.0959	0.0959		0.0901	0.0901	0.0000	231.6373	231.6373	0.0559	0.0000	233.0344
Total	**0.1901**	**1.7432**	**1.6575**	**2.6900e-003**		**0.0959**	**0.0959**		**0.0901**	**0.0901**	**0.0000**	**231.6373**	**231.6373**	**0.0559**	**0.0000**	**233.0344**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0674	1.4226	1.7874	2.6900e-003		0.0136	0.0136		0.0136	0.0136	0.0000	231.6370	231.6370	0.0559	0.0000	233.0341
Total	**0.0674**	**1.4226**	**1.7874**	**2.6900e-003**		**0.0136**	**0.0136**		**0.0136**	**0.0136**	**0.0000**	**231.6370**	**231.6370**	**0.0559**	**0.0000**	**233.0341**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Paving - 2021

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	6.2800e-003	0.0646	0.0733	1.1000e-004		3.3900e-003	3.3900e-003		3.1200e-003	3.1200e-003	0.0000	10.0117	10.0117	3.2400e-003	0.0000	10.0927
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.2800e-003**	**0.0646**	**0.0733**	**1.1000e-004**		**3.3900e-003**	**3.3900e-003**		**3.1200e-003**	**3.1200e-003**	**0.0000**	**10.0117**	**10.0117**	**3.2400e-003**	**0.0000**	**10.0927**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	2.8000e-003	0.0565	0.0865	1.1000e-004		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	10.0117	10.0117	3.2400e-003	0.0000	10.0927
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.8000e-003**	**0.0565**	**0.0865**	**1.1000e-004**		**4.6000e-004**	**4.6000e-004**		**4.6000e-004**	**4.6000e-004**	**0.0000**	**10.0117**	**10.0117**	**3.2400e-003**	**0.0000**	**10.0927**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.8 Architectural Coating - 2021

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	0.9119					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0900e-003	7.6300e-003	9.0900e-003	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	1.2766	1.2766	9.0000e-005	0.0000	1.2788
Total	**0.9129**	**7.6300e-003**	**9.0900e-003**	**1.0000e-005**		**4.7000e-004**	**4.7000e-004**		**4.7000e-004**	**4.7000e-004**	**0.0000**	**1.2766**	**1.2766**	**9.0000e-005**	**0.0000**	**1.2788**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.9119					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0000e-004	6.7800e-003	9.1600e-003	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	1.2766	1.2766	9.0000e-005	0.0000	1.2788
Total	**0.9122**	**6.7800e-003**	**9.1600e-003**	**1.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**1.2766**	**1.2766**	**9.0000e-005**	**0.0000**	**1.2788**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0882	0.2325	0.6824	1.9700e-003	0.1486	2.5300e-003	0.1511	0.0400	2.3900e-003	0.0424	0.0000	163.7673	163.7673	7.1900e-003	0.0000	163.9471
Unmitigated	0.0882	0.2325	0.6824	1.9700e-003	0.1486	2.5300e-003	0.1511	0.0400	2.3900e-003	0.0424	0.0000	163.7673	163.7673	7.1900e-003	0.0000	163.9471

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	135.33	49.15	14.14	408,400	408,400
Parking Lot	0.00	0.00	0.00		
Total	135.33	49.15	14.14	408,400	408,400

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
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.461849	0.064347	0.206426	0.150450	0.053725	0.011671	0.011264	0.029765	0.001633	0.000629	0.005857	0.001390	0.000995
Parking Lot	0.461849	0.064347	0.206426	0.150450	0.053725	0.011671	0.011264	0.029765	0.001633	0.000629	0.005857	0.001390	0.000995

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	28.3298	28.3298	3.9100e-003	8.1000e-004	28.6689
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	28.3298	28.3298	3.9100e-003	8.1000e-004	28.6689
NaturalGas Mitigated	1.2700e-003	0.0116	9.7300e-003	7.0000e-005		8.8000e-004	8.8000e-004		8.8000e-004	8.8000e-004	0.0000	12.6114	12.6114	2.4000e-004	2.3000e-004	12.6863
NaturalGas Unmitigated	1.2700e-003	0.0116	9.7300e-003	7.0000e-005		8.8000e-004	8.8000e-004		8.8000e-004	8.8000e-004	0.0000	12.6114	12.6114	2.4000e-004	2.3000e-004	12.6863

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					
General Light Industry	236328	1.2700e-003	0.0116	9.7300e-003	7.0000e-005		8.8000e-004	8.8000e-004		8.8000e-004	8.8000e-004	0.0000	12.6114	12.6114	2.4000e-004	2.3000e-004	12.6863
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
Total		**1.2700e-003**	**0.0116**	**9.7300e-003**	**7.0000e-005**		**8.8000e-004**	**8.8000e-004**		**8.8000e-004**	**8.8000e-004**	**0.0000**	**12.6114**	**12.6114**	**2.4000e-004**	**2.3000e-004**	**12.6863**

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					
General Light Industry	236328	1.2700e-003	0.0116	9.7300e-003	7.0000e-005		8.8000e-004	8.8000e-004		8.8000e-004	8.8000e-004	0.0000	12.6114	12.6114	2.4000e-004	2.3000e-004	12.6863
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
Total		**1.2700e-003**	**0.0116**	**9.7300e-003**	**7.0000e-005**		**8.8000e-004**	**8.8000e-004**		**8.8000e-004**	**8.8000e-004**	**0.0000**	**12.6114**	**12.6114**	**2.4000e-004**	**2.3000e-004**	**12.6863**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	288172	27.4497	3.7900e-003	7.8000e-004	27.7782
Parking Lot	9240	0.8802	1.2000e-004	3.0000e-005	0.8907

Total		**28.3298**	**3.9100e-003**	**8.1000e-004**	**28.6689**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	288172	27.4497	3.7900e-003	7.8000e-004	27.7782
Parking Lot	9240	0.8802	1.2000e-004	3.0000e-005	0.8907
Total		**28.3298**	**3.9100e-003**	**8.1000e-004**	**28.6689**

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	0.3560	1.0000e-005	1.2300e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3800e-003	2.3800e-003	1.0000e-005	0.0000	2.5400e-003
Unmitigated	0.3560	1.0000e-005	1.2300e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3800e-003	2.3800e-003	1.0000e-005	0.0000	2.5400e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0912					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2647					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1000e-004	1.0000e-005	1.2300e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3800e-003	2.3800e-003	1.0000e-005	0.0000	2.5400e-003
Total	**0.3560**	**1.0000e-005**	**1.2300e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.3800e-003**	**2.3800e-003**	**1.0000e-005**	**0.0000**	**2.5400e-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	0.0912					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2647					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1000e-004	1.0000e-005	1.2300e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3800e-003	2.3800e-003	1.0000e-005	0.0000	2.5400e-003
Total	**0.3560**	**1.0000e-005**	**1.2300e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.3800e-003**	**2.3800e-003**	**1.0000e-005**	**0.0000**	**2.5400e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			

General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	8.4728	0.5007	0.0000	20.9911
Unmitigated	8.4728	0.5007	0.0000	20.9911

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	41.74	8.4728	0.5007	0.0000	20.9911
Parking Lot	0	0.0000	0.0000	0.0000	0.0000

Total		**8.4728**	**0.5007**	**0.0000**	**20.9911**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	41.74	8.4728	0.5007	0.0000	20.9911
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**8.4728**	**0.5007**	**0.0000**	**20.9911**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
Boiler	2	5.02	878.5	1.004	CNG
Boiler	1	5.02	878.5	1.004	CNG

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

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					
Boiler - CNG (0 - 2 MMBTU)	7.1100e-003	0.0316	0.1266	7.8000e-004		9.8200e-003	9.8200e-003		9.8200e-003	9.8200e-003	0.0000	140.6427	140.6427	2.7000e-003	0.0000	140.7101
Total	**7.1100e-003**	**0.0316**	**0.1266**	**7.8000e-004**		**9.8200e-003**	**9.8200e-003**		**9.8200e-003**	**9.8200e-003**	**0.0000**	**140.6427**	**140.6427**	**2.7000e-003**	**0.0000**	**140.7101**

11.0 Vegetation

Arcata Land Co. Cultivation Project - Phase2

Humboldt County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	726.53	1000sqft	16.70	726,530.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	103
Climate Zone	1			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Curent Intensity Factor

Land Use - Per Phase 2, project Description = Hoop Structures

Construction Phase - Assume no demo. Site prep and grading done in Phase 1. Phase 2 is Hoop houses only, 30 work days to construct, no coatings.

Off-road Equipment -

Off-road Equipment - Per Equipment Asumptions provided, 1.5. Assume only Hoop Houses will be constructed

Off-road Equipment - No Demo

Off-road Equipment - All grading was done in Phase 1

Off-road Equipment - Paving was Phase 1

Off-road Equipment - All site prep was phase 1

Off-road Equipment - Per Equipment Assumptions Provided

Trips and VMT - No phases other than Hoop House Construction and related interior work

Demolition - No Demolition

Grading - Material Imported as Part of Phase 1. No grading in Phase 2

Architectural Coating - Sqft of hoop houses = 726,530, no coatings needed

Vehicle Trips - Based on 239 trips per day and 377,592 sq ft; info provided by the client

Vehicle Emission Factors - From EMFAC2017 for Humbolt Co 2022

Vehicle Emission Factors -

Vehicle Emission Factors -

Consumer Products - Hoop Houses would not have ROG emissions from the "General Category"

Area Coating - Hoop green houses will not operate like selected land use, no Arch Coatings

Energy Use - Calculated using info provided by client; NW Council Study

Water And Wastewater - Assume all water is used by plants, no indoor use

Solid Waste - All plant material will be composted.

Construction Off-road Equipment Mitigation - T3L3 Equipment Mitigation with Dust BMPs

Stationary Sources - Process Boilers - Per the list of operating equipment provided and Manufactuer's Specs

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	363,265.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	1,089,795.00	0.00
tblAreaCoating	Area_Nonresidential_Exterior	363265	0
tblAreaCoating	Area_Nonresidential_Interior	1089795	0
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	20.00	1.00
tblConstructionPhase	NumDays	10.00	1.00
tblConstructionPhase	NumDays	30.00	1.00
tblConstructionPhase	NumDays	300.00	63.00
tblConstructionPhase	NumDays	20.00	1.00
tblConstructionPhase	NumDays	20.00	1.00
tblConsumerProducts	ROG_EF	2.14E-05	0
tblEnergyUse	NT24E	0.00	9.29
tblEnergyUse	NT24NG	0.00	0.34
tblFleetMix	HHD	0.05	0.03
tblFleetMix	LDA	0.49	0.46
tblFleetMix	LDT1	0.05	0.06
tblFleetMix	LDT2	0.21	0.21
tblFleetMix	LHD1	0.04	0.05
tblFleetMix	LHD2	6.6740e-003	0.01
tblFleetMix	MCY	5.5530e-003	5.8566e-003
tblFleetMix	MDV	0.13	0.15
tblFleetMix	MH	8.4600e-004	9.9489e-004
tblFleetMix	MHD	0.01	0.01
tblFleetMix	OBUS	3.3980e-003	1.6326e-003
tblFleetMix	SBUS	1.5050e-003	1.3904e-003
tblFleetMix	UBUS	1.5290e-003	6.2950e-004
tblGrading	AcresOfGrading	2.00	0.00
tblLandUse	LotAcreage	16.68	16.70
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
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tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
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tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00

tblProjectCharacteristics	CO2IntensityFactor	641.35	210
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	682.94	0.50
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tblStationaryBoilersUse	AnnualHeatInput	0.00	1,004.00
tblStationaryBoilersUse	BoilerRatingValue	0.00	1.00
tblStationaryBoilersUse	BoilerRatingValue	0.00	1.00
tblStationaryBoilersUse	DailyHeatInput	0.00	5.02
tblStationaryBoilersUse	DailyHeatInput	0.00	5.02
tblStationaryBoilersUse	NumberOfEquipment	0.00	2.00
tblStationaryBoilersUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	VendorTripNumber	119.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	305.00	0.00
tblTripsAndVMT	WorkerTripNumber	61.00	0.00
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tblVehicleEF	HHD	2.94	7.28
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tblVehicleEF	HHD	1,603.74	1,457.69
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tblVehicleEF	HHD	0.03	0.04

tblVehicleEF	HHD	0.03	0.04
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tblVehicleEF	HHD	9.5000e-005	1.0000e-006
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tblVehicleEF	HHD	5.8000e-005	1.0000e-006
tblVehicleEF	HHD	0.14	0.07
tblVehicleEF	HHD	1.3480e-003	2.2410e-003
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tblVehicleEF	HHD	5.8000e-005	1.0000e-006
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tblVehicleEF	LDT1	0.65	0.46
tblVehicleEF	LDT1	0.13	0.13
tblVehicleEF	LDT1	0.15	0.08
tblVehicleEF	LDT1	0.51	1.91
tblVehicleEF	LDT1	0.74	0.83
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tblVehicleEF	LDT2	1.36	1.30
tblVehicleEF	LDT2	4.11	3.54
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tblVehicleEF	LDT2	0.40	0.46
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tblVehicleEF	LDT2	2.6000e-003	2.2280e-003
tblVehicleEF	LDT2	1.7510e-003	1.6350e-003
tblVehicleEF	LDT2	2.3910e-003	2.0490e-003
tblVehicleEF	LDT2	0.06	0.09
tblVehicleEF	LDT2	0.25	0.26

tblVehicleEF	LDT2	0.06	0.08
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.18	1.10
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tblVehicleEF	LDT2	9.3100e-004	1.3400e-004
tblVehicleEF	LDT2	0.06	0.09
tblVehicleEF	LDT2	0.25	0.26
tblVehicleEF	LDT2	0.06	0.08
tblVehicleEF	LDT2	0.05	0.04
tblVehicleEF	LDT2	0.18	1.10
tblVehicleEF	LDT2	0.30	0.61
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tblVehicleEF	LHD1	3.86	2.92
tblVehicleEF	LHD1	1.06	0.22
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tblVehicleEF	LHD1	0.04	0.03
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tblVehicleEF	LHD1	0.34	0.07
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tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.0690e-003	8.7200e-004
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tblVehicleEF	LHD2	0.44	0.10

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tblVehicleEF	LHD2	0.03	0.03
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tblVehicleEF	LHD2	0.02	0.02
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tblVehicleEF	MCY	24.20	23.43
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tblVehicleEF	MCY	164.72	215.60

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tblVehicleEF	MCY	1.8500e-003	1.7880e-003
tblVehicleEF	MCY	4.6350e-003	3.5830e-003
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tblVehicleEF	MCY	1.03	0.94
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tblVehicleEF	MCY	2.56	2.51
tblVehicleEF	MCY	1.25	2.92
tblVehicleEF	MCY	2.62	2.29
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tblVehicleEF	MDV	0.08	0.09
tblVehicleEF	MDV	0.06	0.03
tblVehicleEF	MDV	0.29	1.11
tblVehicleEF	MDV	0.57	0.64
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tblVehicleEF	MDV	1.2670e-003	9.0100e-004
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tblVehicleEF	MDV	0.37	0.27
tblVehicleEF	MDV	0.08	0.09
tblVehicleEF	MDV	0.09	0.04
tblVehicleEF	MDV	0.29	1.11
tblVehicleEF	MDV	0.62	0.70
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tblVehicleEF	MH	0.06	0.03
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tblVehicleEF	MH	59.34	19.28
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tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.05	0.05
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tblVehicleEF	MH	3.2380e-003	3.3230e-003
tblVehicleEF	MH	0.05	0.05

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tblVehicleEF	MH	0.44	0.31
tblVehicleEF	MH	0.35	0.16
tblVehicleEF	MH	0.06	3.24
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tblVehicleEF	MH	8.2900e-004	1.9100e-004
tblVehicleEF	MH	1.27	0.87
tblVehicleEF	MH	0.16	0.11
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tblVehicleEF	MHD	53.09	13.54
tblVehicleEF	MHD	0.97	0.66
tblVehicleEF	MHD	2.57	2.77
tblVehicleEF	MHD	12.59	1.13
tblVehicleEF	MHD	8.0550e-003	1.6500e-003
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	1.1580e-003	2.2400e-004

tblVehicleEF	MHD	7.7070e-003	1.5790e-003
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	1.0650e-003	2.0600e-004
tblVehicleEF	MHD	1.1540e-003	7.3600e-004
tblVehicleEF	MHD	0.08	0.05
tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	5.9800e-004	3.7700e-004
tblVehicleEF	MHD	0.11	0.11
tblVehicleEF	MHD	0.07	0.39
tblVehicleEF	MHD	0.64	0.09
tblVehicleEF	MHD	1.5320e-003	7.1900e-004
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	7.0600e-004	1.3400e-004
tblVehicleEF	MHD	1.1540e-003	7.3600e-004
tblVehicleEF	MHD	0.08	0.05
tblVehicleEF	MHD	0.07	0.03
tblVehicleEF	MHD	5.9800e-004	3.7700e-004
tblVehicleEF	MHD	0.13	0.13
tblVehicleEF	MHD	0.07	0.39
tblVehicleEF	MHD	0.70	0.09
tblVehicleEF	OBUS	0.02	7.6730e-003
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	0.05	0.03
tblVehicleEF	OBUS	0.31	0.55
tblVehicleEF	OBUS	0.74	1.20
tblVehicleEF	OBUS	8.69	3.02
tblVehicleEF	OBUS	170.92	87.93
tblVehicleEF	OBUS	1,296.14	1,405.82
tblVehicleEF	OBUS	61.10	19.95
tblVehicleEF	OBUS	0.78	0.42

tblVehicleEF	OBUS	1.95	1.81
tblVehicleEF	OBUS	5.56	0.86
tblVehicleEF	OBUS	1.6600e-004	7.2000e-004
tblVehicleEF	OBUS	7.3830e-003	0.02
tblVehicleEF	OBUS	6.7000e-004	1.9600e-004
tblVehicleEF	OBUS	1.5800e-004	6.8900e-004
tblVehicleEF	OBUS	7.0550e-003	0.02
tblVehicleEF	OBUS	6.1600e-004	1.8100e-004
tblVehicleEF	OBUS	1.3560e-003	1.6890e-003
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	0.05	0.05
tblVehicleEF	OBUS	6.2100e-004	7.3300e-004
tblVehicleEF	OBUS	0.09	0.09
tblVehicleEF	OBUS	0.06	0.63
tblVehicleEF	OBUS	0.56	0.14
tblVehicleEF	OBUS	1.6420e-003	8.3700e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.6500e-004	1.9700e-004
tblVehicleEF	OBUS	1.3560e-003	1.6890e-003
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	0.06	0.07
tblVehicleEF	OBUS	6.2100e-004	7.3300e-004
tblVehicleEF	OBUS	0.10	0.11
tblVehicleEF	OBUS	0.06	0.63
tblVehicleEF	OBUS	0.61	0.16
tblVehicleEF	SBUS	1.01	0.01
tblVehicleEF	SBUS	9.8520e-003	0.01
tblVehicleEF	SBUS	0.10	2.1640e-003
tblVehicleEF	SBUS	4.09	0.85
tblVehicleEF	SBUS	0.58	0.90

tblVehicleEF	SBUS	4.30	0.39
tblVehicleEF	SBUS	1,374.41	328.70
tblVehicleEF	SBUS	1,204.46	1,138.41
tblVehicleEF	SBUS	22.44	1.32
tblVehicleEF	SBUS	13.96	3.85
tblVehicleEF	SBUS	5.54	7.46
tblVehicleEF	SBUS	17.49	0.65
tblVehicleEF	SBUS	0.01	5.1270e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.03	0.04
tblVehicleEF	SBUS	2.1800e-004	1.9000e-005
tblVehicleEF	SBUS	0.01	4.9050e-003
tblVehicleEF	SBUS	2.8590e-003	2.9190e-003
tblVehicleEF	SBUS	0.03	0.04
tblVehicleEF	SBUS	2.0000e-004	1.7000e-005
tblVehicleEF	SBUS	1.4580e-003	2.2900e-004
tblVehicleEF	SBUS	0.02	4.3900e-003
tblVehicleEF	SBUS	0.51	0.08
tblVehicleEF	SBUS	6.3900e-004	9.2000e-005
tblVehicleEF	SBUS	0.12	0.14
tblVehicleEF	SBUS	0.01	0.03
tblVehicleEF	SBUS	0.23	0.01
tblVehicleEF	SBUS	0.01	3.1110e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	2.9900e-004	1.3000e-005
tblVehicleEF	SBUS	1.4580e-003	2.2900e-004
tblVehicleEF	SBUS	0.02	4.3900e-003
tblVehicleEF	SBUS	0.72	0.10
tblVehicleEF	SBUS	6.3900e-004	9.2000e-005
tblVehicleEF	SBUS	0.14	0.16

tblVehicleEF	SBUS	0.01	0.03
tblVehicleEF	SBUS	0.26	0.01
tblVehicleEF	UBUS	0.13	2.84
tblVehicleEF	UBUS	0.08	0.02
tblVehicleEF	UBUS	4.51	21.64
tblVehicleEF	UBUS	14.09	1.13
tblVehicleEF	UBUS	2,046.25	1,708.44
tblVehicleEF	UBUS	137.44	11.78
tblVehicleEF	UBUS	7.17	0.66
tblVehicleEF	UBUS	13.66	0.12
tblVehicleEF	UBUS	0.53	0.09
tblVehicleEF	UBUS	0.01	0.03
tblVehicleEF	UBUS	0.13	3.8290e-003
tblVehicleEF	UBUS	8.3200e-004	6.1000e-005
tblVehicleEF	UBUS	0.23	0.04
tblVehicleEF	UBUS	3.0000e-003	6.3580e-003
tblVehicleEF	UBUS	0.12	3.6570e-003
tblVehicleEF	UBUS	7.6500e-004	5.7000e-005
tblVehicleEF	UBUS	3.5000e-003	5.6700e-004
tblVehicleEF	UBUS	0.08	0.01
tblVehicleEF	UBUS	2.0260e-003	3.6000e-004
tblVehicleEF	UBUS	0.44	0.04
tblVehicleEF	UBUS	0.02	0.08
tblVehicleEF	UBUS	1.13	0.07
tblVehicleEF	UBUS	0.02	7.5040e-003
tblVehicleEF	UBUS	1.6300e-003	1.1700e-004
tblVehicleEF	UBUS	3.5000e-003	5.6700e-004
tblVehicleEF	UBUS	0.08	0.01
tblVehicleEF	UBUS	2.0260e-003	3.6000e-004
tblVehicleEF	UBUS	0.61	2.90

tblVehicleEF	UBUS	0.02	0.08
tblVehicleEF	UBUS	1.23	0.08
tblVehicleTrips	ST_TR	1.68	0.07
tblVehicleTrips	SU_TR	1.68	0.02
tblVehicleTrips	WD_TR	1.68	0.19
tblWater	AerobicPercent	87.46	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	IndoorWaterUseRate	168,010,062.50	0.00
tblWater	SepticTankPercent	10.33	100.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0155	0.1456	0.1643	2.8000e-004	0.0000	7.7100e-003	7.7100e-003	0.0000	7.5200e-003	7.5200e-003	0.0000	24.2389	24.2389	2.9600e-003	0.0000	24.3129
Maximum	**0.0155**	**0.1456**	**0.1643**	**2.8000e-004**	**0.0000**	**7.7100e-003**	**7.7100e-003**	**0.0000**	**7.5200e-003**	**7.5200e-003**	**0.0000**	**24.2389**	**24.2389**	**2.9600e-003**	**0.0000**	**24.3129**

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					
2021	6.5000e-003	0.1379	0.1787	2.8000e-004	0.0000	1.7500e-003	1.7500e-003	0.0000	1.7200e-003	1.7200e-003	0.0000	24.2389	24.2389	2.9600e-003	0.0000	24.3128
Maximum	**6.5000e-003**	**0.1379**	**0.1787**	**2.8000e-004**	**0.0000**	**1.7500e-003**	**1.7500e-003**	**0.0000**	**1.7200e-003**	**1.7200e-003**	**0.0000**	**24.2389**	**24.2389**	**2.9600e-003**	**0.0000**	**24.3128**

	ROG	NOx	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	**58.12**	**5.30**	**-8.79**	**0.00**	**0.00**	**77.30**	**77.30**	**0.00**	**77.13**	**77.13**	**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)
		Highest		

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	6.2000e-004	6.0000e-005	6.6900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0130	0.0130	3.0000e-005	0.0000	0.0138
Energy	1.3300e-003	0.0121	0.0102	7.0000e-005		9.2000e-004	9.2000e-004		9.2000e-004	9.2000e-004	0.0000	656.1491	656.1491	0.0890	0.0186	663.9216
Mobile	0.0900	0.2374	0.6969	2.0100e-003	0.1517	2.5800e-003	0.1543	0.0408	2.4400e-003	0.0433	0.0000	167.2275	167.2275	7.3500e-003	0.0000	167.4112
Stationary	8.1200e-003	0.0361	0.1447	8.9000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	160.7345	160.7345	3.0800e-003	0.0000	160.8116
Waste						0.0000	0.0000		0.0000	0.0000	0.1015	0.0000	0.1015	6.0000e-003	0.0000	0.2515
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1001**	**0.2858**	**0.8584**	**2.9700e-003**	**0.1517**	**0.0147**	**0.1665**	**0.0408**	**0.0146**	**0.0554**	**0.1015**	**984.1241**	**984.2256**	**0.1055**	**0.0186**	**992.4096**

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	6.2000e-004	6.0000e-005	6.6900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0130	0.0130	3.0000e-005	0.0000	0.0138
Energy	1.3300e-003	0.0121	0.0102	7.0000e-005		9.2000e-004	9.2000e-004		9.2000e-004	9.2000e-004	0.0000	656.1491	656.1491	0.0890	0.0186	663.9216
Mobile	0.0900	0.2374	0.6969	2.0100e-003	0.1517	2.5800e-003	0.1543	0.0408	2.4400e-003	0.0433	0.0000	167.2275	167.2275	7.3500e-003	0.0000	167.4112
Stationary	8.1200e-003	0.0361	0.1447	8.9000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	160.7345	160.7345	3.0800e-003	0.0000	160.8116
Waste						0.0000	0.0000		0.0000	0.0000	0.1015	0.0000	0.1015	6.0000e-003	0.0000	0.2515
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1001**	**0.2858**	**0.8584**	**2.9700e-003**	**0.1517**	**0.0147**	**0.1665**	**0.0408**	**0.0146**	**0.0554**	**0.1015**	**984.1241**	**984.2256**	**0.1055**	**0.0186**	**992.4096**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2021	9/1/2021	5	1	
2	Site Preparation	Site Preparation	9/1/2021	9/1/2021	5	1	
3	Grading	Grading	9/1/2021	9/1/2021	5	1	
4	Building Construction	Building Construction	9/1/2021	11/26/2021	5	63	
5	Paving	Paving	9/1/2021	9/1/2021	5	1	
6	Architectural Coating	Architectural Coating	11/26/2021	11/26/2021	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	0.00	81	0.73
Demolition	Excavators	0	0.00	158	0.38
Demolition	Rubber Tired Dozers	0	0.00	247	0.40
Site Preparation	Rubber Tired Dozers	0	0.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Grading	Excavators	0	0.00	158	0.38
Grading	Graders	0	0.00	187	0.41
Grading	Rubber Tired Dozers	0	0.00	247	0.40
Grading	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Building Construction	Cranes	0	0.00	231	0.29
Building Construction	Forklifts	1	4.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Skid Steer Loaders	1	4.00	65	0.37
Building Construction	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Building Construction	Welders	0	0.00	46	0.45
Paving	Cement and Mortar Mixers	0	0.00	9	0.56
Paving	Pavers	0	0.00	130	0.42
Paving	Paving Equipment	0	0.00	132	0.36
Paving	Rollers	0	0.00	80	0.38
Paving	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Scrapers	2	8.00	367	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	2	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	3	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2021

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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.3000e-004	0.0107	7.0000e-003	2.0000e-005		4.2000e-004	4.2000e-004		3.8000e-004	3.8000e-004	0.0000	1.3317	1.3317	4.3000e-004	0.0000	1.3424
Total	**9.3000e-004**	**0.0107**	**7.0000e-003**	**2.0000e-005**	**0.0000**	**4.2000e-004**	**4.2000e-004**	**0.0000**	**3.8000e-004**	**3.8000e-004**	**0.0000**	**1.3317**	**1.3317**	**4.3000e-004**	**0.0000**	**1.3424**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	9.3000e-004	0.0107	7.0000e-003	2.0000e-005		4.2000e-004	4.2000e-004		3.8000e-004	3.8000e-004	0.0000	1.3317	1.3317	4.3000e-004	0.0000	1.3424
Total	**9.3000e-004**	**0.0107**	**7.0000e-003**	**2.0000e-005**	**0.0000**	**4.2000e-004**	**4.2000e-004**	**0.0000**	**3.8000e-004**	**3.8000e-004**	**0.0000**	**1.3317**	**1.3317**	**4.3000e-004**	**0.0000**	**1.3424**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2021

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	0.0145	0.1341	0.1564	2.6000e-004		7.2500e-003	7.2500e-003		7.0900e-003	7.0900e-003	0.0000	22.7796	22.7796	2.5200e-003	0.0000	22.8425
Total	**0.0145**	**0.1341**	**0.1564**	**2.6000e-004**		**7.2500e-003**	**7.2500e-003**		**7.0900e-003**	**7.0900e-003**	**0.0000**	**22.7796**	**22.7796**	**2.5200e-003**	**0.0000**	**22.8425**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	5.5400e-003	0.1265	0.1708	2.6000e-004		1.3300e-003	1.3300e-003		1.3300e-003	1.3300e-003	0.0000	22.7796	22.7796	2.5200e-003	0.0000	22.8425
Total	**5.5400e-003**	**0.1265**	**0.1708**	**2.6000e-004**		**1.3300e-003**	**1.3300e-003**		**1.3300e-003**	**1.3300e-003**	**0.0000**	**22.7796**	**22.7796**	**2.5200e-003**	**0.0000**	**22.8425**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2021

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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2021

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1000e-004	7.6000e-004	9.1000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1279
Total	**1.1000e-004**	**7.6000e-004**	**9.1000e-004**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.1277**	**0.1277**	**1.0000e-005**	**0.0000**	**0.1279**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	3.0000e-005	6.8000e-004	9.2000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1279
Total	**3.0000e-005**	**6.8000e-004**	**9.2000e-004**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.1277**	**0.1277**	**1.0000e-005**	**0.0000**	**0.1279**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0900	0.2374	0.6969	2.0100e-003	0.1517	2.5800e-003	0.1543	0.0408	2.4400e-003	0.0433	0.0000	167.2275	167.2275	7.3500e-003	0.0000	167.4112
Unmitigated	0.0900	0.2374	0.6969	2.0100e-003	0.1517	2.5800e-003	0.1543	0.0408	2.4400e-003	0.0433	0.0000	167.2275	167.2275	7.3500e-003	0.0000	167.4112

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	138.04	50.86	14.53	417,029	417,029
Total	138.04	50.86	14.53	417,029	417,029

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
Unrefrigerated Warehouse-No Rail	14.70	6.60	6.60	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.461849	0.064347	0.206426	0.150450	0.053725	0.011671	0.011264	0.029765	0.001633	0.000629	0.005857	0.001390	0.000995

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	642.9672	642.9672	0.0888	0.0184	650.6614
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	642.9672	642.9672	0.0888	0.0184	650.6614

NaturalGas Mitigated	1.3300e-003	0.0121	0.0102	7.0000e-005		9.2000e-004	9.2000e-004		9.2000e-004	9.2000e-004	0.0000	13.1819	13.1819	2.5000e-004	2.4000e-004	13.2603
NaturalGas Unmitigated	1.3300e-003	0.0121	0.0102	7.0000e-005		9.2000e-004	9.2000e-004		9.2000e-004	9.2000e-004	0.0000	13.1819	13.1819	2.5000e-004	2.4000e-004	13.2603

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					
Unrefrigerated Warehouse-No Rail	247020	1.3300e-003	0.0121	0.0102	7.0000e-005		9.2000e-004	9.2000e-004		9.2000e-004	9.2000e-004	0.0000	13.1819	13.1819	2.5000e-004	2.4000e-004	13.2603
Total		**1.3300e-003**	**0.0121**	**0.0102**	**7.0000e-005**		**9.2000e-004**	**9.2000e-004**		**9.2000e-004**	**9.2000e-004**	**0.0000**	**13.1819**	**13.1819**	**2.5000e-004**	**2.4000e-004**	**13.2603**

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					
Unrefrigerated Warehouse-No Rail	247020	1.3300e-003	0.0121	0.0102	7.0000e-005		9.2000e-004	9.2000e-004		9.2000e-004	9.2000e-004	0.0000	13.1819	13.1819	2.5000e-004	2.4000e-004	13.2603
Total		**1.3300e-003**	**0.0121**	**0.0102**	**7.0000e-005**		**9.2000e-004**	**9.2000e-004**		**9.2000e-004**	**9.2000e-004**	**0.0000**	**13.1819**	**13.1819**	**2.5000e-004**	**2.4000e-004**	**13.2603**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	6.75e+006	642.9672	0.0888	0.0184	650.6614
Total		**642.9672**	**0.0888**	**0.0184**	**650.6614**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	6.75e+006	642.9672	0.0888	0.0184	650.6614
Total		**642.9672**	**0.0888**	**0.0184**	**650.6614**

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	6.2000e-004	6.0000e-005	6.6900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0130	0.0130	3.0000e-005	0.0000	0.0138
Unmitigated	6.2000e-004	6.0000e-005	6.6900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0130	0.0130	3.0000e-005	0.0000	0.0138

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.2000e-004	6.0000e-005	6.6900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0130	0.0130	3.0000e-005	0.0000	0.0138
Total	**6.2000e-004**	**6.0000e-005**	**6.6900e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0130**	**0.0130**	**3.0000e-005**	**0.0000**	**0.0138**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Landscaping	6.2000e-004	6.0000e-005	6.6900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0130	0.0130	3.0000e-005	0.0000	0.0138
Total	**6.2000e-004**	**6.0000e-005**	**6.6900e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0130**	**0.0130**	**3.0000e-005**	**0.0000**	**0.0138**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.1015	6.0000e-003	0.0000	0.2515
Unmitigated	0.1015	6.0000e-003	0.0000	0.2515

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No Rail	0.5	0.1015	6.0000e-003	0.0000	0.2515
Total		**0.1015**	**6.0000e-003**	**0.0000**	**0.2515**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No Rail	0.5	0.1015	6.0000e-003	0.0000	0.2515
Total		**0.1015**	**6.0000e-003**	**0.0000**	**0.2515**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
Boiler	2	5.02	1004	1.004	CNG
Boiler	1	5.02	1004	1.004	CNG

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

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					
Boiler - CNG (0 - 2 MMBTU)	8.1200e-003	0.0361	0.1447	8.9000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	160.7345	160.7345	3.0800e-003	0.0000	160.8116
Total	**8.1200e-003**	**0.0361**	**0.1447**	**8.9000e-004**		**0.0112**	**0.0112**		**0.0112**	**0.0112**	**0.0000**	**160.7345**	**160.7345**	**3.0800e-003**	**0.0000**	**160.8116**

11.0 Vegetation

Arcata Land Co. Cultivation Project - Phase1

Humboldt County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	67.33	1000sqft	38.20	67,330.00	0
Parking Lot	66.00	Space	0.00	22,725.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	103
Climate Zone	1			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Curent Intensity Factor

Land Use - Phase 1 = New Admin Buildings and infrastructure

Construction Phase - Based on CalEEMod defaults for buildings (67,332 sf) and site (38.2 ac). Assume no demo given existing greenhouse structures will be used and the remaining land is undeveloped

Off-road Equipment - CalEEMod Default

Off-road Equipment - CalEEMod Default

Off-road Equipment - No Demo

Off-road Equipment - Per Equipment Input Assumptions Provided

Off-road Equipment - CalEEMod Default

Off-road Equipment - Dumptrucks included in Haul trips

Off-road Equipment - Per Equipment Assumptions Provided

Trips and VMT - Based on 90,000 CY sand sourced 1 mile from site. Concrete and asphalt = vendor trips w/ amounts based off of plans provided

Demolition - No Demolition

Grading - Per project description, 90,000 CY of sand to elevate and prep the ground

Architectural Coating - Size of Parking area

Vehicle Trips - Based on 135 trips per day (232*(7/12)) and 67,332 building sq ft; infor provided by the client

Vehicle Emission Factors - From EMFAC2017 for Humbolt Co 2030

Vehicle Emission Factors -

Vehicle Emission Factors -

Area Coating - sq ft of parking lot

Energy Use -

Water And Wastewater - The project will have it's own leach fields for SS, water supplied by on-site well with pupm included in energy use

Construction Off-road Equipment Mitigation - T3L3 Equipment Mitigation with Dust BMPs

Stationary Sources - Process Boilers - Per the list of operating equipment provided and Manufactuer's Specs

Solid Waste - Assume half of GLI default

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Parking	1,364.00	22,725.00
tblAreaCoating	Area_Parking	1364	22725
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	55.00	10.00
tblConstructionPhase	NumDays	740.00	200.00
tblConstructionPhase	NumDays	50.00	1.00
tblConstructionPhase	NumDays	55.00	10.00
tblFleetMix	HHD	0.05	0.03
tblFleetMix	HHD	0.05	0.03
tblFleetMix	LDA	0.54	0.53
tblFleetMix	LDA	0.54	0.53
tblFleetMix	LDT1	0.03	0.06
tblFleetMix	LDT1	0.03	0.06

tblFleetMix	LDT2	0.21	0.20
tblFleetMix	LDT2	0.21	0.20
tblFleetMix	LHD1	0.02	0.03
tblFleetMix	LHD1	0.02	0.03
tblFleetMix	LHD2	3.7140e-003	7.5690e-003
tblFleetMix	LHD2	3.7140e-003	7.5690e-003
tblFleetMix	MCY	4.4000e-003	4.7070e-003
tblFleetMix	MCY	4.4000e-003	4.7070e-003
tblFleetMix	MDV	0.12	0.13
tblFleetMix	MDV	0.12	0.13
tblFleetMix	MH	4.6600e-004	6.8300e-004
tblFleetMix	MH	4.6600e-004	6.8300e-004
tblFleetMix	MHD	0.01	9.0980e-003
tblFleetMix	MHD	0.01	9.0980e-003
tblFleetMix	OBUS	3.9810e-003	1.8970e-003
tblFleetMix	OBUS	3.9810e-003	1.8970e-003
tblFleetMix	SBUS	1.4210e-003	1.3340e-003
tblFleetMix	SBUS	1.4210e-003	1.3340e-003
tblFleetMix	UBUS	1.0170e-003	6.2500e-004
tblFleetMix	UBUS	1.0170e-003	6.2500e-004
tblGrading	AcresOfGrading	150.00	0.00
tblLandUse	LandUseSquareFeet	26,400.00	22,725.00
tblLandUse	LotAcreage	1.55	38.20
tblLandUse	LotAcreage	0.59	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	210
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	83.49	41.74
tblStationaryBoilersUse	AnnualHeatInput	0.00	878.50
tblStationaryBoilersUse	AnnualHeatInput	0.00	878.50
tblStationaryBoilersUse	BoilerRatingValue	0.00	1.00
tblStationaryBoilersUse	BoilerRatingValue	0.00	1.00
tblStationaryBoilersUse	DailyHeatInput	0.00	5.02
tblStationaryBoilersUse	DailyHeatInput	0.00	5.02
tblStationaryBoilersUse	NumberOfEquipment	0.00	2.00
tblStationaryBoilersUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	VendorTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	13.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	38.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	0.00
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tblVehicleEF	HHD	0.03	0.04
tblVehicleEF	HHD	7.7080e-003	0.03
tblVehicleEF	HHD	6.1000e-005	0.00
tblVehicleEF	HHD	5.4030e-003	2.8910e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.6720e-003	8.8130e-003
tblVehicleEF	HHD	7.3740e-003	0.03
tblVehicleEF	HHD	5.6000e-005	0.00
tblVehicleEF	HHD	6.4000e-005	1.0000e-006
tblVehicleEF	HHD	5.0060e-003	4.4000e-005
tblVehicleEF	HHD	0.46	0.57
tblVehicleEF	HHD	4.1000e-005	0.00
tblVehicleEF	HHD	0.09	0.03
tblVehicleEF	HHD	7.3200e-004	3.6700e-004
tblVehicleEF	HHD	0.07	1.0000e-006
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tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	1.0000e-004	0.00
tblVehicleEF	HHD	6.4000e-005	1.0000e-006
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tblVehicleEF	HHD	0.10	0.03
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tblVehicleEF	LDA	0.06	0.15
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tblVehicleEF	LDT1	0.04	0.02
tblVehicleEF	LDT1	0.33	1.12
tblVehicleEF	LDT1	0.32	0.34
tblVehicleEF	LDT1	2.6390e-003	3.3310e-003
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tblVehicleEF	LDT1	0.12	0.09
tblVehicleEF	LDT1	0.43	0.27
tblVehicleEF	LDT1	0.10	0.08
tblVehicleEF	LDT1	0.06	0.03
tblVehicleEF	LDT1	0.33	1.12
tblVehicleEF	LDT1	0.35	0.38
tblVehicleEF	LDT2	6.6240e-003	2.9780e-003
tblVehicleEF	LDT2	8.6550e-003	0.06
tblVehicleEF	LDT2	0.80	0.74
tblVehicleEF	LDT2	2.15	2.82
tblVehicleEF	LDT2	291.57	293.39
tblVehicleEF	LDT2	69.12	65.09
tblVehicleEF	LDT2	0.11	0.07

tblVehicleEF	LDT2	0.18	0.27
tblVehicleEF	LDT2	1.4960e-003	1.2280e-003
tblVehicleEF	LDT2	2.1990e-003	1.5820e-003
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tblVehicleEF	LDT2	2.0220e-003	1.4550e-003
tblVehicleEF	LDT2	0.05	0.07
tblVehicleEF	LDT2	0.18	0.20
tblVehicleEF	LDT2	0.05	0.07
tblVehicleEF	LDT2	0.02	0.01
tblVehicleEF	LDT2	0.15	0.90
tblVehicleEF	LDT2	0.12	0.31
tblVehicleEF	LDT2	2.9230e-003	0.01
tblVehicleEF	LDT2	7.2800e-004	1.3600e-004
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tblVehicleEF	LDT2	0.18	0.20
tblVehicleEF	LDT2	0.05	0.07
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.15	0.90
tblVehicleEF	LDT2	0.13	0.33
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tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	0.14	0.15
tblVehicleEF	LHD1	1.48	1.11
tblVehicleEF	LHD1	2.82	0.95
tblVehicleEF	LHD1	9.56	9.45
tblVehicleEF	LHD1	677.06	722.72
tblVehicleEF	LHD1	24.85	8.62
tblVehicleEF	LHD1	0.11	0.10
tblVehicleEF	LHD1	2.77	1.68

tblVehicleEF	LHD1	1.11	0.23
tblVehicleEF	LHD1	1.1400e-003	1.1690e-003
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	0.03	0.02
tblVehicleEF	LHD1	8.7400e-004	2.4400e-004
tblVehicleEF	LHD1	1.0910e-003	1.1180e-003
tblVehicleEF	LHD1	2.6040e-003	2.5650e-003
tblVehicleEF	LHD1	0.03	0.02
tblVehicleEF	LHD1	8.0400e-004	2.2400e-004
tblVehicleEF	LHD1	2.3880e-003	1.8940e-003
tblVehicleEF	LHD1	0.16	0.12
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.3200e-003	1.0050e-003
tblVehicleEF	LHD1	0.19	0.14
tblVehicleEF	LHD1	0.87	1.34
tblVehicleEF	LHD1	0.30	0.06
tblVehicleEF	LHD1	9.5000e-005	9.1000e-005
tblVehicleEF	LHD1	6.6220e-003	7.0150e-003
tblVehicleEF	LHD1	3.0200e-004	8.5000e-005
tblVehicleEF	LHD1	2.3880e-003	1.8940e-003
tblVehicleEF	LHD1	0.16	0.12
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.3200e-003	1.0050e-003
tblVehicleEF	LHD1	0.23	0.17
tblVehicleEF	LHD1	0.87	1.34
tblVehicleEF	LHD1	0.33	0.07
tblVehicleEF	LHD2	2.6710e-003	1.7400e-003
tblVehicleEF	LHD2	6.9820e-003	6.9230e-003
tblVehicleEF	LHD2	4.2420e-003	3.4730e-003
tblVehicleEF	LHD2	0.12	0.11

tblVehicleEF	LHD2	0.65	0.74
tblVehicleEF	LHD2	0.86	0.30
tblVehicleEF	LHD2	14.91	15.48
tblVehicleEF	LHD2	682.07	690.91
tblVehicleEF	LHD2	17.00	3.91
tblVehicleEF	LHD2	0.11	0.14
tblVehicleEF	LHD2	0.88	1.17
tblVehicleEF	LHD2	0.33	0.09
tblVehicleEF	LHD2	1.3670e-003	1.8000e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	2.6700e-004	6.0000e-005
tblVehicleEF	LHD2	1.3080e-003	1.7220e-003
tblVehicleEF	LHD2	2.7580e-003	2.8150e-003
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	2.4500e-004	5.5000e-005
tblVehicleEF	LHD2	4.6100e-004	4.2400e-004
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	2.8500e-004	2.5600e-004
tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	0.09	0.20
tblVehicleEF	LHD2	0.06	0.02
tblVehicleEF	LHD2	1.4500e-004	1.4700e-004
tblVehicleEF	LHD2	6.6080e-003	6.6180e-003
tblVehicleEF	LHD2	1.8500e-004	3.9000e-005
tblVehicleEF	LHD2	4.6100e-004	4.2400e-004
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	2.8500e-004	2.5600e-004

tblVehicleEF	LHD2	0.14	0.15
tblVehicleEF	LHD2	0.09	0.20
tblVehicleEF	LHD2	0.06	0.02
tblVehicleEF	MCY	0.45	0.34
tblVehicleEF	MCY	0.18	0.28
tblVehicleEF	MCY	20.87	20.48
tblVehicleEF	MCY	11.01	9.82
tblVehicleEF	MCY	168.72	214.07
tblVehicleEF	MCY	47.01	64.06
tblVehicleEF	MCY	1.21	1.21
tblVehicleEF	MCY	0.33	0.28
tblVehicleEF	MCY	1.9200e-003	1.9360e-003
tblVehicleEF	MCY	2.8960e-003	2.4930e-003
tblVehicleEF	MCY	1.7950e-003	1.8090e-003
tblVehicleEF	MCY	2.7240e-003	2.3420e-003
tblVehicleEF	MCY	0.70	1.35
tblVehicleEF	MCY	0.88	0.84
tblVehicleEF	MCY	0.41	0.79
tblVehicleEF	MCY	2.34	2.32
tblVehicleEF	MCY	0.83	1.77
tblVehicleEF	MCY	2.45	2.16
tblVehicleEF	MCY	2.0960e-003	2.1180e-003
tblVehicleEF	MCY	7.2300e-004	6.3400e-004
tblVehicleEF	MCY	0.70	1.35
tblVehicleEF	MCY	0.88	0.84
tblVehicleEF	MCY	0.41	0.79
tblVehicleEF	MCY	2.88	2.86
tblVehicleEF	MCY	0.83	1.77
tblVehicleEF	MCY	2.67	2.35
tblVehicleEF	MDV	0.01	2.6420e-003

tblVehicleEF	MDV	0.02	0.07
tblVehicleEF	MDV	1.26	0.66
tblVehicleEF	MDV	4.89	2.93
tblVehicleEF	MDV	402.47	354.25
tblVehicleEF	MDV	96.36	76.98
tblVehicleEF	MDV	0.24	0.06
tblVehicleEF	MDV	0.47	0.29
tblVehicleEF	MDV	1.7090e-003	1.2720e-003
tblVehicleEF	MDV	2.6450e-003	1.7330e-003
tblVehicleEF	MDV	1.5750e-003	1.1760e-003
tblVehicleEF	MDV	2.4320e-003	1.5930e-003
tblVehicleEF	MDV	0.10	0.09
tblVehicleEF	MDV	0.36	0.24
tblVehicleEF	MDV	0.09	0.09
tblVehicleEF	MDV	0.03	0.01
tblVehicleEF	MDV	0.31	1.01
tblVehicleEF	MDV	0.34	0.37
tblVehicleEF	MDV	4.0350e-003	3.2700e-003
tblVehicleEF	MDV	1.0500e-003	7.1200e-004
tblVehicleEF	MDV	0.10	0.09
tblVehicleEF	MDV	0.36	0.24
tblVehicleEF	MDV	0.09	0.09
tblVehicleEF	MDV	0.05	0.02
tblVehicleEF	MDV	0.31	1.01
tblVehicleEF	MDV	0.37	0.40
tblVehicleEF	MH	0.03	8.4020e-003
tblVehicleEF	MH	0.03	0.02
tblVehicleEF	MH	1.56	0.64
tblVehicleEF	MH	6.75	1.77
tblVehicleEF	MH	1,202.12	1,387.10

tblVehicleEF	MH	56.36	14.88
tblVehicleEF	MH	1.68	1.96
tblVehicleEF	MH	1.28	0.23
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.03	0.04
tblVehicleEF	MH	1.1230e-003	2.0900e-004
tblVehicleEF	MH	3.2430e-003	3.3580e-003
tblVehicleEF	MH	0.03	0.04
tblVehicleEF	MH	1.0330e-003	1.9200e-004
tblVehicleEF	MH	0.77	0.45
tblVehicleEF	MH	0.10	0.06
tblVehicleEF	MH	0.29	0.18
tblVehicleEF	MH	0.10	0.07
tblVehicleEF	MH	0.04	1.46
tblVehicleEF	MH	0.43	0.08
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	6.8300e-004	1.4700e-004
tblVehicleEF	MH	0.77	0.45
tblVehicleEF	MH	0.10	0.06
tblVehicleEF	MH	0.29	0.18
tblVehicleEF	MH	0.13	0.09
tblVehicleEF	MH	0.04	1.46
tblVehicleEF	MH	0.47	0.09
tblVehicleEF	MHD	0.02	5.4830e-003
tblVehicleEF	MHD	4.3300e-003	2.0110e-003
tblVehicleEF	MHD	0.06	0.01
tblVehicleEF	MHD	0.39	0.46
tblVehicleEF	MHD	0.35	0.24
tblVehicleEF	MHD	5.05	1.51
tblVehicleEF	MHD	157.91	56.10

tblVehicleEF	MHD	1,192.36	1,084.92
tblVehicleEF	MHD	49.96	13.74
tblVehicleEF	MHD	0.50	0.33
tblVehicleEF	MHD	1.60	1.70
tblVehicleEF	MHD	12.28	1.37
tblVehicleEF	MHD	1.8100e-004	2.8600e-004
tblVehicleEF	MHD	5.3670e-003	0.01
tblVehicleEF	MHD	6.5500e-004	1.6500e-004
tblVehicleEF	MHD	1.7300e-004	2.7400e-004
tblVehicleEF	MHD	5.1290e-003	9.5790e-003
tblVehicleEF	MHD	6.0200e-004	1.5100e-004
tblVehicleEF	MHD	7.1600e-004	5.2700e-004
tblVehicleEF	MHD	0.06	0.04
tblVehicleEF	MHD	0.03	0.02
tblVehicleEF	MHD	4.4600e-004	3.2400e-004
tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	0.05	0.29
tblVehicleEF	MHD	0.34	0.07
tblVehicleEF	MHD	1.5180e-003	5.3400e-004
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	5.8900e-004	1.3600e-004
tblVehicleEF	MHD	7.1600e-004	5.2700e-004
tblVehicleEF	MHD	0.06	0.04
tblVehicleEF	MHD	0.04	0.03
tblVehicleEF	MHD	4.4600e-004	3.2400e-004
tblVehicleEF	MHD	0.06	0.03
tblVehicleEF	MHD	0.05	0.29
tblVehicleEF	MHD	0.37	0.08
tblVehicleEF	OBUS	0.01	6.1160e-003
tblVehicleEF	OBUS	4.1550e-003	2.9820e-003

tblVehicleEF	OBUS	0.04	0.02
tblVehicleEF	OBUS	0.25	0.64
tblVehicleEF	OBUS	0.35	0.40
tblVehicleEF	OBUS	5.46	1.98
tblVehicleEF	OBUS	225.91	98.90
tblVehicleEF	OBUS	1,249.83	1,108.21
tblVehicleEF	OBUS	51.07	13.64
tblVehicleEF	OBUS	0.55	0.45
tblVehicleEF	OBUS	1.18	1.55
tblVehicleEF	OBUS	7.33	1.26
tblVehicleEF	OBUS	4.9000e-005	1.4700e-004
tblVehicleEF	OBUS	3.2550e-003	7.2950e-003
tblVehicleEF	OBUS	6.8300e-004	1.5100e-004
tblVehicleEF	OBUS	4.7000e-005	1.4100e-004
tblVehicleEF	OBUS	3.1070e-003	6.9700e-003
tblVehicleEF	OBUS	6.2800e-004	1.3900e-004
tblVehicleEF	OBUS	1.2470e-003	1.4980e-003
tblVehicleEF	OBUS	0.03	0.03
tblVehicleEF	OBUS	0.04	0.05
tblVehicleEF	OBUS	5.9200e-004	6.8400e-004
tblVehicleEF	OBUS	0.05	0.02
tblVehicleEF	OBUS	0.04	0.57
tblVehicleEF	OBUS	0.36	0.09
tblVehicleEF	OBUS	2.1650e-003	9.3900e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	6.0700e-004	1.3500e-004
tblVehicleEF	OBUS	1.2470e-003	1.4980e-003
tblVehicleEF	OBUS	0.03	0.03
tblVehicleEF	OBUS	0.05	0.06
tblVehicleEF	OBUS	5.9200e-004	6.8400e-004

tblVehicleEF	OBUS	0.06	0.03
tblVehicleEF	OBUS	0.04	0.57
tblVehicleEF	OBUS	0.40	0.10
tblVehicleEF	SBUS	1.01	0.02
tblVehicleEF	SBUS	4.5570e-003	6.2770e-003
tblVehicleEF	SBUS	0.07	2.4280e-003
tblVehicleEF	SBUS	3.96	1.24
tblVehicleEF	SBUS	0.34	0.57
tblVehicleEF	SBUS	3.06	0.37
tblVehicleEF	SBUS	1,315.11	309.97
tblVehicleEF	SBUS	1,183.41	1,019.86
tblVehicleEF	SBUS	22.66	1.52
tblVehicleEF	SBUS	7.54	2.82
tblVehicleEF	SBUS	2.57	4.29
tblVehicleEF	SBUS	17.28	1.21
tblVehicleEF	SBUS	3.9850e-003	2.1580e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.01	0.03
tblVehicleEF	SBUS	2.7100e-004	2.3000e-005
tblVehicleEF	SBUS	3.8130e-003	2.0640e-003
tblVehicleEF	SBUS	2.8640e-003	2.8910e-003
tblVehicleEF	SBUS	0.01	0.03
tblVehicleEF	SBUS	2.4900e-004	2.1000e-005
tblVehicleEF	SBUS	1.6470e-003	1.9400e-004
tblVehicleEF	SBUS	0.02	3.9890e-003
tblVehicleEF	SBUS	0.50	0.10
tblVehicleEF	SBUS	8.1500e-004	9.4000e-005
tblVehicleEF	SBUS	0.08	0.09
tblVehicleEF	SBUS	0.01	0.03
tblVehicleEF	SBUS	0.18	0.01

tblVehicleEF	SBUS	0.01	2.9360e-003
tblVehicleEF	SBUS	0.01	9.6730e-003
tblVehicleEF	SBUS	2.8000e-004	1.5000e-005
tblVehicleEF	SBUS	1.6470e-003	1.9400e-004
tblVehicleEF	SBUS	0.02	3.9890e-003
tblVehicleEF	SBUS	0.71	0.14
tblVehicleEF	SBUS	8.1500e-004	9.4000e-005
tblVehicleEF	SBUS	0.09	0.10
tblVehicleEF	SBUS	0.01	0.03
tblVehicleEF	SBUS	0.20	0.02
tblVehicleEF	UBUS	0.20	1.73
tblVehicleEF	UBUS	0.08	0.02
tblVehicleEF	UBUS	3.57	13.04
tblVehicleEF	UBUS	13.13	1.13
tblVehicleEF	UBUS	1,931.82	1,554.15
tblVehicleEF	UBUS	145.03	10.27
tblVehicleEF	UBUS	3.86	0.57
tblVehicleEF	UBUS	12.85	0.11
tblVehicleEF	UBUS	0.50	0.09
tblVehicleEF	UBUS	0.01	0.03
tblVehicleEF	UBUS	0.06	4.2840e-003
tblVehicleEF	UBUS	1.2140e-003	1.1900e-004
tblVehicleEF	UBUS	0.21	0.04
tblVehicleEF	UBUS	3.0000e-003	6.3580e-003
tblVehicleEF	UBUS	0.06	4.0870e-003
tblVehicleEF	UBUS	1.1170e-003	1.0900e-004
tblVehicleEF	UBUS	3.7570e-003	3.3900e-004
tblVehicleEF	UBUS	0.08	6.1100e-003
tblVehicleEF	UBUS	2.2270e-003	2.0600e-004
tblVehicleEF	UBUS	0.25	0.03

tblVehicleEF	UBUS	0.02	0.04
tblVehicleEF	UBUS	1.12	0.07
tblVehicleEF	UBUS	0.02	9.4660e-003
tblVehicleEF	UBUS	1.6910e-003	1.0200e-004
tblVehicleEF	UBUS	3.7570e-003	3.3900e-004
tblVehicleEF	UBUS	0.08	6.1100e-003
tblVehicleEF	UBUS	2.2270e-003	2.0600e-004
tblVehicleEF	UBUS	0.48	1.77
tblVehicleEF	UBUS	0.02	0.04
tblVehicleEF	UBUS	1.23	0.07
tblVehicleTrips	ST_TR	1.32	0.73
tblVehicleTrips	SU_TR	0.68	0.21
tblVehicleTrips	WD_TR	6.97	2.01
tblWater	AerobicPercent	87.46	0.00
tblWater	AerobicPercent	87.46	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	15,570,062.50	0.00
tblWater	SepticTankPercent	10.33	100.00
tblWater	SepticTankPercent	10.33	100.00

2.0 Emissions Summary

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	0.3557	1.0000e-005	1.2200e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3800e-003	2.3800e-003	1.0000e-005	0.0000	2.5400e-003
Energy	1.2700e-003	0.0116	9.7300e-003	7.0000e-005		8.8000e-004	8.8000e-004		8.8000e-004	8.8000e-004	0.0000	40.8187	40.8187	4.1400e-003	1.0400e-003	41.2312
Mobile	0.0550	0.1189	0.4076	1.6000e-003	0.1481	1.3700e-003	0.1495	0.0398	1.2900e-003	0.0411	0.0000	133.0656	133.0656	3.8400e-003	0.0000	133.1616
Stationary	7.1100e-003	0.0316	0.1266	7.8000e-004		9.8200e-003	9.8200e-003		9.8200e-003	9.8200e-003	0.0000	140.6427	140.6427	2.7000e-003	0.0000	140.7101
Waste						0.0000	0.0000		0.0000	0.0000	8.4728	0.0000	8.4728	0.5007	0.0000	20.9911
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.4191**	**0.1621**	**0.5452**	**2.4500e-003**	**0.1481**	**0.0121**	**0.1602**	**0.0398**	**0.0120**	**0.0518**	**8.4728**	**314.5294**	**323.0022**	**0.5114**	**1.0400e-003**	**336.0965**

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	0.3557	1.0000e-005	1.2200e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3800e-003	2.3800e-003	1.0000e-005	0.0000	2.5400e-003
Energy	1.2700e-003	0.0116	9.7300e-003	7.0000e-005		8.8000e-004	8.8000e-004		8.8000e-004	8.8000e-004	0.0000	40.8187	40.8187	4.1400e-003	1.0400e-003	41.2312

Mobile	0.0550	0.1189	0.4076	1.6000e-003	0.1481	1.3700e-003	0.1495	0.0398	1.2900e-003	0.0411	0.0000	133.0656	133.0656	3.8400e-003	0.0000	133.1616
Stationary	7.1100e-003	0.0316	0.1266	7.8000e-004		9.8200e-003	9.8200e-003		9.8200e-003	9.8200e-003	0.0000	140.6427	140.6427	2.7000e-003	0.0000	140.7101
Waste						0.0000	0.0000		0.0000	0.0000	8.4728	0.0000	8.4728	0.5007	0.0000	20.9911
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.4191**	**0.1621**	**0.5452**	**2.4500e-003**	**0.1481**	**0.0121**	**0.1602**	**0.0398**	**0.0120**	**0.0518**	**8.4728**	**314.5294**	**323.0022**	**0.5114**	**1.0400e-003**	**336.0965**

	ROG	NOx	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**

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	0.0550	0.1189	0.4076	1.6000e-003	0.1481	1.3700e-003	0.1495	0.0398	1.2900e-003	0.0411	0.0000	133.0656	133.0656	3.8400e-003	0.0000	133.1616
Unmitigated	0.0550	0.1189	0.4076	1.6000e-003	0.1481	1.3700e-003	0.1495	0.0398	1.2900e-003	0.0411	0.0000	133.0656	133.0656	3.8400e-003	0.0000	133.1616

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	135.33	49.34	14.46	408,682	408,682

Parking Lot	0.00	0.00	0.00		
Total	135.33	49.34	14.46	408,682	408,682

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-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.526188	0.057164	0.197493	0.130043	0.032642	0.007569	0.009098	0.030557	0.001897	0.000625	0.004707	0.001334	0.000683
Parking Lot	0.526188	0.057164	0.197493	0.130043	0.032642	0.007569	0.009098	0.030557	0.001897	0.000625	0.004707	0.001334	0.000683

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	28.2073	28.2073	3.9000e-003	8.1000e-004	28.5449
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	28.2073	28.2073	3.9000e-003	8.1000e-004	28.5449
NaturalGas Mitigated	1.2700e-003	0.0116	9.7300e-003	7.0000e-005		8.8000e-004	8.8000e-004		8.8000e-004	8.8000e-004	0.0000	12.6114	12.6114	2.4000e-004	2.3000e-004	12.6863
NaturalGas Unmitigated	1.2700e-003	0.0116	9.7300e-003	7.0000e-005		8.8000e-004	8.8000e-004		8.8000e-004	8.8000e-004	0.0000	12.6114	12.6114	2.4000e-004	2.3000e-004	12.6863

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					
General Light Industry	236328	1.2700e-003	0.0116	9.7300e-003	7.0000e-005		8.8000e-004	8.8000e-004		8.8000e-004	8.8000e-004	0.0000	12.6114	12.6114	2.4000e-004	2.3000e-004	12.6863
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
Total		**1.2700e-003**	**0.0116**	**9.7300e-003**	**7.0000e-005**		**8.8000e-004**	**8.8000e-004**		**8.8000e-004**	**8.8000e-004**	**0.0000**	**12.6114**	**12.6114**	**2.4000e-004**	**2.3000e-004**	**12.6863**

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					
General Light Industry	236328	1.2700e-003	0.0116	9.7300e-003	7.0000e-005		8.8000e-004	8.8000e-004		8.8000e-004	8.8000e-004	0.0000	12.6114	12.6114	2.4000e-004	2.3000e-004	12.6863
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
Total		**1.2700e-003**	**0.0116**	**9.7300e-003**	**7.0000e-005**		**8.8000e-004**	**8.8000e-004**		**8.8000e-004**	**8.8000e-004**	**0.0000**	**12.6114**	**12.6114**	**2.4000e-004**	**2.3000e-004**	**12.6863**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e

Land Use	kWh/yr	MT/yr			
General Light Industry	288172	27.4497	3.7900e-003	7.8000e-004	27.7782
Parking Lot	7953.75	0.7576	1.0000e-004	2.0000e-005	0.7667
Total		**28.2073**	**3.8900e-003**	**8.0000e-004**	**28.5449**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	288172	27.4497	3.7900e-003	7.8000e-004	27.7782
Parking Lot	7953.75	0.7576	1.0000e-004	2.0000e-005	0.7667
Total		**28.2073**	**3.8900e-003**	**8.0000e-004**	**28.5449**

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	0.3557	1.0000e-005	1.2200e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3800e-003	2.3800e-003	1.0000e-005	0.0000	2.5400e-003

Unmitigated	0.3557	1.0000e-005	1.2200e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3800e-003	2.3800e-003	1.0000e-005	0.0000	2.5400e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0912					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2644					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1000e-004	1.0000e-005	1.2200e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3800e-003	2.3800e-003	1.0000e-005	0.0000	2.5400e-003
Total	**0.3557**	**1.0000e-005**	**1.2200e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.3800e-003**	**2.3800e-003**	**1.0000e-005**	**0.0000**	**2.5400e-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	0.0912					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2644					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1000e-004	1.0000e-005	1.2200e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3800e-003	2.3800e-003	1.0000e-005	0.0000	2.5400e-003
Total	**0.3557**	**1.0000e-005**	**1.2200e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.3800e-003**	**2.3800e-003**	**1.0000e-005**	**0.0000**	**2.5400e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	8.4728	0.5007	0.0000	20.9911
Unmitigated	8.4728	0.5007	0.0000	20.9911

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			

General Light Industry	41.74	8.4728	0.5007	0.0000	20.9911
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**8.4728**	**0.5007**	**0.0000**	**20.9911**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	41.74	8.4728	0.5007	0.0000	20.9911
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**8.4728**	**0.5007**	**0.0000**	**20.9911**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
Boiler	2	5.02	878.5	1.004	CNG
Boiler	1	5.02	878.5	1.004	CNG

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

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					
Boiler - CNG (0 - 2 MMBTU)	7.1100e-003	0.0316	0.1266	7.8000e-004		9.8200e-003	9.8200e-003		9.8200e-003	9.8200e-003	0.0000	140.6427	140.6427	2.7000e-003	0.0000	140.7101
Total	**7.1100e-003**	**0.0316**	**0.1266**	**7.8000e-004**		**9.8200e-003**	**9.8200e-003**		**9.8200e-003**	**9.8200e-003**	**0.0000**	**140.6427**	**140.6427**	**2.7000e-003**	**0.0000**	**140.7101**

11.0 Vegetation

Arcata Land Co. Cultivation Project - Phase2

Humboldt County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	726.53	1000sqft	16.70	726,530.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	103
Climate Zone	1			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Curent Intensity Factor

Land Use - Per Phase 2, project Description = Hoop Structures

Construction Phase - Assume no demo. Site prep and grading done in Phase 1. Phase 2 is Hoop houses only, 30 work days to construct, no coatings.

Off-road Equipment -

Off-road Equipment - Per Equipment Asumptions provided, 1.5. Assume only Hoop Houses will be constructed

Off-road Equipment - No Demo

Off-road Equipment - All grading was done in Phase 1

Off-road Equipment - Paving was Phase 1

Off-road Equipment - All site prep was phase 1

Off-road Equipment - Per Equipment Assumptions Provided

Trips and VMT - No phases other than Hoop House Construction and related interior work

Demolition - No Demolition

Grading - Material Imported as Part of Phase 1. No grading in Phase 2

Architectural Coating - Sqft of hoop houses = 726,530, no coatings needed

Vehicle Trips - Based on 239 trips per day and 377,592 sq ft; info provided by the client

Vehicle Emission Factors - From EMFAC2017 for Humbolt Co 2030

Vehicle Emission Factors -

Vehicle Emission Factors -

Area Coating - Hoop green houses will not operate like selected land use, no Arch Coatings

Energy Use - Calculated using info provided by client, based on NW Council Study.

Water And Wastewater - Assume all water is used by plants, no indoor use

Solid Waste - Assume the greenhouses will generate half ton of waste to landfill, rest will be composted on-site

Construction Off-road Equipment Mitigation - T3L3 Equipment Mitigation with Dust BMPs

Stationary Sources - Process Boilers - Per the list of operating equipment provided and Manufactuer's Specs

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	363265	0
tblAreaCoating	Area_Nonresidential_Interior	1089795	0
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblEnergyUse	NT24E	0.00	9.29
tblEnergyUse	NT24NG	0.00	0.34
tblFleetMix	HHD	0.05	0.03
tblFleetMix	LDA	0.54	0.53
tblFleetMix	LDT1	0.03	0.06
tblFleetMix	LDT2	0.21	0.20
tblFleetMix	LHD1	0.02	0.03
tblFleetMix	LHD2	3.7140e-003	7.5690e-003
tblFleetMix	MCY	4.4000e-003	4.7070e-003
tblFleetMix	MDV	0.12	0.13
tblFleetMix	MH	4.6600e-004	6.8300e-004

tblFleetMix	MHD	0.01	9.0980e-003
tblFleetMix	OBUS	3.9810e-003	1.8970e-003
tblFleetMix	SBUS	1.4210e-003	1.3340e-003
tblFleetMix	UBUS	1.0170e-003	6.2500e-004
tblGrading	AcresOfGrading	60.00	0.00
tblLandUse	LotAcreage	16.68	16.70
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00

tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	210
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	682.94	0.50
tblStationaryBoilersUse	AnnualHeatInput	0.00	878.50
tblStationaryBoilersUse	AnnualHeatInput	0.00	878.50
tblStationaryBoilersUse	BoilerRatingValue	0.00	1.00
tblStationaryBoilersUse	BoilerRatingValue	0.00	1.00
tblStationaryBoilersUse	DailyHeatInput	0.00	5.02
tblStationaryBoilersUse	DailyHeatInput	0.00	5.02
tblStationaryBoilersUse	NumberOfEquipment	0.00	2.00
tblStationaryBoilersUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	VendorTripNumber	119.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	305.00	0.00
tblTripsAndVMT	WorkerTripNumber	61.00	0.00
tblVehicleEF	HHD	0.48	0.03
tblVehicleEF	HHD	4.7110e-003	1.3170e-003
tblVehicleEF	HHD	0.12	0.00
tblVehicleEF	HHD	1.73	8.38
tblVehicleEF	HHD	0.62	0.23
tblVehicleEF	HHD	2.41	3.7310e-003
tblVehicleEF	HHD	4,873.72	1,232.62

tblVehicleEF	HHD	1,497.15	1,169.42
tblVehicleEF	HHD	5.98	0.03
tblVehicleEF	HHD	14.85	6.97
tblVehicleEF	HHD	1.94	2.63
tblVehicleEF	HHD	20.19	2.51
tblVehicleEF	HHD	5.6470e-003	3.0210e-003
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.03	0.04
tblVehicleEF	HHD	7.7080e-003	0.03
tblVehicleEF	HHD	6.1000e-005	0.00
tblVehicleEF	HHD	5.4030e-003	2.8910e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.6720e-003	8.8130e-003
tblVehicleEF	HHD	7.3740e-003	0.03
tblVehicleEF	HHD	5.6000e-005	0.00
tblVehicleEF	HHD	6.4000e-005	1.0000e-006
tblVehicleEF	HHD	5.0060e-003	4.4000e-005
tblVehicleEF	HHD	0.46	0.57
tblVehicleEF	HHD	4.1000e-005	0.00
tblVehicleEF	HHD	0.09	0.03
tblVehicleEF	HHD	7.3200e-004	3.6700e-004
tblVehicleEF	HHD	0.07	1.0000e-006
tblVehicleEF	HHD	0.05	0.01
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	1.0000e-004	0.00
tblVehicleEF	HHD	6.4000e-005	1.0000e-006
tblVehicleEF	HHD	5.0060e-003	4.4000e-005
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tblVehicleEF	HHD	4.1000e-005	0.00
tblVehicleEF	HHD	0.10	0.03

tblVehicleEF	HHD	7.3200e-004	3.6700e-004
tblVehicleEF	HHD	0.08	1.0000e-006
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tblVehicleEF	LDA	190.90	221.37
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tblVehicleEF	LDA	0.04	0.03
tblVehicleEF	LDA	0.06	0.15
tblVehicleEF	LDA	1.3420e-003	1.0710e-003
tblVehicleEF	LDA	2.0020e-003	1.3870e-003
tblVehicleEF	LDA	1.2360e-003	9.8600e-004
tblVehicleEF	LDA	1.8400e-003	1.2750e-003
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.09	0.09
tblVehicleEF	LDA	0.02	0.02
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tblVehicleEF	LDA	0.04	0.22
tblVehicleEF	LDA	0.05	0.15
tblVehicleEF	LDA	1.9120e-003	1.3000e-004
tblVehicleEF	LDA	4.6500e-004	0.00
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.09	0.09
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.01	6.7860e-003
tblVehicleEF	LDA	0.04	0.22
tblVehicleEF	LDA	0.06	0.16
tblVehicleEF	LDT1	0.02	4.1200e-003
tblVehicleEF	LDT1	0.02	0.07

tblVehicleEF	LDT1	1.59	0.92
tblVehicleEF	LDT1	4.82	2.38
tblVehicleEF	LDT1	261.75	281.66
tblVehicleEF	LDT1	62.41	62.24
tblVehicleEF	LDT1	0.22	0.09
tblVehicleEF	LDT1	0.29	0.25
tblVehicleEF	LDT1	2.3840e-003	1.4880e-003
tblVehicleEF	LDT1	3.3270e-003	2.0070e-003
tblVehicleEF	LDT1	2.1920e-003	1.3690e-003
tblVehicleEF	LDT1	3.0590e-003	1.8450e-003
tblVehicleEF	LDT1	0.12	0.09
tblVehicleEF	LDT1	0.43	0.27
tblVehicleEF	LDT1	0.10	0.08
tblVehicleEF	LDT1	0.04	0.02
tblVehicleEF	LDT1	0.33	1.12
tblVehicleEF	LDT1	0.32	0.34
tblVehicleEF	LDT1	2.6390e-003	3.3310e-003
tblVehicleEF	LDT1	7.0900e-004	0.00
tblVehicleEF	LDT1	0.12	0.09
tblVehicleEF	LDT1	0.43	0.27
tblVehicleEF	LDT1	0.10	0.08
tblVehicleEF	LDT1	0.06	0.03
tblVehicleEF	LDT1	0.33	1.12
tblVehicleEF	LDT1	0.35	0.38
tblVehicleEF	LDT2	6.6240e-003	2.9780e-003
tblVehicleEF	LDT2	8.6550e-003	0.06
tblVehicleEF	LDT2	0.80	0.74
tblVehicleEF	LDT2	2.15	2.82
tblVehicleEF	LDT2	291.57	293.39
tblVehicleEF	LDT2	69.12	65.09

tblVehicleEF	LDT2	0.11	0.07
tblVehicleEF	LDT2	0.18	0.27
tblVehicleEF	LDT2	1.4960e-003	1.2280e-003
tblVehicleEF	LDT2	2.1990e-003	1.5820e-003
tblVehicleEF	LDT2	1.3760e-003	1.1310e-003
tblVehicleEF	LDT2	2.0220e-003	1.4550e-003
tblVehicleEF	LDT2	0.05	0.07
tblVehicleEF	LDT2	0.18	0.20
tblVehicleEF	LDT2	0.05	0.07
tblVehicleEF	LDT2	0.02	0.01
tblVehicleEF	LDT2	0.15	0.90
tblVehicleEF	LDT2	0.12	0.31
tblVehicleEF	LDT2	2.9230e-003	0.01
tblVehicleEF	LDT2	7.2800e-004	1.3600e-004
tblVehicleEF	LDT2	0.05	0.07
tblVehicleEF	LDT2	0.18	0.20
tblVehicleEF	LDT2	0.05	0.07
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.15	0.90
tblVehicleEF	LDT2	0.13	0.33
tblVehicleEF	LHD1	5.2190e-003	3.5200e-003
tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	0.14	0.15
tblVehicleEF	LHD1	1.48	1.11
tblVehicleEF	LHD1	2.82	0.95
tblVehicleEF	LHD1	9.56	9.45
tblVehicleEF	LHD1	677.06	722.72
tblVehicleEF	LHD1	24.85	8.62
tblVehicleEF	LHD1	0.11	0.10

tblVehicleEF	LHD1	2.77	1.68
tblVehicleEF	LHD1	1.11	0.23
tblVehicleEF	LHD1	1.1400e-003	1.1690e-003
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	0.03	0.02
tblVehicleEF	LHD1	8.7400e-004	2.4400e-004
tblVehicleEF	LHD1	1.0910e-003	1.1180e-003
tblVehicleEF	LHD1	2.6040e-003	2.5650e-003
tblVehicleEF	LHD1	0.03	0.02
tblVehicleEF	LHD1	8.0400e-004	2.2400e-004
tblVehicleEF	LHD1	2.3880e-003	1.8940e-003
tblVehicleEF	LHD1	0.16	0.12
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.3200e-003	1.0050e-003
tblVehicleEF	LHD1	0.19	0.14
tblVehicleEF	LHD1	0.87	1.34
tblVehicleEF	LHD1	0.30	0.06
tblVehicleEF	LHD1	9.5000e-005	9.1000e-005
tblVehicleEF	LHD1	6.6220e-003	7.0150e-003
tblVehicleEF	LHD1	3.0200e-004	8.5000e-005
tblVehicleEF	LHD1	2.3880e-003	1.8940e-003
tblVehicleEF	LHD1	0.16	0.12
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.3200e-003	1.0050e-003
tblVehicleEF	LHD1	0.23	0.17
tblVehicleEF	LHD1	0.87	1.34
tblVehicleEF	LHD1	0.33	0.07
tblVehicleEF	LHD2	2.6710e-003	1.7400e-003
tblVehicleEF	LHD2	6.9820e-003	6.9230e-003
tblVehicleEF	LHD2	4.2420e-003	3.4730e-003

tblVehicleEF	LHD2	0.12	0.11
tblVehicleEF	LHD2	0.65	0.74
tblVehicleEF	LHD2	0.86	0.30
tblVehicleEF	LHD2	14.91	15.48
tblVehicleEF	LHD2	682.07	690.91
tblVehicleEF	LHD2	17.00	3.91
tblVehicleEF	LHD2	0.11	0.14
tblVehicleEF	LHD2	0.88	1.17
tblVehicleEF	LHD2	0.33	0.09
tblVehicleEF	LHD2	1.3670e-003	1.8000e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	2.6700e-004	6.0000e-005
tblVehicleEF	LHD2	1.3080e-003	1.7220e-003
tblVehicleEF	LHD2	2.7580e-003	2.8150e-003
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	2.4500e-004	5.5000e-005
tblVehicleEF	LHD2	4.6100e-004	4.2400e-004
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	2.8500e-004	2.5600e-004
tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	0.09	0.20
tblVehicleEF	LHD2	0.06	0.02
tblVehicleEF	LHD2	1.4500e-004	1.4700e-004
tblVehicleEF	LHD2	6.6080e-003	6.6180e-003
tblVehicleEF	LHD2	1.8500e-004	3.9000e-005
tblVehicleEF	LHD2	4.6100e-004	4.2400e-004
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	0.02	0.02

tblVehicleEF	LHD2	2.8500e-004	2.5600e-004
tblVehicleEF	LHD2	0.14	0.15
tblVehicleEF	LHD2	0.09	0.20
tblVehicleEF	LHD2	0.06	0.02
tblVehicleEF	MCY	0.45	0.34
tblVehicleEF	MCY	0.18	0.28
tblVehicleEF	MCY	20.87	20.48
tblVehicleEF	MCY	11.01	9.82
tblVehicleEF	MCY	168.72	214.07
tblVehicleEF	MCY	47.01	64.06
tblVehicleEF	MCY	1.21	1.21
tblVehicleEF	MCY	0.33	0.28
tblVehicleEF	MCY	1.9200e-003	1.9360e-003
tblVehicleEF	MCY	2.8960e-003	2.4930e-003
tblVehicleEF	MCY	1.7950e-003	1.8090e-003
tblVehicleEF	MCY	2.7240e-003	2.3420e-003
tblVehicleEF	MCY	0.70	1.35
tblVehicleEF	MCY	0.88	0.84
tblVehicleEF	MCY	0.41	0.79
tblVehicleEF	MCY	2.34	2.32
tblVehicleEF	MCY	0.83	1.77
tblVehicleEF	MCY	2.45	2.16
tblVehicleEF	MCY	2.0960e-003	2.1180e-003
tblVehicleEF	MCY	7.2300e-004	6.3400e-004
tblVehicleEF	MCY	0.70	1.35
tblVehicleEF	MCY	0.88	0.84
tblVehicleEF	MCY	0.41	0.79
tblVehicleEF	MCY	2.88	2.86
tblVehicleEF	MCY	0.83	1.77
tblVehicleEF	MCY	2.67	2.35

tblVehicleEF	MDV	0.01	2.6420e-003
tblVehicleEF	MDV	0.02	0.07
tblVehicleEF	MDV	1.26	0.66
tblVehicleEF	MDV	4.89	2.93
tblVehicleEF	MDV	402.47	354.25
tblVehicleEF	MDV	96.36	76.98
tblVehicleEF	MDV	0.24	0.06
tblVehicleEF	MDV	0.47	0.29
tblVehicleEF	MDV	1.7090e-003	1.2720e-003
tblVehicleEF	MDV	2.6450e-003	1.7330e-003
tblVehicleEF	MDV	1.5750e-003	1.1760e-003
tblVehicleEF	MDV	2.4320e-003	1.5930e-003
tblVehicleEF	MDV	0.10	0.09
tblVehicleEF	MDV	0.36	0.24
tblVehicleEF	MDV	0.09	0.09
tblVehicleEF	MDV	0.03	0.01
tblVehicleEF	MDV	0.31	1.01
tblVehicleEF	MDV	0.34	0.37
tblVehicleEF	MDV	4.0350e-003	3.2700e-003
tblVehicleEF	MDV	1.0500e-003	7.1200e-004
tblVehicleEF	MDV	0.10	0.09
tblVehicleEF	MDV	0.36	0.24
tblVehicleEF	MDV	0.09	0.09
tblVehicleEF	MDV	0.05	0.02
tblVehicleEF	MDV	0.31	1.01
tblVehicleEF	MDV	0.37	0.40
tblVehicleEF	MH	0.03	8.4020e-003
tblVehicleEF	MH	0.03	0.02
tblVehicleEF	MH	1.56	0.64
tblVehicleEF	MH	6.75	1.77

tblVehicleEF	MH	1,202.12	1,387.10
tblVehicleEF	MH	56.36	14.88
tblVehicleEF	MH	1.68	1.96
tblVehicleEF	MH	1.28	0.23
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.03	0.04
tblVehicleEF	MH	1.1230e-003	2.0900e-004
tblVehicleEF	MH	3.2430e-003	3.3580e-003
tblVehicleEF	MH	0.03	0.04
tblVehicleEF	MH	1.0330e-003	1.9200e-004
tblVehicleEF	MH	0.77	0.45
tblVehicleEF	MH	0.10	0.06
tblVehicleEF	MH	0.29	0.18
tblVehicleEF	MH	0.10	0.07
tblVehicleEF	MH	0.04	1.46
tblVehicleEF	MH	0.43	0.08
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	6.8300e-004	1.4700e-004
tblVehicleEF	MH	0.77	0.45
tblVehicleEF	MH	0.10	0.06
tblVehicleEF	MH	0.29	0.18
tblVehicleEF	MH	0.13	0.09
tblVehicleEF	MH	0.04	1.46
tblVehicleEF	MH	0.47	0.09
tblVehicleEF	MHD	0.02	5.4830e-003
tblVehicleEF	MHD	4.3300e-003	2.0110e-003
tblVehicleEF	MHD	0.06	0.01
tblVehicleEF	MHD	0.39	0.46
tblVehicleEF	MHD	0.35	0.24
tblVehicleEF	MHD	5.05	1.51

tblVehicleEF	MHD	157.91	56.10
tblVehicleEF	MHD	1,192.36	1,084.92
tblVehicleEF	MHD	49.96	13.74
tblVehicleEF	MHD	0.50	0.33
tblVehicleEF	MHD	1.60	1.70
tblVehicleEF	MHD	12.28	1.37
tblVehicleEF	MHD	1.8100e-004	2.8600e-004
tblVehicleEF	MHD	5.3670e-003	0.01
tblVehicleEF	MHD	6.5500e-004	1.6500e-004
tblVehicleEF	MHD	1.7300e-004	2.7400e-004
tblVehicleEF	MHD	5.1290e-003	9.5790e-003
tblVehicleEF	MHD	6.0200e-004	1.5100e-004
tblVehicleEF	MHD	7.1600e-004	5.2700e-004
tblVehicleEF	MHD	0.06	0.04
tblVehicleEF	MHD	0.03	0.02
tblVehicleEF	MHD	4.4600e-004	3.2400e-004
tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	0.05	0.29
tblVehicleEF	MHD	0.34	0.07
tblVehicleEF	MHD	1.5180e-003	5.3400e-004
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	5.8900e-004	1.3600e-004
tblVehicleEF	MHD	7.1600e-004	5.2700e-004
tblVehicleEF	MHD	0.06	0.04
tblVehicleEF	MHD	0.04	0.03
tblVehicleEF	MHD	4.4600e-004	3.2400e-004
tblVehicleEF	MHD	0.06	0.03
tblVehicleEF	MHD	0.05	0.29
tblVehicleEF	MHD	0.37	0.08
tblVehicleEF	OBUS	0.01	6.1160e-003

tblVehicleEF	OBUS	4.1550e-003	2.9820e-003
tblVehicleEF	OBUS	0.04	0.02
tblVehicleEF	OBUS	0.25	0.64
tblVehicleEF	OBUS	0.35	0.40
tblVehicleEF	OBUS	5.46	1.98
tblVehicleEF	OBUS	225.91	98.90
tblVehicleEF	OBUS	1,249.83	1,108.21
tblVehicleEF	OBUS	51.07	13.64
tblVehicleEF	OBUS	0.55	0.45
tblVehicleEF	OBUS	1.18	1.55
tblVehicleEF	OBUS	7.33	1.26
tblVehicleEF	OBUS	4.9000e-005	1.4700e-004
tblVehicleEF	OBUS	3.2550e-003	7.2950e-003
tblVehicleEF	OBUS	6.8300e-004	1.5100e-004
tblVehicleEF	OBUS	4.7000e-005	1.4100e-004
tblVehicleEF	OBUS	3.1070e-003	6.9700e-003
tblVehicleEF	OBUS	6.2800e-004	1.3900e-004
tblVehicleEF	OBUS	1.2470e-003	1.4980e-003
tblVehicleEF	OBUS	0.03	0.03
tblVehicleEF	OBUS	0.04	0.05
tblVehicleEF	OBUS	5.9200e-004	6.8400e-004
tblVehicleEF	OBUS	0.05	0.02
tblVehicleEF	OBUS	0.04	0.57
tblVehicleEF	OBUS	0.36	0.09
tblVehicleEF	OBUS	2.1650e-003	9.3900e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	6.0700e-004	1.3500e-004
tblVehicleEF	OBUS	1.2470e-003	1.4980e-003
tblVehicleEF	OBUS	0.03	0.03
tblVehicleEF	OBUS	0.05	0.06

tblVehicleEF	OBUS	5.9200e-004	6.8400e-004
tblVehicleEF	OBUS	0.06	0.03
tblVehicleEF	OBUS	0.04	0.57
tblVehicleEF	OBUS	0.40	0.10
tblVehicleEF	SBUS	1.01	0.02
tblVehicleEF	SBUS	4.5570e-003	6.2770e-003
tblVehicleEF	SBUS	0.07	2.4280e-003
tblVehicleEF	SBUS	3.96	1.24
tblVehicleEF	SBUS	0.34	0.57
tblVehicleEF	SBUS	3.06	0.37
tblVehicleEF	SBUS	1,315.11	309.97
tblVehicleEF	SBUS	1,183.41	1,019.86
tblVehicleEF	SBUS	22.66	1.52
tblVehicleEF	SBUS	7.54	2.82
tblVehicleEF	SBUS	2.57	4.29
tblVehicleEF	SBUS	17.28	1.21
tblVehicleEF	SBUS	3.9850e-003	2.1580e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.01	0.03
tblVehicleEF	SBUS	2.7100e-004	2.3000e-005
tblVehicleEF	SBUS	3.8130e-003	2.0640e-003
tblVehicleEF	SBUS	2.8640e-003	2.8910e-003
tblVehicleEF	SBUS	0.01	0.03
tblVehicleEF	SBUS	2.4900e-004	2.1000e-005
tblVehicleEF	SBUS	1.6470e-003	1.9400e-004
tblVehicleEF	SBUS	0.02	3.9890e-003
tblVehicleEF	SBUS	0.50	0.10
tblVehicleEF	SBUS	8.1500e-004	9.4000e-005
tblVehicleEF	SBUS	0.08	0.09
tblVehicleEF	SBUS	0.01	0.03

tblVehicleEF	SBUS	0.18	0.01
tblVehicleEF	SBUS	0.01	2.9360e-003
tblVehicleEF	SBUS	0.01	9.6730e-003
tblVehicleEF	SBUS	2.8000e-004	1.5000e-005
tblVehicleEF	SBUS	1.6470e-003	1.9400e-004
tblVehicleEF	SBUS	0.02	3.9890e-003
tblVehicleEF	SBUS	0.71	0.14
tblVehicleEF	SBUS	8.1500e-004	9.4000e-005
tblVehicleEF	SBUS	0.09	0.10
tblVehicleEF	SBUS	0.01	0.03
tblVehicleEF	SBUS	0.20	0.02
tblVehicleEF	UBUS	0.20	1.73
tblVehicleEF	UBUS	0.08	0.02
tblVehicleEF	UBUS	3.57	13.04
tblVehicleEF	UBUS	13.13	1.13
tblVehicleEF	UBUS	1,931.82	1,554.15
tblVehicleEF	UBUS	145.03	10.27
tblVehicleEF	UBUS	3.86	0.57
tblVehicleEF	UBUS	12.85	0.11
tblVehicleEF	UBUS	0.50	0.09
tblVehicleEF	UBUS	0.01	0.03
tblVehicleEF	UBUS	0.06	4.2840e-003
tblVehicleEF	UBUS	1.2140e-003	1.1900e-004
tblVehicleEF	UBUS	0.21	0.04
tblVehicleEF	UBUS	3.0000e-003	6.3580e-003
tblVehicleEF	UBUS	0.06	4.0870e-003
tblVehicleEF	UBUS	1.1170e-003	1.0900e-004
tblVehicleEF	UBUS	3.7570e-003	3.3900e-004
tblVehicleEF	UBUS	0.08	6.1100e-003
tblVehicleEF	UBUS	2.2270e-003	2.0600e-004

tblVehicleEF	UBUS	0.25	0.03
tblVehicleEF	UBUS	0.02	0.04
tblVehicleEF	UBUS	1.12	0.07
tblVehicleEF	UBUS	0.02	9.4660e-003
tblVehicleEF	UBUS	1.6910e-003	1.0200e-004
tblVehicleEF	UBUS	3.7570e-003	3.3900e-004
tblVehicleEF	UBUS	0.08	6.1100e-003
tblVehicleEF	UBUS	2.2270e-003	2.0600e-004
tblVehicleEF	UBUS	0.48	1.77
tblVehicleEF	UBUS	0.02	0.04
tblVehicleEF	UBUS	1.23	0.07
tblVehicleTrips	ST_TR	1.68	0.07
tblVehicleTrips	SU_TR	1.68	0.02
tblVehicleTrips	WD_TR	1.68	0.19
tblWater	AerobicPercent	87.46	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	IndoorWaterUseRate	168,010,062.50	0.00
tblWater	SepticTankPercent	10.33	100.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.8381	6.0000e-005	6.6400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0130	0.0130	3.0000e-005	0.0000	0.0138

Energy	1.3300e-003	0.0121	0.0102	7.0000e-005		9.2000e-004	9.2000e-004		9.2000e-004	9.2000e-004	0.0000	656.1491	656.1491	0.0890	0.0186	663.9216
Mobile	0.0562	0.1213	0.4160	1.6300e-003	0.1511	1.4000e-003	0.1526	0.0406	1.3200e-003	0.0419	0.0000	135.7834	135.7834	3.9200e-003	0.0000	135.8814
Stationary	7.1100e-003	0.0316	0.1266	7.8000e-004		9.8200e-003	9.8200e-003		9.8200e-003	9.8200e-003	0.0000	140.6427	140.6427	2.7000e-003	0.0000	140.7101
Waste						0.0000	0.0000		0.0000	0.0000	0.1015	0.0000	0.1015	6.0000e-003	0.0000	0.2515
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.9027**	**0.1651**	**0.5594**	**2.4800e-003**	**0.1511**	**0.0122**	**0.1633**	**0.0406**	**0.0121**	**0.0527**	**0.1015**	**932.5882**	**932.6897**	**0.1017**	**0.0186**	**940.7784**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.8381	6.0000e-005	6.6400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0130	0.0130	3.0000e-005	0.0000	0.0138
Energy	1.3300e-003	0.0121	0.0102	7.0000e-005		9.2000e-004	9.2000e-004		9.2000e-004	9.2000e-004	0.0000	656.1491	656.1491	0.0890	0.0186	663.9216
Mobile	0.0562	0.1213	0.4160	1.6300e-003	0.1511	1.4000e-003	0.1526	0.0406	1.3200e-003	0.0419	0.0000	135.7834	135.7834	3.9200e-003	0.0000	135.8814
Stationary	7.1100e-003	0.0316	0.1266	7.8000e-004		9.8200e-003	9.8200e-003		9.8200e-003	9.8200e-003	0.0000	140.6427	140.6427	2.7000e-003	0.0000	140.7101
Waste						0.0000	0.0000		0.0000	0.0000	0.1015	0.0000	0.1015	6.0000e-003	0.0000	0.2515
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.9027**	**0.1651**	**0.5594**	**2.4800e-003**	**0.1511**	**0.0122**	**0.1633**	**0.0406**	**0.0121**	**0.0527**	**0.1015**	**932.5882**	**932.6897**	**0.1017**	**0.0186**	**940.7784**

	ROG	NOx	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**

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	0.0562	0.1213	0.4160	1.6300e-003	0.1511	1.4000e-003	0.1526	0.0406	1.3200e-003	0.0419	0.0000	135.7834	135.7834	3.9200e-003	0.0000	135.8814
Unmitigated	0.0562	0.1213	0.4160	1.6300e-003	0.1511	1.4000e-003	0.1526	0.0406	1.3200e-003	0.0419	0.0000	135.7834	135.7834	3.9200e-003	0.0000	135.8814

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	138.04	50.86	14.53	417,029	417,029
Total	138.04	50.86	14.53	417,029	417,029

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
Unrefrigerated Warehouse-No Rail	14.70	6.60	6.60	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.526188	0.057164	0.197493	0.130043	0.032642	0.007569	0.009098	0.030557	0.001897	0.000625	0.004707	0.001334	0.000683

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	642.9672	642.9672	0.0888	0.0184	650.6614
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	642.9672	642.9672	0.0888	0.0184	650.6614
NaturalGas Mitigated	1.3300e-003	0.0121	0.0102	7.0000e-005		9.2000e-004	9.2000e-004		9.2000e-004	9.2000e-004	0.0000	13.1819	13.1819	2.5000e-004	2.4000e-004	13.2603
NaturalGas Unmitigated	1.3300e-003	0.0121	0.0102	7.0000e-005		9.2000e-004	9.2000e-004		9.2000e-004	9.2000e-004	0.0000	13.1819	13.1819	2.5000e-004	2.4000e-004	13.2603

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					
Unrefrigerated Warehouse-No Rail	247020	1.3300e-003	0.0121	0.0102	7.0000e-005		9.2000e-004	9.2000e-004		9.2000e-004	9.2000e-004	0.0000	13.1819	13.1819	2.5000e-004	2.4000e-004	13.2603
Total		**1.3300e-003**	**0.0121**	**0.0102**	**7.0000e-005**		**9.2000e-004**	**9.2000e-004**		**9.2000e-004**	**9.2000e-004**	**0.0000**	**13.1819**	**13.1819**	**2.5000e-004**	**2.4000e-004**	**13.2603**

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					
Unrefrigerated Warehouse-No Rail	247020	1.3300e-003	0.0121	0.0102	7.0000e-005		9.2000e-004	9.2000e-004		9.2000e-004	9.2000e-004	0.0000	13.1819	13.1819	2.5000e-004	2.4000e-004	13.2603
Total		**1.3300e-003**	**0.0121**	**0.0102**	**7.0000e-005**		**9.2000e-004**	**9.2000e-004**		**9.2000e-004**	**9.2000e-004**	**0.0000**	**13.1819**	**13.1819**	**2.5000e-004**	**2.4000e-004**	**13.2603**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	6.75e+006	642.9672	0.0888	0.0184	650.6614
Total		**642.9672**	**0.0888**	**0.0184**	**650.6614**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	6.75e+006	642.9672	0.0888	0.0184	650.6614
Total		**642.9672**	**0.0888**	**0.0184**	**650.6614**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.8381	6.0000e-005	6.6400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0130	0.0130	3.0000e-005	0.0000	0.0138
Unmitigated	2.8381	6.0000e-005	6.6400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0130	0.0130	3.0000e-005	0.0000	0.0138

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.8375					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.1000e-004	6.0000e-005	6.6400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0130	0.0130	3.0000e-005	0.0000	0.0138
Total	**2.8381**	**6.0000e-005**	**6.6400e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0130**	**0.0130**	**3.0000e-005**	**0.0000**	**0.0138**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.8375					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.1000e-004	6.0000e-005	6.6400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0130	0.0130	3.0000e-005	0.0000	0.0138
Total	**2.8381**	**6.0000e-005**	**6.6400e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0130**	**0.0130**	**3.0000e-005**	**0.0000**	**0.0138**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.1015	6.0000e-003	0.0000	0.2515
Unmitigated	0.1015	6.0000e-003	0.0000	0.2515

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No Rail	0.5	0.1015	6.0000e-003	0.0000	0.2515
Total		**0.1015**	**6.0000e-003**	**0.0000**	**0.2515**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No Rail	0.5	0.1015	6.0000e-003	0.0000	0.2515
Total		**0.1015**	**6.0000e-003**	**0.0000**	**0.2515**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
Boiler	2	5.02	878.5	1.004	CNG
Boiler	1	5.02	878.5	1.004	CNG

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

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					
Boiler - CNG (0 - 2 MMBTU)	7.1100e-003	0.0316	0.1266	7.8000e-004		9.8200e-003	9.8200e-003		9.8200e-003	9.8200e-003	0.0000	140.6427	140.6427	2.7000e-003	0.0000	140.7101
Total	**7.1100e-003**	**0.0316**	**0.1266**	**7.8000e-004**		**9.8200e-003**	**9.8200e-003**		**9.8200e-003**	**9.8200e-003**	**0.0000**	**140.6427**	**140.6427**	**2.7000e-003**	**0.0000**	**140.7101**

11.0 Vegetation

Attachment 2: EMFAC2017 Calculations

CalEEMod EMFAC2017 Fleet Mix Input - 2021

FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
	0.451903	0.065643	0.207148	0.153542	0.057401	0.012341	0.011624	0.029683	0.001599	0.00063	0.006035	0.001397	0.001054

CalEEMod EMFAC2017 Emission Factors Input - 2021

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.003234	0.001835	0.004349	0.024584552	0.008158	0	0	0.011131	0
A	CH4_RUNEX	0.004075	0.013213	0.007324	0.007555	0.017179	0.008965	0.013104	0.005632286	0.015612	3.935736	0.357285	0.010714	0.027973
A	CH4_STREX	0.073451	0.147006	0.114792	0.128889	0.012915	0.005011	0.014545	1.95809E-07	0.026415	0.018542	0.293792	0.002047	0.026108
A	CO_IDLEX	0	0	0	0	0.13813	0.104108	0.421814	6.824785133	0.560681	0	0	0.80657	0
A	CO_RUNEX	0.866148	2.414102	1.420634	1.421479	1.716174	0.892639	1.050602	0.480633666	1.558493	19.37869	23.89389	0.925382	3.589206
A	CO_STREX	2.715605	3.341081	3.659194	4.551562	0.909025	0.364211	1.930788	0.001525325	3.153653	1.129307	9.526722	0.383035	2.883427
A	CO2_NBIO_IDLEX	0	0	0	0	10.14663	16.41607	78.06557	1285.921442	89.19256	0	0	329.1029	0
A	CO2_NBIO_RUNEX	270.5492	333.866	360.2116	433.7737	736.8671	733.1433	1217.811	1500.609848	1461.671	1748.193	215.8254	1150.409	1599.499
A	CO2_NBIO_STREX	57.45823	74.04301	79.54914	94.05602	7.518444	3.973186	13.25419	0.036041698	20.64999	12.25654	66.48316	1.263654	19.89426
A	NOX_IDLEX	0	0	0	0	0.126719	0.163337	0.770784	6.952748551	0.562461	0	0	3.934003	0
A	NOX_RUNEX	0.076086	0.272807	0.185476	0.181946	3.063616	1.941407	3.727619	4.72202442	2.338395	2.206358	1.245411	7.8025	2.702615
A	NOX_STREX	0.249579	0.485899	0.496302	0.536428	0.216041	0.102168	0.935148	1.9903937	0.745064	0.135381	0.284135	0.59691	0.233023
A	PM10_IDLEX	0	0	0	0	0.001414	0.001814	0.002523	0.011602472	0.002199	0	0	0.005599	0
A	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.060054116	0.13034	0.090129	0.01176	0.7448	0.13034
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.010679	0.011394	0.012	0.035013767	0.012	0.025431	0.004	0.011698	0.013266
A	PM10_RUNEX	0.001944	0.003267	0.001861	0.001953	0.030567	0.026321	0.07952	0.064127619	0.044674	0.00478	0.001906	0.047637	0.054837
A	PM10_STREX	0.002174	0.003952	0.002334	0.002667	0.000254	7.62E-05	0.000239	7.18451E-07	0.0002	3.53E-05	0.004003	1.76E-05	0.0004
A	PM25_IDLEX	0	0	0	0	0.001353	0.001736	0.002413	0.011100554	0.002104	0	0	0.005356	0
A	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.025737478	0.05586	0.038627	0.00504	0.3192	0.05586
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.00267	0.002848	0.003	0.008753442	0.003	0.006358	0.001	0.002925	0.003317
A	PM25_RUNEX	0.0018	0.00301	0.001714	0.001809	0.029201	0.025168	0.07607	0.06135347	0.042726	0.00457	0.001794	0.045568	0.05239
A	PM25_STREX	0.002	0.003634	0.002146	0.002457	0.000233	7.01E-05	0.00022	6.60589E-07	0.000184	3.25E-05	0.003796	1.62E-05	0.000368
A	ROG_DIURN	0.05074	0.169239	0.087649	0.09335	0.001736	0.00053	0.000794	3.23177E-06	0.001661	0.000733	1.314124	0.000218	0.926945
A	ROG_HTSK	0.171232	0.485649	0.265898	0.2795	0.104832	0.031336	0.052502	0.000261229	0.036018	0.014675	0.944954	0.004132	0.11393
A	ROG_IDLEX	0	0	0	0	0.017076	0.012688	0.025865	0.529298673	0.058548	0	0	0.072826	0
A	ROG_RESTL	0.044638	0.135401	0.078697	0.086033	0.000856	0.00027	0.000398	1.41104E-06	0.000713	0.000472	0.788952	8.62E-05	0.323113
A	ROG_RUNEX	0.017711	0.061668	0.032897	0.036412	0.208502	0.157504	0.21046	0.120824932	0.162009	0.059218	2.540316	0.140485	0.175515
A	ROG_RUNLS	0.326585	2.010095	1.116991	1.114735	0.979571	0.27708	0.405449	0.002577081	0.617351	0.103221	3.033578	0.030134	3.390656
A	ROG_STREX	0.355549	0.822425	0.596977	0.698866	0.069223	0.025553	0.085719	1.02099E-06	0.148759	0.079996	2.301167	0.012917	0.124114
A	SO2_IDLEX	0	0	0	0	9.73E-05	0.000156	0.000741	0.012148748	0.000849	0	0	0.003114	0
A	SO2_RUNEX	0.000151	0.003192	0.01163	0.004276	0.007118	0.00701	0.01163	0.014177196	0.014131	0.007065	0.002136	0.010899	0.015679
A	SO2_STREX	0	0	0.000131	0.000929	7.44E-05	3.93E-05	0.000131	3.56662E-07	0.000204	0.000121	0.000658	1.25E-05	0.000197
A	TOG_DIURN	0.05074	0.169239	0.087649	0.09335	0.001736	0.00053	0.000794	3.23177E-06	0.001661	0.000733	1.314124	0.000218	0.926945
A	TOG_HTSK	0.171232	0.485649	0.265898	0.2795	0.104832	0.031336	0.052502	0.000261229	0.036018	0.014675	0.944954	0.004132	0.11393
A	TOG_IDLEX	0	0	0	0	0.023166	0.016214	0.034555	0.602566249	0.075093	0	0	0.097846	0
A	TOG_RESTL	0.044638	0.135401	0.078697	0.086033	0.000856	0.00027	0.000398	1.41104E-06	0.000713	0.000472	0.788952	8.62E-05	0.323113
A	TOG_RUNEX	0.025629	0.089816	0.047907	0.05126	0.254083	0.182523	0.246922	0.137595954	0.201288	4.020133	3.050213	0.168825	0.239004
A	TOG_RUNLS	0.326585	2.010095	1.116991	1.114735	0.979571	0.27708	0.405449	0.002577081	0.617351	0.103221	3.033578	0.030134	3.390656
A	TOG_STREX	0.389277	0.900442	0.65361	0.764995	0.07579	0.027977	0.093851	1.11785E-06	0.162873	0.087585	2.501497	0.014143	0.135889

CalEEMod Construction Inputs - Phase 1

Phase	CalEEMod WORKER TRIPS	CalEEMod VENDOR TRIPS	Total Worker Trips	Total Vendor Trips	CalEEMod HAULING TRIPS*	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class	*Worker VMT*	*Vendor VMT*	*Hauling VMT*
Demolition	0		-	-	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	-	-	-
Site Preparation	5		150	-	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	2,520	-	-
Grading	8		600	-	4375	16.8	6.6	1	LD_Mix	HDT_Mix	HHDT	10,080	-	4,375
Building Construction	39	15	7,800	3,000	500	16.8	6.6	6.6	LD_Mix	HDT_Mix	HHDT	131,040	19,800	3,300
Trenching	5		375	-	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	6,300	-	-
Paving	15		150	-	56	16.8	6.6	6.6	LD_Mix	HDT_Mix	HHDT	2,520	-	370
Architectural Coating	8		80	-	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	1,344	-	-

*Hauling based on assumption using the proposed square footage of the project

Number of Days Per Year				
2021	1/4/21	12/1/21	332	
			332	**238** ***Total Workdays***

Phase	Start Date	End Date	Days/Week	Workdays
Demolition	1/4/2021	1/4/2021	5	1
Site Preparation	1/4/2021	2/12/2021	5	30
Grading	2/12/2021	5/27/2021	5	75
Building Construction	2/12/2021	11/18/2021	5	200
Trenching	2/12/2021	5/27/2021	5	75
Paving	5/27/2021	6/9/2021	5	10
Architectural Coating	11/18/2021	12/1/2021	5	10

CalEEMod Construction Inputs

Phase	CalEEMod WORKER TRIPS	CalEEMod VENDOR TRIPS	Total Worker Trips	Total Vendor Trips	CalEEMod HAULING TRIPS*	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class	*Worker VMT*	*Vendor VMT*	*Hauling VMT*
Demolition	0		-	-	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	-	-	-
Site Preparation	0		-	-	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	-	-	-
Grading	0		-	-	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	-	-	-
Building Construction	305	119	19,215	7,497	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	322,812	49,480	-
Paving	0		-	-	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	-	-	-
Architectural Coating	61		61	-	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	1,025	-	-

*Hauling based on assumption using the proposed square footage of the project

Number of Days Per Year				
2022	9/1/21	11/26/21	87	
			87	**63** ***Total Workdays***

Phase	Start Date	End Date	Days/Week	Workdays
Demolition	9/1/2021	9/1/2021	5	1
Site Preparation	9/1/2021	9/1/2021	5	1
Grading	9/1/2021	9/1/2021	5	1
Building Construction	9/1/2021	11/26/2021	5	63
Paving	9/1/2021	9/1/2021	5	1
Architectural Coating	9/1/2021	9/1/2021	5	1

Summary of Construction Traffic Emissions (EMFAC2017)

CATEGORY	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	NBio- CO2
					Grams						
Hauling	3595.98	82085.43	37527.0425	173.957	2405.34	1337.88	3743.2	361.93	825.77	1187.70	18412862.34
Vendor	4520.77	108675.14	29394.5	293.446	5920.20	3528.57	9448.8	890.80	2141.65	3032.45	30985719.54
Worker	18040.88	22378.66	207008.9	570.568	45987.40	7218.28	53205.7	6919.64	3040.01	9959.66	47033122.63
Total (g)	26157.63	213139.236	273930.436	1037.970849	54312.9314	12084.73008	66397.6615	8172.370514	6007.433992	14179.80451	96431704.52
Total (lbs)	57.67	469.89	603.91	2.29	119.74	26.6	146.38	18.02	13.24	31.26	212595.5172
Total (tons)	0.0288	0.235	0.302	0.001	0.060	0.0133	0.0732	0.0090	0.007	0.016	106.30
Total (MT)											96.43

YEAR											
						Tons					
	2021	0.0288	0.2349	0.3020	0.0011	0.0599	0.0133	0.0732	0.0090	0.0066	0.0156	96.4317

Summary of Construction Traffic Emissions (EMFAC2017)

CATEGORY	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	NBio- CO2
						Grams					
Hauling	0.00	0.00	0	0.000	0.00	0.00	0.0	0.00	0.00	0.00	0
Vendor	8131.91	237663.51	66751.2	718.671	14794.58	7393.89	22188.5	2226.11	3994.62	6220.74	75880701.59
Worker	34850.18	41147.67	393364.0	1162.857	96827.20	15150.93	111978.1	14569.42	6356.90	20926.32	96353735.02
Total (g)	42982.09	278811.1765	460115.198	1881.528047	111621.783	22544.82015	134166.603	16795.53183	10351.52357	27147.0554	172234436.6
Total (lbs)	94.76	614.67	1014.38	4.15	246.08	49.7	295.79	37.03	22.82	59.85	379711.9352
Total (tons)	0.0474	0.307	0.507	0.002	0.123	0.0249	0.1479	0.0185	0.011	0.030	189.86
Total (MT)											172.23

YEAR	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	NBio- CO2
						Tons					
2021	0.0474	0.3073	0.5072	0.0021	0.1230	0.0249	0.1479	0.0185	0.0114	0.0299	172.2344

CalEEMod EMFAC2017 Fleet Mix Input - 2022

FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
	0.461849	0.064347	0.206426	0.15045	0.053725	0.011671	0.011264	0.029765	0.001633	0.000629	0.005857	0.00139	0.000995

CalEEMod EMFAC2017 Emission Factors Input - 2022

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.003261	0.001819	0.004502	0.0245006	0.007673	0	0	0.012038	0
A	CH4_RUNEX	0.003438	0.011726	0.006601	0.006392	0.016524	0.008592	0.007931	0.003433918	0.010897	2.842436	0.354325	0.010347	0.024793
A	CH4_STREX	0.066758	0.136016	0.10761	0.119767	0.012763	0.004819	0.014713	1.98442E-07	0.025289	0.016303	0.291881	0.002164	0.025281
A	CO_IDLEX	0	0	0	0	0.13926	0.104131	0.427371	7.280650695	0.55342	0	0	0.853414	0
A	CO_RUNEX	0.768016	2.16212	1.299864	1.215862	1.660618	0.867419	0.740382	0.341956696	1.1994	21.63626	23.42503	0.904809	3.071555
A	CO_STREX	2.61631	3.207686	3.543894	4.266037	0.904855	0.351322	1.90753	0.002780989	3.021883	1.128859	9.549275	0.388486	2.72874
A	CO2_NBIO_IDLEX	0	0	0	0	10.10221	16.36548	75.71234	1320.657355	87.92835	0	0	328.6991	0
A	CO2_NBIO_RUNEX	263.3227	327.4271	351.3574	424.3077	737.2723	730.4001	1191.74	1457.685091	1405.82	1708.439	215.6018	1138.415	1579.014
A	CO2_NBIO_STREX	55.90106	72.61474	77.67106	91.66109	7.599218	3.938598	13.53639	0.035897342	19.95054	11.77848	66.28158	1.318275	19.28094
A	NOX_IDLEX	0	0	0	0	0.124564	0.161437	0.660671	7.020604795	0.420261	0	0	3.848892	0
A	NOX_RUNEX	0.064249	0.241276	0.165503	0.156226	2.922604	1.856652	2.770068	4.074924794	1.808467	0.656261	1.241154	7.463867	2.619187
A	NOX_STREX	0.230001	0.452977	0.46131	0.495154	0.218025	0.100946	1.127109	2.187422321	0.86429	0.12021	0.284589	0.652741	0.231963
A	PM10_IDLEX	0	0	0	0	0.001392	0.001814	0.00165	0.004795989	0.00072	0	0	0.005127	0
A	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.060115497	0.13034	0.090129	0.01176	0.7448	0.13034
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.010642	0.011383	0.012	0.035049124	0.012	0.025431	0.004	0.011677	0.013293
A	PM10_RUNEX	0.001805	0.003002	0.001775	0.001853	0.029695	0.026243	0.039749	0.041074196	0.017891	0.003829	0.001902	0.044902	0.054063
A	PM10_STREX	0.002055	0.003671	0.002228	0.002482	0.000249	7.04E-05	0.000224	6.58588E-07	0.000196	6.14E-05	0.003782	1.86E-05	0.00037
A	PM25_IDLEX	0	0	0	0	0.001331	0.001735	0.001579	0.004588517	0.000689	0	0	0.004905	0
A	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.025763785	0.05586	0.038627	0.00504	0.3192	0.05586
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.00266	0.002846	0.003	0.008762281	0.003	0.006358	0.001	0.002919	0.003323
A	PM25_RUNEX	0.001671	0.002765	0.001635	0.001715	0.028367	0.025094	0.03802	0.039297327	0.017102	0.003657	0.001788	0.042951	0.051655
A	PM25_STREX	0.001889	0.003376	0.002049	0.002283	0.000229	6.48E-05	0.000206	6.05547E-07	0.000181	5.65E-05	0.003583	1.71E-05	0.000341
A	ROG_DIURN	0.046184	0.160927	0.086287	0.09207	0.001748	0.000506	0.000736	2.87951E-06	0.001689	0.000567	1.327351	0.000229	0.871375
A	ROG_HTSK	0.157028	0.463202	0.26022	0.274145	0.106387	0.029991	0.050093	0.000231364	0.03674	0.010972	0.94104	0.00439	0.108109
A	ROG_IDLEX	0	0	0	0	0.017083	0.012594	0.02459	0.527491189	0.051219	0	0	0.076027	0
A	ROG_RESTL	0.041169	0.130568	0.078784	0.086272	0.000872	0.000264	0.000377	1.26175E-06	0.000733	0.00036	0.797929	9.15E-05	0.307549
A	ROG_RUNEX	0.014705	0.054499	0.029468	0.028956	0.202199	0.154759	0.10907	0.073508235	0.08681	0.0436	2.510256	0.135148	0.159325
A	ROG_RUNLS	0.305583	1.906643	1.098204	1.107781	1.015117	0.264967	0.387401	0.002241385	0.63103	0.07632	2.915455	0.031223	3.237465
A	ROG_STREX	0.317232	0.754991	0.554747	0.641322	0.068477	0.024472	0.085456	1.03409E-06	0.142445	0.069706	2.285981	0.013594	0.118201
A	SO2_IDLEX	0	0	0	0	9.69E-05	0.000155	0.000719	0.012476916	0.000837	0	0	0.003111	0
A	SO2_RUNEX	0.000151	0.003239	0.011389	0.004165	0.007125	0.006985	0.011389	0.013771684	0.013571	0.007504	0.002134	0.010787	0.015474
A	SO2_STREX	0	0	0.000134	0.000901	7.52E-05	3.9E-05	0.000134	3.55233E-07	0.000197	0.000117	0.000656	1.3E-05	0.000191
A	TOG_DIURN	0.046184	0.160927	0.086287	0.09207	0.001748	0.000506	0.000736	2.87951E-06	0.001689	0.000567	1.327351	0.000229	0.871375
A	TOG_HTSK	0.157028	0.463202	0.26022	0.274145	0.106387	0.029991	0.050093	0.000231364	0.03674	0.010972	0.94104	0.00439	0.108109
A	TOG_IDLEX	0	0	0	0	0.023193	0.016076	0.033342	0.600508565	0.066529	0	0	0.102771	0
A	TOG_RESTL	0.041169	0.130568	0.078784	0.086272	0.000872	0.000264	0.000377	1.26175E-06	0.000733	0.00036	0.797929	9.15E-05	0.307549
A	TOG_RUNEX	0.02128	0.079401	0.04292	0.041945	0.246049	0.178822	0.130395	0.083726312	0.113186	2.904336	3.024095	0.162487	0.215271
A	TOG_RUNLS	0.305583	1.906643	1.098204	1.107781	1.015117	0.264967	0.387401	0.002241385	0.63103	0.07632	2.915455	0.031223	3.237465
A	TOG_STREX	0.347326	0.826613	0.607376	0.702145	0.074973	0.026793	0.093563	1.1322E-06	0.15596	0.076319	2.485219	0.014884	0.129415

CalEEMod EMFAC2017 Fleet Mix Input - 2030

FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
	0.526188	0.057164	0.197493	0.130043	0.032642	0.007569	0.009098	0.030557	0.001897	0.000625	0.004707	0.001334	0.000683

CalEEMod EMFAC2017 Emission Factors Input - 2030

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.00352	0.00174	0.005483	0.026555176	0.006116	0	0	0.018447	0
A	CH4_RUNEX	0.001263	0.00412	0.002978	0.002642	0.010895	0.006923	0.002011	0.001317066	0.002982	1.731661	0.335561	0.006277	0.008402
A	CH4_STREX	0.035273	0.067068	0.063398	0.070609	0.011376	0.003473	0.013737	1.92916E-07	0.016589	0.015702	0.276441	0.002428	0.019916
A	CO_IDLEX	0	0	0	0	0.153508	0.106962	0.463534	8.384680949	0.639972	0	0	1.243644	0
A	CO_RUNEX	0.438076	0.922254	0.736692	0.660132	1.11033	0.743535	0.235442	0.234047981	0.40004	13.0438	20.47743	0.569411	0.63535
A	CO_STREX	1.97013	2.377296	2.824156	2.93263	0.95067	0.303683	1.509374	0.003731323	1.975092	1.12563	9.820631	0.365081	1.774785
A	CO2_NBIO_IDLEX	0	0	0	0	9.445536	15.47755	56.1043	1232.621919	98.89886	0	0	309.9715	0
A	CO2_NBIO_RUNEX	221.37	281.6554	293.39	354.2499	722.722	690.9053	1084.917	1169.417538	1108.206	1554.155	214.0724	1019.86	1387.098
A	CO2_NBIO_STREX	46.81964	62.24348	65.09248	76.97882	8.620862	3.913688	13.74164	0.030772645	13.63977	10.26667	64.05586	1.517994	14.88239
A	NOX_IDLEX	0	0	0	0	0.098048	0.138733	0.327073	6.970961111	0.451168	0	0	2.816357	0
A	NOX_RUNEX	0.025974	0.085962	0.071127	0.061341	1.676771	1.17454	1.700839	2.631443213	1.54992	0.566163	1.210373	4.29458	1.957686
A	NOX_STREX	0.145487	0.25451	0.265784	0.2913	0.228019	0.088989	1.365337	2.512553674	1.264433	0.11026	0.28249	1.208848	0.226342
A	PM10_IDLEX	0	0	0	0	0.001169	0.0018	0.000286	0.003021305	0.000147	0	0	0.002158	0
A	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.060472403	0.13034	0.090129	0.01176	0.7448	0.13034
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.010259	0.011259	0.012	0.035253409	0.012	0.025431	0.004	0.011564	0.013433
A	PM10_RUNEX	0.001071	0.001488	0.001228	0.001272	0.02008	0.023667	0.010024	0.027224457	0.007295	0.004284	0.001936	0.027172	0.041778
A	PM10_STREX	0.001387	0.002007	0.001582	0.001733	0.000244	5.98E-05	0.000165	3.61368E-07	0.000151	0.000119	0.002493	2.33E-05	0.000209
A	PM25_IDLEX	0	0	0	0	0.001118	0.001722	0.000274	0.002890605	0.000141	0	0	0.002064	0
A	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.025916745	0.05586	0.038627	0.00504	0.3192	0.05586
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002565	0.002815	0.003	0.008813353	0.003	0.006358	0.001	0.002891	0.003358
A	PM25_RUNEX	0.000986	0.001369	0.001131	0.001176	0.019164	0.022629	0.009579	0.026046719	0.00697	0.004087	0.001809	0.025989	0.039932
A	PM25_STREX	0.001275	0.001845	0.001455	0.001593	0.000224	5.5E-05	0.000151	3.32264E-07	0.000139	0.000109	0.002342	2.14E-05	0.000192
A	ROG_DIURN	0.025313	0.093176	0.0731	0.089387	0.001894	0.000424	0.000527	6.63543E-07	0.001498	0.000339	1.349936	0.000194	0.452483
A	ROG_HTSK	0.090809	0.272007	0.203532	0.235299	0.121852	0.024361	0.039753	4.42959E-05	0.033575	0.00611	0.839851	0.003989	0.058226
A	ROG_IDLEX	0	0	0	0	0.017066	0.011996	0.024142	0.571725648	0.048044	0	0	0.100411	0
A	ROG_RESTL	0.023973	0.083514	0.073113	0.088313	0.001005	0.000256	0.000324	3.72606E-07	0.000684	0.000206	0.788966	9.44E-05	0.180865
A	ROG_RUNEX	0.004679	0.018211	0.012582	0.011477	0.139699	0.134847	0.020875	0.027800354	0.022182	0.027518	2.319862	0.08599	0.072669
A	ROG_RUNLS	0.222786	1.118331	0.903224	1.011437	1.33781	0.197459	0.285778	0.00036705	0.572361	0.037185	1.766218	0.026477	1.459024
A	ROG_STREX	0.150236	0.342599	0.305411	0.365547	0.060786	0.016818	0.071545	1.00315E-06	0.093594	0.065906	2.158292	0.014721	0.081833
A	SO2_IDLEX	0	0	0	0	9.09E-05	0.000147	0.000534	0.011645201	0.000939	0	0	0.002936	0
A	SO2_RUNEX	0.00013	0.003331	0.010407	0.00327	0.007015	0.006618	0.010407	0.011048434	0.010608	0.009466	0.002118	0.009673	0.013571
A	SO2_STREX	0	0	0.000136	0.000712	8.53E-05	3.87E-05	0.000136	3.0452E-07	0.000135	0.000102	0.000634	1.5E-05	0.000147
A	TOG_DIURN	0.025313	0.093176	0.0731	0.089387	0.001894	0.000424	0.000527	6.63543E-07	0.001498	0.000339	1.349936	0.000194	0.452483
A	TOG_HTSK	0.090809	0.272007	0.203532	0.235299	0.121852	0.024361	0.039753	4.42959E-05	0.033575	0.00611	0.839851	0.003989	0.058226
A	TOG_IDLEX	0	0	0	0	0.023383	0.015243	0.033969	0.65086613	0.060774	0	0	0.139196	0
A	TOG_RESTL	0.023973	0.083514	0.073113	0.088313	0.001005	0.000256	0.000324	3.72606E-07	0.000684	0.000206	0.788966	9.44E-05	0.180865
A	TOG_RUNEX	0.006786	0.02657	0.018312	0.016595	0.16802	0.154573	0.025712	0.031694784	0.029376	1.77046	2.857117	0.102726	0.090214
A	TOG_RUNLS	0.222786	1.118331	0.903224	1.011437	1.33781	0.197459	0.285778	0.00036705	0.572361	0.037185	1.766218	0.026477	1.459024
A	TOG_STREX	0.16449	0.375103	0.334387	0.400228	0.066553	0.018413	0.078333	1.09832E-06	0.102474	0.072159	2.348258	0.016118	0.089596

Biological Resources Assessment

Arcata Land Company, LLC

Assessor's Parcel Number Parcel "D"
Arcata, California





Prepared for:
Arcata Land Company

June 2020
017062

Phone: (707) 822-5785 **Email:** arcata@shn-engr.com **Web:** shn-engr.com
1062 G Street, Ste. I, Arcata, CA 95521-5800

Reference: 017062

June 17, 2020

Rudolf Visser
Arcata Land Company, LLC
3318 Foster Avenue
Arcata, CA 95521

Subject: Biological Resources Assessment

Dear Rudolf Visser:

Enclosed is the Biological Resources Assessment for your project site referred to as Parcel "D" in Arcata, CA. This report addresses special-status species that may have the potential to occur within the study area. The findings of this report will serve as a tool for guidance on land management decisions.

Feel free to contact me at 707-822-5785 with any questions or concerns.

Respectfully submitted,

SHN

Gretchen O'Brien
Biologist

GAO:ceg

Enclosure: Biological Resources Assessment – Parcel "D"

Reference: 017062

Biological Resources Assessment

Arcata Land Company, LLC
Parcel "D"
Arcata, California

Prepared for:
Rudolf Visser

Prepared by:

1062 G St., Suite I
Arcata, CA 95521-5800
707-822-5785

June 2020

QA/QC:GSW

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Abbreviations and Acronyms

C°	degrees Celsius
F°	degrees Fahrenheit
AE	Agriculture Exclusive
APN	Assessor's Parcel Number
BIOS	Biogeographical Information and Observation System
BMP	best management practices
BRA	Biological Resources Assessment
C	candidate species status
CCH	Consortium of California Herbaria
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CT	candidate threatened species status
CWA	Clean Water Act
D	delisted species status
DPS	Northern California distinct population segment/species status
E	endangered species status
EPA	U.S. Environmental Protection Agency
ESU	evolutionarily significant unit/species status
FESA	Federal Endangered Species Act
FP	fully protected species status
G1/S1	critically imperiled species heritage rank
G2/S2	imperiled species heritage rank
G3/S3	vulnerable species heritage rank
G4/S4	apparently secure species heritage rank
G5/S5	species heritage rank
IPaC	Information for Planning and Conservation
LSA	Lake or Streambed Alteration
MBTA	Migratory Bird Treaty Act
NCCP	Natural Community Conservation Planning
NMFS	National Marine Fisheries Service
NPPA	Native Plant Protection Act
PT	proposed threatened species status
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SMAO	Streamside Management Area Ordinance
SSC	species of special concern
SWRCB	State Water Resources Control Board
T	threatened species status
U.S.	United States
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VegCAMP	Vegetation Classification and Mapping Program
WDR	Waste Discharge Requirement
WL	watch list species status

1.0 Introduction

SHN has conducted preliminary site investigations including literature reviews and database query for an assessment to determine biological resources potentially present in relation to the Arcata Land Company, LLC property near Arcata, California (Figure 1). This Biological Resources Assessment (BRA) will serve as a tool to identify potential sensitive natural resources that may occur onsite and help determine project-related impacts and offer recommendations for minimal disturbance to biological resources.

1.1 Project Location

The project is located in Arcata, California, on the United States Geological Survey (USGS) Arcata North 7.5-minute Quadrangle (USGS, 2012), located in the Township 06 North, Range 01 east, Section 19 in the Humboldt Meridian. The parcel covers approximately 30 acres with a central location latitude 40.886551° and longitude -124.102427° (Figure 2).

2.0 Project Description

The proposed project includes greenhouse structures, water storage, leach field, and production building for agricultural purposes; therefore, the entire study area will be considered the area of potential impact.

2.1 Site Description

The study area consists of greenhouse structures, soil composting, and an agricultural field that has historically been used for agricultural purposes and is currently used for quinoa production (Appendix 1, Photo 1). Much of the study area is disturbed and managed, with mostly grassland habitat available for plants and animals (Appendix 1, Photos 1 and 2). There is a small drainage along the western parcel boundary that may provide habitat for amphibians (Appendix 2, Photo 3). The property is zoned Heavy Industrial (MH/Q) by the Humboldt County Zoning Regulations, and the current Humboldt County General Plan Land Use designation is Agricultural Exclusive (AE). Much of the surrounding area is active agricultural land.

The study area is predominantly non-native grass and forb species, supporting cutleaf geranium (*Geranium dissectum*), orchard grass (*Dactylis glomerata*), wild radish (*raphanus sativus*), velvet grass (*holcus lanatus*), sweet vanilla grass (*anthoxanthum odoratum*), and field mustard (*brassica rapa*).

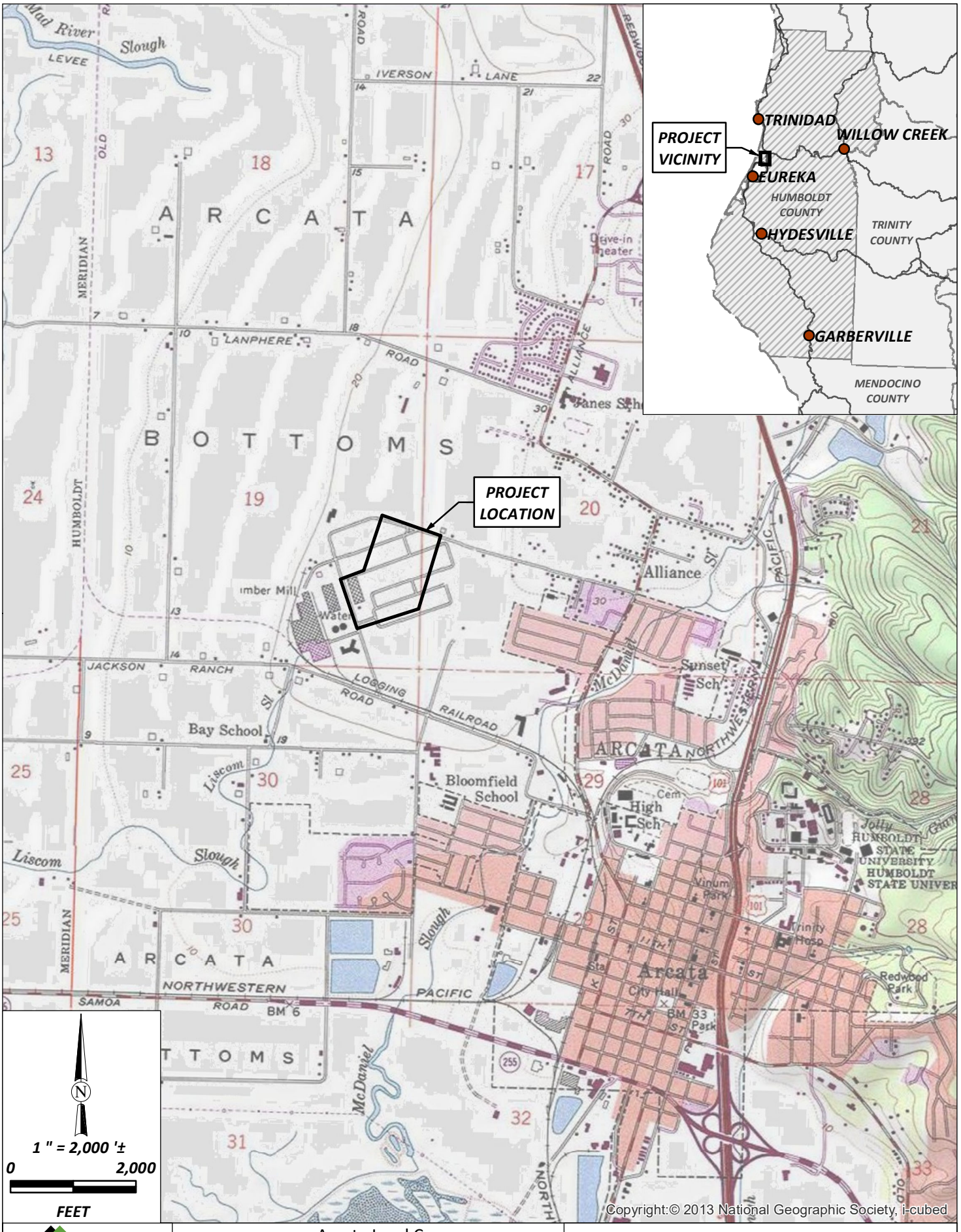
3.0 Methodology

3.1 Literature Review

This Biological Resources Assessment includes a review of pertinent literature on habitat characteristics of the site, and a review of information related to special-status species of plants and animals that could potentially use the described habitats.

The findings for this report are a result of several sources, including a review of existing literature regarding sensitive resources that have the potential to occur within the site. Resources for this determination included:

- California Natural Diversity Database (CNDDB) query for the Arcata North and surrounding USGS 7.5-minute topographic quadrangles (Tyee City, Trinidad, Crannel, Panther Creek, Blue Lake, Arcata South, and Eureka) (California Department of Fish and Wildlife [CDFW], 2019a).



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SHN	Arcata Land Co Biological Resources Assessment Arcata, California	Project Location Map Parcel D SHN 017062
	July 2019 | BIO_D_Fig1_ProjectLocation	Figure 1



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SHN	Arcata Land Co Biological Resources Assessment Arcata, California	Study Area & Special Status Species Parcel D SHN 017062
	July 2019 | BIO_D_Fig2_StudyAreaAndSpecialStatus	Figure 2

- Biogeographical Information and Observation System (BIOS; CDFW, 2019b).
- Electronic Inventory of Rare and Endangered Vascular Plants of California (California Native Plant Society [CNPS], 2019) query for a list of all plant species reported for the Arcata North and surrounding USGS 7.5-minute topographic quadrangles.
- Special Animals of California List (CDFW, 2019c).
- United States Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) was queried for threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of the proposed project and/or may be affected by the proposed project (USFWS, 2019a).

From the database queries, a list of potential target special-status species for the study area was compiled. Tables 1 and 2 in Appendix 2 include species reported by the CNDDB and USFWS, and species listed in the CNPS inventory of rare plants.

3.2 Coordination with Permitting and Regulatory Agencies

SHN staff will subsequently coordinate with CDFW staff on wildlife concerns as needed.

3.3 Field Observations and Studies

A preliminary site visit was conducted on December 5, 2018 to assess the available habitat for the potential special-status species that were reported in the vicinity, and determine where to focus survey efforts. Following survey methods from CDFW's *Protocols for Surveying and Evaluating Impacts to Special-status Native Plant Populations and Natural Communities* (CDFW, 2009), seasonally-appropriate site visits were conducted on May 2 and July 19, 2019 for the highest probability of detecting special-status plant species. A thorough reconnaissance of habitat availability for and presence of special-status animals was conducted on the May 2 visit, during the breeding season for many of the animal species reported to occur in the vicinity.

4.0 Regulatory Setting

Regulatory authority over biological resources is shared by federal, State, and local authorities under a variety of legislative acts. The following section summarizes the federal, State, and local regulations for special-status species, jurisdiction waters of the U.S. and State of California, and other sensitive biological resources. This section provides a listing and overview of these federal and State laws.

4.1 Federal Laws

4.1.1 Clean Water Act Sections 404 and 401

Under Section 404 (33 U.S. Code (USC) 1344) of the Clean Water Act (CWA), as amended, the Army Corps of Engineers (USACE) retains primary responsibility for permits to discharge dredged or fill material into waters of the U.S. All discharges of dredged or fill material into jurisdictional waters of the U.S. that result in permanent or temporary losses of waters of the U.S. are regulated by the USACE. A permit from the USACE must be obtained before placing fill or grading in wetlands or other waters of the U.S., unless the activity is exempt from CWA Section 404 regulation (for example, certain farming and forestry activities).

The USACE defines wetlands as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence

of vegetation typically adapted for life in saturated soil conditions" (Environmental Laboratory, 1987). In other words, the USACE defines wetlands by the presence of all three wetland indicators: hydrophytic vegetation, hydric soils, and wetlands hydrology.

Waters of the U.S. are defined at 33 Code of Federal Regulations (CFR) Part 328. They include traditional navigable waters; relatively permanent, non-navigable tributaries of traditional navigable waters; and certain wetlands. Following recent court cases, the U.S. Environmental Protection Agency (EPA) and USACE published a memorandum entitled Clean Water Act Jurisdiction (USACE/EPA, 2008) to guide the determination of jurisdiction over waters of the U.S., especially for wetlands. The applicability of Section 404 permitting over discharges to wetlands is, therefore, a two-step process: 1) determining the areas that are wetlands, and 2) where a wetland is present, assessing the wetland's connection to traditional navigable waters and non-navigable tributaries to determine whether the wetland is jurisdictional under the CWA. A wetland is considered jurisdictional if it meets certain specified criteria.

The USACE is required to consult with the USFWS and/or National Marine Fisheries Service (NMFS) under Section 7 of the FESA if the action subject to CWA permitting could result in "Take" of federally listed species or an adverse effect to designated critical habitat. The project is within the jurisdiction of the Sacramento District of the USACE.

Section 401 of the CWA (33 U.S.C. 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the U.S. to obtain a certification from the state in which the discharge originates or would originate, or, if appropriate, from the interstate water pollution control agency having jurisdiction over the affected waters at the point where the discharge originates or would originate, that the discharge will comply with the applicable effluent limitations and water quality standards. A certification obtained for the construction of any facility must also pertain to the subsequent operation of the facility. The responsibility for the protection of water quality in California rests with the State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCB). The project is within the jurisdiction of the North Coast RWQCB.

4.1.2 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (16 U.S.C. Sections 661-667e, March 10, 1994, as amended 1946, 1958, 1978, and 1995) requires that whenever waters or channel of a stream or other body of water are proposed or authorized to be modified by a public or private agency under a federal license or permit, the federal agency must first consult with the USFWS and/or NMFS and with the head of the agency exercising administration over the wildlife resources of the state where construction will occur (in this case the CDFW), with a view to conservation of birds, fish, mammals, and all other classes of wild animals, and all types of aquatic and land vegetation upon which wildlife is dependent.

If direct permanent impacts occur to waters of the U.S. from a proposed project, then a permit from USACE under CWA Section 404 is required for the construction of the proposed project. USACE is required to consult with USFWS and/or NMFS as appropriate regarding potential impacts to federally listed species under FESA. Such action may prompt consultation with CDFW, which would review the project pursuant to California Endangered Species Act (CESA) and issue a consistency letter with USFWS and/or NMFS, if required.

4.1.3 Federal Endangered Species Act

The United States Congress passed the FESA in 1973 to protect species that are endangered or threatened with extinction. The FESA is intended to operate in conjunction with the National Environmental Policy Act

(NEPA) to help protect the ecosystems upon which endangered and threatened species depend and within which they live. The USFWS and the NMFS are the designated federal agencies responsible for administering the FESA.

The FESA prohibits the "Take" of endangered or threatened wildlife species. A "Take" is defined as harassing, harming (including significantly modifying or degrading habitat), pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species, or any attempt to engage in such conduct (16 U.S.C. 1531, 50 CFR 17.3). An activity can be defined as a "Take" even if it is unintentional or accidental. Taking can result in civil or criminal penalties. Activities that could result in "Take" of a federally listed species require an incidental "Take" authorization resulting from FESA Section 7 consultation or FESA Section 10 consultation. Plants are legally protected under the FESA only if "Take" occurs on federal land or from federal actions, such as issuing a wetland fill permit.

A federal endangered species is one that is considered in danger of becoming extinct throughout all, or a significant portion, of its range. A federal threatened species is one that is likely to become endangered in the foreseeable future. The USFWS also maintains a list of species proposed for listing as threatened or endangered. Proposed species are those for which a proposed rule to list as endangered or threatened has been published in the Federal Register. In addition to endangered, threatened, and proposed species, the USFWS maintains a list of candidate species. Candidate species are those for which the USFWS has on file sufficient information to support issuance of a proposed listing rule.

Pursuant to the requirements of the FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed endangered or threatened species may be present in the project area and determine whether the proposed project will have a potentially significant impact on such a species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under the FESA or result in the destruction or adverse modification of critical habitat designated or proposed to be designated for such species (16 U.S.C. 1536[3], [4]). Project-related impacts to species on the FESA endangered or threatened list would be considered significant and would require mitigation.

4.1.4 Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) of 1918 makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in CFR Part 10, including feather or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). The MBTA also prohibits disturbance and harassment of nesting migratory birds at any time during their breeding season. The USFWS is responsible for enforcing the MBTA (16 U.S.C. 703). The migratory bird nesting season is generally considered to be between March 1 and August 31 within the study region.

4.2 State Laws

4.2.1 Porter-Cologne Water Quality Control Act

The state and RWQCB also maintain independent regulatory authority over the placement of waste, including fill, into waters of the State under the Porter-Cologne Water Quality Control Act. Waters of the State are defined by the Porter-Cologne Water Quality Control Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The SWRCB protects all waters in its regulatory scope, but has special responsibility for isolated wetlands and headwaters. These water bodies might not be regulated by other programs, such as Section 404 of the CWA. Waters of the State are regulated by the RWQCBs under the State Water Quality Certification Program, which regulates discharges of dredged and fill

material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Projects that require an USACE permit, or fall under other federal jurisdiction, and have the potential to impact waters of the State are required to comply with the terms of the Water Quality Certification Program. If a proposed project does not require a federal license or permit, but does involve activities that may result in a discharge of harmful substances to waters of the State, the RWQCBs have the option to regulate such activities under their state authority in the form of Waste Discharge Requirements (WDRs) or certification of WDRs.

4.2.2 California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. The CESA is similar to the Federal Endangered Species Act (FESA) but pertains to state-listed endangered and threatened species. Under the CESA, the CDFW has the responsibility for maintaining a list of threatened and endangered species designated under State law (California Fish and Game Code [CFGC] 2070). Section 2080 of the CFGC prohibits "Take" of any species that the commission determines to be an endangered or threatened species. "Take" is defined in Section 86 of the CFGC as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

The state and federal lists of threatened and endangered species are generally similar; however, a species present on one list may be absent from the other. CESA regulations are also somewhat different from the FESA in that the State regulations included threatened, endangered, and candidate plants on non-federal lands within the definition of "Take." CESA allows for "Take" incidental to otherwise lawful development projects.

Pursuant to the requirements of the CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the project area and determine whether the proposed project will have a potentially significant impact on such species. Project-related impacts to species on the CESA endangered or threatened list (or, in addition, designated by the CDFW as a "Species of Special Concern," which is a level below threatened or endangered status) would be considered significant and would require mitigation.

4.2.3 California Environmental Quality Act

California Environmental Quality Act (CEQA) Guidelines Sections 15125(c) and 15380(d) provide that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. Thus, CEQA provides the ability to protect a species from potential project impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

The CNPS maintains a list of plant species native to California whose populations that are significantly reduced from historical levels, occur in limited distribution, or are otherwise rare or threatened with extinction. This information is published in the Inventory of Rare and Endangered Plants of California (CNPS, 2019). Taxa with a California Rare Plant Rank (CRPR) of 1A, 1B, 2A, 2B, and 3 in the CNPS inventory consist of plants that meet the definitions of the CESA of the CFGC, are eligible for state listing, and meet the definition of Rare or Endangered under CEQA Guidelines Sections 15125(c) and 15380(d). Some taxa with a CRPR 4 may meet the definitions of the CESA of the CFGC. CRPR 4 populations may qualify for consideration under CEQA if they are peripheral or disjunct populations; represent the type locality of the species; or exhibit unusual morphology and/or occur on unusual substrates.

Additionally, CDFW maintains lists of special animals and plants. These lists include a species conservation ranking status from multiple sources, including FESA, CESA, federal departments with unique jurisdictions,

CNPS, and other non-governmental organizations. Based on these sources, CDFW assigns a heritage rank to each species according to their degree of imperilment (as measured by rarity, trends, and threats). These ranks follow NatureServe's Heritage Methodology, in which all species are listed with a G (global) and S (state) rank. Species with state ranks of S1-S3 are also considered highly imperiled.

CEQA Guidelines checklist IV(b) calls for the consideration of riparian habitats and sensitive natural communities. Sensitive vegetation communities are natural communities and habitats that are either unique, of relatively limited distribution in the region, or of particularly high wildlife value. However, these communities may or may not necessarily contain special-status species. Sensitive natural communities are usually identified in local or regional plans, policies, or regulations, or by the CDFW (i.e., the CNDDB program and Vegetation Classification and Mapping Program [VegCAMP]) or the USFWS. Impacts to sensitive natural communities and habitats must be considered and evaluated under the CEQA (California Code of Regulations [CCR]: Title 14, Div. 6, Chap. 3, Appendix G).

Although sensitive natural communities do not (at present) have legal protection, CEQA calls for an assessment of whether any such resources would be affected, and requires a finding of significance if there will be substantial losses. High quality occurrences of natural communities with heritage ranks of 3 or lower are considered by CDFW to be significant resources and fall under the CEQA Guidelines for addressing impacts. Local planning documents (such as, general plans) often identify these resources as well. Avoidance, minimizations, or mitigation measures should be implemented if project-affected stands of rare vegetation types or natural communities are considered high-quality occurrences of the given community.

As a trustee agency under CEQA, CDFW reviews potential project impacts to biological resources, including wetlands. In accordance with the CEQA thresholds of significance for biological resources, areas that meet the state criteria of wetlands and could be impacted by a project must be analyzed. Pursuant to CFGC Section 2785, CDFW defines wet areas as "lands which may be covered periodically or permanently with shallow water and which include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, fens, and vernal pools."

4.2.4 California Fish and Game Code Section 1600

Streams, lakes, and riparian vegetation as habitat for fish and other wildlife species, are subject to jurisdiction by the CDFW under Sections 1600-1616 of the CFGC. Any activity that will do one or more of the following: 1) substantially obstruct or divert the natural flow of a river, stream, or lake; 2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or 3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake generally require a Streambed Alteration Agreement (SAA).

The term "stream," which includes creeks and rivers, is defined in the CCR as follows: "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life." This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation (14 CCR 1.72).

In addition, the term "stream" can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife. Riparian is defined as "on, or pertaining to, the banks of a stream"; therefore, riparian vegetation is defined as, "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFW, 1994). Removal of riparian vegetation also requires an SAA from the CDFW.

4.2.5 California Fish and Game Code Sections 3503 and 3513

According to Section 3503 of the CFGC it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird (except English sparrows [*Passer domesticus*] and European starlings [*Sturnus vulgaris*]). Section 3503.5 specifically protects birds in the orders Falconiformes and Strigiformes (birds-of-prey). Section 3513 essentially overlaps with the MBTA, prohibiting the "Take" or possession of any migratory non-game bird. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "Take" by the CDFW.

4.2.6 Fully Protected Species and Species of Special Concern

The classification of "fully protected" was the CDFW's initial effort to identify and provide additional protection to those animals that were rare or faced with possible extinction. Lists were created for fish, amphibian and reptiles, birds, and mammals. Most of the species on these lists have subsequently been listed under CESA and/or FESA. The CFGC sections (fish at Sec. 5515, amphibian and reptiles at Sec. 5050, birds at Sec. 3511, and mammals at Sec. 4700) dealing with "fully protected" species states that these species "…may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species," (CDFW, 1998) although "Take" may be authorized for necessary scientific research. This language makes the "fully protected" designation the strongest and most restrictive regarding the "Take" of these species. In 2003, the code sections dealing with fully protected species were amended to allow the CDFW to authorize "Take" resulting from recovery activities for state-listed species.

Species of special concern (SSC) are broadly defined as animals not listed under the CESA, but that are nonetheless of concern to the CDFW because they are declining at a rate that could result in listing or historically occurred in low numbers and known threats to their persistence currently exist. This designation is intended to result in special consideration for these animals by the CDFW, land managers, consulting biologists, and others, and is intended to focus attention on the species to help avert the need for costly listing under CESA and cumbersome recovery efforts that might ultimately be required. This designation also is intended to stimulate collection of additional information on the biology, distribution, and status of poorly known at-risk species, and focus research and management attention on them. Although the SSC designation provides no special legal status, they are given special consideration under CEQA during project review.

Table 2 in Appendix 2 includes potentially-occurring federal- and state-listed species and SSC animals that may occur in the project area.

4.2.7 Native Plant Protection Act of 1973

The Native Plant Protection Act (NPPA) of 1973 (Sec.1900-1913 of the CFGC) includes provisions that prohibit the taking of endangered or rare native plants from the wild and a salvage requirement for landowners. The CDFW administers the NPPA and generally regards as "rare" many plant species included on Lists 1A, 1B, 2A, 2B, 3, and 4 of the CNPS Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2019).

Table 1 in Appendix 2 includes potentially-occurring endangered or rare native plants that may occur in the project area (including CNPS lists).

4.2.8 Natural Community Conservation Planning Act

The Natural Community Conservation Planning (NCCP) Act of 1991 is an effort by the State of California, and numerous private and public partners that is broader in its orientation and objectives than the CESA and FESA (refer to discussions above). The primary objective of the NCCP Act is to conserve natural communities at the ecosystem scale while accommodating compatible land use. The NCCP Act seeks to anticipate and prevent the controversies and gridlock caused by species listings by focusing on the long-term stability of wildlife and plant communities and including key interests in the process.

No regionally-occurring natural community or associated plan is listed by the state for the project area.

4.3 Other Statutes, Codes, and Policies Affording Limited Species Protection—Humboldt County Streamside Management Area Ordinance

Riparian and wetland habitats receive protection under Humboldt County's Streamside Management Area Ordinance (SMAO); as defined in Title 3, Section 314-61.1 of the Humboldt County Code. Development and work within SMAs requires a special permit from the County, if those activities are not exempt.

The purpose of the SMAO is to provide oversight in the use and development of land located within wet areas such as rivers, creeks, springs, and other wetland types. This includes natural resource areas along both sides of streams containing the channel and adjacent land. In areas outside of urban development and expansion areas, SMAs are identified as a 100-foot setback from the stream transition line of perennial streams and 50-foot setback for streams with seasonal intermittent flow. In areas inside of urban development and expansion areas, SMAs are identified as a 50-foot setback from perennial streams and 25-foot setback for streams with seasonal intermittent flow. The stream transition line is defined in the Humboldt County General Plan as, "that line closest to a stream where riparian vegetation is permanently established," which is typically interpreted in riparian areas as the closest rooted tree to the water course.

Routine maintenance activities are permitted under the SMAO, if trees that are more than 12 inches in diameter are not cut, and that no more than 6,000 cumulative square feet of woody vegetation is removed. Additionally, activities are not considered routine maintenance if they could result in a significant environmental impact. Significance with regard to environmental impact can be difficult to qualify on a case-by-case level. However, the California Department of Fish and Wildlife generally considers the removal of riparian woody vegetation greater than 4 inches in diameter as an activity that requires compensatory mitigation. Mitigation measures for projects within SMAs can include retaining snags and trees that support nesting birds, replanting of disturbed areas equal to the development area, and other potential site-specific habitat improvements.

4.3.1 County of Humboldt Commercial Cannabis Cultivation Land Use Ordinance (non-coastal zone)

On May 8, 2018, the Humboldt County Board of Supervisors adopted Ordinance Number 2599, amending provisions of Title III of the Humboldt County code relating to the commercial cultivation, processing, manufacturing, distribution, testing, and sale of cannabis for medicinal or adult use for the areas outside the coastal zone. The ordinance established land use regulations concerning commercial cultivation, processing, manufacturing, and distribution of cannabis for medical use within the County of Humboldt in order to limit and control such cannabis activities in coordination with the State of California.

Section 55.4.12.1.10 establishes performance standards for biological resource protection for all cannabis cultivation and processing operations, referring to the mitigation measures established in the Final Environmental Impact Report for the ordinance which includes:

- MM 3.4-1a. Pre-approval biological reconnaissance survey to determine if suitable habitat is present for any special-status plant or animal species; and
- MM 3.4-3a. CDFW (2009) Protocol level special-status plant surveys prior to new development related to cannabis activities.

Section 55.4.12.1.10 establishes performance standards for biological resource protection for all cannabis cultivation and processing operations. Section 55.4.12.6 specifies performance standards for project-related noise produced by a generator used for commercial cannabis cultivation. The noise effects on wildlife are focused on avoiding impacts to marbled murrelet and northern spotted owl. Project-related noise impacts are assumed to be less than significant if noise levels are 50 decibels or less at 100 feet distance or the edge of the nearest habitat, whichever is closer.

5.0 Special-status Biological Resources

An evaluation was conducted for the potential presence or absence of habitat for special-status plant and animal species. CNDDB RareFind (CDFW, 2019d), BIOS (CDFW, 2019b), and CNPS (CNPS, 2019) searches were completed for the Arcata North 7.5-minute USGS quadrangle and all adjacent quadrangles. The aforementioned databases were queried for historical and existing occurrences of state- and federally-listed threatened, endangered, and candidate plant and animal species, species proposed for listing, and all special-status plants listed by the CNPS. In addition, a list of all federally listed species that are known to occur or may occur in the vicinity was obtained from the USFWS' Information for Planning and Conservation database (USFWS, 2019a).

Table 1 in Appendix 2 includes all plant species reported from the queries, their preferred habitat, and whether there is suitable habitat present within the study area for the species. Table 2 includes all animal species reported from the queries, their preferred habitat, and whether there is suitable habitat present within the study area for the species. The potential for occurrence of those species included on the list were then evaluated based on the habitat requirements of each species relative to the conditions observed under desktop review and during the initial site visit.

Each species was evaluated for its potential to occur in the study area according to the following criteria:

- **None**. Species listed as having "none" are those species for which:
    - there is no suitable habitat present in the study area (that is, habitats in the study area are unsuitable for the species requirements [for example, elevation, hydrology, plant community, disturbance regime, etc.]).
- **Low**. Species listed as having a "low" potential to occur in the study area are those species for which:
    - there is no known record of occurrence in the vicinity, and
    - there is marginal or very limited suitable habitat present within the study area.
- **Moderate**. Species listed as having a "moderate" potential to occur in the study area are those species for which:
    - there are known records of occurrence in the vicinity, and
    - there is suitable habitat present in the study area.

- **High**. Species listed as having a "high" potential to occur in the study area are those species for which:
    - there are known records of occurrence in the vicinity (there are many records and/or records in close proximity), and
    - there is highly suitable habitat present in the study area.

5.1 Special-status Plant Species

Based on a review for special-status plant species, 72 special-status plant species have been reported from the region consisting of the site's quadrangle and their surrounding quadrangles. Of the special-status plant species reported in the region, 66 plant species are considered to have a low or no potential to occur at the project site and 6 species have a moderate or high potential (Table 1 in Appendix 2). Surveys were completed May 2, 2019 and July 19, 2019. Species with a moderate potential for occurrence within the study area are described below:

Hosackia gracilis is a perennial herb in the Fabaceae family. It is neither State nor federally listed, but has a CRPR of 4.2 and a heritage rank of G4/S3. Its elevation range is reported from 0 to 700 meters above sea level. Within its range state-wide, its blooming period is reported as March through July. This species is reported from wetlands, roadsides, and a variety of habitats from coastal scrub to coniferous forests. Although suitable habitat may exist within the study area for this species, it was not detected.

Lathyrus palustris is a perennial herb in the Fabaceae family. It is neither State nor federally listed, but has a CRPR of 2B.2 and a heritage rank of G5/S2. Its elevation range is reported from 2 to 140 meters above sea level. Within its range state-wide, its blooming period is reported as March through August. This species is reported from bogs, fens, lower montane coniferous forest, marsh, swamp, coastal prairie, and coastal scrub. Although suitable habitat may exist within the study area for this species, it was not detected.

Montia howellii is an annual herb in the Montiaceae family. It is neither State nor federally listed, but has a CRPR of 2B.2 and a heritage rank of G3G4/S2. Its elevation range is reported from 0 to 835 meters above sea level. Within its range state-wide, its blooming period is reported as March through May. This species is reported from meadows and seeps, north coast coniferous forests, vernal pools, vernally mesic sites, and sometimes roadsides. Although suitable habitat may exist within the study area for this species, it was not detected.

Sidalcea malachroides is a perennial herb in the Malvaceae family. It is neither State nor federally listed, but has a CRPR of 4.2 and a heritage rank of G3/S3. Its elevation range is reported from 0 to 730 meters above sea level. Within its range state-wide, its blooming period is reported as March through August. This species is reported from woodlands, clearings near the coast, and often in disturbed areas. Although suitable habitat may exist within the study area for this species, it was not detected.

Sidalcea malviflora ssp. *patula* is a perennial herb in the Malvaceae family. It is neither State nor federally listed, but has a CRPR of 1B.2 and a heritage rank of G5T2/S2. Its elevation range is reported from 5 to 1,255 meters above sea level. Within its range state-wide, its blooming period is reported as May through August. This species is reported from coastal bluff scrub, coastal prairie, roadcuts and north coast coniferous forests. Although suitable habitat may exist within the study area for this species, it was not detected.

Sidalcea oregana ssp. *eximia* is a perennial herb in the Malvaceae family. It is neither State nor federally listed, but has a CRPR of 1B.2 and a heritage rank of G5T1/S1. Its elevation range is reported from 5 to 1,805

meters above sea level. Within its range state-wide, its blooming period is reported as June through August. This species is reported from meadows, seeps, low montane conifer forests, and in gravelly soil. Although suitable habitat may exist within the study area for this species, it was not detected.

5.2 Special-status Animal Species

Based on a review of special-status animal species, 66 special-status animal species have been reported with the potential to occur in the project region. Due to the minimal natural, undisturbed vegetation or water resources within the study area, many of the regionally occurring special-status species are not likely to utilize the available habitat. Of the 66 special-status animal species potentially occurring in the region, 51 animal species are considered to have a no or low potential to occur at the project site and 15 species have a moderate to high potential to occur (Table 2 in Appendix 2). Species with a moderate or high potential for occurrence within the study area are described below. Field investigations particularly focused on determining presence or potential use of the study area by these species.

5.2.1 Amphibians

The northern red-legged frog (*Rana aurora*) is an amphibian in the Ranidae family. Reported habitats include Klamath and north coast flowing waters and riparian forests, usually near dense riparian cover. It is generally found near permanent water, but is sometimes found far from water in damp woods and meadows during the non-breeding season (May to November).
Status: Federal None, State None, Species of Special Concern, Global rank Apparently Secure, State rank Vulnerable.
Suitable dispersal habitat for this species exists within the study area and potential breeding habitat exists in the drainage along the western boundary of the study area, although it was not detected.

5.2.2 Birds

The Cooper's hawk (*Accipiter cooperii*) occurs in woodlands, riparian forest, chiefly of open, interrupted, or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river floodplains; also, live oaks. This species builds stick platform nests lined with bark in crotches of riparian deciduous trees and second-growth conifers near streams.
Status: Federal None, State None, Watchlist, Global rank Secure, State rank Apparently Secure.
Foraging habitat for this species exists in the eastern half of the study area and adjacent to the study area. Potential foraging habitat exists for this species within the study area, nesting habitat exists on adjacent property, although it was not detected.

The sharp-shinned hawk (*Accipiter striatus*) can be found in ponderosa pine, black oak, riparian deciduous, mixed conifer, Jeffrey pine habitats, and prefers riparian areas. North-facing slopes with plucking perches are critical requirements. Nests are usually within 275 feet of water.
Status: Federal None, State None, Watchlist, Global rank Secure, State rank Apparently Secure.
Foraging habitat for this species exists in the study area and adjacent to the study area, although it was not detected.

The great egret (*Ardea alba*) is a colonial nester in large trees. Rookery sites are located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes. This species is most often found foraging around water, including wet fields and grassy meadows near water.
Status: Federal None, State None, Sensitive, Global rank Secure, State rank Apparently Secure.
Potential foraging habitat exists for this species within the study area during the wet season, although it was not detected.

The great blue heron (*Ardea herodias*) is a colonial nester in tall trees, cliffsides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows. This species is most often found foraging near or in water, or in grassy fields near water.
Status: Federal None, State None, Sensitive, Global rank Secure, State rank Apparently Secure.
Potential foraging habitat exists for this species within the study area during the wet season, although it was not detected.

The short-eared owl (*Asio flammeus*) lives in large, open areas with low vegetation including grasslands, savannah, marshes, and agricultural areas. They can be seen during the day and make their nests on the ground.
Status: Federal None, State None, Species of Special Concern, Global rank Secure, State rank Vulnerable.
Suitable foraging and potential nesting habitat exist for this species within the study area, although it was not detected.

The Vaux's swift (*Chaetura vauxi*) typically nests in tree cavities and forages in the air over streams and standing water that support invertebrates. Status: Federal None, State None, Species of Special Concern, Global rank Secure, State rank Imperiled/Vulnerable.
Potential aerial foraging habitat exists within the study area for this species, although it was not detected.

The northern harrier (Circus cyaneus) is most common in large undisturbed tracts of wetlands and grasslands with low, thick vegetation during the breeding season. In winter, they use a wider range of habitat types with low vegetation including sand dunes, deserts, pastures, and croplands.
Status: Federal None, State None, Species of Special Concern, Global rank Secure, State rank Vulnerable.
Winter foraging habitat exists for this species within the study area, although it was not detected.

The snowy egret (*Egretta thula*) nests in colonies in isolated areas, often near water. They forage in marshes and estuaries, grassy ponds, pools, and wet fields.
Status: Federal None, State None, Global rank Secure, State rank Apparently Secure.
Potential foraging habitat exists for this species within the study area during the wet season, although it was not detected.

The white-tailed kite (*Elanus leucurus*) can be found in foothills, valleys, and river bottomlands and marshes. They typically use open grasslands for foraging and nest in densely-topped trees.
Status: Federal None, State None, Fully Protected, Global rank Secure, State rank Apparently Secure/Vulnerable.
Potential foraging habitat exists for this species in the study area and nesting habitat adjacent to the study area, although it was not detected.

The Merlin (*Falco columbarius*) nests near forest openings near water and forages typically for smaller birds in the air in open areas.
Status: Federal None, State None, Watch List, Global rank Secure, State rank Sensitive/Apparently Secure.
Foraging habitat exists for this species within the study area, although it was not detected.

The American peregrine falcon (*Falco peregrinus anatum*) occupies wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, and human-made structures. Nest consists of a scrape or a depression or ledge in an open site.
Status: Federal Delisted, State Delisted, Fully Protected, Global rank Apparently Secure, State rank Vulnerable/Apparently Secure.
Potential foraging habitat exists within the study area for this species, although it was not detected.

The Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*) live in grasslands, meadows, and cultivated fields, as well as coastal scrub and estuaries.
Status: Federal None, State None, Species of Special Concern, Global rank imperiled/sensitive, State rank imperiled/sensitive.
Foraging and nesting habitat exists for this species within the study area, although it was not detected.

5.2.3 Fish

None of the fish species listed on the CNDDB report are considered to have a moderate or high potential to occur within the project area due to the lack of any stream connectivity through the study area.

5.2.4 Insects

The western bumble bee (*Bombus occidentalis*) is an insect in the Apidae family. This species was once common and widespread, but has declined precipitously from central California to southern British Columbia, perhaps from disease.
Status: Federal None, State None, Sensitive, Global Rank Imperiled/Vulnerable, State Rank Critically Imperiled.
There is suitable foraging and nesting habitat available for this species within the study area, although it was not detected.

The obscure bumblebee (*Bombus calignosus*) lives in along coastal areas of the western states in underground burrows or above ground in abandoned bird nests.
Status: Federal None, State None, Vulnerable, Global Rank Apparently Secure, State Rank Critically Imperiled/Imperiled.
There is suitable foraging and nesting habitat available for this species within the study area, although it was not detected.

5.2.5 Mammals

None of the mammal species listed on the CNDDB report are considered to have a moderate or high potential to occur within the project area due to the lack of suitable habitat available within the study area.

5.2.6 Mollusks

None of the mollusk species listed on the CNDDB report are considered to have a moderate or high potential to occur within the project area due to the lack of suitable habitat available within the study area.

5.2.7 Reptiles

The only reptile listed on the CNDDB report was Western Pond Turtle (*Emys marmorata*) and is not considered to have a moderate or high potential to occur within the study area as no suitable habitat for this species exists within the study area.

5.3 Special-status Natural Communities and Habitats

5.3.1 Sensitive Natural Communities

Sensitive natural communities are habitats that are generally defined by vegetation type and geographical location and are increasingly restricted in abundance and distribution. Recognition of natural communities is an ecosystem-based approach to maintaining biodiversity in California. Holland-type CNDDB natural

communities are habitat for numerous special-status plant and animal species. CDFW no longer updates their tracking of Holland-type CNDDB natural communities and has since standardized alliance and association-level vegetation nomenclature for California to comply with the National Vegetation Classification System. High quality occurrences of natural communities with heritage ranks of 3 or lower are considered by CDFW to be significant resources and fall under the CEQA Guidelines for addressing impacts.

No sensitive natural communities were found within the study area.

5.3.2 Wetland and Riparian Habitats

Refer to the wetland delineation report prepared by SHN staff for full description of wetland and riparian habitats in the project area (SHN, 2018). Riparian areas typically provide habitat for a mosaic of wildlife species and are considered sensitive habitat under the Humboldt County SMAO Preservation of waterways are included in Section 7.0 Recommendations.

5.3.3 Nesting Bird Habitat

There is limited nesting habitat for birds within the study area. Some species, such as western meadowlark (*Sturnella neglecta*), may nest in tall grasses. Protection measures for nesting birds are included in Section 7.0 Recommendations.

5.3.4 Wildlife Movement Corridors

Watercourses and their associated riparian zones are likely the primary wildlife movement corridors due to their complex structure, providing cover and hiding places from predators, and the extensive connectivity to other habitats the riparian zones typically provide. Additionally, wildlife may use existing roads and trails that provide corridors between patches of vegetation. There are no significant wildlife movement corridors within the parcel, although some animals, especially nocturnal mammals may use the existing and proposed roadways as movement corridors.

5.3.5 Designated Critical Habitat

USFWS's Critical Habitat Portal (USFWS, 2019b) query for habitat designated as critical for species listed under the FESA reported that the closest designated critical habitat is for the Tidewater Goby (*Eucyclogobius newberryi*), 1.08 miles to the west of the study area (Mad River Slough).

5.4 Invasive Species

Non-native species are often introduced to an area, whether intentionally or unintentionally, by human activities and can have a detrimental effect on native species. The non-native invaders do not have natural predators or controls in an introduced environment so they are able to spread freely and out-compete native species, particularly sensitive species with particular habitat requirements that may change drastically due to the spread of the invasive species.

Invasive species of concern found on site include bristly oxtongue (*Helmenthotheca echioides* [Cal-IPC Limited]), bull thistle (*Cirsium arvense* [Cal-IPC Moderate]), pampas grass (*Cortaderia jubata* [Cal-IPC High]), reed canary grass (*Phalaris arundinacea*), Himalayan blackberry (*Rubus armeniacus* [Cal-IPC High]), Fuller's teasel (*Dipsacus follonum* [Cal-IPC Moderate]), field mustard (*Brassica rapa* [Cal-IPC Limited]), ripgut (*Bromus diandrus* [Cal-IPC Moderate]), and poison hemlock (Conium maculatum [Cal-IPC] moderate).

This area undergoes frequent disturbance. Due to these activities and the existing establishment of invasive species populations, invasive species are expected to remain prevalent.

6.0 Conclusion

This BRA outlines information related to biological resources that have the potential to occur within the study area. No special-status plants or animals were observed during site visits. Several special-status species have the potential to occupy the study area based on the available habitat, although the surrounding landscape may provide suitable habitat for animals that are able to move outside of the project area. For minimizing impacts on wildlife, plants, and natural communities discussed, as well as development effects, and avoiding conflicts with local policies protecting biological resources, the following recommendations are provided.

7.0 Recommendations

The following recommendations are provided for guidance in developing mitigation and minimization measures for the protection of biological resources.

- Use standard BMPs during ground disturbance activities and remove construction debris and waste from and up to 100 feet around drainage ditches.

- Limit clearing of vegetation to the non-breeding season for birds. If vegetation removal or work on structures is done between September 1 and February 28 (outside reproductive season for most birds), these activities are not likely to affect reproductive success. If brush clearing must occur during the reproductive season, nesting bird surveys should be performed by a qualified biologist to ensure that no active nests are destroyed.

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Photos 1



Photo 1. Agricultural field in the study area.



Photo 2. Typical vegetation in study area.



Photo 3. Drainage alongside greenhouses on the western boundary of the study area.



Photo 4. Access roads with predominantly non-native vegetation.

Species Lists 2

Table 1
Regionally-Occurring Special-status Plant Species Scoping List CNDDB, CNPS, IPaC
Arcata Land Co.
Arcata North and Surrounding 7.5-min Quadrangles

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Abronia umbellata var. breviflora	pink sand-verbena	Nyctaginaceae	None	None	G4G5-T2	S1	1B.1	June-Oct.	Coastal dunes and coastal strand.	Foredunes and interdunes with sparse cover. Usually the plant closest to the ocean. 0-10 m.	None
Angelica lucida	sea-watch	Apiaceae	None	None	G5	S3	4.2	May-Sept.	Coastal strand	Coastal bluff scrub, coastal dunes, coastal scrub, coastal salt marshes. 0-150 m	None
Astragalus pycnostachyus var. pycnostachyus	coastal marsh milk-vetch	Fabaceae	None	None	G2T2	S2	1B.2	April-Oct.	Coastal dunes, marshes & swamps, coastal scrub.	Mesic sites in dunes or along streams or coastal salt marshes. 0-155 m.	None
Astragalus rattanii var. rattanii	Rattan's milk-vetch	Fabaceae	None	None	G4T4	S4	4.3	April-July	Chaparral, cismontane woodland, lower montane conifer forest.	Open grassy hillsides, gravelly flats in valleys, & gravel bars of stream beds. 30-825 m.	Low
Astragalus umbraticus	Bald Mountian milk-vetch	Fabaceae	None	None	G3	S2	2B.3	May-August	Cismontane woodland, lower montane coniferous forest.	Dry open oak and pine woodlands; sometimes on roadsides. 210-1,220 m	Low
Bryoria pseudocapillaris	false gray horsehair lichen	Parmeli-aceae	None	None	G3	S2	3.2	Lichen	Coastal dunes, North Coast coniferous forest (immediate coast).	Usually on conifers. 0-90 m.	None
Bryoria spiralifera	twisted horsehair lichen	Parmeli-aceae	None	None	G3	S1S2	1B.1	Lichen	North coast coniferous forest.	Usually on conifers. 0-30 m.	None

Table 1
Regionally-Occurring Special-status Plant Species Scoping List CNDDB, CNPS, IPaC
Arcata Land Co.
Arcata North and Surrounding 7.5-min Quadrangles

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Calamagrostis bolanderi	Bolander's reed grass	Poaceae	None	None	G4	S4	4.2	May-August	Closed-cone conifer forest, N. coast conifer forest, broadleaf upland forest, coast scrub, marsh & swamps, meadows & seeps, bogs & fens.	Mesic sites. 0-455 m.	Low
Cardamine angulata	seaside bittercress	Brassic-aceae	None	None	G5	S1	2B.1	Jan.-July	Low montane, conifer forest, N. coast conifer forest, wetland	Wet areas, streambanks. 90-155 m.	None
Carex arcta	northern clustered sedge	Cyperaceae	None	None	G5	S1	2B.2	June-Sept.	Bogs and fens, north coast conifer forest.	Mesic sites. 60-1,405 m.	None
Carex buxbaumii	Buxbaum's sedge	Cyperaceae	None	None	G5	S3	4.2	March-August	Bogs and fens, meadows and seeps, marshes and swamps.	Mesic sites. 3-3,300 m.	Low
Carex lenticularis var. limnophila	lagoon sedge	Cyperaceae	None	None	G5T5	S1	2B.2	June-August	Bogs, fens, marsh, swamp, No. coast conifer forest.	Lakeshores, beaches. Often in gravelly substrates. 0-6 m.	None
Carex leptalea	bristle-stalked sedge	Cyperaceae	None	None	G5	S1	2B.2	March-July	Bogs, fens, meadows, seeps, marshes, swamps.	Mostly known from bogs and wet meadows. 3-1,395 m.	Low
Carex lyngbyei	Lyngbye's sedge	Cyperaceae	None	None	G5	S3	2B.2	April-August	Marsh & swamp (brackish or freshwater).	0-200 m.	Low

Table 1
Regionally-Occurring Special-status Plant Species Scoping List CNDDB, CNPS, IPaC
Arcata Land Co.
Arcata North and Surrounding 7.5-min Quadrangles

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Carex praticola	northern meadow sedge	Cyperaceae	None	None	G5	S2	2B.2	May-July	Meadows and seeps.	Moist to wet meadows. 15-3,200 m.	Low
Carex viridula ssp. viridula	green yellow sedge	Cyperaceae	None	None	G5T5	S2	2B.3	June-July	Bogs, fens, marshes, swamps (freshwater), no. coast coniferous forest.	Mesic sites. 0-1,705 m.	Low
Castilleja ambigua var. humboldtiensis	Humboldt Bay owl's-clover	Orobanch-aceae	None	None	G4T2	S2	1B.2	April-August	Marshes and swamps.	Coastal saltmarsh with *Spartina, Distichlis, Salicornia, Jaumea*. 0-20 m.	None
Castilleja litoralis	Oregon coast paintbrush	Orobanch-aceae	None	None	G3	S3	2B.2	June	Coastal bluff scrub, coastal dunes, coastal scrub.	Sandy sites. 5-255 m.	None
Castilleja mendocinensis	Mendocino Coast paintbrush	Orobanch-aceae	None	None	G2	S2	1B.2	April-August	Coast bluff scrub, coast scrub, coastal prairie, closed-cone conifer forest, coastal dunes.	Often on sea bluffs or cliffs in coastal bluff scrub or prairie. 0-160 m.	None
Chloropyron maritimum ssp. palustre	Point Reyes salty bird's-beak	Orobanch-aceae	None	None	G4?T2	S2	1B.2	June-Oct.	Coastal salt marsh.	Usually in coastal salt marsh with *Salicornia, Distichlis, Jaumea, Spartina,* etc. 0-10 m.	None
Chrysosplenium glechomifolium	Pacific golden saxifrage	Saxifrag-aceae	None	None	G5	S3	4.3	Feb.-June	North Coast conifer forest, riparian forest	Streambanks, sometimes seeps, or roadsides. 10-220 m.	Low

Table 1
Regionally-Occurring Special-status Plant Species Scoping List CNDDB, CNPS, IPaC
Arcata Land Co.
Arcata North and Surrounding 7.5-min Quadrangles

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Collinsia corymbosa	round-headed Chinese-houses	Plantagin-aceae	None	None	G1	S1	1B.2	April-June	Coastal dunes.	10-30 m.	None
Coptis laciniata	Oregon goldthread	Ranuncul-aceae	None	None	G4	S3	4.2	March-April	North Coast coniferous forest, meadows and seeps.	Mesic sites such as moist streambanks. 0-1,000 m.	Low
Discelium nudum	naked flag moss	Disceliacea e	None	None	G4G5	S1	2B.2	Moss	Coastal bluff scrub.	Moss on moist silty clay to fine sandy banks in some-what shaded sites. 10-50 m.	None
Eleocharis parvula	small spikerush	Cyperaceae	None	None	G5	S4	4.3	July-August	Marsh & swamp, salt marsh, wetland	In coastal salt marshes. 1-3,020 m.	None
Empetrum nigrum	black crowberry	Ericaceae	None	None	G5	S1	2B.2	July-August	Coastal bluff scrub, coastal prairie.	3-15 m.	None
Epilobium septentrionale	Humboldt County fuchsia	Onagraceae	None	None	G4	G4	4.3	July-Sept.	Broadleaf upland forest, north coast coniferous forest.	Dry, sandy or rocky ledges. 45-1,800 m.	None
Erigeron bloomeri var. nudatus	Waldo daisy	Asteraceae	None	None	G5T4	S3	2B.3	June-July	Lower montane coniferous forest, upper montane coniferous forest.	In open areas on dry rocky outcrops on serpentine. 730-1,740 m.	None
Erysimum menziesii	Menzies' wallflower	Brassic-aceae	E	E	G1	S1	1B.1	March-Sept.	Coastal dunes.	Localized on dunes and coastal strand. 0-35 m.	None

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Arcata North and Surrounding 7.5-min Quadrangles

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Erythronium oregonum	giant fawn lily	Liliaceae	None	None	G4G5	S2	2B.2	March-June	Cismontane woodland, meadows, seeps	Openings. Sometimes on serpentine; rocky sites. 300-1,435 m.	None
Erythronium revolutum	coast fawn lily	Liliaceae	None	None	G4G5	S3	2B.2	March-August	Bogs & fens, broadleaf upland forest, N. coast conifer forest.	Mesic sites; streambanks. 60-1,405 m.	Low
Fissidens pauperculus	minute pocket moss	Fissident-aceae	None	None	G3?	S2	1B.2	Lichen	North coast coniferous forest, Redwood.	On damp soil along the coast. In dry streambeds and on stream banks. 10-1,024 m.	Low
Fritillaria purdyi	Purdy's fritillary	Liliaceae	None	None	G4	S4	4.3	March-June	Chaparral, cismontane wood-land, low montane conifer forest.	Usually on serpentine. 175-2,255 m.	None
Gilia capitata ssp. pacifica	Pacific gilia	Polemoni-aceae	None	None	G5T3	S2	1B.2	April-August	Coastal bluff scrub, chaparral, coastal prairie, valley & foothill grassland.	5-1,345 m.	Low
Gilia millefoliata	dark-eyed gilia	Polemoni-aceae	None	None	G2	S2	1B.2	April-July	Coastal dunes.	1-60 m.	None
Glehnia littoralis ssp. leiocarpa	American glehnia	Apiaceae	None	None	G5T5	S3	4.2	May-August	Coastal Dunes	0-20 m.	None
Hemizonia congesta ssp. tracyi	Tracy's tarplant	Asteraceae	None	None	G5T4	S4	4.3	May-Oct.	Coastal prairie N. coast conifer forest, ultramafic, valley & foothill grassland	Openings; sometimes on serpentine. 120-1,200 m.	None

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Arcata North and Surrounding 7.5-min Quadrangles

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Hesperevax sparsiflora var. brevifolia	short-leaved evax	Asteraceae	None	None	G4T3	S2	1B.2	March-June	Coastal bluff scrub, coastal dunes, coastal prairie.	Sandy bluffs and flats. 0-215 m.	None
Hosackia gracilis	harlequin lotus	Fabaceae	None	None	G4	S3	4.2	March-July	Broadleaf upland forest, coast bluff scrub, coast prairie, coast scrub, closed-cone conifer forest, N. coast conifer forest, valley & foothill grassland.	Wetlands and roadsides. Meadow, seep, marsh & swamp. 0-700 m.	Moderate
Iliamna latibracteata	California globe mallow	Malvaceae	None	None	G2G3	S2	1B.2	June-August	N. Coast conifer forest, chaparral, low montane conifer forest, riparian scrub (streambanks).	Seepage areas in silty clay loam. 60-2,000 m.	Low
Juncus nevadensis var. inventus	Sierra rush	Juncaceae	None	None	G5T3-T4	S1	2B.2	July-Nov.	Bogs and fens, Wetlands.	0-10 m.	Low
Lasthenia californica ssp. macrantha	perennial goldfields	Asteraceae	None	None	G3T2	S2	1B.2	Jan.-Nov.	Coastal bluff scrub, coastal dunes, coastal scrub.	5-185 m.	Low
Lathyrus glandulosus	sticky pea	Fabaceae	None	None	G3	S3	4.3	April-June	Cismontane woodland.	In oak woodlands upland from the coast redwood forests & along roadsides. 300-800 m.	Low

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Lathyrus japonicus	seaside pea	Fabaceae	None	None	G5	S2	2B.1	May-August	Coastal dunes.	3-65 m.	None
Lathyrus palustris	marsh pea	Fabaceae	None	None	G5	S2	2B.2	March-August	Bogs & fens, lower montane conifer forest, marsh & swamp, N. coast conifer forest, coastal prairie, coastal scrub.	Moist coastal areas. 2-140 m.	Moderate
Layia carnosa	beach layia	Asteraceae	E	E	G2	S2	1B.1	March-July	Coastal dunes, coastal scrub.	On sparsely vegetated, semi-stabilized dunes, usually behind foredunes. 0-30 m.	Low
Lilium kelloggii	Kellogg's lily	Liliaceae	None	None	G3	S3	4.3	May-August	Lower montane conifer forest, N. coast conifer forest.	Gaps and roadsides in conifer forest. 3-1,300 m.	Low
Lilium occidentale	western lily	Liliaceae	E	E	G1	S1	1B.1	June-July	Coastal scrub, freshwater marsh, bogs & fens, coastal bluff scrub, coast prairie, N. coast conifer forest, marshes and swamps.	Well-drained, old beach washes overlain with wind-blown alluvium and organic topsoil; usually near margins of Sitka spruce. 3-110 m.	None
Listera cordata	heart-leaved twayblade	Orchidaceae	None	None	G5	S4	4.2	Feb.-July	Low montane conifer forest, N. coast conifer forest, Bog & fen.	5-1,370 m.	Low

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Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Lycopodiella inundata	inundated bog-clubmoss	Lycopodi-aceae	None	None	G5	S1	2B.2	June-Sept.	Bogs and fens, lower montane coniferous forest, marshes and swamps.	Peat bogs, muddy depressions, pond margins. 5-915 m.	None
Lycopodium clavatum	running-pine	Lycopodi-aceae	None	None	G5	S3	4.1	June-Sept.	Lower montane conifer forest, north coast coniferous forest, marsh & swamp.	Forest understory, edges, openings, roadsides; mesic sites with partial shade and light. 45-1,225 m.	Low
Lycopus uniflorus	northern bugleweed	Lamiacea e	None	None	G5	S4	4.3	July-Sept.	Bogs and fens, marshes and swamps, wetlands.	Wet places. 5-2,000 m.	None
Mitellastra caulescens	leafy-stemmed mitrewort	Saxifrag-aceae	None	None	G5	S4	4.2	March-Oct.	Broadleaf upland forest, lower montane and North coast coniferous forests, meadows & seeps	Mesic sites. 5-1,700 m.	Low
Monotropa uniflora	ghost-pipe	Ericaceae	None	None	G5	S2	2B.2	June-Sept.	Broadleaf upland forest, north coast coniferous forest.	Often under redwoods or west hemlock. 15-855 m.	None
Montia howellii	Howell's montia	Montiaceae	None	None	G3G4	S2	2B.2	Feb.-May	Meadows and seeps, north coast coniferous forest, vernal pools.	Vernally wet sites; often on compacted soil. 10-1,005 m.	Moderate

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Oenothera wolfii	Wolf's evening-primrose	Onagraceae	None	None	G2	S1	1B.1	May-Oct.	Coastal bluff scrub, dunes, and prairie, low montane conifer forest.	Sandy substrates; usually mesic sites. 0-125 m.	None
Packera bolanderi var. bolanderi	seacoast ragwort	Asteraceae	None	None	G4T4	S2S3	2B.2	Jan.-August	Coastal scrub, north coast conifer forest.	Often along roadsides. 30-915 m.	Low
Piperia candida	white-flowered rein orchid	Orchidaceae	None	None	G3	S3	1B.2	May-Sept.	N. coast conifer forest, low montane conifer forest, broadleaf upland forest.	Sometimes on serpentine. Forest duff, mossy banks, rock outcrops, and muskeg. 45-1,615 m.	None
Pityopus californicus	California pinefoot	Ericaceae	None	None	G4G5	S4	4.2	March-August	Broadleaf upland forest, upper montane and, N. coast conifer forest, low montane conifer forest.	Deep shade with few understory species, often under layer of duff, in rocky to clay loam soil. 15-2,225 m.	None
Pleuropogon refractus	nodding semaphore grass	Poaceae	None	None	G4	S4	4.2	March-August	Meadow & seep, low montane conifer forest, N. coast conifer forest, riparian forest.	Mesic sites along streams, grassy flats in shaded redwood groves. 0-1,600 m.	Low
Polemonium carneum	Oregon polemonium	Polemoni-aceae	None	None	G3G4	S2	2B.2	April-Sept.	Coast scrub & prairie, low montane conifer forest.	0-1,830 m.	Low
Ribes laxiflorum	trailing black currant	Grossulari-aceae	None	None	G5	S4	4.3	March-August	N. coast conifer forest, Redwood forests.	Grows over logs and stumps in moist, wet places. 5-1,395 m.	None

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Arcata North and Surrounding 7.5-min Quadrangles

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Romanzoffia tracyi	Tracy's romanzoffia	Boragin-aceae	None	None	G4	S2	2B.3	March-May	Coastal bluff scrub, coastal scrub.	Rocky sites. 15-300 m.	None
Sidalcea malachroides	maple-leaved checkerbloom	Malvaceae	None	None	G3	S3	4.2	March-August	Broadleaf upland forest, coast prairie, coast scrub, North coast coniferous forest, riparian.	Woodlands and clearings near coast; often in disturbed areas. 0-730 m.	Low
Sidalcea malviflora ssp. patula	Siskiyou checkerbloom	Malvaceae	None	None	G5T2	S2	1B.2	May-August	Coast bluff scrub, coast prairie, north coast coniferous forest.	Open coastal forest; roadcuts. 5-1,255 m.	Moderate
Sidalcea oregana ssp. eximia	coast checkerbloom	Malvaceae	None	None	G5T1	S1	1B.2	June-August	Meadow & seep, North coast & low montane conifer forest.	Near meadows, in gravelly soil. 5-1,805 m.	Low
Silene scouleri ssp. scouleri	Scoulers catchfly	Caryophyllaceae	None	None	G5T5	S2S3	2B.2	March-Sept.	Coastal bluff scrub, coastal prairie, valley and foothill grasslands.	0-1,970 m.	Low
Spergularia canadensis var. occidentalis	western sand-spurrey	Caryophyll-aceae	None	None	G5T4	S1	2B.1	June-August	Marshes and swamps (coastal salt marshes).	0-3 m.	Low
Tiarella trifoliata var. trifoliata	trifoliate laceflower	Saxifrag-aceae	None	None	G5T5	S2S3	3.2	June-August	Lower montane coniferous forest, north coast coniferous forest.	Forest edge; moist shady banks. 170-1,500 m.	None

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Arcata Land Co.
Arcata North and Surrounding 7.5-min Quadrangles

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Trichodon cylindricus	cylindrical trichodon	Ditrichaceae	None	None	G4	S2	2B.2	Moss	Broadleaf upland forest, upper montane conifer forest.	Openings on sandy or clay soil on roadsides, stream banks, trails, fields. 50-1,500 m.	Low
Usnea longissima	Methuselah's beard lichen	Parmeli-aceae	None	None	G4	S4	4.2	Lichen	North coast coniferous forest, broadleaf upland forest.	In the "redwood zone" on tree branches, incl. big leaf maple, oaks, ash, Douglas-fir, and bay. 45-1,465 m in CA.	Low
Viola palustris	alpine marsh violet	Violaceae	None	None	G5	S1S2	2B.2	March-August	Coastal scrub, bogs and fens.	Swampy, shrubby places in coast scrub or coastal bogs. 0-150 m.	Low

1. Species indicator status as assigned by Federal Endangered Species Act (FESA), California Endangered Species Act (CESA), and California Department of Fish and Wildlife (CDFW)

C: candidate
CT: candidate threatened
D: delisted
DPS: distinct population segment
E: endangered
ESU: evolutionarily significant unit
FP: fully protected
PT: proposed threatened
SSC: species of special concern
T: threatened
WL: watch list

2. Species Heritage rank as assigned by California Department of Fish and Wildlife (CDFW)

G1/S1: critically imperiled
G2/S2: imperiled
G3/S3: vulnerable
G4/S4: apparently secure
G5/S5: secure

Table 2
Regionally-Occurring Special-status Animal Species Scoping List CNDDB, RareFind, & IPaC Arcata North & surrounding 7.5" quadrangles.
Arcata Land Company, Parcel "D"

Scientific Name	Common Name	FedList	CalList	Other Status	Global Rank	State Rank	Habitats	Potential of occurrence
Amphibians								
Ascaphus truei	Pacific tailed frog	None	None	SSC	G4	S3S4	Inhabits cold, clear, permanent rocky streams in wet forests. They do not inhabit ponds or lakes. A rocky streambed is necessary for protective cover for adults, eggs, and larvae.	None
Plethodon elongatus	Del Norte salamander	None	None	WL	G4	S3	Occurs in montane hardwood-conifer, redwood, Douglas-fir & ponderosa pine habitats. Restricted to perennial montane streams. Tadpoles require water below 15 degrees C.	None
Rana aurora	northern red-legged frog	None	None	SSC	G4	S3	Humid forests, woodlands, grasslands, & streamsides in NW California, usually near dense riparian cover. Generally near permanent water, but can be found far from water, in damp woods and meadows, during non-breeding season.	Moderate
Rana boylii	foothill yellow-legged frog	None	CT	SSC	G3	S3	Partly-shaded, shallow streams & riffles with a rocky substrate in a variety of habitats. Need at least some cobble-sized substrate for egg-laying. Need at least 15 weeks to attain metamorphosis.	Low
Rhyacotriton variegatus	southern torrent salamander	None	None	SSC	G3G4	S2S3	Coastal redwood, Douglas-fir, mixed conifer, montane riparian and montane hardwood-conifer habitats. Cold, well-shaded, permanent streams and seepages, or within splash zone or on moss-covered rock within trickling water.Old growth forest.	None
Birds								
Accipiter cooperii	Cooper's hawk	None	None	WL	G5	S4	Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	High
Accipiter striatus	sharp-shinned hawk	None	None	WL	G5	S4	Ponderosa pine, black oak, riparian deciduous, mixed conifer & Jeffrey pine habitat. Prefers riparian. North-facing slopes, with plucking perches are critical requirements. Nests usually within 275 ft of water.	Moderate

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Arcata Land Company, Parcel "D"

Scientific Name	Common Name	FedList	CalList	Other Status	Global Rank	State Rank	Habitats	Potential of occurrence
Ardea alba	great egret	None	None	S	G5	S4	Live in freshwater, brackish, and marine wetlands. During the breeding season they live in colonies in trees or shrubs with other waterbirds.	High
Ardea herodias	great blue heron	None	None	S	G5	S4	Colonial nester in tall trees, cliffsides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	Moderate
Asio flammeus	short-eared owl	None	None	SSC	G5	S5	Live in large, open areas with low vegetation, including prairie and coastal grasslands, heathlands, meadows, shrubsteppe, savanna, tundra, marshes, dunes, and agricultural areas.	High
Botaurus lentiginosus	American bittern	None	None	None	G4	S3S4	In winter they move to areas where water bodies don't freeze, especially near the coast, where they occasionally use brackish marshes. Usually build their nests among thick stands of cattails, bulrushes, and sedges that grow out of shallow water.	None
Brachyramphus marmoratus	marbled murrelet	T	E	None	G3G4	S1	Breeds in coniferous forests near coasts, nesting on large horizontal branches high up in trees. Winters at sea.	None
Cerorhinca monocerata	rhinoceros auklet	None	None	WL	G5	S3	Mostly pelagic. Nests on islands in ground burrows.	None
Chaetura vauxi	Vaux's swift	None	None	SSC	G5	S2S3	Nests in coniferous or mixed forest. Forages in forest openings, especially above streams.	Moderate
Charadrius alexandrinus nivosus	western snowy plover	Threatened	None	SSC	G3T3	S2S3	Sandy beaches, salt pond levees & shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	None
Charadrius montanus	mountain plover	None	None	SSC	G3	S2S3	Short grasslands, freshly plowed fields, newly sprouting grain fields, & sometimes sod farms. Short vegetation, bare ground & flat topography. Prefers grazed areas & areas with burrowing rodents.	None

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Regionally-Occurring Special-status Animal Species Scoping List CNDDB, RareFind, & IPaC Arcata North & surrounding 7.5" quadrangles.
Arcata Land Company, Parcel "D"

Scientific Name	Common Name	FedList	CalList	Other Status	Global Rank	State Rank	Habitats	Potential of occurrence
Circus cyaneus	northern harrier	None	None	SSC	G5	S3	Breeding is most common in large, undisturbed tracts of wetlands and grasslands with low, thick vegetation. During winter they use a range of habitats with low vegetation, including deserts, coastal sand dunes, pasturelands, croplands, dry plains, grasslands, old fields, estuaries, open floodplains, and marshes.	High/Present
Coccyzus americanus	yellow-billed cuckoo	T	E	BCC, S	G5T2T3	S1	Yellow-billed Cuckoos use wooded habitat with dense cover and water nearby, including woodlands with low, scrubby, vegetation, overgrown orchards, abandoned farmland, and dense thickets along streams and marshes.	None
Contopus cooperi	olive-sided flycatcher	None	None	SSC	G4	S4	Winters at forest edges and clearings where tall trees or snags are present. Nest is an open cup of twigs, rootlets, and lichens, placed out near tip of horizontal branch of a tree.	Low
Coturnicops noveboracensis	yellow rail	None	None	SSC	G4	S1S2	In winter, drier fresh-water and brackish marshes, as well as dense, deep grass, and rice fields. Nest on the ground.	None
Egretta thula	snowy egret	None	None	None	G5	S4	Snowy Egrets nest in colonies on thick vegetation in isolated places. During the breeding season Snowy Egrets feed in estuaries, saltmarshes, tidal channels, shallow bays, and mangroves. They winter in mangroves, saltwater lagoons, freshwater swamps, grassy ponds, and temporary pools, and forage on beaches, shallow reefs, and wet fields.	Moderate
Elanus leucurus	white-tailed kite	None	None	FP	G5	S3S4	Rolling foothills and valley margins w/scattered oaks & river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	High

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Arcata Land Company, Parcel "D"

Scientific Name	Common Name	FedList	CalList	Other Status	Global Rank	State Rank	Habitats	Potential of occurrence
Empidonax traillii	willow flycatcher	None	E	S	G5T3T4	S1S2	In the Pacific Northwest, also breed in drier scrubby areas. In winter, use shrubby clearings, pastures, and woodland edges often near water. Most nests are in willow, but may also build a nest in box elder, dogwood, hawthorn, bracken fern, and tamarisk about 2–5 feet above the ground.	None
Falco columbarius	merlin	None	None	WL	G5	S3S4	Breed in open and semi-open areas across northern No. America. The boreal subspecies usually nest near forested openings, in fragmented woodlots, near rivers, lakes, bogs, and on lake islands. The Pacific Northwest subspecies nests mostly in coastal areas, along rivers.	Moderate
Falco peregrinus anatum	American peregrine falcon	D	D	FP	G4T4	S3S4	Elevations up to about 12,000 feet, as well as along rivers and coastlines or in cities. Any open habitat, but with a greater likelihood along barrier islands, mudflats, coastlines, lake edges, and mountain chains.	Moderate
Fratercula cirrhata	tufted puffin	None	None	SSC	G5	S1S2	Breeds on coastal slopes in ground burrows, sometimes under boulders and piles of rocks, occasionally under dense vegetation.	None
Haliaeetus leucocephalus	bald eagle	Delisted	E	FP	G5	S3	Ocean shore, lake margins, & rivers for both nesting & wintering. Most nests within 1 mi of water. Nests in large, old-growth, or dominant live tree w/open branches, especially ponderosa pine. Roosts communally in winter.	Low
Icteria virens	yellow-breasted chat	None	None	SSC	G5	S3	Summer resident; inhabits riparian thickets of willow & other brushy tangles near watercourses. Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests w/i 10 ft of ground.	Low
Numenius americanus	long-billed curlew	None	None	WL	G5	S2	Breeds in upland shortgrass prairies & wet meadows in northeastern California. Habitats on gravelly soils and gently rolling terrain are favored over others.	None
Nycticorax nycticorax	black-crowned night heron	None	None	None	G5	S4	Marsh, swamp, riparian forest, riparian woodland, wetland. Colonial nester, in trees, occasionally in tule patches. Rookery sites located adjacent to foraging areas: lake margins, mud-bordered bays, marshy spots.	Low

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Regionally-Occurring Special-status Animal Species Scoping List CNDDB, RareFind, & IPaC Arcata North & surrounding 7.5" quadrangles.
Arcata Land Company, Parcel "D"

Scientific Name	Common Name	FedList	CalList	Other Status	Global Rank	State Rank	Habitats	Potential of occurrence
Oceanodroma furcata	fork-tailed storm-petrel	None	None	SSC	G5	S1S2	Pelagic, foraging and wintering in nearshore waters. Nests in burrows and crevices.	None
Pandion haliaetus	osprey	None	None	WL	G5	S4	Near rivers, lakes, reservoirs, lagoons, swamps, and marshes. Nests are usually built on snags, treetops, or crotches between large branches and trunks; on cliffs or human-built platforms.	Low
Passerculus sandwichensis alaudinus	Bryant's savannah sparrow	None	None	SSC	G5T2T3	S2S3	Savannah Sparrows live in grasslands with few trees, including meadows, pastures, grassy roadsides, sedge wetlands, and cultivated fields planted with cover crops like alfalfa. Near oceans, they also inhabit tidal saltmarshes and estuaries.	High
Pelecanus occidentalis californicus	California brown pelican	D	D	FP	G4T3	S3	Colonial nester on coastal islands just outside the surf line. Nests on coastal islands of small to moderate size which afford immunity from attack by ground-dwelling predators. Roosts communally.	None
Phalacrocorax auritus	double-crested cormorant	None	None	WL	G5	S4	Colonial nester on coastal cliffs, offshore islands, & along lake margins in the interior of the state. Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.	None
Poecile atricapillus	black-capped chickadee	None	None	WL	G5	S3	Inhabits riparian woodlands in Del Norte and northern Humboldt counties. Mainly found in deciduous tree-types, especially willows and alders, along large or small watercourses.	Low
Ptychoramphus aleuticus	Cassin's auklet	None	None	SSC	G4	S2S4	Mostly pelagic. Nests on islands in ground burrows. Dives in the ocean for prey.	None
Rallus obsoletus obsoletus	California Ridgway's rail	E	E	FP	G5T1	S1	Ridgway's Rails live in saltmarsh swamps with extensive vegetation, which they use as refuges, especially at high tide. These birds live in low portions of coastal saltmarshes dominated by cordgrass and pickleweed, or in mangroves.	None
Riparia riparia	bank swallow	None	T	None	G5	S2	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	None

Table 2
Regionally-Occurring Special-status Animal Species Scoping List CNDDB, RareFind, & IPaC Arcata North & surrounding 7.5" quadrangles.
Arcata Land Company, Parcel "D"

Scientific Name	Common Name	FedList	CalList	Other Status	Global Rank	State Rank	Habitats	Potential of occurrence
Strix occidentalis caurina	Northern spotted owl	T	T	SSC, S	G3T3	S2S3	Mature coniferous forest stands with large trees and a complex array of vegetation types, sizes and ages. Typically in dense section of old forest, the nest is well protected from open sky by a dense tree canopy in a broken-off treetop or in a cavity.	None
				Fish				
Acipenser medirostris	green sturgeon	T	None	SSC	G3	S1S2	The most marine species of sturgeon. Abundance increases northward of Point Conception. Spawns in the Sacramento, Klamath, & Trinity Rivers. Spawns at temps between 8-14 C. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock.	None
Eucyclogobius newberryi	tidewater goby	E	None	SSC	G3	S3	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water & high oxygen levels.	None
Spirinchus thaleichthys	longfin smelt	C	T	SSC	G5	S1	Euryhaline, nektonic & anadromous. Open waters of estuaries, mostly mid to bottom of water column. Prefer salinities of 15-30 parts per trillion (ppt), but can be found in completely freshwater to almost pure seawater.	None
Thaleichthys pacificus	eulachon	T	None	-	G5	S3	Found in Klamath River, Mad River, Redwood Creek & in small numbers in Smith River & Humboldt Bay tributaries. Spawn in lower reaches of coastal rivers w/ moderate water velocities & bottom of pea-sized gravel, sand & woody debris.	None
Entosphenus tridentatus	Pacific lamprey	None	None	SSC	G4	S4	Found in Pacific Coast streams north of San Luis Obispo Co., however regular runs in Santa Clara River. Size of runs is declining. Swift-current gravel-bottomed areas for spawning with water temps between 12-18 C. Ammocoetes need soft sand or mud.	None

Table 2
Regionally-Occurring Special-status Animal Species Scoping List CNDDB, RareFind, & IPaC Arcata North & surrounding 7.5" quadrangles.
Arcata Land Company, Parcel "D"

Scientific Name	Common Name	FedList	CalList	Other Status	Global Rank	State Rank	Habitats	Potential of occurrence
Oncorhynchus clarkii clarkii	coast cutthroat trout	None	None	SSC	G4T4	S3	Small coastal streams from the Eel River to the Oregon border. Small, low gradient coastal streams & estuaries. Shaded streams with water temps <18C, & small gravel for spawning.	None
Oncorhynchus kisutch pop. 2	coho salmon - southern Oregon / northern California ESU	T	T	None	G4T2Q	S2?	Small coastal streams, as well as larger rivers, e.g. the Klamath River system, as far upstream as Iron Gate Dam and the Shasta River. Females usually choose spawning sites near the head of a riffle with medium to small gravel substrates.	None
Oncorhynchus mykiss irideus pop. 1	steelhead - Klamath Mountains Province DPS	None	None	SSC	G5T2Q	S2	Klamath River and Rouge River watersheds. Mature in deep pools and spawn upstream.	None
Oncorhynchus mykiss irideus pop. 16	steelhead - northern California DPS	T	None	None	G5T2T3Q	S2S3	Aquatic, California coastal river basins from Redwood Creek to and including the Gualala River. Below natural and manmade impassable barriers. Excavates in gravel for spawning.	None
Oncorhynchus mykiss irideus pop. 36	summer-run steelhead trout	None	None	SSC	G5T4Q	S2	No. California coastal streams south to Middle Fork Eel River. Within range of Klamath Mtns province DPS & No. California DPS. Cool, swift, shallow water & clean loose gravel for spawning, & suitably large pools in which to spend the summer.	None
Oncorhynchus tshawytscha pop. 17	chinook salmon - California coastal ESU	T	None	None	G5	S1	South of the Klamath River to and including the Russian River.	None
Oncorhynchus tshawytscha pop. 30	chinook salmon - upper Klamath and Trinity Rivers ESU	None	None	SSC	G5	S1S2	Below natural and manmade impassable barriers. Cool, fast flowing water, deep with course gravel.	None
Insects								
Bombus caliginosus	obscure bumble bee	None	None	VU	G4?	S1S2	Nests underground or above ground in abandoned bird nests. Coastal areas from Santa Barbara County to north to Washington State.	Moderate

Table 2
Regionally-Occurring Special-status Animal Species Scoping List CNDDB, RareFind, & IPaC Arcata North & surrounding 7.5" quadrangles.
Arcata Land Company, Parcel "D"

Scientific Name	Common Name	FedList	CalList	Other Status	Global Rank	State Rank	Habitats	Potential of occurrence
Bombus occidentalis	western bumble bee	None	None	S	G2G3	S1	Once common & widespread, species has declined precipitously from central CA to southern B.C. Nest in cavities or abandoned burrows.	Moderate
Cicindela hirticollis gravida	sandy beach tiger beetle	None	None	None	G5T2	S2	Inhabits areas adjacent to non-brackish water along the coast of California from San Francisco Bay to northern Mexico. Clean, dry, light-colored sand in the upper zone. Subterranean larvae prefer moist sand not affected by wave action.	None
Mammals								
Aplodontia rufa humboldtiana	Humboldt mountain beaver	None	None	None	G5TNR	SNR	North facing slopes near ample water sources, with dense cover, on steep hillsides with loose soil. Dense herbaceous cover is needed for protection from predators, as well as for forage material, while steep loose hillsides allow for burrow creation.	None
Erethizon dorsatum	North American porcupine	None	None	None	G5	S3	Upper and lower montane coniferous forests. Make their dens in hollow trees or in rocky areas. Spend much of the time in trees.	None
Arborimus albipes	white-footed vole	None	None	SSC	G3G4	S2	Mature coastal forests in Humboldt & Del Norte cos. Prefers areas near small, clear streams with dense alder & shrubs. Occupies the habitat from the ground surface to the canopy. Feeds in all layers & nests on the ground under logs or rock.	None
Arborimus pomo	Sonoma tree vole	None	None	SSC	G3	S3	N. coast fog belt from Oregon border to Sonoma Co. In Douglas-fir, redwood & montane hardwood-conifer forests. Feeds almost exclusively on Douglas-fir needles. Will occasionally take needles of grand fir, hemlock or spruce.	None
Pekania pennanti	fisher - West Coast DPS	None	T	SSC	G5T2T3Q	S2S3	Southern Oregon, Northern California and the Southern Sierra Nevada Mountains, north coast coniferous forest, oldgrowth, riparian forest.	None
Corynorhinus townsendii	Townsend's big-eared bat	None	None	SSC	G3G4	S2	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls & ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	None

Table 2
Regionally-Occurring Special-status Animal Species Scoping List CNDDB, RareFind, & IPaC Arcata North & surrounding 7.5" quadrangles.
Arcata Land Company, Parcel "D"

Scientific Name	Common Name	FedList	CalList	Other Status	Global Rank	State Rank	Habitats	Potential of occurrence
Myotis evotis	long-eared myotis	None	None	S	G5	S3	Found in all brush, woodland & forest habitats from sea level to about 9000 ft. prefers coniferous. Nursery colonies in buildings, crevices, spaces under bark, & snags. Caves used primarily as night roosts. woodlands & forests.	None
Mollusks								
Margaritifera falcata	western pearlshell	None	None	None	G4G5	S1S2	Eggs incubate and hatch into microscopic mussel infants which attach themselves to the gills or fins of a passing host fish. Once they drop from the fish, they'll burrow into the gravel bed and sediment of the river or lake the fish has reached.	None
Anodonta californiensis	California floater	None	None	S	G3Q	S2?	Typically inhabit lakes, reservoirs, and slow-moving streams with mud or sand substrates, although they have also been found in rivers and creeks with gravel substrates	None
Reptiles								
Chelonia mydas	green sea turtle	None	T	None	G3	S1	Adult and juvenile green turtles live are generally found nearshore as well as in bays and lagoons, on reefs, and especially in areas with seagrass beds. They bury eggs on sandy beaches.	None
Emys marmorata	western pond turtle	None	None	SSC	G3G4	S3	A thoroughly aquatic turtle of ponds, marshes, rivers, streams & irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	None

Species indicator status as assigned by Federal Endangered Species Act (FESA),		Species Heritage rank as assigned by California Department of
California Endangered Species Act (CESA), and California Department of Fish and Wildlife (CDFW):		Fish and Wildlife (CDFW):
C: candidate	FP: fully protected	G1/S1: critically imperiled
CT: candidate threatened	PT: proposed threatened	G2/S2: imperiled
D: delisted	SSC: species of special concern	G3/S3: vulnerable
DPS: distinct population segment	T: threatened	G4/S4: apparently secure
E: endangered	WL: watch list	G5/S5: secure
ESU: evolutionarily significant unit		

Table 3 Botanical Species Observed 5/2/2019, 7/19/2019 Arcata Land Co. Parcel "D", Arcata, CA			
Scientific Name	**Common Name**	**Family**	**Native?**
Trees			
Salix hookeriana	Hooker's willow	Salicaceae	Y[1]
Salix lasiolepis	arroyo willow	Salicaceae	Y
Thuja plicata	western red cedar	Cupressaceae	Y
Shrubs			
Cotoneaster franchettii	Franchett's cotoneaster	Rosaceae	N[2]
Rosa spp.	cultivated rose	Rosaceae	N
Rubus armeniacus	Himalayan berry	Rosaceae	N
Sedges and Rushes			
Carex densa	dense sedge	Cyperaceae	Y
Carex obnupta	slough sedge	Cyperaceae	Y
Cyperus eragrostis	tall flat sedge	Cyperaceae	Y
Eleocharis macrostachya	common spikerush	Cyperaceae	Y
Juncus effusus ssp. *pacificus*	common rush	Juncaceae	Y
Grasses			
Agrostis stolonifera	creeping bentgrass	Poaceae	N
Aira caryophyllea	silver hairgrass	Poaceae	N
Alopecurus pratensis	meadow foxtail	Poaceae	N
Anthoxanthum odoratum	sweet vernal grass	Poaceae	N
Avena barbata	wild oat	Poaceae	N
Briza maxima	large quaking grass	Poaceae	N
Briza minor	small quaking grass	Poaceae	N
Bromus carinatus var. *carinatus*	California brome	Poaceae	Y
Bromus diandrus	rip-gut brome	Poaceae	N
Bromus hordeacus	soft chess	Poaceae	N
Cortaderia jubata	pampas grass	Poaceae	N
Dactylis glomeratum	orchard grass	Poaceae	N
Deschampsia caespitosa ssp. holciformis	tufted hair grass	Poaceae	Y
Festuca arundinacea	California oat-grass	Poaceae	Y
Festuca bromoides	brome fescue	Poaceae	N
Festuca microstachys	small fescue	Poaceae	Y
Festuca Perennis	perennial rye grass	Poaceae	N
Holcus lanatus	velvet grass	Poaceae	N
Phalaris arundinacea	reed canary grass	Poaceae	N
Phleum pretense	Timothy grass	Poaceae	N
Poa annua	annual grass	Poaceae	N
Poa pratensis	Kentucky bluegrass	Poaceae	N
Herbs			
Allium triquetrum	three cornered leek	Alliaceae	N
Bellis perenne	English daisy	Asteraceae	N
Brassica rapa	common mustard	Brassicaceae	N
Callitriche heterophylla var. heterophylla	varied leaved water starwort	Plantaginaceae	Y
Cerastium glomeratum	mouse-ear chickweed	Caryophyllaceae	N
Conium maculatum	poison hemlock	Apiaceae	N
Dipsacus fullonum	Fuller's teasel	Dipsacaceae	N
Epilobium ciliatum	fringed willow herb	Onagraceae	N
Erodium circutarium	heron's bill	Geraniaceae	N
Erodium moschatum	whitestem filaree	Geraniaceae	N
Euphorbia peplans	petty spurge	Euphorbiaceae	N
Fragaria vesca	California strawberry	Rosaceae	Y

Table 3 Botanical Species Observed 5/2/2019, 7/19/2019 Arcata Land Co. Parcel "D", Arcata, CA			
Scientific Name	**Common Name**	**Family**	**Native?**
Galium aparine	cleaver plant	Rubiaceae	Y
Gamochaeta ustulata	featherweed	Asteraceae	Y
Geranium dissectum	cutleaf geranium	Geraniaceae	N
Geranium robertianum	Robert's geranium	Geraniaceae	N
Helminthotheca echioides	bristly ox-tongue	Asteraceae	N
Hypochaeris radicata	hairy cat's-ear	Asteraceae	N
Lathyrus latifolius	sweet pea	Fabaceae	N
Leontodon saxatilis	hawkbit	Asteraceae	N
Leucanthemum vulgare	oxeye daisy	Asteraceae	N
Linum bienne	flax	Linaceae	N
Lotus corniculatus	birds-foot trifoil	Fabaceae	N
Lysimachia arvensis	scarlet pimpernel	Myrsinaceae	N
Malva parviflora	cheeseweed mallow	Malvaceae	N
Matricaria discoidea	pineapple weed	Asteraceae	Y
Medicago polymorpha	bur clover	Fabaceae	N
Mentha pulegium	pennyroyal	Lamiaceae	N
Parentucellia viscosa	yellow glandweed	Orobanchaceae	N
Plantago lanceolata	English plantain	Plantaginaceae	N
Polygonum aviculare	prostrate knotweed	Polygonaceae	N
Potentilla anserine ssp. pacifica	silverweed	Rosaceae	Y
Prunella vulgaris var. *lanceolata*	self-heal	Lamiaceae	Y
Ranunculus repens	creeping buttercup	Ranunculaceae	N
Raphanus sativa	wild radish	Onagraceae	N
Rumex acetosella	sheep sorrel	Polygonaceae	N
Rumex crispus	curly dock	Polygonaceae	N
Sonchus olereacus	sow thistle	Asteraceae	N
Stachys ajugoides	bugle hedge-nettle	Lamiaceae	Y
Stachys chamissonis	hedge nettle	Lamiaceae	Y
Stellaria media	chickweed	Caryophyllaceae	N
Taraxacum officinale	dandelion	Asteraceae	N
Trifolium fragiferum	strawberry clover	Fabaceae	N
Trifolium incarnatum	crimson clover	Fabaceae	N
Trifolium repens	white clover	Fabaceae	N
Trifolium subterraneum	subterranean clover	Fabaceae	N
Veronica americana	American brooklime	Scrophulariaceae	Y
Vicia hirsuta	tiny vetch	Fabaceae	N
Vicia sativa ssp. *sativa*	spring vetch	Fabaceae	N
Vines			
Convolvulus arvensis	field bindweed	Convolvulaceae	N
83 Species			**26% Native**

1. Y: Yes
2. N: No

Table 4
Animals Observed 5/2/19
Arcata Land Co, Parcel "D", Arcata, CA

Scientific Name	Common Name	Family	Nesting Habit	Listed?
Amphibians				
Pseudacris regilla	Northern Pacific Treefrog	Hylidae	Any standing freshwater. Males and females pair up in the water where the female lays her eggs as the male fertilizes them externally. The eggs hatch into tadpoles which feed in the water and eventually grow four legs, lose their tails and emerge onto land where they disperse into the surrounding territory.	NL
Birds				
Corvus corax	Common raven	Corvidae	A stick nest is built high in a tree, on a cliff under a rock overhang, or on artificial structures.	NL
Circus cyaneus	Northern harrier	Accipitridae	Nest is built on the ground in thick vegetation using small branches and lined with grasses.	SSC
Bombycilla cedrorum	Cedar waxwing	Passeriformes	Cup nest placed in a tree of varying species and height.	NL
Hirundo rustica	Barn swallow	Hirundinidae	Mud half-cup nest often placed on artificial structures such as eaves of buildings and under bridges.	NL
Molothrus ater	Brown-headed cowbird	Icteridae	Nest parasite. They lay their eggs in the active nests of other birds that then unintentionally "host" the young.	NL
Mammals				
Thomomys bottae	Botta's Pocket Gopher	Geomyidae	(signs found - mounds & excavated tunnel entrances)	NL

NL = Not Listed

SSC = Species of Special Concern



Eureka, CA | Arcata, CA | Redding, CA | Willits, CA | Coos Bay, OR | Klamath Falls, OR

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Wetland and Other Waters Delineation Report

Arcata Land Company
Assessor's Parcel Numbers:
503-231-004 506-231-010
505-151-003 506-231-011
505-151-004 507-181-007
Arcata, California




Prepared for:
Rudolph Visser
Arcata Land Company

June 2020
017062

Reference: 017062

Wetland and Other Waters Delineation Report

Arcata Land Company

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503-231-004 506-231-010
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Arcata, California

Prepared for:

Rudoph Visser
Arcata Land Company, LLC

Prepared by:

812 W. Wabash Ave.
Eureka, CA 95501
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June 2020

QA/QC:CIW

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Abbreviations and Acronyms

ALC	Arcata Land Company, LLC
APN	Assessor's parcel number
CDEC	California Data Exchange Center
CFR	Code of Federal Regulations
CT	control point
CWA	Clean Water Act
EM	emergent
EPA	United States Environmental Protection Agency
ERDC/CRREL	United States Army Engineer Research and Development Center/Cold Regions Research and Engineering Laboratory
FAC	facultative wetland plant species
FACU	facultative-upland wetland plant species
FACW	facultative-wet wetland plant species
GIS	geographic information system
GPS	global positioning system
NGTOC	National Geospatial Technical Operations Center
NL	not listed wetland plant species
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OBL	obligate wetland plant species
OHWM	ordinary high water mark
PEM1B	Palustrine Emergent Persistent Seasonally Saturated
Redox	redoximorphic
RWQCB	California Regional Water Quality Control Board
SWRCB	State Water Resources Control Board
TP	test pit
UPL	upland wetland plant species
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish & Wildlife Service
USGS	United States Geological Survey
WDRs	waste discharge requirements
WETS	Climate Analysis for Wetlands Tables
WoS	waters of the State
WoUS	waters of the United States

1.0 Introduction

SHN has prepared this Wetland and Other Waters Delineation Report for the Arcata Land Company, LLC (ALC) in Arcata, California. This site has historically been used as an industrial lumber mill and more recently, for agricultural purposes. Fieldwork was performed by SHN staff soil scientists and botanists.

1.1 Purpose

The purpose of this report is to identify potential wetlands and other waters of the United States and State within the project area, as defined by the United States Army Corps of Engineers (USACE) and State methods. The delineation of these features will help guide the design and construction of future development within the study area to minimize or avoid impacts to potential jurisdictional wetlands and other waters.

1.2 Project Location

The project is located in the "Arcata Bottoms" at 3318 Foster Avenue, Arcata, California. The project is 2.9 miles east of the Pacific Ocean, at a 25-foot elevation above sea level (Figure 1; United States Geological Survey [USGS] Arcata North 7.5-minute Quadrangle; USGS, 2012), located in the Township 06 North, Range 01 east, Sections 19 and 20 in the Humboldt Meridian. The study area is composed of two sections: the main contiguous 71.5-acre area east of the industrial mill building (Study Area A), and a 2.0-acre area west of the industrial mill building (Study Area B) (Figures 1 and 2). The Assessor's parcel numbers (APN) for this study area are 503-231-004, 505-151-003, 505-151-004, 506-231-010, 506-231-011, and 507-181-007, with a central location at latitude 40.885619° and longitude -124.101504°.

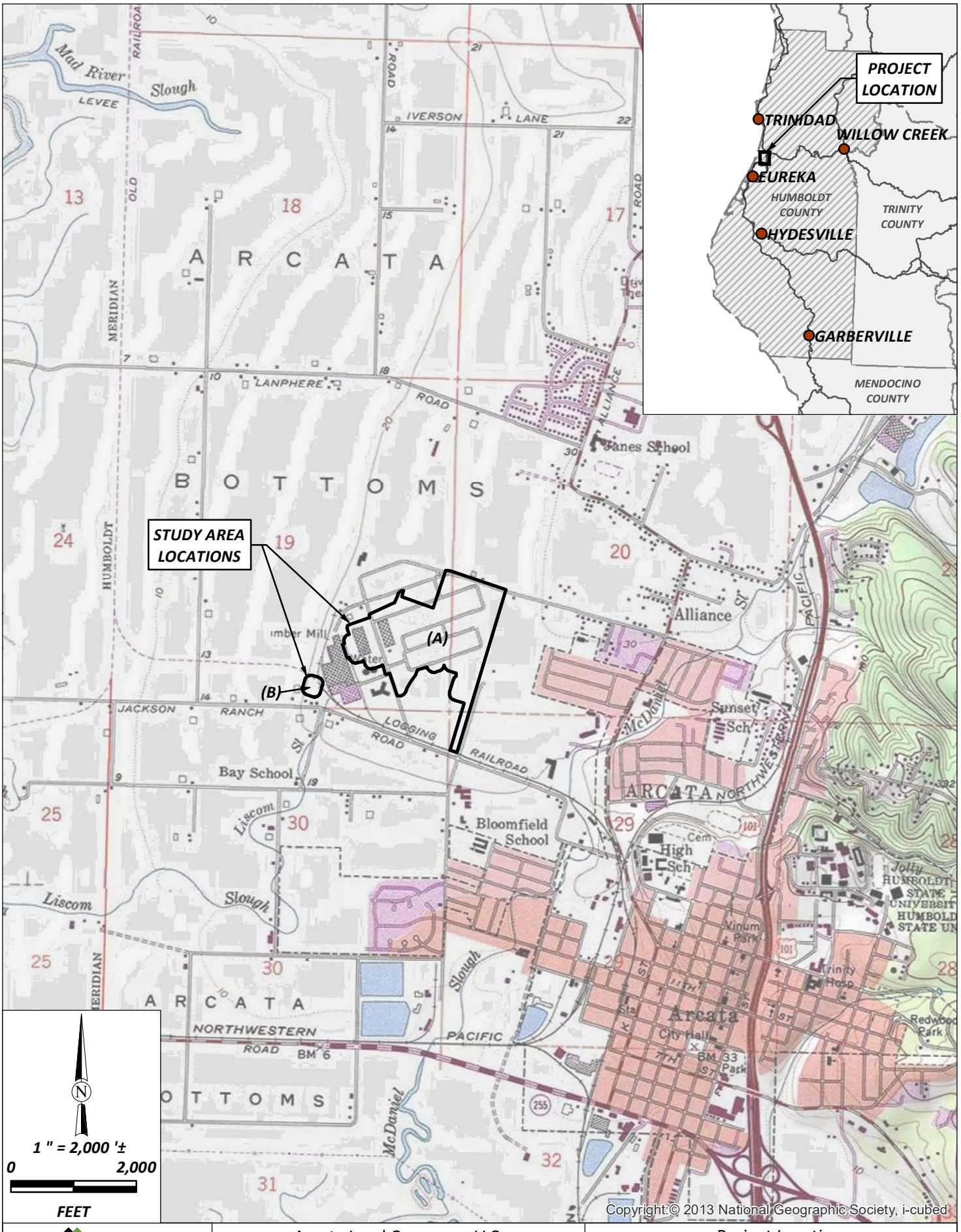
2.0 Project Description

Arcata Land Company is proposing commercial cannabis activities at the project site. This report will assist with site planning and development considerations.

3.0 Environmental Setting

3.1 Site Overview

A review of historical photos (City of Arcata, 2017) show that this site was used for hay or livestock production until Simpson Lumber Company constructed an industrial mill facility sometime between 1948 and 1954 (Appendix 1, Photo 1). The site has been modified many times with the addition of warehouses and lumber storage racks. Between 1988 and 1993, the historical photos show the removal of storage racks. The fields have since been graded and are currently used for agriculture. Drainage ditches were installed to prevent surface water accumulation within or around fields and existing infrastructure. The majority of these drainage ditches are actively maintained.



Path: \\Eureka\Projects\2017\017062-ArcataLandCo\GIS\PROJ_MXD\WetlandDelineation\WD_Fig1_ProjectLocation.mxd User Name: jsousa

SHN	Arcata Land Company, LLC. Wetland & Other Waters Delineation Report Arcata, California	Project Location Map SHN 017062
	May 2020 | WD_Fig1_ProjectLocation	Figure 1

LATITUDE: 40.887573
LONGITUDE: -124.113457

APN
506-231-011

TP7U

TP5U

APN
507-181-007

TP6U

210

116

TP11U

TP8U

APN
505-151-003

APN
506-231-010

STUDY AREA (A)

TP4U

127

APN
506-231-004

210

TP3U

TP1U

TP15U

TP16U

TP10U

TP2U

TP12W

WETLAND #2
(874 SQFT)

WETLAND #1
(5,144 SQFT)

127

STUDY AREA (B)

TP14U

TP13U

TP17W

210

133

APN
506-231-010

APN
505-151-004

127

LISCOM
SLOUGH

TP9U

LATITUDE: 40.881523
LONGITUDE: -124.099973

EXPLANATION

- WETLAND TEST PITS
- WETLANDS
- CULVERT
- DITCHES
- SURFACE FLOW DIRECTION
- STUDY AREA
- PROJECT PARCELS
- PARCELS
- NRCS SOIL BOUNDARY
- 116 — NRCS SOIL MAP UNIT (DEFINITIONS BELOW)

N

1"=300'±

0 300

FEET

116 - SWAINSLOUGH, 0 TO 2 PERCENT
127 - JOLLYGIANT, 0 TO 2 PERCENT
133 - ARLYNDA, 0 TO 9 PERCENT
210 - DUNGAN, 0 TO 2 PERCENT

IMAGE SOURCE: GOOGLE EARTH; DATED 5/26/2016;
PARCEL DATA: HUMBOLDT COUNTY GIS, 2017;
SOIL BOUNDARIES: NRCS, 2018

Arcata Land Company, LLC.
Wetland & Other Waters Delineation Report
Arcata, California

Wetland & OHWM
Delineation Map
SHN 017062

May 2020 | WD_Fig2_WetlandsAndOHWM | Figure 2

Path: \\Eureka\Projects\2017\017062-ArcataLandCo\GIS\PROJ_MXD\WetlandDelineation\WD_Fig2_WetlandsAndOHWM.mxdUser Name: jsousa

3.2 Site Hydrology

The United States Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS) Climate Analysis for Wetlands Table (WETS) method was used to review rainfall conditions for the previous three months prior to the test pit (TP) investigations (or the same month and two months prior if after the 15th; Table 1; USDA-NRCS, 2017a and 2020). The first season of TP investigations occurred December 18, 19, and December 21, 2017. The 2017 rainfall data for October, November, and December (California Data Exchange Center [CDEC], 2017) were compared to the 30-year rainfall average at the Woodley Island Weather Forecast Office in Eureka, California (1981-2010 data) for the same months. If the current rainfall of each month is between 30% and 70% of the 1981-2010 precipitation average, it is "normal" rainfall; if above 70%, it is ranked "wetter than normal" rainfall; if below 30%, it is ranked "drier than normal" rainfall. The rainfall for this 2017 period is considered "normal" (Table 1). The second TP investigation occurred on May 11, 2020. The data for the 2020 rainfall data for February, March, and April (CDEC, 2020) were compared to the 30-year rainfall average at the Woodley Island Weather Forecast Office in Eureka, California (1981-2010 data) for the same months. This TP investigation was performed during a "drier than normal" rainfall.

Table 1. WETS[1] Rainfall Data
Arcata Land Company, LLC
Arcata, CA

Month	WETS Condition	<30%	> 70%	Rainfall (in.)	Condition Value	Weight	Product Value
December 18, 19, and 21, 2017: Test Pit Excavation							
December 2017	Below Normal	4.78	9.86	1.94	1	3	3
November 2017	Above Normal	3.35	6.80	7.4	3	2	6
October 2017	Normal	1.10	2.73	1.64	2	1	2
Total[2]	**Normal Rainfall**						**11**
May 11, 2020: Test Pit Excavation							
April 2020	Normal	1.93	4.03	2.17	2	3	6
March 2020	Below Normal	3.64	6.32	2.87	1	2	2
February 2020	Below Normal	3.51	6.71	0.36	1	1	1
Total[2]	**Drier than Normal Rainfall**						**9**

1. WETS: Climate Analysis for Wetlands Tables.
2. A sum of 6-9 prior to site investigation is considered a drier than normal rainfall.
   10-14 prior to site investigation is considered a normal rainfall.
   15-18 prior to site investigation is considered a wetter than normal rainfall.

Sources: CDEC, 2017 and 2020; USDA-NRCS, 2017a

3.3 National Wetlands Inventory (NWI)

The United States Fish and Wildlife Service (USFWS) NWI website (USFWS, 2017) shows a Palustrine Emergent Persistent Seasonally Saturated (PEM1B) system covering the entire parcel, except for the main building area and its surrounding parking area (Appendix 2). This general categorization by the NWI is not intended for planning purposes, because of the lack of ground-truthing. In their "Data Limitations, Exclusions and Precaution" disclaimer, it states that:

> *The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed*

on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.
(USFWS, 2017)

The intention of this project is to determine wetland boundaries with the addition of onsite soils, hydrology and vegetation mapping.

4.0 Vegetation

Approximately 20% of the main study area (A) is within the industrial mill building site and mostly covered with concrete. There are portions of roadways, soil/wood chip piles, and drainageways that are graveled or on soil (Appendix 1, Photo 2). This supports primarily exotic plant growth such as sow thistle (*Sonchus oleraceus* [UPL]), red-seeded dandelion (*Taraxacum officinale* [FACU]), Italian ryegrass (*Festuca perennis* [FAC]), bull thistle (*Cirsium vulgare* [FACU]), curly dock (*Rumex crispus* [FAC]), and common mustard (*Brassica rapa* [FACU]), as well as the native red-tinged bulrush (*Scirpus microcarpus* [OBL]). The rest of the study area consists of graded agricultural fields (Appendix 1, Photo 3) with orchard grass (*Dactylis glomerata* [FACU]), velvet grass (*Holcus lanatus* [FAC]), Italian ryegrass [FAC], sweet vernal grass (*Anthoxanthum odoratum* [FACU]), English plantain (*Plantago lanceolata* [FACU]), white clover (*Trifolium repens* [FAC]), curly dock [FAC], and dove's foot geranium (*Geranium molle* [NL]). Some fields were recently seeded with burseem clover (*Trifolium* X [NL]).

The portion of the study area west of the mill warehouses (study area B) is bisected by a drainageway that is bordered by a Himalayan blackberry thicket (R*ubus armeniacus* [FAC]), which also contains red alder (*Alnus rubra* [FAC]), common mustard [FACU], wild teasel (*Dipsacus fullonum* [FAC]), bull thistle [FACU], Queen Anne's lace (*Daucus carota* [FACU]), poison hemlock (*Conium maculatum* [FAC]), and creeping buttercup (*Ranunculus repens* [FAC]). The rest of this study area is pasture grazed by livestock, dominated by Italian ryegrass [FAC], and orchard grass [FACU].

A complete list of plants observed within the study area is compiled in Table 1 in Appendix 3.

5.0 Geologic and Soil Composition

The project site is located in the "Arcata Bottoms," a broad alluvial plain at the northern end of Humboldt Bay (Figure 1). Published geologic maps of the region indicate that native materials at the site consist of Quaternary aged alluvium (Kelley, 1984). Alluvium on the Arcata Bottoms is described as unconsolidated coarse- to fine-grained sand and silt, with gravel in channel areas; the alluvium may locally interfinger with marine terrace deposits. At least some of the alluvium on the Arcata Bottoms is inferred to be Holocene in age and appears to reflect deposition by the Mad River following the most recent sea level low stand.

The underlying soils in the study area have the USDA-NRCS classification of Swainslough, 0-2 percent slope (map unit 116); Jollygiant, 0-2 percent slopes (map unit 127); Arlynda, 0-9 percent slopes (map unit 133); and Dungan, 0-2 percent slope (map unit 210) and are described below. The actual soil description at each exploratory soil TP is included in the field data forms found in Appendix 4 with photos in Appendix 1.

116—Swainslough, 0 to 2 percent slopes

Map Unit Setting
National map unit symbol: hs3n
Elevation: 0 to 160 feet
Mean annual precipitation: 35 to 80 inches

Mean annual air temperature: 50 to 55 degrees F
Frost-free period: 275 to 330 days
Farmland classification: Farmland of statewide importance

Description of Swainslough
Typical profile
Oi - 0 to 3 inches: slightly decomposed plant material
A - 3 to 12 inches: silty clay loam
Bg1 - 12 to 20 inches: silty clay loam
Bg2 - 20 to 29 inches: silty clay loam
Bg3 - 29 to 38 inches: silty clay loam
Bg4 - 38 to 65 inches: silty clay loam
Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 0 to 4 inches
Frequency of flooding: Occasional
Frequency of ponding: Frequent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water storage in profile: High (about 10.5 inches)
Hydric soil rating: yes

127—Jollygiant, 0 to 2 percent slopes

Map Unit Setting
National map unit symbol: q1hl
Elevation: 0 to 160 feet
Mean annual precipitation: 35 to 80 inches
Mean annual air temperature: 50 to 55 degrees F
Frost-free period: 275 to 330 days
Farmland classification: Prime farmland if irrigated

Description of Jollygiant
Ap - 0 to 16 inches: silty clay loam
Bg1 - 16 to 33 inches: silty clay loam
Bg2 - 33 to 47 inches: loam
Bg3 - 47 to 63 inches: very fine sandy loam
Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 10 to 20 inches
Custom Soil Resource Report 16
Frequency of flooding: Rare
Frequency of ponding: None

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 10.1 inches)
Hydric soil rating: no

133—Arlynda, 0 to 9 percent slopes

Map Unit Setting

National map unit symbol: hs5q
Elevation: 0 to 230 feet
Mean annual precipitation: 35 to 80 inches
Mean annual air temperature: 50 to 56 degrees F
Frost-free period: 275 to 330 days
Farmland classification: Not prime farmland

Description of Arlynda

Typical profile
Oi - 0 to 1 inches: slightly decomposed plant material
Ap - 1 to 9 inches: silty clay loam
Bg1 - 9 to 22 inches: silty clay loam
Ab - 22 to 27 inches: clay loam
2Bg1 - 27 to 34 inches: silty clay loam
2Bg2 - 34 to 52 inches: silt loam
Properties and qualities
Slope: 0 to 9 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 0 to 4 inches
Frequency of flooding: Occasional
Frequency of ponding: Frequent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 10.3 inches)
Hydric soil rating: yes

210—Dungan, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hs2j
Elevation: 10 to 160 feet
Mean annual precipitation: 35 to 80 inches
Mean annual air temperature: 50 to 55 degrees F
Frost-free period: 275 to 330 days
Farmland classification: Prime farmland if irrigated

Description of Dungan

Typical profile
Ap1 - 0 to 3 inches: silt loam
Ap2 - 3 to 13 inches: silt loam
Bw - 13 to 29 inches: silt loam
C1 - 29 to 37 inches: fine sandy loam

C2 - 37 to 61 inches: silty clay loam
Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 39 to 61 inches
Frequency of flooding: Rare
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 10.8 inches)
Hydric soil rating: no
(USDA, 2017b)

6.0 Regulatory Setting

6.1 Federal Laws

6.1.1 Section 401 and 404 of the Clean Water Act

Under Section 404 of the Clean Water Act (CWA; 33 U.S. Code [USC] 1344; U.S. Code of Federal Regulations (CFR), 1986), as amended, the USACE and the Environmental Protection Agency (EPA) retain primary responsibility for regulating discharge of dredged or fill material into "navigable waters of the United States." All discharges of dredged or fill material into jurisdictional Waters of the United States (WoUS) that result in permanent or temporary losses of WoUS are regulated by the USACE. A permit from the USACE must be obtained before placing fill or grading in wetlands or other WoUS, unless the activity is exempt from CWA Section 404 regulation (for example, certain farming and forestry activities).

In summary, the definition of WoUS as defined by 33 CFR Section 328.3 includes:

1. waters used for commerce,
2. interstate wetlands,
3. all other waters (including lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, and natural ponds),
4. impoundments of water,
5. tributaries to aforementioned waters,
6. territorial seas, and
7. wetlands adjacent to waters.

Under 33 CFR 328.3, WoUS do not include prior converted cropland or waste treatment systems.

In 2008, the EPA and USACE released a guidance memorandum implementing the Supreme Court's decision in the cases of the Rapanos v. U.S. and Carabell v. U.S. Because of these cases, the agencies will apply a significant nexus standard to the following categories of waterbodies to determine if it meets the definition of WoUS:

- Non-navigable tributaries that are not relatively permanent

- Wetland adjacent to non-navigable tributaries that are not relatively permanent
- Wetland adjacent to but that does not directly abut a relatively permanent tributary

Section 401 of the CWA (33 USC 1341) requires that applicants for a federal license or permit obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards (CFR, 1986). The certification is obtained from the state in which the discharge originates or would originate, or if appropriate, from the interstate water pollution control agency having jurisdiction over the affected waters at the point where the discharge originates or would originate. The responsibility for the protection of water quality in California rests with the State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCBs).

6.1.2 Rivers and Harbors Appropriation Act of 1899

The River and Harbors Appropriation Act of 1899 addresses activities that involve the construction of dams, bridges, dikes, and other structures across any navigable water. Placing obstructions to navigation outside established federal lines and excavating from or depositing material in such waters require permits from the USACE. Section 10 of the Rivers and Harbors Appropriation Act (33 USC 403) prohibits the unauthorized obstruction or alteration of any navigable WoUS.

6.2 State Laws

6.2.1 California Coastal Act

This site is outside of the California Coastal Act jurisdiction.

6.2.2 Porter-Cologne Water Quality Control Act

The State of California maintains independent regulatory authority over the placement of waste, including fill, into Waters of the State (WoS) under the Porter-Cologne Water Quality Control Act. WoS are defined by the Porter-Cologne Water Quality Control Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The SWRCB protects all waters in its regulatory scope but has special responsibility for isolated wetlands and headwaters. WoS are regulated by the RWQCBs under the State Water Quality Certification Program, which regulates discharges of dredged and fill material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act.

Projects that require a USACE permit, or fall under other federal jurisdiction, and have the potential to impact WoS are required to comply with the terms of the Water Quality Certification Program. If a proposed project does not require a federal license or permit, but does involve activities that may result in a discharge to WoS, then the local RWQCB has the option to regulate such activities under its state authority in the form of waste discharge requirements (WDRs) or certification of WDRs. Water Quality Order No. 2004-0004-DWQ specifies general WDRs for dredge or fill discharges to waters deemed by the USACE to be outside of federal jurisdiction under Section 404 of the CWA. The State Water Board follows the USACE's 1987 Manual and Supplement's methods (Environmental Laboratory, 1987) for delineating wetlands in all but when using the vegetation less than five percent criteria. The USACE does not recognize wetland status if there is less than 5-percent vegetation during the peak growing season, while the State Water Board does, such as in tidal flats, vernal pools, and playas. The State may claim jurisdiction over naturally-occurring wetlands lacking vegetation that the USACE would not (SWRCB, 2019).

7.0 Methods

Wetland delineation methods described in *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987) and *The Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (USACE, 2010) were used to identify potential wetlands and other waters. The routine method for wetland delineation described in the USACE 1987 manual was used to identify potential wetlands within the study area. The USACE method relies on a three-parameter approach, in which criteria for hydrophytic vegetation, hydric soils, and wetland hydrology must each be met (present at the point of field investigation) to conclude that an area qualifies as a wetland.

Hydrophytic vegetation refers to plant species known to be adapted to wetland sites. To classify the hydrophytic plants onsite, the most recent *Western Mountains, Valleys, and Coast 2016 Regional Wetland Plant List* was used (USACE, 2016). Hydric soils are soils that are formed under saturated conditions, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil profile (USDA, 2017c). Wetland hydrology is demonstrated through direct evidence (primary indicators) or indirect evidence (secondary indicators) of flooding, ponding, or saturation for a significant portion of the growing season (USACE, 2010).

Prior to conducting the field investigation, SHN staff reviewed the USGS topographic quadrangle map (Figure 1); Google Earth (Google Earth, 2016); USDA-NRCS Web Soil Survey website (USDA, 2017b); and NWI map (USFWS, 2017; Appendix 2). Prior to the test pit investigation, a preliminary site investigation was performed on March 30, 2017 to view existing hydrology. During the test pit subsurface investigation, sample points were characterized at the site for the aforementioned botanical, hydrological, and soil parameters.

Wetland test pit locations were selected to:

- achieve appropriate coverage and characterization of wetland and upland areas,
- document potential changes in the vegetative community (such as a shift in the dominant species), and
- determine the approximate boundary line between wetlands and uplands by evaluating the extent of key wetland criteria (hydrology, hydric soils, and hydrophytic vegetation).

All field mapping was completed with a Trimble Pro 6t global positioning system (GPS) antenna connected to a Panasonic Toughbook CF-19 with Geographic Information System (GIS) software. SHN staff downloaded the appropriate aerial photos and digitized relevant site plan mapping (Google Earth, 2016). Several fixed locations (for example fence angles) were marked as control points (CT) with the Trimble Pro 6t to get an estimate of aerial imagery accuracy.

7.1 Vegetation Methods

Prior to the field investigation, a review of plant species reported to be within the study area was performed by querying the "Consortium of California Herbaria" (Consortium of California Herbaria, 2017) database records and "Calflora" (Calflora, 2017 and 2020) observations. It was determined that the 2017 site investigations were performed during a normal rainfall period by reviewing rainfall data, and the 2020 site investigation in a drier than normal rainfall period (see Section 3.2 Site Hydrology, Table 1). Absolute percent cover of each plant species was visually estimated within the sample point and within each vegetation stratum. The tree stratum was inspected at a 30-foot radius centered on the sample point, and

the herbaceous and sapling/shrub strata at a 5-foot radius. Botanical nomenclature follows *The Jepson Manual, Vascular Plants of California* (Baldwin et al., 2012) in addition to the online Jepson Interchange (University of California, Berkeley, 2017) for verification of species whose taxonomy may have changed since its publication.

The wetland indicator status of plant species for this investigation was based on the *Western Mountains, Valleys, and Coast 2016 Regional Wetland Plant List* (USACE, 2016). Synonyms were checked for species that did not appear on the USACE wetland plant list. Plant species were classified as:

- Obligate (OBL)–almost always occurs in wetlands
- Facultative-wet (FACW)–usually occurs in wetlands, but may occur in non-wetlands
- Facultative (FAC)–occurs in wetlands and non-wetlands
- Facultative-upland (FACU)–usually occurs in non-wetlands, but may occur in wetlands
- Upland (UPL)–almost never occurs in wetlands
- Not listed (NL)-scored as an upland plant and calculated as such on wetland determination forms

The 50/20 method[1] was applied to each stratum to determine the dominant plant species and to satisfy the hydrophytic vegetation criteria. If either hydric soils or wetland hydrology were present, the prevalence index[2] was applied. The occurrence and type of plant cover determine whether jurisdictional areas are identified as satisfying the vegetation criteria of a wetland or other waters. Those sites with little or no hydrophytic plant cover, or other sites not capable of supporting hydrophytic plant communities in normal circumstances, are identified as Waters of the State if hydric soils and wetland hydrology are present or are identified as other waters, provided they have an Ordinary High Water Mark (OHWM).

7.2 Soils Methods

Soils were field-verified for the presence or absence of hydric conditions. All TPs were dug to a minimum depth of 16 inches during the 2017 normal rainfall period, and a minimum depth of 24 inches during the 2020 drier than normal rainfall period. The thickness of each soil horizon was measured. The Munsell Soil Color Chart (Kollmorgen Instruments Corporation, 1998) was referenced to determine the colors of the moist soil matrix and redoximorphic (redox) features (if present). Soils were closely inspected for hydric soil indicators, as defined by the NRCS "Field Indicators of Hydric Soils in the United States" (Version 8.1; USDA-NRCS, 2017c).

7.3 Hydrology Methods

Hydrology was examined during the December 18, 19, and 21, 2017 and May 11, 2020 test pit excavations for hydrology indicators (for example, additional indicators would include water marks, drift deposits, sediment deposits, alpha, alpha-dipyridyl reaction, drainage patterns, geomorphic placement, water-stained

[1] The 50/20 rule: for each stratum of the plant community, dominant species are the most abundant species that (when ranked in descending order of abundance and cumulatively totaled) immediately exceed 50% of total dominance measure for the stratum, plus any additional species that individually comprise 20% or more of the total dominance measure for the stratum (USACE, 2010).
[2] The prevalence index is a weighted-average wetland indicator status of all plant species in the sampling plot or other sampling unit, where each indicator status category is given a numeric code (OBL = 1, FACW = 2, FAC = 3, FACU = 4, and UPL = 5) and weighting is by abundance (absolute percent cover).

leaves, and similar features). Indicators of extended period saturation would include oxidized rhizospheres surrounding living roots or the presence of reduced iron or sulfur in the soil profile. A site location must contain at least one primary indicator or two secondary indicators to have the hydrology parameter.

7.4 Ordinary High Water Mark Methods

For purposes of Section 404 of the CWA, the lateral limits of federal jurisdiction over non-tidal water bodies in the absence of adjacent wetlands extend to the OHWM. When adjacent wetlands are present, CWA jurisdiction extends beyond the OHWM to the limits of the adjacent wetlands. For purposes of Sections 9 and 10 of the Rivers and Harbors Act of 1899, the lateral extent of federal jurisdiction, which is limited to the traditional navigable waters of the United States, extends to the OHWM, whether or not adjacent wetlands extend landward of the OHWM (USACE, 2014).

USACE regulations define the term OHWM for the purposes of the CWA lateral jurisdiction as follows:

> *The term "ordinary high water mark" means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas at 33 CFR 328.3(e).*

The OHWM in non-perennial streams corresponds with the boundaries of the active channel, which are typically expressed by some combination of three primary indicators: a topographic break in slope, change in sediment characteristics, and change in vegetation characteristics (USACE, 2014). The following supporting features should be considered when making an OHWM determination, to the extent that they can be identified and are deemed reasonably reliable (USACE, 2014):

- Drift/wrack
- Erosion/scour
- Bank undercutting
- Root exposure
- Point bars
- Water staining
- Litter removal
- Silt deposits
- Shelving
- Headcut/knickpoint
- Macroinvertebrates

8.0 Discussion and Results

Fourteen test pits were excavated on December 18, 19, and 21, 2017, and three additional test pits were excavated on May 11, 2020 (Figure 2). The test pits were excavated during a normal rainfall season in 2017 and a drier than normal rainfall season in 2020 within the growing season of this region (Section 3.2 Site Hydrology). Normal circumstances were considered present, because the most recent site disturbances were made over ten years ago, as seen on Google Earth images which date back to April 1989 (Google Earth, 2016).

This site's hydrology has been substantially altered, and currently stormwater flows through drainage ditches and culverts installed around the perimeter of the former industrial lumber facilities. Following closure of the industrial lumber mill, storage racks were removed, and the fields were regraded to restore agricultural use. The average slope of the study area ranges from 1 to 10 percent. The photos of the study areas are shown in Appendix 1. The majority of the soils encountered in test pits was fill, derived from other

sources, or graded from different areas of the property. See the Discussion section below for each TP that describes the physical features and considerations of the site, followed by a Data section that summarizes information from the completed Wetland Determination Data Forms located in Appendix 4.

Most of the man-made ditches are continually maintained, except in the ditch flowing through Study Area B. All three parameters were found within this feature as described in Section 8.17.

8.1 TP1U

Discussion

The TP1U was chosen for its position within the hydric soil "Arlynda" and has the lowest elevation in the vicinity. Because of the topographically low position, it was thought that this location might have wetland conditions present, however only one wetland parameter was observed (hydrophytic vegetation) at TP1U.TP1U and the surrounding area does not meet the three-parameter wetland definition and is not considered a wetland site. (Appendix 1, Photo 4).

Data

TP1U vegetation contained only an herbaceous stratum. The dominant species for the herb stratum was 60-percent Italian ryegrass [FAC]. Dominance by a hydrophytic species meets the hydrophytic vegetation parameter.

There were no hydrology or hydric soil indicators observed.

8.2 TP2U

Discussion

TP2U was excavated 343 feet southwest of TP1U and is also within the hydric soil "Arlynda". Rusty nails and occasional rounded gravel were found within the test pit, indicating fill material. It appears that an older slough scarp has been filled in over time. There were no wetland parameters observed; therefore, it is not considered a wetland.

Data

TP2U vegetation contained only an herb stratum. The dominant species were 35-percent Italian ryegrass [FAC] and 25-percent orchard grass [FACU]. Vegetation dominance by a mix of upland and wetland indicator species did not meet the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.3 TP3U

Discussion

TP3U is in the mid-section of the agricultural field. There were no wetland parameters observed; therefore, it is not considered a wetland site.

Data

TP3U vegetation contained only an herb stratum. The dominant species were 30-percent wild radish (*Raphanus sativus* [NL]) and 10-percent dove's foot geranium [NL]. Vegetation dominance by a mix of upland and wetland indicator species did not meet the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.4 TP4U

Discussion

TP4U is in the mid-section of the agricultural field. This section of the field has been recently tilled and seeded with burseem clover [NL]. There was 85-percent bare soil with only 15-percent vegetation present, which was still in the seedling stage. There were no wetland parameters observed; therefore, it is not considered a wetland site. (Appendix 1, Photo 5).

Data

TP4U vegetation contained only an herb stratum. The dominant species were 10-percent burseem clover [NL] and 3-percent unknown seedlings. The seedlings could not be identified and were considered "problematic" at the December 18, 2017 site visit. Even without the definitive identification of the seedlings, the dominance test indicator could not be met. This site does not qualify as having the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.5 TP5U

Discussion

TP5U is in the northern section of the agricultural field. This section of the field has been recently tilled and seeded with burseem clover [NL]. There was 90-percent bare soil with only 15-percent vegetation present, which was still in the seedling stage. No wetland parameters were met; therefore, it is not considered a wetland site.

Data

TP5U vegetation contained only an herb stratum. The dominant species were 8-percent Italian ryegrass [FAC] and 5-percent burseem clover [NL]. This site does not qualify as having the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.6 TP6U

Discussion

TP6U is located in the northern portion of agricultural field, 285 feet east of TP5U. It is within one of the maintained, man-made ditches and had just been cleared prior to the test pit excavation (Appendix 1, Photo 6). There were only two wetland parameters present (hydric soils and vegetation); therefore, it is not considered a wetland site.

Data

TP6U vegetation contained only an herb stratum. The dominant species was 60-percent Italian ryegrass [FAC]. Dominance by a hydrophytic species meets the hydrophytic vegetation parameter.

One artificial secondary hydrology indicator was observed: D2 (Geomorphic Position) resulting from excavation of the ditch. Two or more secondary indicators are necessary to qualify for the hydrology parameter; therefore, the hydrology parameter has not been met.

The F3 (Depleted Matrix) hydric soil indicator was met.

8.7 TP7U

Discussion

TP7U is in the northern portion of the agricultural field, 217 feet north of TP6U. It is within one of the maintained man-made ditches and had just been cleared prior to the test pit excavation (Appendix 1, Photo 7). There were only two wetland parameters present (hydric soils and vegetation); therefore, it is not considered a wetland site.

Data

TP7U vegetation contained only an herbaceous stratum. The dominant species for the herb stratum was 65-percent Italian ryegrass [FAC]. Dominance by a hydrophytic species meets the hydrophytic vegetation parameter.

One artificial secondary hydrology indicator was observed: D2 (Geomorphic Position) resulting from excavation of the ditch. Two or more secondary indicators are necessary to qualify for the hydrology parameter; therefore, the hydrology parameter has not been met.

The F3 (Depleted Matrix) hydric soil indicator was met.

8.8 TP8U

Discussion

TP8U is located within the northeastern portion of the agricultural field. There were no wetland parameters observed; therefore, it is not considered a wetland site.

Data

TP8U vegetation contained only an herbaceous stratum. The dominant species were 35-percent orchard grass [FACU] and 15-percent Italian ryegrass [FAC]. Vegetation dominance by a mix of upland and wetland indicator species did not meet the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.9 TP9U

Discussion

TP9U is located at the southern-most section of the study area, near the access road. This location was investigated as the area was dominated by hydrophytic vegetation. Neither hydric soils nor wetland hydrology were observed; therefore, it is not considered a wetland.

Data

TP9U vegetation contained only an herbaceous stratum. The dominant species for the herb stratum was 55-percent Italian ryegrass [FAC]. Dominance by a hydrophytic species meets the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.10 TP10U

Discussion

TP10U is in the western portion of the agricultural fields. There were no wetland parameters observed; therefore, it is not considered a wetland.

Data
TP10U vegetation contained only an herbaceous stratum. The dominant species for the herb stratum was 55-percent Italian ryegrass [FAC] and 20-percent dove's foot geranium [NL]. Vegetation dominance by a mix of upland and wetland indicator species did not meet the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.11 TP11U

Discussion
TP11U is in the western portion of the agricultural fields, 700 feet north of TP10U. There was only one wetland parameter observed (hydrophytic vegetation); therefore, it is not considered a wetland site.

Data
TP11U vegetation contained only an herbaceous stratum. The dominant species for the herb stratum was 55-percent Italian ryegrass [FAC]. Dominance by a hydrophytic species meets the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.12 TP12W

Discussion
TP12W is located within the man-made drainage swale that drains stormwater from the southern portion of the agricultural fields. It is the paired plot to TP15U. Three wetland parameters were present at this location (hydric soils, hydrology, and vegetation; Appendix 1, Photo 8); therefore, this location is considered a wetland.

Data
TP12W vegetation contained the tree, sapling/shrub, and herb strata. The dominant species for the tree stratum was 35-percent coastal willow (*Salix hookeriana* [FACW]) and 10-percent Monterey cypress (*Hesperocyparis macrocarpa* [NL]). The dominant sapling/shrub species was composed of 15-percent Himalayan blackberry [FAC]. The dominant herb species were composed of 25-percent red-tinged bulrush [OBL] and 10-percent water parsley (*Oenanthe sarmentosa* [OBL]). Dominance by hydrophytes meets the hydrophytic vegetation parameter.

Two secondary hydrology indicators were observed: D2 (Geomorphic Position) and D5 (FAC-Neutral Test). Two or more secondary indicators are necessary to qualify for the hydrology parameter; therefore, the hydrology parameter has been met.

The F6 (Redox Dark Surface) hydric soil indicator was met.

8.13 TP13U

Discussion
TP13U is located west of the industrial mill buildings between a drainageway and gravel road. There was only one wetland parameter observed (hydrophytic vegetation; Appendix 1, Photo 9); therefore, it is not considered a wetland site. It is the paired test pit for TP17W.

Data
TP13U vegetation contained only an herbaceous stratum. The dominant species for the herb stratum was 25-percent Italian ryegrass [FAC], 25-percent orchard grass [FACU], and 25-percent velvet grass [FAC]. Dominance by hydrophytes meets the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.14 TP14U

Discussion
TP14U is located 146 feet west of TP13U, on the west side of the drainageway and within a livestock pasture. There were no wetland parameters observed; therefore, it is not considered a wetland site.

Data
TP14U vegetation contained only an herbaceous stratum. The dominant species for the herb stratum was 40-percent Italian ryegrass [FAC], 20-percent orchard grass [FACU], and 20-percent dove's foot geranium [NL]. Vegetation dominance by a mix of upland and wetland indicator species did not meet the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.15 TP15U

Discussion
TP15U was excavated on May 11, 2020, and it is in a constructed ditch that drains the elevated eastern portion of the agricultural fields. It is the paired test pit to TP12W. The collected water drains westward offsite to an underground culvert, which is routed underneath the mill warehouse buildings and eventually into Liscom Slough (Figure 2; Appendix 1, Photo 10). The ditch drains elevated upland pasture to the north, and no wetlands occur uphill from this location. There were no wetland parameters observed; therefore, it is not considered a wetland site.

Data
TP15U vegetation contained only an herbaceous stratum. The dominant species for the herb stratum was 30-percent soft chess (*Bromus hordeaceus* [FACU]), 20-percent velvet grass (FAC), 15-percent common vetch (*Vicia sativa* [UPL]), and 15-percent sweet vernal grass [FACU]. Vegetation dominance by a mix of upland and wetland indicator species did not meet the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.16 TP16U

Discussion
TP16U is located in a constructed roadside drainage ditch 38 feet west of TP15U. The ditch contains mixed layers of sand, woody debris, and asphalt chunks likely from the former mill yard north of the test pit. It flows into the same drainage system described in TP15U. There was one wetland parameter observed (hydrophytic vegetation); therefore, it is not considered a wetland site.

Data
TP16U vegetation contained a sapling/shrub and an herbaceous stratum. The dominant species for the sapling/shrub stratum was the Himalayan blackberry [FAC]. The dominant species for the herb stratum was

35-percent velvet grass (FAC), 15-percent six-weeks fescue (*Festuca myuros* [FACU]), 10-percent wild radish [NL], and 10-percent creeping bent grass (*Agrostis stolonifera* [FAC]). Dominance by hydrophytes meets the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.17 TP17W

Discussion

TP17W is located in a constructed drainage ditch that runs along the western property boundary through the section labeled "Study Area B" (Figure 2; Appendix 1, Photo 11). TP17W is 28 feet west of TP13U which represents upland conditions surrounding this drainage ditch. There were three wetland parameters observed (hydrophytic vegetation, hydric soil, and hydrology); therefore, it is considered a wetland site. OHWM conditions were investigated at this location, however OHWM indicators were not present and it was determined that this feature is more accurately described as a wetland.

Data

TP17W vegetation contained a tree, sapling/shrub, and an herbaceous stratum. The dominant species for the tree stratum was red alder [FAC], and for the sapling/shrub stratum, the Himalayan blackberry [FAC]. The dominant species for the herb stratum was 40-percent water parsley (OBL), 30-percent wild radish [NL], and 30-percent sweet vernal grass [FACU]. Dominance by hydrophytes meets the hydrophytic vegetation parameter.

Two secondary hydrology indicators were observed; D2 (Geomorphic Position) and C2 (Dry-Season Water Table). Two or more secondary indicators are necessary to qualify for the hydrology parameter; therefore, the hydrology parameter has been met.

The F6 (Redox Dark Surface) hydric soil indicator was met.

8.18 Ordinary High Water Mark

No OHWMs were observed in the study areas. Ditches onsite are maintained constructed ditches or show none of the indicators listed in Section 7.4 Ordinary High Water Mark Methods.

8.19 Waters of the State

No additional State jurisdictional waters were found in the study areas. The criteria for naturally-occurring wetlands that have less than five-percent vegetative during the growing season was not observed.

9.0 Conclusions

Wetland and OHWM site investigations occurred on December 18, 19, and 21, 2017 and May 11, 2020. The 2017 test pit excavations were performed during a normal rainfall season and the 2020 excavations during a drier than normal rainfall (Section 3.2 Site Hydrology). Following the USACE three-parameter guidelines, there are two wetland areas found within the study areas. Table 2 describes the type, location, and size of the wetland. Data sheets are included in Appendix 4.

Table 2. Wetland Delineation and OHWM[1] Results
Arcata Land Company, LLC
Arcata, CA

Waterbodies	Cowardian Type	Latitude/Longitude[2]	Area (square feet)
Wetland #1	Palustrine SS1[3]	40.884087°/ -124.104205°	5,144
Wetland #2	Palustrine SS1	40.883854°/ -124.108543°	874
Total			**6,018**

1. OHWM: ordinary high water mark
2. In decimal degrees
3. Palustrine Scrub-Shrub Broad-Leaved Deciduous

10.0 Limitations

The results in this report represent conditions at the time of fieldwork. It is possible that some species were not observable at the time of the fieldwork and that conditions have changed since field work was completed. This report documents the investigation by using the best professional judgment of SHN's botanist and soil scientist. The conclusions should be verified by the USACE through receipt of a jurisdictional determination letter.

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Site Photographs 1

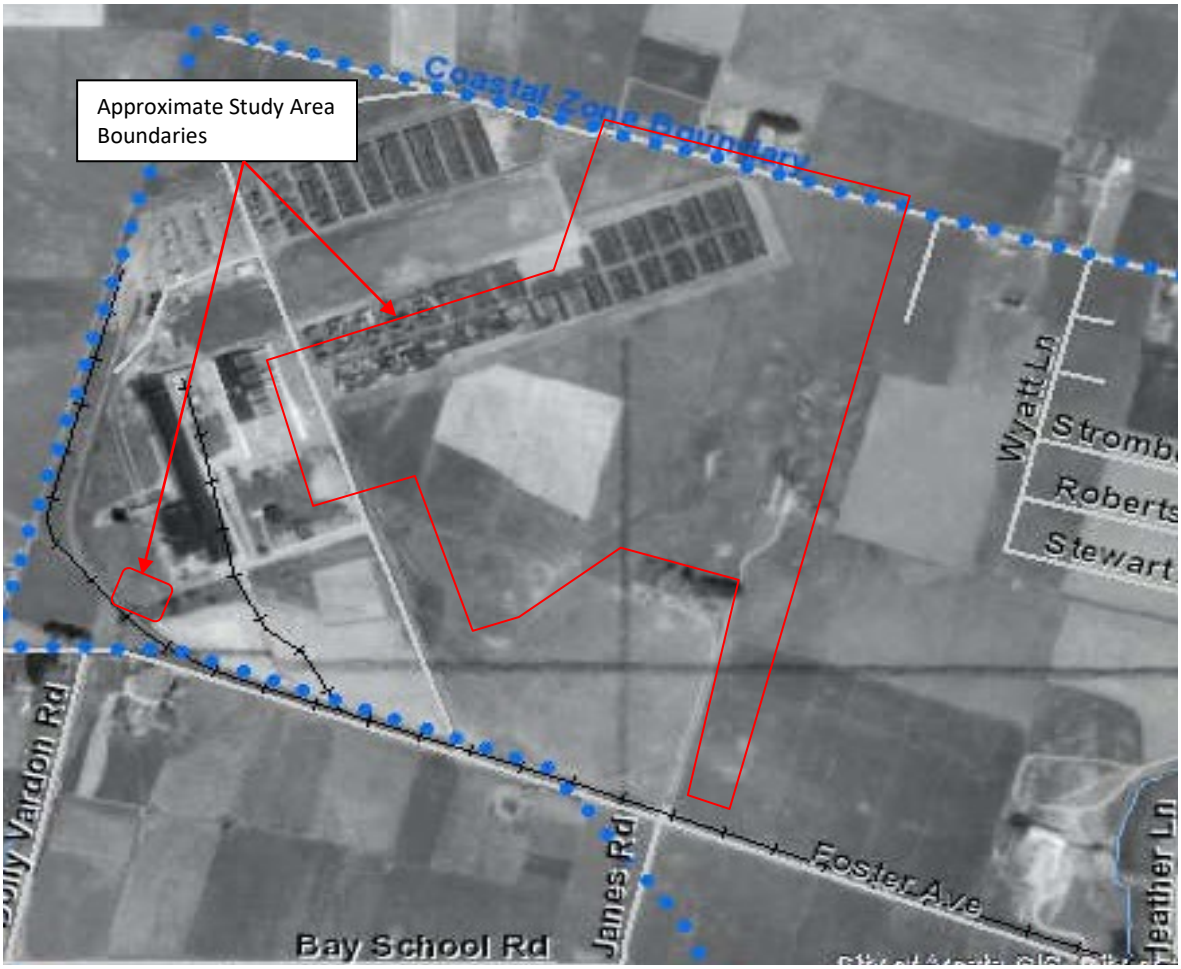


Photo 1: 1954 Aerial mosaic from Arcata GIS website (City of Arcata, 2017)


Photo 2: Main industrial concreted area



Photo 3: Agricultural fields looking west towards former industrial mill warehouses



Photo 4: TP1U looking north in typical agricultural field setting



Photo 5: TP4U recently tilled field looking north



Photo 6: TP6U maintained ditch looking south



Photo 7: Maintained ditch looking east towards TP7U



Photo 8: TP12W site location



Photo 9: TP13U looking west towards Wetland#2 drainageway and TP14U pasture beyond.



Photo 10: TP15U looking south.



Photo 11: TP17W

National Wetlands Inventory 2

U.S. Fish and Wildlife Service
National Wetlands Inventory

ALC NWI Map



December 4, 2017

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Plant List 3

Table 1 Plants Observed at Study Site December 18, 19, and 21, 2017 and May 11, 2020 Arcata Land Company, LLC Arcata, California		
Scientific Name	**Common Name**	**Indicator 2016[1]**
Achillea millefolium	yarrow	FACU
Acmispon parviflorus	hill lotus	NL
Agrostis stolonifera	creeping bent grass	FAC
Aira caryophyllea	silvery hairgrass	FACU
Alnus rubra	red alder	FAC
Anaphalis margaritacea	pearly everlasting	FACU
Anthoxanthum odoratum	sweet vernal grass	FACU
Athyrium filix-femina var. *cyclosorum*	western lady fern	FAC
Avena barbata	slim oat	NL
Baccharis pilularis ssp. *consanguinea*	coyote brush	NL
Bellis perennis	English lawn daisy	NL
Brassica rapa	common mustard	FACU
Briza maxima	rattlesnake grass	NL
Bromus carinatus var. *carinatus*	California brome	NL
Bromus diandrus	ripgut brome	NL
Bromus hordeaceus	soft chess	FACU
Callitriche sp.	water starwort	OBL
Carex obnupta	slough sedge	OBL
Cerastium arvense	meadow chickweed	FACU
Cirsium vulgare	bullthistle	FACU
Claytonia perfoliata	miner's lettuce	FAC
Claytonia sibirica	candy flower	FAC
Conium maculatum	poison hemlock	FAC
Convolvulus arvensis	field bindweed	NL
Cortaderia jubata	Andean pampas grass	FACU
Cotoneaster franchetii	Franchett's cotoneaster	NL
Cynosurus echinatus	dogtail grass	NL
Dactylis glomerata	orchard grass	FACU
Daucus carota	Queen Anne's lace	FACU
Dipsacus fullonum	wild teasel	FAC
Eucalyptus globulus	blue gum	NL
Festuca microstachys	small fescue	NL
Festuca myuros	six-weeks fescue	FACU
Festuca perennis	Italian rye grass	FAC
Galium aparine	cleaver plant	FACU
Geranium dissectum	cutleaf geranium	NL
Geranium molle	dove's foot geranium	NL
Hesperocyparis macrocarpa X	Monterey cypress cultivar	NL
Holcus lanatus	velvetgrass	FAC

Table 1
Plants Observed at Study Site December 18, 19, and 21, 2017 and May 11, 2020
Arcata Land Company, LLC
Arcata, California

Scientific Name	Common Name	Indicator 2016[1]
Hordeum marinum ssp. *gussoneanum*	barley	FAC
Hypochaeris radicata	hairy cat's ear	FACU
Juncus bufonius var. *bufonius*	common toad rush	FACW
Juncus effusus ssp. *pacificus*	Pacific rush	FACW
Juncus patens	spreading rush	FACW
Lonicera involucrata var. *ledebourii*	coast twinberry	FAC
Lotus corniculatus	bird's foot trefoil	FAC
Lupinus bicolor	annual lupine	NL
Melilotus albus	white sweetclover	NL
Mentha pulegium	pennyroyal	OBL
Oenanthe sarmentosa	water parsley	OBL
Parentucellia viscosa	yellow parentucellia	FAC
Phalaris arundinacea	reed canarygrass	FACW
Pinus radiata X	Monterey pine cultivar	NL
Plantago lanceolata	English plantain	FACU
Plantago major	common plantain	FAC
Poa annua	annual blue grass	FAC
Poa pratensis	Kentucky blue grass	FAC
Polypogon monspeliensis	annual beard grass	FACW
Prunella vulgaris	self heal	FACU
Pteridium aquilinum var. *pubescens*	bracken fern	NL
Ranunculus repens	creeping buttercup	FAC
Raphanus sativus	wild radish	NL
Rubus armeniacus	Himalayan blackberry	FAC
Rubus parviflorus	thimbleberry	FACU
Rubus spectabilis	salmonberry	FAC
Rubus ursinus	California blackberry	FACU
Rumex acetosella	sheep sorrel	FACU
Rumex crispus	curly dock	FAC
Salix hookeriana	coastal willow	FACW
Salix lasiandra var. *lasiandra*	Pacific willow	FACW
Salix sitchensis	Sitka willow	FACW
Sambucus racemosa var. *racemosa*	red elderberry	FACU
Scirpus microcarpus	red-Tinged Bulrush	OBL
Soliva sessilis	lawn Burweed	FAC
Sonchus asper	spiny sowthistle	FACU
Sonchus oleraceus	sow thistle	UPL
Stachys ajugoides var. *rigida*	hedge nettle	OBL
Stachys rigida	rough hedgenettle	FACW
Taraxacum officinale	red-seeded dandelion	FACU
Trifolium X	berseem Clover	NL

Table 1
Plants Observed at Study Site December 18, 19, and 21, 2017 and May 11, 2020
Arcata Land Company, LLC
Arcata, California

Scientific Name	Common Name	Indicator 2016[1]
Trifolium repens	white clover	FAC
Triphysaria pusilla	little owl's clover	NL
Typha latifolia	broadleaf cattail	OBL
Vicia sativa	common vetch	UPL
Vinca major	vinca	NL
Viola sempervirens	redwood violet	NL

1. Indicators are abbreviated as follows:
   OBL: Obligate
   FACW: Facultative wet
   FAC: Facultative
   FACU: Facultative upland
   UPL: Upland
   NL: Not listed

Wetland Determination Data Forms

4

SHN Consulting Engineers & Geologists, Inc.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Foster Avenue City/County: Humboldt Sampling Date: 12/18/17

Applicant/Owner: Arcata Land Co. State: CA Sampling Point: TP1U

Investigator(s): Cindy Wilcox & Greg OConnell Section, Township, Range: Sec. 20 T06N R01E

Landform (hillslope, terrace, etc.): marine terrace Local relief (concave, convex, none): none Slope (%): 0-2

Subregion (LRR): A, MLRA 4B Lat: 40.9852540° Long: -124.0995360° Datum: Humboldt

Soil Map Unit Name: Arlynda 0-9% slopes NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____ No ✓	
Wetland Hydrology Present?	Yes ____ No ✓	

Remarks: Chosen for lowest elevated area in vicinity (local low spot) - TP1U is upland and no wetland paired plot was done.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2. Ø			
3.			
4.			
	Ø	= Total Cover	

Sapling/Shrub Stratum (Plot size: 5ft)			
1.			
2.			
3. Ø			
4.			
5.			
	Ø	= Total Cover	

Herb Stratum (Plot size: 5ft)			
1. Festuca perennis	60	Y	FAC
2. Dactylis glomerata	5	N	FACU
3. Holcus lanatus	5	N	FAC
4. Trifolium (not repens) sp.	10	N	*
5. Plantago lanceolata	5	N	FACU
6. Rumex crispus	2	N	FAC
7. other grasses *	10	N	*
8.			
9.			
10.			
11.			
	97	= Total Cover	

Woody Vine Stratum (Plot size: 5ft)			
1. Ø			
2.			
	Ø	= Total Cover	

% Bare Ground in Herb Stratum 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: * not identifiable @ time of year.

Sampling Point: TP14

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/2	95	7.5YR 3/4	5	RM	PL	SiCL	Roots similar color as redox
2-17	10YR 3/2	70	7.5YR 3/4	<1	RM	PL	SiCL	
2-17	10YR 4/2	30					SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5) no
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SHN Consulting Engineers & Geologists, Inc.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Foster Avenue City/County: Humboldt Sampling Date: 12/18/17

Applicant/Owner: Arcata Land Co. State: CA Sampling Point: TP24

Investigator(s): Cindy Wilcox & Greg OConnell Section, Township, Range: Sec. 20 T06N R01E

Landform (hillslope, terrace, etc.): Marine terrace Local relief (concave, convex, none): none Slope (%): 2-4

Subregion (LRR): A, MLRA 4B Lat: 40.9846870° Long: -124.100532° Datum: Humboldt

Soil Map Unit Name: Arlynda 0-9% slopes NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: -TP24 is upland & does not have a paired wetland test pit.
- Rounded gravel & rusty iron nail. → historic fill.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2. Ø			
3.			
4.			
	Ø	= Total Cover	

Sapling/Shrub Stratum (Plot size: 5ft)			
1.			
2.			
3. Ø			
4.			
5.			
	Ø	= Total Cover	

Herb Stratum (Plot size: 5ft)			
1. Dactylis glomerata	25	Y	FACU
2. Festuca perennis	35	Y	FAC
3. Holcus lanatus	15	N	FAC
4. Trifolium sp. (not repens) *	10	N	*
5. Rumex crispus	2	N	FAC
6. Geranium Mollis	2	N	NL
7. Daucus Carota	2	N	FACU
8.			
9.			
10.			
11.			
	91 ✓	= Total Cover	

Woody Vine Stratum (Plot size: 5ft)			
1.			
2. Ø			
	Ø	= Total Cover	

% Bare Ground in Herb Stratum 15

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: * No ID @ time of year

SOIL

Sampling Point: TP21

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-21	10YR 3/2	100	7.5YR 3/4	<1	RM	M	S.L	Fill
			10YR 5/6	<1	RM	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: Occational rounded gravel incongruous w/ Matrix color → fill. Rusty nail & metal. Appears to have been old slough scar filled in ~1990's

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5) ND
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SHN Consulting Engineers & Geologists, Inc.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Foster Avenue City/County: Humboldt Sampling Date: 12/18/2017

Applicant/Owner: Arcata Land Co. State: CA Sampling Point: TP3W

Investigator(s): Cindy Wilcox & Greg OConnell Section, Township, Range: Sec. 19 T06N R01E

Landform (hillslope, terrace, etc.): marine terrace Local relief (concave, convex, none): none Slope (%): 1-2

Subregion (LRR): A, MLRA 4B Lat: 40.885190° Long: -124.101958° Datum: Humboldt

Soil Map Unit Name: Jollygiant 0-2% NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: Recently filled field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2. Ø			
3.			
4.			
	Ø	= Total Cover	

Sapling/Shrub Stratum (Plot size: 5ft)			
1.			
2.			
3. Ø			
4.			
5.			
	Ø	= Total Cover	

Herb Stratum (Plot size: 5ft)			
1. Raphanus sativus (wild radish)	30	Y	NL
2. Trifolium spp.	5	N	*
3. Geranium Molle	10	Y	NL
4. other unknown herbs *	5	N	*
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50	= Total Cover	

Woody Vine Stratum (Plot size: 5ft)			
1.			
2. Ø			
	Ø	= Total Cover	

% Bare Ground in Herb Stratum 55

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: Ø (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: Ø (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

* Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: *=> recently filled. seedlings.

TP34 SHN Consulting Engineers & Geologists, Inc.

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR3/2	100	10YR5/6	<1	RM	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5) n o
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SHN Consulting Engineers & Geologists, Inc.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Foster Avenue City/County: Humboldt Sampling Date: 12/18/17

Applicant/Owner: Arcata Land Co. State: CA Sampling Point: TP4U

Investigator(s): Cindy Wilcox & Greg OConnell Section, Township, Range: Sec. 19 T06N R01E

Landform (hillslope, terrace, etc.): marine terrace Local relief (concave, convex, none): none Slope (%): 2-3

Subregion (LRR): A, MLRA 4B Lat: 40.886348° Long: -124.101729° Datum: Humboldt

Soil Map Unit Name: Jolly giant 0-2% NWI classification: PEMD

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	
Hydric Soil Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks: USFW NWI mapped area. plowed field. seeded w/ clover. flat surface

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Ø			
2.			
3.			
4.			
	Ø	= Total Cover	

Sapling/Shrub Stratum (Plot size: 5ft)			
1. Ø			
2.			
3.			
4.			
5.			
	Ø	= Total Cover	

Herb Stratum (Plot size: 5ft)			
1. Trifolium sp* (X)	10	Y	*(NL) CW
2. Raphanus sativus	2	N	NL
3. unknown seedlings *	3	Y	*
4. (burseem clover identified later by employee - CW)			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	15	= Total Cover	

Woody Vine Stratum (Plot size: 5ft)			
1. Ø			
2.			
	Ø	= Total Cover	

% Bare Ground in Herb Stratum 85

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0-1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: *(0-50%) (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50% CW

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

* Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: * recently tilled field.

SHN Consulting Engineers & Geologists, Inc.

SOIL

Sampling Point: TP4U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 3/2	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No ✓

Remarks: Till depth ~8". Hit harder horizon below this level.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✱ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): _____

Water Table Present? Yes ____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SHN Consulting Engineers & Geologists, Inc.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Foster Avenue City/County: Humboldt Sampling Date: 12/18/2017

Applicant/Owner: Arcata Land Co. State: CA Sampling Point: TP 5 U

Investigator(s): Cindy Wilcox & Greg OConnell Section, Township, Range: Sec 20 T06N R01E

Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 2-3

Subregion (LRR): A, MLRA 4B Lat: 40.888390° Long: -124.100950° Datum: Humboldt

Soil Map Unit Name: Dilgiant 0-2% NWI classification: PEMID

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
- recently tilled field.
- @ edge of fava bean field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Tritolium sp.	5	Y	NL (W)
2. Festuca perennis	8	Y	FAC
3. Geranium Molle	2	N	NL
4.			
5. → Later identified as bursage			
6. clover by employee - (W)			
7.			
8.			
9.			
10.			
11.			
	15 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 90

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species _____	x 1 =	_____
FACW species _____	x 2 =	_____
FAC species _____	x 3 =	_____
FACU species _____	x 4 =	_____
UPL species _____	x 5 =	_____
Column Totals: _____ (A)		_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No _____

Remarks:
* recently tilled
*

TP5U

SHN Consulting Engineers & Geologists, Inc.

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10 YR 3/2	99	10YR 5/8	1	RM	M	CL	
10-19	10 YR 3/2	92	10YR 5/8	8	RM	M	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: Prof. judgement. F3 must start within 10" Redox starts ~10" but weakly (2%) & increases in % @ 11". Not calling this a hydric soil

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SHN Consulting Engineers & Geologists, Inc.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Foster Avenue City/County: Humboldt Sampling Date: 12/18/17

Applicant/Owner: Arcata Land Co. State: CA Sampling Point: TP64

Investigator(s): Cindy Wilcox & Greg OConnell Section, Township, Range: Sec. 20 T06N R01E

Landform (hillslope, terrace, etc.): drainage ditch Local relief (concave, convex, none): concave Slope (%): 2-3

Subregion (LRR): A, MLRA 4B Lat: 40.688100° Long: -124.099942° Datum: Humboldt

Soil Map Unit Name: Dungan 0-2% NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	
Hydric Soil Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: Drainage ditch cleaned by excavator. Local low spot is linear feature that was historically graded to drain water.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft)			
1.			
2. Ø			
3.			
4.			
	Ø	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5 ft)			
1.			
2.			
3. Ø			
4.			
5.			
	Ø	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. Festuca perennis	60	Y	FAC
2. Bersseen clover	10	N	NL
3. Plantago lanceolata	5	N	FACU
4. Ranunculus repens	5	N	FAC
5. Plantago major	2	N	FAC
6. Hypochaeris radicata	2	N	FACU
7. Trifolium repens	15	N	FAC
8.			
9.			
10.			
11.			
	99	= Total Cover	
Woody Vine Stratum (Plot size: 5 ft)			
1. Ø			
2.			
	Ø	= Total Cover	

% Bare Ground in Herb Stratum 15

Great plan

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ✓ Yes ____ No ____

Remarks:

SOIL

Sampling Point: TP64

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR 3/2	10					CL	
1-24	10YR 3/2	10					C	
1-24	10YR 4/2	70	10YR 5/8	20	RM	M	C	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: on side of graded drainage ditch

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5) no
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Odd reaction negative

SHN Consulting Engineers & Geologists, Inc.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Foster Avenue City/County: Humboldt Sampling Date: 12/18/17

Applicant/Owner: Arcata Land Co State: CA Sampling Point: TP 14

Investigator(s): Cindy Wilcox & Greg OConnell Section, Township, Range: Sec. 20 T06N R01E

Landform (hillslope, terrace, etc.): drainage swale Local relief (concave, convex, none): concave Slope (%): 3-5

Subregion (LRR): A, MLRA 4B Lat: 40.888670° Long: -124.099720° Datum: Humboldt

Soil Map Unit Name: Dungan 0-2% NWI classification: PEMID

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks: Newly cleaned ditch w/ excavator. Cleaned annually (Communication Mr. Lane). TP in lowest swale elevation. Excavator said this soil layer much lower than originally. Took soil from here to grade

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30ft)			
1. Monterey Cypress	2		NL
2.			
3.			
4.			
	2	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5 ft)			
1.			
2. Ø			
3.			
4.			
5.			
	Ø	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. Festuca perennis	65	Y	FAC
2. Plantago lanceolata	10	N	FACU
3. Geranium molle	5	N	NL
4. unkn. grasses *	5	N	*
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	85	= Total Cover	
Woody Vine Stratum (Plot size: 5ft)			
1. Ø			
2.			
	Ø	= Total Cover	

% Bare Ground in Herb Stratum 20

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- * Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: * not identifiable @ this time of year.

SHN Consulting Engineers & Geologists, Inc.

SOIL

Sampling Point: P74

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-17	10YR 3/2	25	10YR 5/4	5			SiCL	
	10YR 4/2	60	10YR 4/6	10				
17-22	10YR 3/2						SL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: Below topsoil line - excavated ~ 4" topsoil prior to our test pit. Excavator operator discussed original surface ~ 3' above what it is now - before 1990's field grading.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5) ND
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SHN Consulting Engineers & Geologists, Inc.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Foster Avenue | City/County: Humboldt | Sampling Date: 12/19/17

Applicant/Owner: Arcata Land Co. | State: CA | Sampling Point: TP4

Investigator(s): Cindy Wilcox & Greg OConnell | Section, Township, Range: Sec. 20 T06N R01E

Landform (hillslope, terrace, etc.): marine terrace | Local relief (concave, convex, none): none | Slope (%): 2-4

Subregion (LRR): A, MLRA 4B | Lat: 40.886990° | Long: -124.099322° | Datum: Humboldt

Soil Map Unit Name: Dungan 0-2% | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2. Ø			
3.			
4.			
	Ø	= Total Cover	

Sapling/Shrub Stratum (Plot size: 5 ft)			
1.			
2. Ø			
3.			
4.			
5.			
	Ø	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. Dactylus glomerata	35	Y	FACU
2. Holcus lanatus	15	N	FAC
3. Festuca perennis	25	Y	FAC
4. unk. grasses **	15	N	*
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90	= Total Cover	

Woody Vine Stratum (Plot size: 5 ft)			
1. Ø			
2.			
	Ø	= Total Cover	

% Bare Ground in Herb Stratum 25

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ** Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: ** not identifiable @ this time of year

SHN Consulting Engineers & Geologists, Inc.

SOIL

Sampling Point: TP84

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	100	—				CL	
16-24	2.5Y 4/2	80	—				C	
16-24	2.5Y 3/2	20	—				C	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5) NO
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SHN Consulting Engineers & Geologists, Inc.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Foster Avenue City/County: Humboldt Sampling Date: 12/19/17

Applicant/Owner: Arcata Land Co. State: CA Sampling Point: TP9U

Investigator(s): Cindy Wilcox & Greg OConnell Section, Township, Range: Sec 29 T06N R01E

Landform (hillslope, terrace, etc.): marine terrace Local relief (concave, convex, none): none Slope (%): 1-2

Subregion (LRR): A, MLRA 4B Lat: 40.881931° Long: -124.100415° Datum: Humboldt

Soil Map Unit Name: Jolly giant 0-2% NWI classification: PEMID

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2. Ø			
3.			
4.			
	Ø	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5ft)			
1.			
2.			
3. Ø			
4.			
5.			
	Ø	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. Juncus patens	2	N	FACW
2. Plantago lanceolata	16	N	FACU
3. Trifolium repens	10	N	FAC
4. Rumex crispus	5	N	FAC
5. Festuca perennes	55	Y	FAC
6. Trifolium (berseem)	5	N	NL
7. other unk. grasses **	15	N	*
8.			
9.			
10.			
11.			
	102	= Total Cover	
Woody Vine Stratum (Plot size: 5ft)			
1. Ø			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 10 (gopher holes)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ** Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ✓ Yes _____ No _____

Remarks: ** not identifiable @ this time of year.

SOIL

Sampling Point: TP9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 3/1	100	—				SiL	
20-31	10YR 3/1	94	5YR 4/6	6	RM	PL	SiCL	between 3/1 & 2/1

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5) NO
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SHN Consulting Engineers & Geologists, Inc.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Foster Avenue City/County: Humboldt Sampling Date: 12/19/17

Applicant/Owner: Arcata Land Co. State: CA Sampling Point: TP 104

Investigator(s): Cindy Wilcox & Greg OConnell Section, Township, Range: Sec. 19 T06N R01E

Landform (hillslope, terrace, etc.): marine terrace Local relief (concave, convex, none): none Slope (%): 1-2

Subregion (LRR): A, MLRA 4B Lat: 40.884867° Long: -124.103819 Datum: Humboldt

Soil Map Unit Name: Jolly giant 0-2% NWI classification: PEMID

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks: Grading in this area in prior years ~ 1990's

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2. Ø			
3.			
4.			
	Ø	= Total Cover	

Sapling/Shrub Stratum (Plot size: 5ft)			
1.			
2.			
3. Ø			
4.			
5.			
	Ø	= Total Cover	

Herb Stratum (Plot size: 5ft)			
1. Festuca perennis	55	Y	FAC
2. Geranium molle	20	Y	NL
3. Trifolium repens	5	N	FAC
4. Trifolium sp. (berseem clover)	10	N	NL
5. Rumex crispus	2	N	FAC
6. Dipsacus fullonum	5	N	FAC
7. Plantago major	5	N	FAC
8. unkn. grasses **	15	N	*
9.			
10.			
11.			
	117	= Total Cover	

Woody Vine Stratum (Plot size: 5ft)			
1. Ø			
2.			
	Ø	= Total Cover	

% Bare Ground in Herb Stratum 15

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

5 - Wetland Non-Vascular Plants[1]

X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: ** not identifiable this time of year.

SHN Consulting Engineers & Geologists, Inc.

SOIL

Sampling Point: TP10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-24								
0-21	10YR 3/2	100	none				L	
21-24	10YR 3/2	100	none				SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: occasional rounded gravel.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5) UO
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SHN Consulting Engineers & Geologists, Inc.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Foster Avenue City/County: Humboldt Sampling Date: 12/19/17

Applicant/Owner: Arcata Land Co. State: CA Sampling Point: TP114

Investigator(s): Cindy Wilcox & Greg OConnell Section, Township, Range: Sec. 19 T06N R01E

Landform (hillslope, terrace, etc.): marine terrace Local relief (concave, convex, none): none Slope (%): 3-4

Subregion (LRR): A, MLRA 4B Lat: 40.886768° Long: -124.103398° Datum: Humboldt

Soil Map Unit Name: Jollygiant 0-2% NWI classification: PEMID

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30-ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2. Ø			
3.			
4.			
	Ø	= Total Cover	

Sapling/Shrub Stratum (Plot size: 5-ft)			
1.			
2. Ø			
3.			
4.			
5.			
	Ø	= Total Cover	

Herb Stratum (Plot size: 5-ft)			
1. Festuca perennis	55	Y	FAC
2. Cerenium Molle	15	N	NL
3. Trifolium repens	15	N	FAC
4. Trifolium sp. (berseem)	5	N	NL
5. Dipsacus fullonum	5	N	FAC
6. Rumex crispus	3	N	FAC
7. unkn. grasses **	10	N	*
8.			
9.			
10.			
11.			
	107	= Total Cover	

Woody Vine Stratum (Plot size: 5-ft)			
1. Ø			
2.			
	Ø	= Total Cover	

% Bare Ground in Herb Stratum 20

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ~~*~~ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ✓ Yes _____ No _____

Remarks:

* not identifiable @ this time of year.

SN Consulting Engineers & Geologists, Inc.

SOIL

Sampling Point: PILU

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/1	100	∅				CL	
3-19	10YR 3/2	100	∅				SiCL	
19-24	10YR 3/2	100	∅				SiCL	looser material

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5) ND
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SHN Consulting Engineers & Geologists, Inc.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Foster Avenue City/County: Humboldt Sampling Date: 12/21/17

Applicant/Owner: Arcata Land Co. State: CA Sampling Point: TP12W

Investigator(s): Cindy Wilcox/Greg O'Connell Section, Township, Range: S 19&30 T06N R 01E

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR): A, MLRA 4B Lat: 40.884508° Long: -124.10 4427° Datum: Humboldt

Soil Map Unit Name: Jollygiant. 0-2% NWI classification: PEM 1B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ___	**Is the Sampled Area within a Wetland?** Yes ✓ No ___
Hydric Soil Present?	Yes ✓	No ___	
Wetland Hydrology Present?	Yes ✓	No ___	

Remarks: WETS above normal rainfall for September through November 2017

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix hookeriana	35	Y	FACW
2. Monterey cypress	10	Y*	NL
3.			
4.			
	45	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Rubus armeniacus	15	Y	FAC
2.			
3.			
4.			
5.			
	15	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. Scirpus microcarpus	25	Y	OBL
2. Oenanthe sarmentosa	10	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 5ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 75

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ___	x 1 = ___
FACW species ___	x 2 = ___
FAC species ___	x 3 = ___
FACU species ___	x 4 = ___
UPL species ___	x 5 = ___
Column Totals: ___ (A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks: * excluded from analysis b/c planted species (Put back in - CW)

SOIL

Sampling Point: TP 12W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/2	100					SiCL	
5-17	10YR 3/2	90	5YR 4/6	10	RM	M	SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 15-17"

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SHN Consulting Engineers & Geologists, Inc.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Foster Avenue City/County: Humboldt Sampling Date: 12/21/17

Applicant/Owner: Arcata Land Co. State: CA Sampling Point: TP134

Investigator(s): Cindy Wilcox & Greg OConnell Section, Township, Range: Sec. 19 T06N R01E

Landform (hillslope, terrace, etc.): marine terrace Local relief (concave, convex, none): none Slope (%): 1-2

Subregion (LRR): A, MLRA 4B Lat: 40.8638910 Long: -124.168450° Datum: Humboldt

Soil Map Unit Name: Jollygiant 0-2% NWI classification: PEMID

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks: On bank of man-made ditch of ottawa next to industrial building.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	2	Y	FAC ✓
2.			
3.			
4.			
	2 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 ft)			
1. Festuca perennis	25	Y	FAC
2. Dactylis glomerata	25	Y	FACU
3. Holcus lanatus	25	Y	FAC
4. Dipsacus fullonum	5	N	FAC
5. Conium maculatum	10	N	FAC
6. Juncus effusus	5	N	FACW
7. Juncus patens	5	N	FACW
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 5 ft)			
1. Ø			
2.			
	Ø = Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: Thatch layer

SHN Consulting Engineers & Geologists, Inc.

SOIL

Sampling Point: TP134

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/1	100					L	
2-23	10YR 3/2	70					CL	w/ gravel (rounded)
2-23	10YR 4/2	25	10YR 5/4	5			CL	pockets of redox/red. matrix juxtaposed w/ 10YR 3/2 Fill mix
								sharp contacts

Fill

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: Redox material not "insitu", but brought in as fill. Not hydric forming in place.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5) ND
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SHN Consulting Engineers & Geologists, Inc.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Foster Avenue City/County: Humboldt Sampling Date: 12/21/17

Applicant/Owner: Arcata Land CA State: CA Sampling Point: TP14U

Investigator(s): Cindy Wilcox & Greg OConnell Section, Township, Range: Sec. 19 T06N R01E

Landform (hillslope, terrace, etc.): marine terrace Local relief (concave, convex, none): none Slope (%): 1-2

Subregion (LRR): A, MLRA 4B Lat: 40.883879° Long: -124.109990° Datum: Humboldt

Soil Map Unit Name: Jollyglant 0-2% NWI classification: PEMID

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2. Ø			
3.			
4.			
	Ø	= Total Cover	

Sapling/Shrub Stratum (Plot size: 5 ft)			
1.			
2. Ø			
3.			
4.			
5.			
	Ø	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. Festuca perennis	40	Y	FAC
2. Dactylus glomerata	20	Y	FACU
3. Holcus lanatus	15	N	FAC
4. Conium maculata	15	N	FAC
5. Geranium molle	20	Y	NL
6. Raphanus sativa	10	N	NL
7.			
8.			
9.			
10.			
11.			
	120	= Total Cover	

Woody Vine Stratum (Plot size: 5 ft)			
1. Ø			
2.			
	Ø	= Total Cover	

% Bare Ground in Herb Stratum 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 30 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SHN Consulting Engineers & Geologists, Inc.

SOIL

Sampling Point: TP14U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20"	10YR 3/1	100					SL	Fill

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: plastic bag ~ 6" below soil surface

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5) ✓ 0
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Foster Avenue City/County: Arcata / Humboldt Sampling Date: 5/11/20

Applicant/Owner: Arcata Lundco State: CA Sampling Point: TP 154

Investigator(s): Joseph Sater, Cindy Wilcox Section, Township, Range:

Landform (hillslope, terrace, etc.): Alluvial Plain Local relief (concave, convex, none): Concave * Slope (%): 0-2%

Subregion (LRR): A MLRA 4B Lat: 40.864083 Long: -124.104651 Datum: Humboldt

Soil Map Unit Name: Jolly Urban 0-2% NWI classification: PEMIB

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? N Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No _____
Hydric Soil Present?	Yes _____ No ✓	
Wetland Hydrology Present?	Yes _____ No ✓	

Remarks: Pit excavated in man-made agricultural ditch draining upland

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Herb Stratum (Plot size: 5ft)			
1. Bromus hordeaceus	30	Y	FACU
2. Vicia sativa	15	Y	UPL
3. Rumex crispus	3	N	FAC
4. Holcus lanatus	20	Y	FAC
5. Anthoxanthum odoratum	15	Y	FACU
6. Ranunculus repens	10	N	FAC
7. Briza maxima	1	N	NL
8. Sonchus oleraceus	4	N	UPL
9. Geranium dissectum	3	N	NL
10. Bromus diandrus	5	N	NL
11. Dipsacus fullonum	8	N	FAC
Avena barbata	5	N	NL
	= Total Cover		

Woody Vine Stratum (Plot size:)			
1. Festuca perennis	5	N	FAC
2.			
	114 = Total Cover		

% Bare Ground in Herb Stratum 0 (24.8)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL/NL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: TP 15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR3/2	100					SCL	
9-15	10YR3/2	>99	7.5YR5/8	0.5%	C	PL	SiCL	Along dead root channels
			5YR4/6	0.5%	C	PL		
15-24+	10YR3/2	97	7.5YR5/8	3%	C	M	SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): N/A

Water Table Present? Yes _____ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): N/A

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: TP excavated w/i man-made ditch draining upland areas

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Foster Avenue City/County: Arcata / Humboldt Sampling Date: 5/11/20
Applicant/Owner: Arcata Land Co. State: CA Sampling Point: TP164
Investigator(s): Cindy Wilcox, Joseph Sabo Section, Township, Range:
Landform (hillslope, terrace, etc.): drainage ditch Local relief (concave, convex, none): concave Slope (%): 0-1
Subregion (LRR): A MLRA 4B Lat: 40.864871 Long: -124.104784 Datum:
Soil Map Unit Name: Jolly Gulch 0-2% NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? N Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: Excavated manmade ditch along access road

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Rubus armeniacus	15	Y	FAC
2.			
3.			
4.			
5.			
	15 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Festuca myuros (vulpia)	15	Y	FACU
2. Raphanus sativus	10	Y	NL
3. Holcus lanatus	35	Y	FAC
4. Briza maxima	3	N	NL
5. Agrostis stolonifera	10	Y	FAC
6. Dipsacus fullonum	5	N	FAC
7. Geranium dissectum	2	N	NL
8. Vicia sativa	3	N	UPL
9. Festuca perennis	10	Y	FAC
10. Rumex crispus	5	N	FAC
11. Rumex acetosella	5	N	FAC
	103 = Total Cover		
	20.6		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 6%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 66 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: TP 16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 5/2	100					SL	collection of debris from workyard - woody debris, sand layers, black burned woody debris
12-24+	2.5Y 3/1	85	10YR 5/8	15	C	M	SiCL	→ Native Soil

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✗ Depth (inches): N/A

Water Table Present? Yes _____ No ✗ Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes _____ No ✗ Depth (inches): N/A

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Foster Avenue City/County: Arcata / Humboldt Sampling Date: 5/11/20

Applicant/Owner: Arcata Land Co. State: CA Sampling Point: TP 17W

Investigator(s): Joseph Sabol, Cindy Wilcox Section, Township, Range: Sec 19 T6N R1E

Landform (hillslope, terrace, etc.): drainage ditch Local relief (concave, convex, none): concave Slope (%): 0-1

Subregion (LRR): A MLRA 4B Lat: 40.883854 Long: -124.108543 Datum:

Soil Map Unit Name: Jolly Giant 0-20% NWI classification: PEMB

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? N Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: Excavated ditch on western boundary

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	7	Y	FAC
2.			
3.			
4.			
	7	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Rubus armeniacus	10	Y	FAC
2.			
3.			
4.			
5.			
	10	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. Oenanthe sarmentosa	40	Y	OBL
2. Equisetum arvense	28	N	FAC
3. Raphanus sativus	30	Y	NL
4. Anthoxanthum odoratum	30	Y	FACU
5. Dipsacus fullonum	5	N	FAC
6. Vicia sativa	4	N	UPL
7. Vicia tetrasperma	2	N	NL
8. Rumex acetosella	1	N	FACU
9. Agrostis stolonifera	4	N	FAC
10.			
11.			
	144 / 28.8	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum Ø

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: * Multiple herbaceous layers present.

SOIL

Sampling Point: TP 17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 3/2	88	5YR 5/6	12	C	PL	SiCL ←	Sand/as preset, fill
9-27+	2.5Y 4/1	50%					SCL ←	Cobble/fill present + gravel
	10YR 5/8	50						Pockets of sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: No reaction to a-a-d

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- X Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5) N
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes X No ___ Depth (inches): 23 in

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 16 in

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

* Excavated within man-made ditch



Eureka, CA | Arcata, CA | Redding, CA | Willits, CA | Coos Bay, OR | Klamath Falls, OR

www.shn-engr.com

Federal Emergency Management Agency

Washington, D.C. 20472

JUN 2 1 2017

IN REPLY REFER TO:

The Honorable Virginia Bass
Chair, Humboldt County
Board of Supervisors
825 5th Street
Room 111
Eureka, California 95501

Case Number: 11-09-0847V
Community: Humboldt County, California
(Unincorporated Areas)
Community No.: 060060
Effective Date: June 22, 2017
Revised FIRM Panel Nos.:
06023C0005G, 06023C0010G, 06023C0015G, 06023C0020G, 06023C0155G, 06023C0160G, 06023C0320G, 06023C0330G, 06023C0340G, 06023C0350G, 06023C0485G, 06023C0495G, 06023C0515G, 06023C0525G, 06023C0660G, 06023C0670G, 06023C0680G, 06023C0830G, 06023C0835G, 06023C0839G, 06023C0840G, 06023C0843G, 06023C0845G, 06023C0852G, 06023C0854G, 06023C0855G, 06023C0865G, 06023C0985G, 06023C0990G, 06023C0995G, 06023C1005G, 06023C1015G, 06023C1025G, 06023C1170G, 06023C1180G, 06023C1190G, 06023C1195G, 06023C1360G, 06023C1370G, 06023C1390G, 06023C1400G, 06023C1555G, 06023C1565G, 06023C1575G, 06023C1730G, 06023C1735G, 06023C1745G, 06023C1765G, 06023C1770G, 06023C1775G, 06023C1910G, 06023C1930G, 06023C1935G, 06023C1940G, 06023C1945G

REVALIDATION 2

Dear Ms. Bass:

When a new National Flood Insurance Program (NFIP) map panel becomes effective, it automatically supersedes previously issued Letter of Map Change (LOMC) actions (i.e., Letters of Map Revision-based on Fill [LOMR-Fs] and Letters of Map Amendment [LOMAs]) that have been issued on that map panel, even if they are still valid and should apply to the new NFIP map as well. Because a revised NFIP map has been prepared for your community, it is necessary for the Federal Emergency Management Agency (FEMA) to take administrative action to prevent valid LOMR-Fs and LOMAs from being superseded. Accordingly, the purpose of this letter is to revalidate the determinations for properties and/or structures in your community as described in the LOMR-Fs and LOMAs previously issued by FEMA on the dates listed below. As of the above-referenced effective date, these LOMR-Fs and LOMAs will revise the effective NFIP map for the referenced community, dated June 21, 2017, and will remain in effect until superseded by a revision to the NFIP map panel on which the property is located.

Please be advised, the revalidation letter effective November 5, 2016, case number 07-09-0269V, for the Unincorporated Areas of Humboldt County has been superseded. All LOMR-Fs and LOMAs from that

letter have been reviewed and have been incorporated into this updated revalidation letter if appropriate. Please note all LOMCs with effective dates after November 5, 2016, that are located on non-revised panels for your community, will remain valid until superseded by a revision to the NFIP map panel on which the property is located. The LOMCs on non-revised NFIP map panels are not included in the table below. The FEMA case numbers, when available, property identifiers, Flood Insurance Rate Map (FIRM) Panel numbers, and current flood insurance zones of the revalidated LOMR-Fs and LOMAs are listed below.

Because these revalidated LOMR-Fs and LOMAs will not be printed or distributed to primary map users, such as local insurance agents and mortgage lenders, your community will serve as a repository for these new data. We encourage you to disseminate the information reflected by this letter throughout your community so that interested persons, such as property owners, local insurance agents, and mortgage lenders, may benefit from the information.

If you feel a LOMC has been omitted from the list that should have been included, we encourage you to submit the LOMC for re-determination. When requesting a re-determination, we ask that a cover letter be sent along with a copy of the original determination letter to: LOMC Clearinghouse, 3601 Eisenhower Avenue, Suite 500, Alexandria, Virginia 22304-6426.

If you have any questions regarding this matter, please contact the FEMA Regional Office at 111 Broadway Street, Suite 1200, Oakland, California or by phone at (510) 627-7100. Copies of previously issued LOMR-Fs and LOMAs, if needed, can be obtained by contacting the FEMA Map Information eXchange (FMIX), toll free at (877) 336-2627 (877-FEMA-MAP).

Sincerely,



Luis Rodriguez, P.E., Director
Engineering and Modeling Division
Federal Insurance and Mitigation Administration

cc: LOMC Subscription Service Subscribers
Community Map Repository
Mr. Todd Sobolik, Chief Building Official and Floodplain Administrator, Humboldt County

REVALIDATED LETTERS OF MAP CHANGE FOR HUMBOLDT COUNTY, CALIFORNIA

Case No: 11-09-0847V **Community No.: 060060**

June 22, 2017

Case No.	Date Issued	Project Identifier	Map Panel No.	Zone
95-09-334A	4/26/1995	SANTA CLARA TRACT, BLOCK 7, LOTS 1-4-- 2845 ESSEX ST.	06023C0845G	X
04-09-0207A	4/23/2004	90 EVERGREEN WAY -- PORTION OF SECTION 16, T2S, R2W, H.M.	06023C1575G	X
04-09-0449A	4/23/2004	1229 LIGHTHOUSE ROAD -- PORTION OF SECTION 16, T2S, R2W, H.M.	06023C1575G	X
05-09-0128A	3/23/2005	TRACT 488, PARCEL 3--2351 OAK RIDGE TERRACE LANE	06023C0865G	X
06-09-BD67A	8/15/2006	1889 COPENHAGEN ROAD	06023C1015G	X
09-09-0145A	11/4/2008	565 MCDONALD CREEK ROAD -- A PORTION OF SECTION 32, TOWNSHIP 10 NORTH, RANGE 1 EAST, HBM	06023C0330G	X
09-09-1845A	7/9/2009	62 SOLE AVENUE -- Lots 16 - 18, Block 5, King Salmon Resort	06023C1025G	X
10-09-0293A	12/8/2009	2426 & 2428 OLD ARCATA ROAD	06023C0854G	Multiple
12-09-1883A	6/7/2012	SECTIONS 23 & 24, T8N, R1W -- 94 STUMPTOWN ROAD	06023C0485G	X
12-09-3182A	11/8/2012	SECTION 29, T7N, R1E -- 1675 MURRAY ROAD	06023C0680G	X
13-09-1029A	1/31/2013	SANTA CLARA TRACT, BLOCK 7, LOTS 5-9 -- 2836 NORTH STREET	06023C0845G	X
13-09-2942A	9/19/2013	TRACT NO. 151, BEAU PRE SUBDIVISION, PORTION OF LOT 1 -- 3180 EAGLE LANE	06023C0680G	X

REVALIDATED LETTERS OF MAP CHANGE FOR HUMBOLDT COUNTY, CALIFORNIA

Case No: 11-09-0847V **Community No.: 060060**

June 22, 2017

Case No.	Date Issued	Project Identifier	Map Panel No.	Zone
14-09-1014A	1/30/2014	SECTION 24, T5N, R1W, HUMBOLDT MERIDIAN -- 2899 NORTH STREET	06023C0845G	X
14-09-2045A	4/15/2014	PARCEL MAP 2102, PARCEL 1 -- 979 PINE HILL ROAD	06023C0843G	X
14-09-2125A	4/29/2014	SECTION 32, T7N, R1E, HUMBOLDT MERIDIAN -- 1654 MURRAY ROAD	06023C0680G	X
14-09-2454A	5/13/2014	SECTION 24, T5N, R1W, HUMBOLDT MERIDIAN -- 2929 NORTH STREET	06023C0845G	X
14-09-2282A	5/29/2014	SECTION 18, T4S, R3E, HUMBOLDT MERIDIAN -- 6000 BRICELAND-THORN ROAD	06023C1975F	X
14-09-3628A	7/15/2014	MYERS TRACT, PORTION LOTS 98 & 113 -- 851 PINE HILL ROAD	06023C0843G	X
15-09-2485A	9/4/2015	EDWIN P. FREDRICKSON, PARCEL A -- 207 FREDRICKSON LANE	06023C0843G	X
17-09-0524A	1/9/2017	PARCEL MAP NO. 1655, PARCEL 1 -- 2473 GOLDFINCH LANE	06023C0680G	X
17-09-0857A	3/20/2017	SECTION 16, T2S, R2W -- 1311 LIGHTHOUSE ROAD	06023C1575G	X
17-09-0981A	3/31/2017	SECTION 26, T4N, R1W -- 8472 ELK RIVER ROAD	06023C1025G	X

REVALIDATED LETTERS OF MAP CHANGE FOR HUMBOLDT COUNTY, CALIFORNIA

Case No: 11-09-0847V **Community No.: 060060**

June 22, 2017

The letters shown below were revalidated by case number 07-09-0269V. They are revalidated automatically by this letter because they are not located on a revised FIRM panel.

Case No.	Date Issued	Project Identifier	Map Panel No.	Zone
92-09-087B	10/2/1992	TRACT 23, PACIFIC MANOR SUBDIV UNIT 1, LOT 11 -- 1999 UPPER BAY ROAD	06023C0690F	X
94-09-817A	9/20/1994	44 SOUTH 12TH STREET -- APN 200-353-18	06023C1209F	X
95-09-553A	6/16/1995	PORTION OF SECTION 16, T2S, R2W	06023C1575F	X
96-09-909A	9/3/1996	4651 PARTON LANE -- PORTION OF SECTION 17, T6N, R1E, H.M.	06023C0690F	X
97-09-262A	1/2/1997	PARCEL 1, PARCEL MAP NO. 438-- 4090 OLD RAILROAD GRADE ROAD	06023C0685F	X
97-09-502A	3/10/1997	2160 GLENDALE DRIVE -- PORTION OF SECTION 13, T6N, R1E, H.B.&M.	06023C0694F	X
97-09-1184A	10/23/1997	3422 FOSTER AVENUE -- PORTION OF SECTION 19, T6N, R1E, H.M.	06023C0690F	X
98-09-088A	10/30/1997	SIMPSON TIMBER CO, PORTION OF SECTIONS 19, 20, 29 & 30, T6N, R1E, H.M.	06023C0690F	X
98-09-786A	7/9/1998	3787 SPEAR STREET -- PORTION OF SECTION 20, T6N, R1E, H.M.	06023C0690F	X
98-09-1069A	9/18/1998	TRACT 25, LITTLE GOLDEN GATE SUBDIV, LOT 46 -- 280 ACKERMAN LANE	06023C1500F	X
99-09-057A	11/2/1998	TRACT 23, PACIFIC MANOR SUBDIV UNIT 1, LOT 13 -- 1987 UPPER BAY ROAD	06023C0690F	X

REVALIDATED LETTERS OF MAP CHANGE FOR HUMBOLDT COUNTY, CALIFORNIA

Case No: 11-09-0847V **Community No.: 060060**

June 22, 2017

Case No.	Date Issued	Project Identifier	Map Panel No.	Zone
99-09-201A	12/23/1998	TRACT 23, PACIFIC MANOR SUBDIV UNIT 1, LOT 2 -- 2068 ERNEST AVENUE	06023C0690F	X
99-09-813A	6/11/1999	3510 NEWBURG ROAD -- PARCEL 2, PARCEL MAP NO. 171	06023C1207F	X
99-09-915A	7/9/1999	220 MAPLE HILLS ROAD -- A PORTION OF SECTIONS 10 & 11, T3S, R3E, H.M.	06023C1850F	X
00-09-327A	2/24/2000	TRACT 64, PACIFIC MANOR SUBDIV UNIT 6, LOT 156 -- 2061 ERNEST WAY	06023C0690F	X
01-09-711A	6/6/2001	120 FRANCES GROVE LANE -- PARCEL MAP 3087, PARCEL 3	06023C1850F	X
02-09-699A	6/26/2002	3805 FOSTER AVENUE -- PORTION OF SECTION 30, T6N, R1E, H.M.	06023C0690F	X
02-09-1134A	7/17/2002	TRACT 27, RIVERSIDE ESTATES SUBDIV UNIT 1, LOTS 20 & 21 -- 72 KIRK COURT	06023C1455F	X
04-09-0105A	11/25/2003	151 ETTER RANCH ROAD -- PORTION OF SECTION 6, T4S, R2E, H.M.	06023C1825F	X
04-09-0003A	12/16/2003	220 CROSBY ROAD -- PORTION OF SECTION 8, T2N, R1W, H.M.	06023C1205F	X
04-09-0215A	1/7/2004	96 CHURCH LANE -- PORTION OF SECTION 31, T2N, R2E, H.M. (APN: 206-441-32)	06023C1275F	X

REVALIDATED LETTERS OF MAP CHANGE FOR HUMBOLDT COUNTY, CALIFORNIA

Case No: 11-09-0847V **Community No.: 060060**

June 22, 2017

Case No.	Date Issued	Project Identifier	Map Panel No.	Zone
04-09-0292A	2/13/2004	PORTION OF SECTION 14, T4S, R3E, H.M. (APN: 77-281-05)	06023C1980F	X
04-09-0561A	3/1/2004	176 CHURCH LANE -- PORTION OF SECTION 31, T2N, R2E, H.M. (APN: 206-431-006)	06023C1275F	X
05-09-0296A	2/1/2005	TRACT 72, KIMTU MEADOWS SUBDIV, LOT 12 -- 1653 KIMTU DRIVE	06023C1980F	X
05-09-1452A	9/7/2005	TRACT 64, LOT 149 -- 2043 ERNEST WAY	06023C0690F	X
05-09-1558A	9/7/2005	TRACT NO. 32, PACIFIC MANOR SUBDIV, UNIT 2, LOT 20 -- 3032 JANES ROAD	06023C0689F	X
05-09-1656A	10/4/2005	3018 JANES ROAD, PORT OF SEC 20, T6N, R1E, H.M.	06023C0689F	X
06-09-0237A	1/31/2006	72 LOVE LEE LANE	06023C1245F	X
07-09-1455A	7/10/2007	244 CHURCH LANE -- A PORTION OF SECTION 31, T2N, R2E, H.M.	06023C1275F	X
07-09-1966X	10/2/2007	BUILDINGS A-G -- 1749 ALAMAR WAY	06023C1209F	X
08-09-0321A	1/7/2008	PACIFIC MANOR SUBDIV, UNIT 2, LOT 24 -- 1957 EDITH DRIVE	06023C0869F	X
08-09-0439A	4/17/2008	PACIFIC MANOR SUBDIV 6, LOT 162 -- 2026 BALL COURT	06023C0690F	X
08-09-0899A	5/22/2008	LOT 42, TRACT 33, PACIFIC MANOR SUBDIVISION UNIT 3 -- 1984 LESLIE COURT	06023C0690F	X

REVALIDATED LETTERS OF MAP CHANGE FOR HUMBOLDT COUNTY, CALIFORNIA

Case No: 11-09-0847V **Community No.: 060060**

June 22, 2017

Case No.	Date Issued	Project Identifier	Map Panel No.	Zone
08-09-1269A	7/10/2008	MANOR SUBDIV, TRACT 33, UNIT 3, LOT 35 -- 3054 ALICE AVENUE	06023C0690F	X
08-09-1665A	9/4/2008	PACIFIC MANOR SUBDIV, BLOCK 3, LOT 55-- 1994 EDITH DRIVE	06023C0690F	X
09-09-0289A	12/18/2008	PACIFIC MANOR SUBDIV UNIT 3, TRACT 33, LOT 38 -- 3031 ALICE AVENUE	06023C0690F	X
09-09-0443A	1/13/2009	8821 & 8833 WEST END ROAD -- PORTION OF SECTION 15, T6N, R1E, H.M.	06023C0695F	X
09-09-0566A	7/2/2009	211 CHURCH LANE -- A PORTION OF SECTION 31, T2N, R2E, H.M.	06023C1275F	X
09-09-2422A	8/18/2009	77 LOVE LEE LANE -- A PORTION OF SECTION 26, T2N, R1E, H.M.	06023C1245F	X
09-09-2222A	9/17/2009	120 East Branch Road, Garberville, CA 95442	06023C1985F	X
09-09-2881A	10/20/2009	121 Northwestern Avenue -- Sec 36, T2N, R1W, Humboldt Meridian	06023C1220F	X
10-09-0703A	3/25/2010	(70-RS) PARCEL 1 -- 619 SHELTER COVE RD	06023C1975F	X
10-09-3805A	10/5/2010	(70-RS) TRACT 33, PACIFIC MANOR SUBDIVISION UNIT 3, LOT 37 -- 3030 ALICE AVENUE	06023C0690F	X
10-09-3644A	10/7/2010	(70-RS) TRACT NO. 33, PACIFIC MANOR SUBDIVISION UNIT NO. 3, LOT 27 -- 1983 EDITH DRIVE	06023C0690F	X

REVALIDATED LETTERS OF MAP CHANGE FOR HUMBOLDT COUNTY, CALIFORNIA

Case No: 11-09-0847V **Community No.: 060060**

June 22, 2017

Case No.	Date Issued	Project Identifier	Map Panel No.	Zone
11-09-0645A	1/6/2011	(70-OAS) SECTION 16, T2N, R1W, H.M. -- 434 HARBERS LANE	06023C1215F	X
11-09-1945A	4/26/2011	(70-RS) LOT 4, TRACT 48, RIVERCREST -- 33 RIVER CREST DRIVE	06023C1985F	X
11-09-2755A	6/7/2011	(70-RS) PACIFIC MANOR SUBDIVISION, UNIT 6, TRACT 64, LOT 167 – 2045 BALL COURT	06023C0690F	X
11-09-2812A	6/7/2011	(70-RS) PACIFIC MANOR SUBDIVISION UNIT 6, LOT 163 -- 2025 BALL COURT	06023C0690F	X
11-09-2956A	6/21/2011	(70-R) A PORTION OF SECTION 19, T6N, R1E, H.M. -- 3212 & 3266 FOSTER AVENUE	06023C0690F	X
11-09-3084A	6/30/2011	(70-RS) TRACT NO. 23, PACIFIC MANOR SUBDIVISION UNIT 1, LOT 17 -- 1963 UPPER BAY ROAD	06023C0690F	X
11-09-2871A	7/19/2011	(65-RS) PARCEL 3 -- 1455, 1465, 1487 SAND PRAIRIE COURT	06023C1209F	X
11-09-2789A	8/25/2011	(70-RS) SECTION 6, T1N, R2E -- 802 RIVERSIDE PARK ROAD	06023C1455F	X
11-09-4046A	11/1/2011	TRACT NO. 32, PACIFIC MANOR SUBDIVISION, UNIT 2, LOT 23 -- 3076 JANES ROAD	06023C0689F	X
12-09-0478A	1/10/2012	TRACT 33, PACIFIC MANOR UNIT 3, LOT 43 -- 1978 LESLIE COURT	06023C0690F	X

REVALIDATED LETTERS OF MAP CHANGE FOR HUMBOLDT COUNTY, CALIFORNIA

Case No: 11-09-0847V **Community No.: 060060**

June 22, 2017

Case No.	Date Issued	Project Identifier	Map Panel No.	Zone
12-09-0346A	1/24/2012	SECTION 6, T1N, R2E -- 36 FIR LOOP COURT	06023C1455F	X
12-09-1854A	6/12/2012	SECTION 24, T6N, R1E, HUMBOLDT MERIDIAN -- 2350 GLENDALE DRIVE	06023C0694F	X
12-09-2911A	9/5/2012	Lot 4, Tract No. 179 Subdivision - 600 River Bend Road	06023C0760F	X
12-09-2686A	9/13/2012	TRACT NO. 64 PACIFIC MANOR SUBDIVISION UNIT SIX, LOT 158 -- 2050 BALL COURT	06023C0690F	X
13-09-1485A	4/23/2013	SECTION 29, T2N, R1E -- 1919 RIVER BAR ROAD	06023C1240F	X
13-09-1201A	4/25/2013	SECTION 31, T2N, R2E, H.M. -- 18 CHURCH LANE	06023C1275F	X
13-09-1754A	4/25/2013	2862 STATE HIGHWAY 254	06023C1850F	X
13-09-2163A	7/23/2013	SECTION 6, T5S, R2E -- 600 HUCKLEBERRY LANE	06023C1975F	X
13-09-2450A	8/1/2013	TRACT NO. 48 RIVERCREST SUBDIVISION, LOT 7 -- 34 RIVER CREST	06023C1985F	X
14-09-0314A	12/12/2013	TRACT NO. 33, PACIFIC MANOR SUBDIVISION UNIT THREE, LOT 36 -- 3042 ALICE AVENUE	06023C0690F	X
14-09-0315A	12/12/2013	TRACT NO. 23, PACIFIC MANOR SUBDIVISION UNIT ONE, LOT 10 -- 3014 ALICE AVENUE	06023C0690F	X
14-09-0725A	2/20/2014	PORTION SECTION 7, T1N, R3E, HUMBOLDT BASE AND MERIDIAN -- 18995 STATE HIGHWAY 36	06023C1460F	X

REVALIDATED LETTERS OF MAP CHANGE FOR HUMBOLDT COUNTY, CALIFORNIA

Case No: 11-09-0847V **Community No.: 060060**

June 22, 2017

Case No.	Date Issued	Project Identifier	Map Panel No.	Zone
14-09-1976A	3/11/2014	PACIFIC MANOR SUBDIVISION UNIT NO. 1, LOT 15 -- 19 UPPER BAY ROAD	06023C0690F	X
14-09-3244A	7/24/2014	SECTION 30, T6N, R1E -- 1850 DOLLY VARDEN ROAD	06023C0690F	X
15-09-0145A	11/25/2014	TRACT 33 PACIFIC MANOR UNIT THREE, LOT 52 -- 3055 ALICE AVENUE	06023C0690F	X
16-09-0008A	11/5/2015	PACIFIC MANOR, UNIT 4, TRACT 46, LOT 92 -- 2020 ERNEST WAY	06023C0690F	X
16-09-0105A	11/13/2015	PARCEL MAP NO. 438, PARCEL 2 -- 4050 OLD RAILROAD GRADE ROAD	06023C0685F	X
16-09-0640A	12/11/2015	712 Price Creek School Road	06023C1220F	X
16-09-1552A	4/29/2016	PARCEL MAP NO. 1303, PARCEL 4 -- 5280 SOUTH QUARRY ROAD	06023C0860F	X
16-09-1541A	5/4/2016	3645 HEINDON ROAD	06023C0689F	X
16-09-1880A	6/10/2016	TRACT NO. 33 PACIFIC MANOR UNIT THREE, LOT 45 -- 1972 LESLIE COURT	06023C0690F	X

Federal Emergency Management Agency

Washington, D.C. 20472

OCT 30 1997

Mr. Charles J. Roecklein, P.E.
SHN Consulting Engineers & Geologists
812 West Wabash
Eureka, California 95501-2138

IN REPLY REFER TO CASE NO. 98-09-088A
Follows Case Nos. 97-09-013A and 97-09-917A
Community: Humboldt County, California
Community No.: 060060
Map Panel Affected: 0615 C
Map Effective Date: August 5, 1986
218-70-R

Dear Mr. Roecklein:

We reviewed your request dated June 26, 1997, for a Letter of Map Amendment (LOMA). All required information for this request was received on October 22, 1997. Using the information submitted and the effective National Flood Insurance Program (NFIP) map, we determined the property described below is not in a Special Flood Hazard Area (SFHA), the area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood).

Property Description: A portion of Sections 19, 20, 29, and 30, Township 6 North, Range 1 East, Humboldt Meridian, as shown on the survey recorded as Instrument No. 12226 in Book 12 of Surveys, Page 13, in the Office of the Recorder, Humboldt County, California See Below for affected parcels:

Flooding Source: Mad River

This letter amends the above-referenced NFIP map to remove the property from the SFHA. The property is now in Zone X (unshaded), an area of minimal flooding outside the SFHA.

This letter corrects the property description shown in the LOMA dated August 25, 1997.

The enclosed document provides additional information about LOMAs. If you have any questions about this letter, please contact Ms. Agnes De Coca of our staff in Washington, DC, either by telephone at (202) 646-2746 or by facsimile at (202) 646-4596.

Sincerely,

Frederick Sharrocks Jr.

Frederick H. Sharrocks, Jr., Chief
Hazard Identification Branch
Mitigation Directorate

Enclosure

cc: Community Map Repository

Affected parcels/ A.P.Ns.- 505-151-03
506-131-01 & 11
506-231-02, 04 & 05
507-181-07

APR 04 2001

Case No.: 01-09-300A LOMA

Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP AMENDMENT
DETERMINATION DOCUMENT (REMOVAL)

COMMUNITY AND MAP PANEL INFORMATION		LEGAL PROPERTY DESCRIPTION
COMMUNITY	CITY OF ARCATA, HUMBOLDT COUNTY, CALIFORNIA	A portion of Sections 19 and 20, Township 6 North, Range 1 East, Humboldt Meridian, described as Parcels 1, 2, 3, 101661, and 101737 in the Grant Deed recorded as Instrument No. 2000-12273-10, in the Office of the Recorder, Humboldt County, California
	COMMUNITY NO: 060061, 060060	
MAP PANEL AFFECTED	NUMBER: 0600610002 E, 0600600615 D	
	NAME: CITY OF ARCATA, HUMBOLDT COUNTY, CALIFORNIA	
	DATE: 11/05/1997, 02/08/1999	
FLOODING SOURCE: MAD RIVER		APPROXIMATE LATITUDE & LONGITUDE: 40.895; -124.104 SOURCE OF LATITUDE & LONGITUDE: PRECISION MAPPING STREETS 4.0

DETERMINATION

LOT	BLOCK/ SECTION	SUBDIVISION	STREET ADDRESS	OUTCOME WHAT IS REMOVED FROM THE SFHA	NEW FLOOD ZONE	1% ANNUAL CHANCE FLOOD ELEVATION (NGVD)	LOWEST ADJACENT GRADE ELEVATION (NGVD)	LOWEST FLOOR ELEVATION (NGVD)	LOWEST LOT ELEVATION (NGVD)
1	—	Section 20	—	Property	C	13.0 feet	—	—	26.0 feet

Special Flood Hazard Area (SFHA) – The **SFHA** is an area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood).

ADDITIONAL CONSIDERATIONS (if the appropriate box is checked, please refer to the appropriate section on Attachment 1)

☒ 1. DETERMINATION TABLE (CONTINUED)

☒ 2. ZONE A

This document provides the Federal Emergency Management Agency's determination regarding a request for a Letter of Map Amendment for the property described above. Using the information submitted and the effective National Flood Insurance Program (NFIP) map, we determined the [structure(s) on the] property is/are not located in the SFHA, an area inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood). This document amends the effective NFIP map to remove the [structure / property] from the SFHA; therefore, the federal mandatory flood insurance requirement does not apply. However, the lender has the option to continue the flood insurance requirement to protect its financial risk on the loan. A Preferred Risk Policy (PRP) is available for buildings located outside the SFHA. Information about the PRP and how one can apply is enclosed.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at 1-877-336-2627 (FEMA MAP) or by letter addressed to the FEMA LOMA DEPOT, 3601 Eisenhower Avenue, Suite 600, Alexandria, VA 22304-6439.

Matthew B. Miller

Matthew B. Miller, P.E., Chief
Hazards Study Branch
Mitigation Directorate

APR 0 4 2001

Case No.: 01-09-300A LOMA

Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP AMENDMENT
DETERMINATION DOCUMENT (REMOVAL)
ATTACHMENT 1 (ADDITIONAL CONSIDERATIONS)

1. DETERMINATION DOCUMENT TABLE (CONTINUED)

LOT	BLOCK/ SECTION	SUBDIVISION	STREET ADDRESS	OUTCOME WHAT IS REMOVED FROM THE SFHA	NEW FLOOD ZONE	1% ANNUAL CHANCE FLOOD ELEVATION (NGVD)	LOWEST ADJACENT GRADE ELEVATION (NGVD)	LOWEST FLOOR ELEVATION (NGVD)	LOWEST LOT ELEVATION (NGVD)
2	—	Sections 19 and 20	—	Property	C	16.0 feet	—	—	19.0 feet
3	—	Section 20	—	Property	C	15.0 feet	—	—	27.0 feet
101661	—	Section 19	—	Property	C	16.0 feet	—	—	18.0 feet
101737	—	Section 20	—	Property	C	16.0 feet	—	—	23.0 feet

2. ZONE A

The NFIP map affecting this property depicts an SFHA that was determined using the best flood hazard data available to FEMA, but without performing a detailed engineering analysis. The flood elevation used to make this determination is based on approximate methods and has not been formalized through the standard process for establishing base flood elevations published in the Flood Insurance Study. This flood elevation is subject to change.

This attachment provides additional information regarding this request. If you have any questions about this attachment, please contact the Federal Emergency Management Agency Map Assistance Center toll free at 1-877-336-2627 (FEMA MAP) or by letter addressed to the FEMA LOMA DEPOT, 3601 Eisenhower Avenue, Suite 600, Alexandria, VA 22304-6439.

Matthew B. Miller

Matthew B. Miller, P.E., Chief
Hazards Study Branch
Mitigation Directorate

9

Federal Emergency Management Agency

Washington, D.C. 20472

OCT 30 1997

Mr. Charles J. Roecklein, P.E.
SHN Consulting Engineers & Geologists
812 West Wabash
Eureka, California 95501-2138

IN REPLY REFER TO CASE NO. 98-09-088A
Follows Case Nos. 97-09-013A and 97-09-917A
Community: Humboldt County, California
Community No.: 060060
Map Panel Affected: 0615 C
Map Effective Date: August 5, 1986
218-70-R

Dear Mr. Roecklein:

We reviewed your request dated June 26, 1997, for a Letter of Map Amendment (LOMA). All required information for this request was received on October 22, 1997. Using the information submitted and the effective National Flood Insurance Program (NFIP) map, we determined the property described below is not in a Special Flood Hazard Area (SFHA), the area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood).

Property Description: A portion of Sections 19, 20, 29, and 30, Township 6 North, Range 1 East, Humboldt Meridian, as shown on the survey recorded as Instrument No. 12226 in Book 12 of Surveys, Page 13, in the Office of the Recorder, Humboldt County, California See Below for affected parcels:

Flooding Source: Mad River

This letter amends the above-referenced NFIP map to remove the property from the SFHA. The property is now in Zone X (unshaded), an area of minimal flooding outside the SFHA.

This letter corrects the property description shown in the LOMA dated August 25, 1997.

The enclosed document provides additional information about LOMAs. If you have any questions about this letter, please contact Ms. Agnes De Coca of our staff in Washington, DC, either by telephone at (202) 646-2746 or by facsimile at (202) 646-4596.

Sincerely,

Frederick H. Sharrocks, Jr., Chief
Hazard Identification Branch
Mitigation Directorate

Enclosure

cc: Community Map Repository

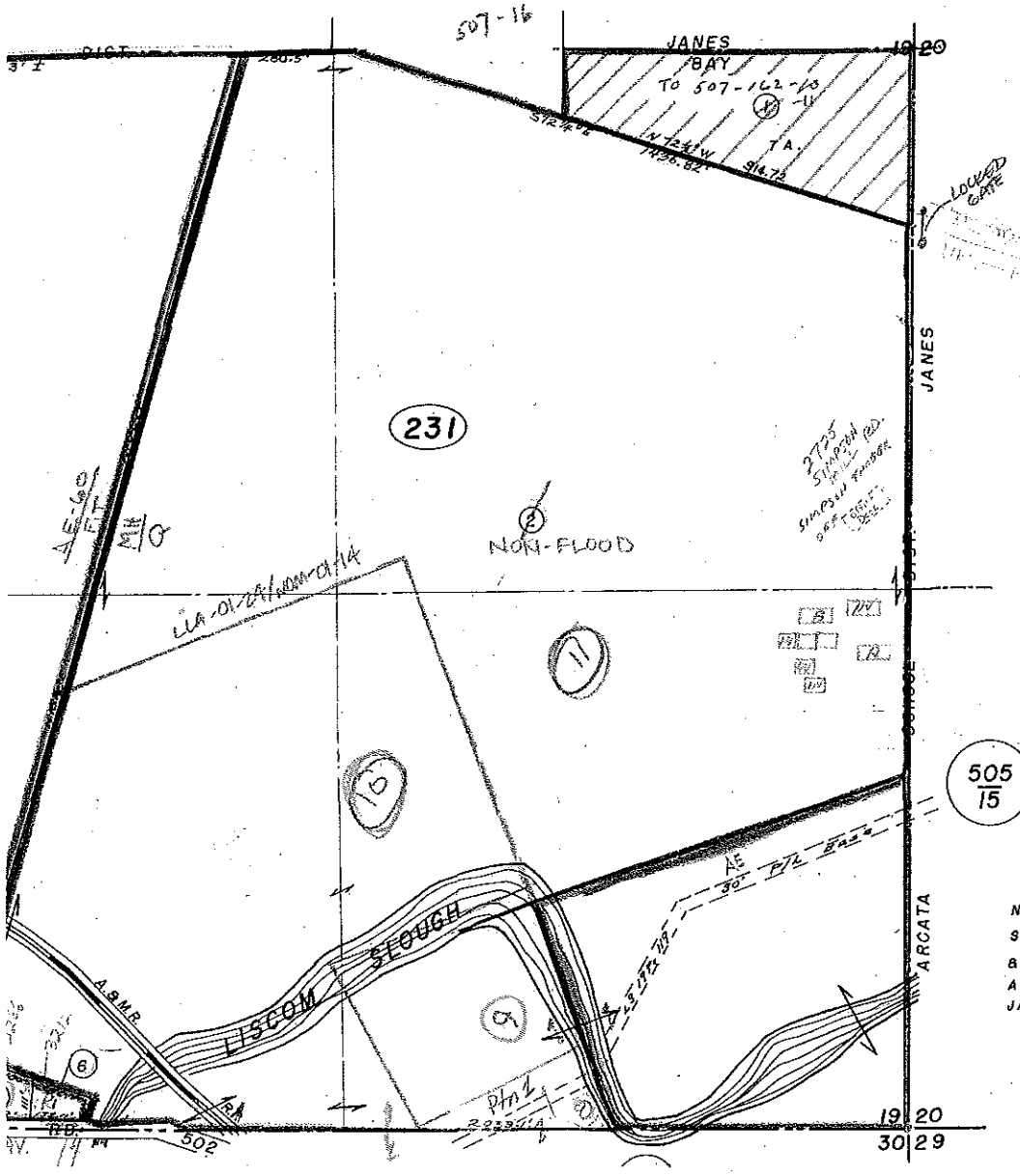
Affected Parcels/ A.P.Nos.: 505-151-03
506-131-01 & 11
506-231-02 04-05
507-181-07

changed to 009

PTN SE¼ SEC 19 6N 1E

2=F-14 CZ
I-20 INLAND

506-23
A-E



L S : 12 P 13
12 P 128
8 P 51
1A P 5

1" = 300'

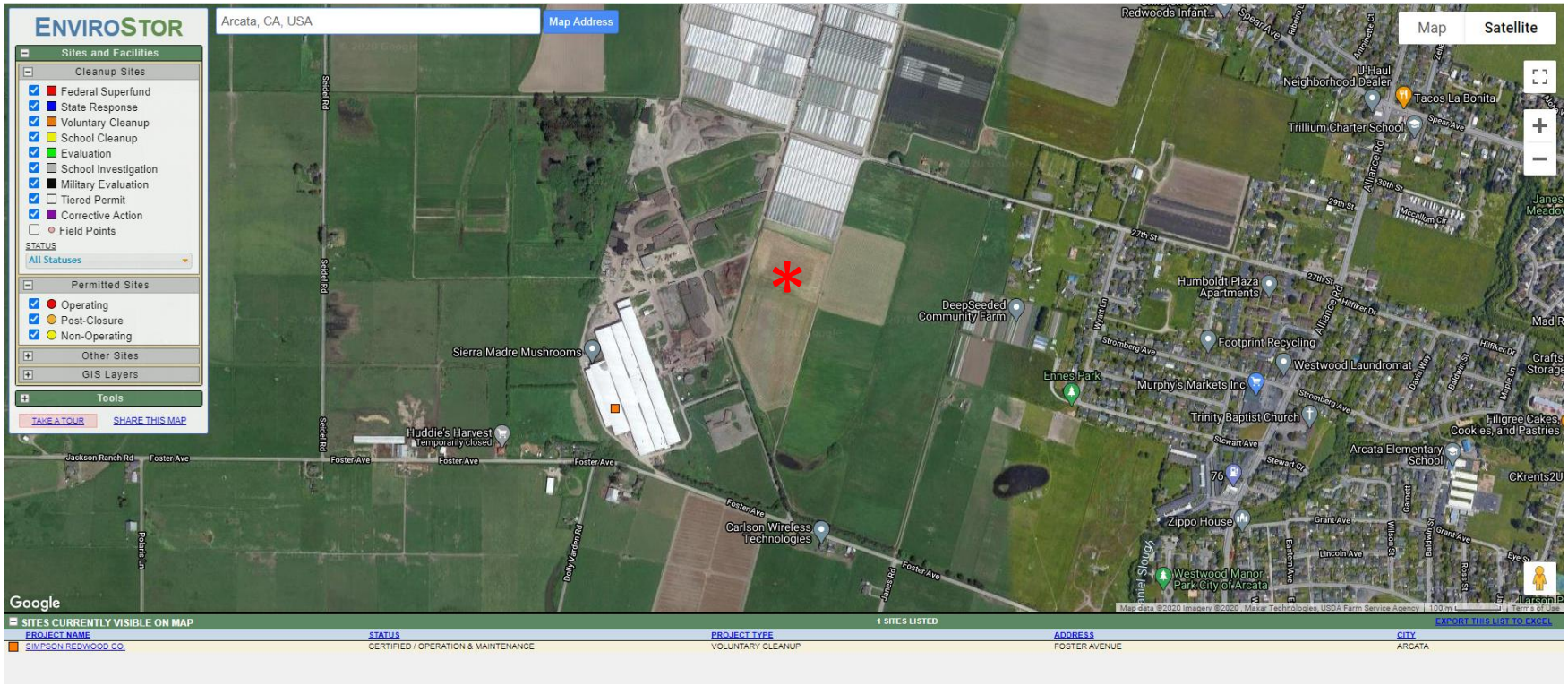
ALL

AE=60
F,T 9/10/85

MH 3/4/90
OR OLD FIRM

FIRM # 615
(510 A.E.)

NOTE: PTN ON N LN OF SE¼, N OF 506-231-02 & W OF 506-231-01 IS ASSESSED ENTIRELY IN JANES SCH. DIST.



EnviroStor records search (accessed September 30, 2020)

PARTNER
Engineering and Science, Inc.



PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT

The Sun Valley Group Arcata Properties
3160 Upper Bay Road
Arcata, California 95521

Report Date: June 2, 2015
Partner Project No. 15-139484.1



Prepared for:

The Sun Valley Group, Inc.
3160 Upper Bay Road
Arcata, California 95521

PARTNER
Engineering and Science, Inc.

June 2, 2015

Robert Jenkins
The Sun Valley Group, Inc.
3160 Upper Bay Road
Arcata, California 95521

Subject: Phase I Environmental Site Assessment
3160 Upper Bay Road
Arcata, California 95521
Partner Project No. 15-139484.1

Dear Mr. Jenkins:

Partner Engineering and Science, Inc. (Partner) is pleased to provide the results of the *Phase I Environmental Site Assessment* (Phase I ESA) report of the abovementioned address (the "subject property"). This assessment was performed in general conformance with the scope and limitations as detailed in the ASTM Practice E1527-13 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.

This assessment included a site reconnaissance as well as research and interviews with representatives of the public, property ownership, site manager, and regulatory agencies. An assessment was made, conclusions stated, and recommendations outlined.

We appreciate the opportunity to provide environmental services to you. If you have any questions concerning this report, or if we can assist you in any other matter, please contact me at (415) 992-3755.

Sincerely,

Jay Grenfell
Relationship Manager

2154 Torrance Blvd., Suite 200, Torrance, CA 90501 ◊ Phone 800-419-4923 ◊ Fax 866-928-7418

EXECUTIVE SUMMARY

Partner Engineering and Science, Inc. (Partner) has performed a Phase I Environmental Site Assessment (ESA) in general accordance with the scope of work and limitations of ASTM Standard Practice E1527-13, the Environmental Protection Agency Standards and Practices for All Appropriate Inquiries (AAI) (40 CFR Part 312) and set forth by The Sun Valley Group, Inc. for the property located at 3160 Upper Bay Road in the City of Arcata, Humboldt County, California (the "subject property"). The Phase I Environmental Site Assessment is designed to provide The Sun Valley Group, Inc. with an assessment concerning environmental conditions (limited to those issues identified in the report) as they exist at the subject property.

Property Description

The subject property is located on the south side of Upper Bay Road and Lanphere Road, the north side of Foster Avenue, the east side of Seidel Road and the western terminus of 27th Street within a mixed commercial, agricultural and residential area of unincorporated Humboldt County. Please refer to the table below for further description of the subject property:

Subject Property Data	
Address:	3160 Upper Bay Road, Arcata, California
Additional Addresses:	3318 Foster Avenue, 2725 Simpson Mill Road, 4044 Lanphere Road, 2353 Seidel Road and 1780 27th Street
Historical Address:	3315 Foster Avenue
Property Use:	Agricultural flower bulb production, Storage and Offices
Land Acreage:	Approximately 520 Acres
Number of Floors:	One and two
Date of Development:	Residential: 1947; Lumber mill: 1951; Floral Farm: 1969
Assessor's Parcel Numbers (APNs):	505-151-003, 505-151-004, 505-151-005, 505-161-009, 506-131-011, 506-131-014, 506-131-015, 506-131-016, 506-231-004, 506-231-005, 506-231-010, 506-231-011, 506-241-016, 507-181-007, 506-231-009, 507-162-003, 506-241-003, 507-203-056, 507-162-013, 507-162-014 and 507-181-016
Type of Construction:	Varied
Current Tenants:	The Sun Valley Group, ABC Storage and Carlson Wireless
Site Assessment Performed By:	David Gerhardstein of Partner
Site Assessment Conducted On:	May 27, 2015

The subject property is currently occupied by The Sun Valley Group, ABC Storage, Carlson Wireless and several residential tenants for agricultural, commercial storage, office and residential use. Onsite operations consist of planting, growth and packaging of flower bulbs for sale as well as recreational vehicle storage and office use. In addition to the current structures, the subject property is also improved with agricultural bulb and hay fields; 11 groundwater wells; three diesel aboveground storage tanks (ASTs); two gasoline ASTs; one 30,000-gallon, one 500-gallon and two 100-gallon propane ASTs; more than 100 hoop houses; multiple natural gas boiler systems providing heat to greenhouses and hoop houses; six diesel-powered backup generators; agricultural and storm water drainage ditches; one lined

agricultural water retention pond and two storm water retention ponds; a large wooden water tank for fire suppression with electric and diesel-powered fire pumps; outdoor storage and soil stockpile yards; asphalt and gravel paved roads and parking areas; and perimeter fencing.

According to available historical sources, the subject property was formerly developed residentially as early as 1947; developed with a lumber mill between 1951 and circa 1989; and developed as a floral farm from 1969 to present day. Tenants on the subject property include residential tenants (1951-Present); Simpsons Redwood Company (1951-1989); The Sun Valley Group (1969-Present); and ABC Indoor RV Storage and Carlson Wireless (Present).

The immediately surrounding properties consist of residential and agricultural properties to the north, south, east and west.

According to data from an ongoing subsurface investigation on the subject property, as further discusses in Section 4.0, the depth and direction of groundwater in the vicinity of the subject property is inferred to be approximately two to 13 feet below ground surface (bgs) and flow toward the southeast.

Findings

A *recognized environmental condition (REC)* refers to the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property; due to release to the environment; under conditions indicative of a release to the environment; or under conditions that pose a material threat of a future release to the environment. The following was identified during the course of this assessment:

- The southern portion of the subject property was formerly occupied by the Simpson Redwood Company (Simpson) as a lumber mill and plywood manufacturer from 1951 until 1989. Prior to sale of the property, Simpson entered into a Voluntary Cleanup Agreement (VCA) with the California Department of Toxic Substances Control (DTSC) during February 1997 to assess potential environmental liability and cleanup any impacts that existed. Simpson engaged EnviroNet Consulting (EnviroNet) to perform a thorough environmental assessment of the property in 1997 which was completed in September 1997 and revealed multiple areas of the property with potentially significant impacts to soil and groundwater. The findings identified two former 5,000-gallon gasoline USTs, one 10,000-gallon diesel UST, and one 500-gallon unidentified UST which had been closed in place by filling with sand and concrete during 1985 and 1987 with oversight from the Humboldt County Environmental Health Department (HCEHD) as well as a groundwater hotspot containing a small plume of volatile organic compounds (VOCs) in the southeastern corner of the property and multiple other areas of concern related to the former manufacturing and maintenance operations at the property. As a result, EnviroNet recommended development and implementation of a remedial action workplan (RAP).

  A RAP was developed and approved by the DTSC in November 1997. Remedial actions commenced which included excavation and offsite disposal of approximately 8,600 cubic yards of soil as well as extraction and treatment of approximately 1.2 million gallons of groundwater. The DTSC issued a certification in February 1999 which stated that the completed remedial actions sufficiently addressed onsite contamination with the exception of the small VOC plume in

groundwater in the southeastern portion of the property. Groundwater monitoring was required to continue in that area in compliance with the 1998 Operations and Maintenance Plan implemented to monitor the natural attenuation of those impacts. Groundwater monitoring continued until 2013 which demonstrated a continued downward trend in concentrations of contaminants of concern (COCs). In September 2013 an agreement with Simpson's consultant, SHN Consulting Engineers and Geologists, Inc. (SHN), was reached with the Regional Water Quality Control Board (RWQCB) and DTSC to halt semi-annual groundwater monitoring with two additional events to take place in 2015 and review of the regulatory status for the case set for 2016.

As a result of the open VCA case with ongoing groundwater monitoring at the subject property, the former use, cleanup activities and ongoing monitoring program at the subject property represent a *REC*. However, based on the certified remedial actions that were undertaken, the regulatory oversight and identification of the responsible party with ongoing participation, as well as the downward trending concentrations of COCs in the only remaining area of the property under investigation, no additional investigation is recommended at this time.

A *controlled recognized environmental condition (CREC)* refers to a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls. The following was identified during the course of this assessment:

- Partner did not identify controlled recognized environmental conditions during the course of this assessment.

A *historical recognized environmental condition (HREC)* refers to a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls. The following was identified during the course of this assessment:

- Partner did not identify historical recognized environmental conditions during the course of this assessment.

An *environmental issue* refers to environmental concerns identified by Partner, which do not qualify as RECs; however, warrant further discussion. The following was identified during the course of this assessment:

- The subject property has been used for agricultural purposes since at least 1969 with agricultural chemicals such as pesticides, fungicides, herbicides and fertilizers in frequent use throughout the subject property. Based on the continued use of the subject property for agricultural purposes and the proper handing and usage of these materials to prevent potential releases, the historical and continued agricultural usage of the subject property should not represent a significant environmental concern. Should the property use change however, additional investigation may be

warranted to determine the potential for agricultural chemicals to have accumulated in the subsurface.

- Three concrete sumps, in the areas of the fungicide dip tank, chemical storage room and equipment were observed at the subject property. The sumps are used to catch and accumulate runoff from fungicide dipping operations, spills during mixing and formulation of agricultural chemicals and wash/rinse water from cleaning field applicator equipment. Occasionally these features have been known to crack or otherwise degrade to the point where materials can be released to the subsurface. All three sumps appeared to be in good condition at the time of partner's visit and are not expected to represent a significant environmental concern at this time.
- The subject property is equipped with one 30,000-gallon propane AST; two 1,000-gallon diesel ASTs; one 1,000-gallon gasoline AST; one 550-gallon diesel AST; one 550-gallon gasoline AST; one 500-gallon propane AST; six 250-gallon diesel ASTs; two 120-gallon motor oil ASTs; two 100-gallon propane ASTs; and one 50-gallon diesel fire pump AST. The ASTs are located throughout the subject property. With the exception of the propane tanks and 250-gallon diesel generators, all ASTs are equipped with secondary containment. No staining, leaks or spills were noted in the vicinity of the ASTs, and no releases were identified in regulatory agency research. Based on the good condition of equipment and lack of a release, these tanks are not expected to represent a significant environmental concern at this time.

Conclusions, Opinions and Recommendations

Partner has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-13 of 3160 Upper Bay Road in the City of Arcata, Humboldt County, California (the "subject property"). Any exceptions to, or deletions from, this practice are described in Section 1.5 of this report.

This assessment has revealed evidence of recognized environmental conditions and environmental issues in connection with the subject property. Based on the conclusions of this assessment, Partner recommends the following:

- The groundwater monitoring in the southeastern portion of the subject property should be continued in line with the DTSC Operations and Maintenance plan.

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1.0 INTRODUCTION

Partner Engineering and Science, Inc. (Partner) has performed a Phase I Environmental Site Assessment (ESA) in general conformance with the scope and limitations of ASTM Standard Practice E1527-13 and the Environmental Protection Agency Standards and Practices for All Appropriate Inquiries (AAI) (40 CFR Part 312) for the property located at 3160 Upper Bay Road in the City of Arcata, Humboldt County, California (the "subject property"). Any exceptions to, or deletions from, this scope of work are described in the report.

1.1 Purpose

The purpose of this ESA is to identify existing or potential Recognized Environmental Conditions (as defined by ASTM Standard E1527-13) affecting the subject property that: 1) constitute or result in a material violation or a potential material violation of any applicable environmental law; 2) impose any material constraints on the operation of the subject property or require a material change in the use thereof; 3) require clean-up, remedial action or other response with respect to Hazardous Substances or Petroleum Products on or affecting the subject property under any applicable environmental law; 4) may affect the value of the subject property; and 5) may require specific actions to be performed with regard to such conditions and circumstances. The information contained in the ESA Report will be used by Client to: 1) evaluate its legal and financial liabilities for transactions related to foreclosure, purchase, sale, loan origination, loan workout or seller financing; 2) evaluate the subject property's overall development potential, the associated market value and the impact of applicable laws that restrict financial and other types of assistance for the future development of the subject property; and/or 3) determine whether specific actions are required to be performed prior to the foreclosure, purchase, sale, loan origination, loan workout or seller financing of the subject property.

This ESA was performed to permit the *User* to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations on scope of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 U.S.C. §9601) liability (hereinafter, the "*landowner liability protections*," or "*LLPs*"). ASTM Standard E1527-13 constitutes "*all appropriate inquiry* into the previous ownership and uses of the *property* consistent with good commercial or customary practice" as defined at 42 U.S.C. §9601(35)(B).

1.2 Scope of Work

The scope of work for this ESA is in general accordance with the requirements of ASTM Standard E1527-13. This assessment included: 1) a property and adjacent site reconnaissance; 2) interviews with key personnel; 3) a review of historical sources; 4) a review of regulatory agency records; and 5) a review of a regulatory database report provided by a third-party vendor. Partner contacted local agencies, such as environmental health departments, fire departments and building departments in order to determine any current and/or former hazardous substances usage, storage and/or releases of hazardous substances on the subject property. Additionally, Partner researched information on the presence of activity and use limitations (AULs) at these agencies. As defined by ASTM E1527-13, AULs are the legal or physical restrictions or limitations on the use of, or access to, a site or facility: 1) to reduce or eliminate potential

exposure to hazardous substances or petroleum products in the soil or groundwater on the subject property; or 2) to prevent activities that could interfere with the effectiveness of a response action, in order to ensure maintenance of a condition of no significant risk to public health or the environment. These legal or physical restrictions, which may include institutional and/or engineering controls (IC/ECs), are intended to prevent adverse impacts to individuals or populations that may be exposed to hazardous substances and petroleum products in the soil or groundwater on the property.

If requested by Client, this report may also include the identification, discussion of, and/or limited sampling of asbestos-containing materials (ACMs), lead-based paint (LBP), mold, and/or radon.

1.3 Limitations

Partner warrants that the findings and conclusions contained herein were accomplished in accordance with the methodologies set forth in the Scope of Work. These methodologies are described as representing good commercial and customary practice for conducting an ESA of a property for the purpose of identifying recognized environmental conditions. There is a possibility that even with the proper application of these methodologies there may exist on the subject property conditions that could not be identified within the scope of the assessment or which were not reasonably identifiable from the available information. Partner believes that the information obtained from the record review and the interviews concerning the subject property is reliable. However, Partner cannot and does not warrant or guarantee that the information provided by these other sources is accurate or complete. The conclusions and findings set forth in this report are strictly limited in time and scope to the date of the evaluations. The conclusions presented in the report are based solely on the services described therein, and not on scientific tasks or procedures beyond the scope of agreed-upon services or the time and budgeting restraints imposed by the Client. No other warranties are implied or expressed.

Some of the information provided in this report is based upon personal interviews, and research of available documents, records, and maps held by the appropriate government and private agencies. This report is subject to the limitations of historical documentation, availability, and accuracy of pertinent records, and the personal recollections of those persons contacted.

This practice does not address requirements of any state or local laws or of any federal laws other than the all appropriate inquiry provisions of the LLPs. Further, this report does not intend to address all of the safety concerns, if any, associated with the subject property.

Environmental concerns, which are beyond the scope of a Phase I ESA as defined by ASTM include the following: ACMs, LBP, radon, and lead in drinking water. These issues may affect environmental risk at the subject property and may warrant discussion and/or assessment; however, are considered non-scope issues. If specifically requested by the Client, these non-scope issues are discussed in Section 6.3.

1.4 User Reliance

The Sun Valley Group, Inc. engaged Partner to perform this assessment in accordance with an agreement governing the nature, scope and purpose of the work as well as other matters critical to the engagement. All reports, both verbal and written, are for the sole use and benefit of The Sun Valley Group, Inc. Either

verbally or in writing, third parties may come into possession of this report or all or part of the information generated as a result of this work. In the absence of a written agreement with Partner granting such rights, no third parties shall have rights of recourse or recovery whatsoever under any course of action against Partner, its officers, employees, vendors, successors or assigns. Any such unauthorized user shall be responsible to protect, indemnify and hold Partner, Client and their respective officers, employees, vendors, successors and assigns harmless from any and all claims, damages, losses, liabilities, expenses (including reasonable attorneys' fees) and costs attributable to such Use. Unauthorized use of this report shall constitute acceptance of and commitment to these responsibilities, which shall be irrevocable and shall apply regardless of the cause of action or legal theory pled or asserted. Additional legal penalties may apply.

This report has been completed under specific Terms and Conditions relating to scope, relying parties, limitations of liability, indemnification, dispute resolution, and other factors relevant to any reliance on this report. Any parties relying on this report do so having accepted the Terms and Conditions for which this report was completed. A copy of Partner's standard Terms and Conditions can be found at http://www.partneresi.com/terms-and-conditions.php.

1.5 Limiting Conditions

The findings and conclusions contain all of the limitations inherent in these methodologies that are referred to in ASTM E1527-13.

Specific limitations and exceptions to this ESA are more specifically set forth below:

- Interviews with past owners, operators and occupants were not reasonably ascertainable, which constitutes a data gap. Based on information obtained from other historical sources (as discussed in Section 3.0), this data gap is not expected to alter the findings of this assessment.
- Partner was not able to document the historical use of the subject property prior to 1947. The following sources were reviewed during the course of this assessment and found to be limited: aerial photographs were not available prior to 1954; city directories were not available prior to 1977; topographic maps prior to 1947 were not reasonably ascertainable; and other historical sources such as fire insurance maps did not provide coverage of the subject property. This data failure is not considered critical and does not change the conclusions of this report.
- Partner was unable to determine the property use at five-year intervals, which constitutes a data gap. Except for property tax files and recorded land title records, which were not considered to be sufficiently useful, Partner reviewed all standard historical sources and conducted appropriate interviews.
- Partner submitted a Freedom of Information Act (FOIA) request to the Humboldt County Planning and Building Department for information pertaining to hazardous substances, underground storage tanks, releases, inspection records, etc. for the subject property. As of this writing, this agency has not provided documents pertinent to Partner's request. Based on information

obtained from other historical sources, this limitation is not expected to alter the overall findings of this assessment.

2.0 SITE DESCRIPTION

2.1 Site Location and Legal Description

The subject property at 3160 Upper Bay Road in Humboldt County, California is located on the south side of Upper Bay Road and Lanphere Road, the north side of Foster Avenue, the east side of Seidel Road and the western terminus of 27th Street. According to the Humboldt County Assessor, the subject property is described as APNS 505-151-003, 505-151-004, 505-151-005, 505-161-009, 506-131-011, 506-131-014, 506-131-015, 506-131-016, 506-231-004, 506-231-005, 506-231-010, 506-231-011, 506-241-016, 507-181-007, 506-231-009, 507-162-003, 506-241-003, 507-203-056, 507-162-013, 507-162-014 and 507-181-016, and ownership is currently vested in The Sun Valley Group, Inc..

Please refer to Figure 1: Site Location Map, Figure 2: Site Plan, Figure 3: Topographic Map, and Appendix A: Site Photographs for the location and site characteristics of the subject property.

2.2 Current Property Use

The subject property is currently occupied by The Sun Valley Group, ABC Storage, Carlson Wireless and several residential tenants for agricultural, commercial storage, office and residential use. Onsite operations consist of planting, growth and packaging of flower bulbs for sale as well as recreational vehicle storage and office use. In addition to the current structures, the subject property is also improved with agricultural bulb and hay fields; 11 groundwater wells; three diesel aboveground storage tanks (ASTs); two gasoline ASTs; one 30,000-gallon, one 500-gallon and two 100-gallon propane ASTs; more than 100 hoop houses; multiple natural gas boiler systems providing heat to greenhouses; six diesel-powered backup generators; agricultural and storm water drainage ditches; one lined agricultural water retention pond and two storm water retention ponds; a large wooden water tank for fire suppression with electric and diesel-powered fire pumps; outdoor storage and soil stockpile yards; asphalt and gravel paved roads and parking areas; and perimeter fencing.

The subject property is designated for industrial development by Humboldt County.

The subject property was identified in the Voluntary Cleanup Program (VCP); EnviroStor; Proposition 65 Records (Notify 65); Spills, Leaks, Investigations and Cleanups (SLIC); Land Disposal Sites (LDS); Registered Aboveground Storage Tank (AST); Historical Underground Storage Tanks (HIST UST); Facilities Index Data (CA FID) UST; Statewide Environmental Evaluation and Planning System (SWEEPS) UST; and Certified Unified Program Agency (CUPA) Listings databases in the regulatory database report, as further discussed in Section 4.2.

2.3 Current Use of Adjacent Properties

The subject property is located within a mixed residential and agricultural area of unincorporated Humboldt County. During the vicinity reconnaissance, Partner observed the following land use on properties in the immediate vicinity of the subject property:

Immediately Surrounding Properties

North: Upper Bay Road and Lanphere Road, beyond which are agricultural land and residences (3203 Upper Bay Road; 3635, 3851 and 4067 Lanphere Road; and 3485-3731 Spear Avenue)

Immediately Surrounding Properties

South: Residences, agricultural land and Foster Avenue, beyond which are additional residences and agricultural land (2665, 3067, 3266, 3364, and 3422 Foster Avenue)

East: Residences, agricultural land and the western terminus of 27th Street (1650, 1750, 1754, 1758, 1969 and 1971 27th Street; 1694 and 1698 29th Street; and 2160 Foster Avenue)

West: Seidel Road, beyond which are agricultural land and residences (2474, 3012 and 3466 Seidel Road)

An adjacent property to the south was identified in the CUPA Listings database, an adjacent property to the west was identified in the HIST UST database and an adjacent property to the north was identified in the CA FID UST and SWEEPS UST databases in the regulatory database report in the regulatory database report, as discussed in Section 4.2.

2.4 Physical Setting Sources

2.4.1 Topography

The United States Geological Survey (USGS) *Arcata North, California* Quadrangle 7.5-minute series topographic map was reviewed for this ESA. According to the contour lines on the topographic map, the subject property is located at approximately 20 feet above mean sea level (MSL). The contour lines in the area of the subject property indicate the area is sloping gently toward the west. The subject property is depicted on the 1972 map as developed with numerous small structures and a lumber mill.

A copy of the 1972 topographic map is included as Figure 3.

2.4.2 Hydrology

According to data from an ongoing subsurface investigation on the subject property, as further discussed in Section 4.0, the depth and direction of groundwater in the vicinity of the subject property is inferred to be approximately two to 13 feet below ground surface (bgs) and flow toward the southeast. The nearest surface water in the vicinity are the unnamed ponds located on the subject property.

According to onsite observations and information provided by the property owner, water for the subject property is provided by onsite groundwater wells and from the Humboldt Bay Municipal Water District. The sources of public water for the Humboldt Bay Municipal Water District are public groundwater wells located in the bed of the Mad River to the northeast of the City of Arcata.

2.4.3 Geology/Soils

The subject property is situated within the Coast Ranges geomorphic province of the State of California. According to information obtained from the United States Geological Survey (USGS), the area surrounding the subject property is underlain by alluvium and marine deposits of the Quaternary era. Soils from this series are characterized as alluvium, lake, playa and terrace deposits; unconsolidated and semi-consolidated. Soils of this area consist of mostly of non-marine deposits, with some marine deposits near the shore.

Based on information obtained from the United States Department of Agriculture (USDA) Natural Resources Conservation Service Web Soil Survey online database, the subject property is mapped as

Swainslough, Jollygiant, Arlynda, Dungan and Canalschool soils. These consist of very poorly drained soils in depressions, backswamps, low flood-plain steps, and reclaimed salt marshes formed in mixed alluvium on alluvial plains. Slopes range from 0 to 2 percent.

2.4.4 Flood Zone Information

Partner performed a review of the Flood Insurance Rate Map, published by the Federal Emergency Management Agency. According to Community Panel Number 0600600615D, dated February 8, 1999, the subject property appears to be located in Zone A, an area located within the 100-year and 500-year flood plains.

3.0 HISTORICAL INFORMATION

Partner obtained historical use information about the subject property from a variety of sources. A chronological listing of the historical data found is summarized in the table below:

Historical Use Information		
Period/Date	**Source**	**Description/Use**
1947-1951	Topographic Maps	Residential
1951-1969	Aerial Photographs, Agency Records, City Directories, Interviews, Previous Report, Sanborn Maps	Lumber mill and Residential
1969-1989	Aerial Photographs, Agency Records, City Directories, Interviews	Lumber Mill, Floral Farm and Residential
1989-Present	Aerial Photographs, Building Records, City Directories, Interviews, Onsite Observations, Agency Records	Flower Farm and Residential

Tenants on the subject property include residential tenants (1951-Present); Simpsons Redwood Company (1951-1989); The Sun Valley Group (1969-Present); and ABC Indoor RV Storage and Carlson Wireless (Present). Potential environmental concerns were identified in association with the current or former use of the subject property, as further discussed in Section 4.0.

3.1 Aerial Photograph Review

Partner obtained available aerial photographs of the subject property and surrounding area from Environmental Data Resources (EDR) on May 19, 2015. The following observations were noted to be visible on the subject property and adjacent properties during the aerial photograph review:

Date: 1954	*Scale: 1"=500'*
Subject Property:	Appears developed agriculturally across most of the property with a residences in the northern portion and one large building with large outdoor timber storage yards in the southern portion
North:	Appears developed agriculturally and residentially
South:	Appears developed agriculturally and residentially
East:	Appears developed agriculturally and residentially
West:	Appears developed agriculturally and residentially

Dates: 1956, 1969	*Scale: 1"=500'*
Subject Property:	The large building on the southern portion appears to have been expanded and new outdoor storage yards developed
North:	No significant changes visible
South:	No significant changes visible
East:	No significant changes visible
West:	No significant changes visible

Date: 1972	*Scale: 1"=500'*
Subject Property:	Appears under development in the northern and central portion
North:	No significant changes visible

Date: 1972		***Scale: 1"=500'***
South:	No significant changes visible	
East:	No significant changes visible	
West:	No significant changes visible	

Date: 1982		***Scale: 1"=500'***
Subject Property:	Appears developed with several larger buildings northern portion with roads and crops in the central and eastern portion and three ponds to the west of the timber storage yards	
North:	No significant changes visible	
South:	No significant changes visible	
East:	No significant changes visible	
West:	No significant changes visible	

Date: 1989		***Scale: 1"=500'***
Subject Property:	Appears additionally developed with greenhouses in the northern portion	
North:	No significant changes visible	
South:	No significant changes visible	
East:	No significant changes visible	
West:	No significant changes visible	

Date: 1998		***Scale: 1"=500'***
Subject Property:	Appears developed with more greenhouses in the northern and central portions and the outdoor storage yards in the southern portion appear empty	
North:	No significant changes visible	
South:	No significant changes visible	
East:	No significant changes visible	
West:	No significant changes visible	

Dates: 2005, 2009		***Scale: 1"=500'***
Subject Property:	Appears developed with many more greenhouses and hoop houses in the central portion as well as soil stockpiles in the storage yards and an additional pond in the western central portion	
North:	No significant changes visible	
South:	No significant changes visible	
East:	No significant changes visible	
West:	No significant changes visible	

Dates: 2010, 2012		***Scale: 1"=500'***
Subject Property:	Appears additionally developed with a pond in the northern central portion, to the west of the green houses	
North:	No significant changes visible	
South:	No significant changes visible	
East:	No significant changes visible	
West:	No significant changes visible	

Copies of reviewed aerial photographs are included in Appendix B.

3.2 Fire Insurance Maps

Partner reviewed the collection of Sanborn Fire insurance maps from EDR on May 13, 2015. Sanborn map coverage was not available for the subject property.

A copy of the EDR no coverage letter is included in Appendix B.

3.3 City Directories

Partner reviewed historical city directories obtained from EDR on May 22, 2015 for past names and businesses that were listed for the subject property and adjacent properties. The findings are presented in the following table:

City Directory Search for the Subject Property

Year(s)	Occupant Listed
1977	Sun Valley Bulb Farms (1780 27th Street)
1982	Sun Valley Bulb Farms (1780 27th Street)
1992	Sun Valley Bulb Farms (3160 Upper Bay Road); Sun Valley Farms (1780 27th Street)
1995	Sun Valley Bulb Farms (3160 Upper Bay Road)
1999	Sun Valley Floral Farms (3160 Upper Bay Road); Northcoast Environmental Construction (3318 Foster Avenue); Occupant Unknown (1780 27th Street)
2003	Sun Valley Floral Farms (3160 Upper Bay Road); Occupant Unknown (2353 Seidel Road); Arcata Land Co, Sun Valley Floral Farms (3318 Foster Avenue); Occupant Unknown (1780 27th Street)
2008	Sun Valley Floral Farms (3160 Upper Bay Road); Arcata Land Co, Sun Valley Floral Farms (3318 Foster Avenue)
2013	Sun Valley Floral Farms (3160 Upper Bay Road); Residential (2353 Seidel Road); ABC Indoor RV Storage, Arcata Land Co, Sierra Madre Mushrooms (3318 Foster Avenue)

According to the city directory review, the subject property has been occupied by an agricultural operation since at least 1977 and was briefly occupied by an environmental construction firm during 1999.

City Directory Search for Adjacent Properties

Year(s)	Occupant Listed
1958	Westwood Village Auto Body & Paint (1650 27th Street)
1963	Residential (1650 27th Street)
1968	Residential (1650 27th Street)
1973	Residential (1650 27th Street); Residential (1750 27th Street)
1977	Residential (1650 27th Street); Residential (1750 27th Street)
1982	Residential (1650 27th Street); Residential (1750 27th Street); Residential (1969 27th Street); Residential (1971 27th Street)
1992	Residential (3203 Upper Bay Road); Residential (3466 Seidel Road); Residential (3067 Foster Avenue); Residential (3266 Foster Avenue); Residential (3364 Foster Avenue); Residential (3422 Foster Avenue); Residential (1750 27th Street); Residential (1971 27th Street)
1995	Residential (3067 Foster Avenue); Residential (3266 Foster Avenue); Residential (3364 Foster Avenue); Residential (3422 Foster Avenue); Occupant Unknown (1650 27th Street); Residential (1750 27th Street); Residential (1969 27th Street); Residential (1971 27th Street)
1999	Residential (2474 Seidel Road); Residential (3012 Seidel Road); Residential (3067 Foster Avenue); Residential (3266 Foster Avenue); Residential (3364 Foster Avenue); Residential

City Directory Search for Adjacent Properties	
Year(s)	**Occupant Listed**
	(3422 Foster Avenue); Occupant Unknown (1650 27th Street); Residential (1750 27th Street); Residential (1754 27th Street); Residential (1969 27th Street); Residential (1971 27th Street)
2003	Occupant Unknown (3203 Upper Bay Road); Residential (2474 Seidel Road); Residential (3067 Foster Avenue); Occupant Unknown (3266 Foster Avenue); Residential (3364 Foster Avenue); Residential (3422 Foster Avenue); Residential (1650 27th Street); Residential (1750 27th Street); Residential (1754 27th Street); Residential (1969 27th Street)
2008	Occupant Unknown (3203 Upper Bay Road); Residential (2474 Seidel Road); Residential (3067 Foster Avenue); Occupant Unknown (3266 Foster Avenue); Residential (3364 Foster Avenue); Residential (3422 Foster Avenue); Residential (1650 27th Street); Residential (1750 27th Street); Residential (1754 27th Street); Residential (1969 27th Street); Occupant Unknown (1971 27th Street)
2013	Residential (3203 Upper Bay Road); Residential (2474 Seidel Road); Residential (3012 Seidel Road); Occupant Unknown (3466 Seidel Road); Residential (3067 Foster Avenue); Occupant Unknown (3266 Foster Avenue); Residential (3364 Foster Avenue); Residential (3422 Foster Avenue); Residential (1650 27th Street); Residential (1750 27th Street); Residential (1754 27th Street); Residential (1758 27th Street); Residential (1969 27th Street); Residential (1971 27th Street)

Based on the city directory review, no environmentally sensitive listings were identified for the adjacent property addresses.

Copies of reviewed city directories are included in Appendix B.

3.4 Historical Topographic Maps

Partner reviewed historical topographic maps obtained from EDR on May 13, 2015. The following observations were noted to be depicted on the subject property and adjacent properties during the topographic map review:

Date: 1947	
Subject Property:	Depicted with multiple small structures along the perimeter of the property and portions of a slough and railroad tracks in the southern portion
North:	Depicted with several small structures across a road
South:	Depicted with several small structures across a road
East:	Depicted with several small structures
West:	Depicted with several small structures across a road

Date: 1951	
Subject Property:	Depicted with a large building, several additional small buildings, roads and a railroad spur in the southern portion
North:	No significant changes depicted
South:	No significant changes depicted
East:	No significant changes depicted
West:	No significant changes depicted

Date:	*1959*
Subject Property:	Depicted with a lumber mill and water tanks in the southern portion
North:	No significant changes depicted
South:	No significant changes depicted
East:	No significant changes depicted
West:	No significant changes depicted

Date:	*1972*
Subject Property:	Depicted with a an expansion to the lumber mill and several additional small structures in the northern portion
North:	No significant changes depicted
South:	No significant changes depicted
East:	No significant changes depicted
West:	No significant changes depicted

Copies of reviewed topographic maps are included in Appendix B.

4.0 REGULATORY RECORDS REVIEW

4.1 Regulatory Agencies

4.1.1 Health Department

Regulatory Agency Data	
Name of Agency:	Humboldt County Environmental Health Department (HCEHD)
Point of Contact:	Norm Crawford
Agency Address:	100 H Street, Eureka, California
Agency Phone Number:	(707) 445-6215
Date of Contact:	May 19, 2015
Method of Communication:	In Person/Email

Summary of Communication:

According to records reviewed, the subject property currently has an open cleanup case related to former operations at the Simpson Redwood Company property located in the southern portion of the subject property. That portion of the property was occupied by the Simpson Redwood Company (Simpson) as a lumber mill and plywood manufacturer from 1951 until 1989. Prior to sale of the property, Simpson entered into a Voluntary Cleanup Agreement (VCA) with the California Department of Toxic Substances Control (DTSC) during February 1997 to assess potential environmental liability and cleanup any impacts that existed. Simpson engaged EnviroNet Consulting (EnviroNet) to perform a thorough environmental assessment of the property in 1997 which was completed in September 1997 and revealed multiple areas of the property with potentially significant impacts to soil and groundwater. The findings identified two former 5,000-gallon gasoline USTs, one 10,000-gallon diesel UST, and one 500-gallon unidentified UST which had been closed in place by filling with sand and concrete during 1985 and 1987 with oversight from the HCEHD as well as a groundwater hotspot containing a small plume of volatile organic compounds (VOCs) in the southeastern corner of the property and multiple other areas of concern related to the former manufacturing and maintenance operations at the property. As a result, EnviroNet recommended development and implementation of a remedial action workplan (RAP).

A RAP was developed and approved by the DTSC in November 1997 and remedial actions commenced which included excavation and offsite disposal of approximately 8,600 cubic yards of soil as well as extraction and treatment of approximately 1.2 million gallons of groundwater. The DTSC certified that the remedial actions sufficiently addressed onsite contamination in February 1999 with the caveat that groundwater monitoring continue for the small VOC plume in the southeastern potion of the property to monitor the natural attenuation of those impacts. Groundwater monitoring continued in that area until 2013 which demonstrated a continued downward trend in concentrations of contaminants of concern (COCs). In September 2013 an agreement with Simpson's consultant, SHN Consulting Engineers and Geologists, Inc. (SHN), was reached with the Regional Water Quality Control Board (RWQCB) and the DTSC to halt semi-annual groundwater monitoring with two additional events to take place in 2015 and review of the regulatory status for the case set for 2016.

The former use, cleanup activities and ongoing groundwater monitoring at the subject property represent a REC. However, based on the certified remedial actions that were undertaken, the regulatory oversight and identification of the responsible party with ongoing participation, as well as the downward trending concentrations of COCs in the only remaining area of the property under investigation, no additional investigation is recommended at this time.

Additionally, the subject property is regulated by the HCEHD for storage, use and generation of hazardous materials including pesticides, fungicides, herbicides, gasoline, diesel and waste oil and antifreeze. The most recent inspection of the property was conducted in June 2014 and revealed minor violations related to accuracy of chemical inventory and labeling of hazardous wastes. The inspector additionally directed The Sun Valley Group to discontinue use of the wash rack near the maintenance shop until an oil/water separator was installed in the area. Records further indicated that a monitoring report from 2003 indicated the presence of the fungicide chlorothalonil in surface water at concentrations as high as 1.6 microgram per liter (µg/L) and in an agricultural supply well at a concentration of 0.64 µg/L. No additional reports of impacts to surface water or groundwater from agricultural chemical use were found and the most recent data from surface water samples collected in the retention pond on the western central portion of the property revealed no detectable concentrations of pesticides in surface water. Based on the good condition of hazardous materials storage systems as well as the lack of significant violations or documented releases and the recent surface water data, the onsite storage and use of hazardous materials does not represent a significant environmental concern at this time.

A copy of pertinent documents is included in Appendix B.

4.1.2 Fire Department

Regulatory Agency Data	
Name of Agency:	Arcata Fire Protection District (AFPD)
Point of Contact:	Staff
Agency Address:	631 9th Street, Arcata, California
Agency Phone Number:	(707) 825-2000
Date of Contact:	May 19, 2015
Method of Communication:	Telephone
Summary of Communication:	No records regarding hazardous substance use, storage or releases, or the presence of USTs and AULs on the subject property were on file with the AFPD.

4.1.3 Air Pollution Control Agency

Regulatory Agency Data	
Name of Agency:	North Coast Unified Air Quality Management District (NCUAQMD)
Point of Contact:	Erin Squire
Agency Address:	707 L Street, Eureka, California
Agency Phone Number:	(707) 443-3093
Date of Contact:	May 19, 2015
Method of Communication:	Email/Telephone
Summary of Communication:	According to records reviewed, the subject property has been permitted to perform agricultural burns from 2004 through 2014 with regulation under smoke management plans. Additionally, the NCUAQMD received a notification in April 2007 for demolition activities related to removal of 1,600 square feet of asbestos containing roofing materials. Further, the subject property has a permit to operate (PTO) one incinerator for the disposal of untreated paper, cardboard and approved wood waste which was issued in

Regulatory Agency Data	
	October 2007. No violations were reported. Based on the nature of onsite operations covered by the NCUAQMD regulation, these records do not represent a significant environmental concern.

4.1.4 Regional Water Quality Agency

Regulatory Agency Data	
Name of Agency:	Regional Water Quality Control Board (RWQCB)
Point of Contact:	GeoTracker and Craig Hunt
Agency Address:	5550 Skylane Boulevard, Suite A, Santa Rosa, California
Agency Phone Number:	(510) 622-2300
Date of Contact:	May 19, 2015
Method of Communication:	Online/Email
Summary of Communication:	According to records reviewed, the subject property currently has an ongoing groundwater monitoring program related to the cleanup case for the former Simpson Redwood Company operations on the southern portion of the property, as previously discussed in Section 4.1.1. Additionally, the subject property was listed as a land disposal site (LDS) but no documentation was provided. Partner contacted Mr. Craig Hunt of the RWQCB who confirmed that the LDS listing was an error and the GeoTracker case listing has since been removed.

4.1.5 Department of Toxic Substances Control

Regulatory Agency Data	
Name of Agency:	California Department of Toxic Substances Control (DTSC)
Point of Contact:	EnviroStor
Agency Address:	1001 I Street, Sacramento
Agency Phone Number:	(800) 728-6942
Date of Contact:	May 19, 2015
Method of Communication:	Online
Summary of Communication:	According to records reviewed, the subject property currently has an ongoing groundwater monitoring program overseen by the DTSC related to the cleanup case for the former Simpson Redwood Company operations on the southern portion of the property, as previously discussed in Section 4.1.1.

4.1.6 Building/Planning Department

Regulatory Agency Data	
Name of Agency:	Humboldt Planning & Building Department (HPBD)
Point of Contact:	Counter Staff
Agency Address:	3015 H Street, Eureka, California
Agency Phone Number:	(707) 445-7245
Date of Contact:	May 19, 2015
Method of Communication:	Faxed Request/In Person

Regulatory Agency Data	
Summary of Communication:	At the time of Partner's visit to the HPBD and as of the date of this report, records were not yet available for review.

4.1.7 Oil & Gas Exploration

Regulatory Agency Data	
Name of Agency:	California Division of Oil, Gas and Geothermal Resources (DOGGR)
Point of Contact:	Well Finder
Agency Address:	801 K Street, Sacramento, California
Agency Phone Number:	(916) 445-9686
Date of Contact:	May 19, 2015
Method of Communication:	Online
Summary of Communication:	According to DOGGR maps online, no oil or gas wells are located on the subject property.

4.1.8 Assessor's Office

Regulatory Agency Data	
Name of Agency:	Humboldt County Assessor (HCA)
Point of Contact:	Website
Agency Address:	825 5th Street, Eureka, California
Agency Phone Number:	(707) 445-7663
Date of Contact:	May 19, 2015
Method of Communication:	Online
Summary of Communication:	According to records reviewed, the subject property is identified by APNs 505-151-003, 505-151-004, 505-151-005, 505-161-009, 506-131-011, 506-131-014, 506-131-015, 506-131-016, 506-231-004, 506-231-005, 506-231-010, 506-231-011, 506-241-016, 507-181-007, 506-231-009, 507-162-003, 506-241-003, 507-203-056, 507-162-013, 507-162-014 and 507-181-016.

4.2 Mapped Database Records Search

Information from standard federal, state, county, and city environmental record sources was provided by EDR. Data from governmental agency lists are updated and integrated into one database, which is updated as these data are released. The information contained in this report was compiled from publicly available sources and the locations of the sites are plotted utilizing a geographic information system, which geocodes the site addresses. The accuracy of the geocoded locations is approximately +/-300 feet.

Using the ASTM definition of migration, Partner considers the migration of hazardous substances or petroleum products in any form onto the subject property during the evaluation of each site listed on the radius report, which includes solid, liquid, and vapor.

4.2.1 Regulatory Database Summary

Radius Report Data				
Database	**Search Radius (mile)**	**Subject Property**	**Adjacent Properties**	**Sites of Concern**
Federal NPL or Delisted NPL Site	1.00	N	N	N
Federal CERCLIS Site	0.50	N	N	N
Federal CERCLIS-NFRAP Site	0.50	N	N	N
Federal RCRA CORRACTS Facility	1.00	N	N	N
Federal RCRA TSDF Facility	0.50	N	N	N
Federal RCRA Generators Site (LQG, SQG, CESQG)	0.25	N	N	N
Federal IC/EC Registries	0.50	N	N	N
Federal ERNS Site	Subject Property	N	--	--
State/Tribal Equivalent NPL	1.00	N	N	N
State/Tribal Equivalent CERCLIS	1.00	N	N	N
State/Tribal Landfill/Solid Waste Disposal Site	0.50	N	N	N
State/Tribal Leaking Storage Tank Site	0.50	N	N	N
State/Tribal Registered Storage Tank Sites (UST/AST)	0.25	**Y**	N	N
State/Tribal Voluntary Cleanup Sites (VCP)	0.50	**Y**	N	N
State/Tribal Spills	0.50	**Y**	N	N
Federal Brownfield Sites	0.50	N	N	N
State Brownfield Sites	0.50	N	N	N
EDR MGP	1.00	N	N	N
EDR US Hist Auto Station	0.25	N	N	N
EDR US Hist Cleaners	0.25	N	N	N
On-ASTM/AAI Databases	Varies	**Y**	**Y**	N

4.2.2 Subject Property Listings

The subject property was identified in the VCP; EnviroStor Database; Notify 65; SLIC; LDS; AST; HIST UST; CA FID UST; SWEEPS UST; and CUPA Listings databases in the regulatory database report, as further discussed below:

- The subject property, identified as Simpson Redwood Co, Sun Valley Bulb Farms, Sun Valley Floral Farms 3160 Upper Bay Road, Sun Valley Floral Farms – Arcata Division and, Arcata Remanufacturing and Simpson Timber Company Arcata at 1780 27th Street, 3160 Upper Bay Road and 3315 Foster Avenue is listed as a voluntary cleanup site with ongoing groundwater monitoring overseen by the DTSC, as previously discussed in Section 4.1.1. The subject property was additionally identified in the Notify 65 database, a listing of Proposition 65 reports regarding hazardous substances, but no relevant details are provided. Further, the subject property is identified as being equipped with ASTs totaling 33,875-gallons, some of which were previously removed, including one 10,000-gallon diesel UST, two 5,000-gallon gasoline UST and one 500-gallon gasoline UST which were closed in place in the 1980s, as previously discussed in Section

4.1.1. Finally, the subject property is listed as a land disposal site which is inaccurate and the result of an error which was formerly posted on the RWQCB's GeoTracker database, as previously discussed in Section 4.1.4. As previously discussed, the cleanup activities at the former Simpson Redwood Company property represents a REC. However, based on the regulatory status of the subject property with local agencies, the observed onsite conditions, and recent analytical data of surface and groundwater, these listing are not considered significant environmental concerns at this time

4.2.3 Adjacent Property Listings

An adjacent property to the north was identified in the CA FID UST and SWEEPS UST databases in the regulatory database report, as discussed below:

- The property, identified as Trout, Elmer B. at 3665 Spear Avenue and located adjacent to the north of the subject property, is identified as being equipped with one 550-gallon leaded gasoline UST. The status of the tank was not reported but releases or violations were found. Based on the overall small quantity, lack of an identified release, relative distance to the subject property and low permeability of the soil types in the vicinity, this listing is not expected to represent a significant environmental concern and it is unlikely that further regulatory file review for this site would alter the findings of this assessment.

An adjacent property to the south was identified in the CUPA Listings database in the regulatory database report, as discussed below:

- The property, identified as Bar M Organic Dairy and 3364 Foster Avenue and adjacent to the south of the subject property, is identified as being regulated by the HCEHD as an agricultural small quantity generator of hazardous waste and as having a hazardous materials business plan. No violations or releases are reported. Based on the small quantities, lack of identified releases and the direction of groundwater flow in the vicinity, this listing is not expected to represent a significant environmental concern and it is unlikely that further regulatory file review for this site would alter the findings of this assessment.

An adjacent property to the south was identified in the HIST UST database in the regulatory database report, as discussed below:

- The property, identified as Robert Graham at 3466 Seidel Road and adjacent to the west of the subject property, is listed as having been formerly equipped with one 300-gallon UST which was installed in 1945 and contained regular product. No releases were reported. Based on the overall small quantity, lack of an identified release, relative distance to the subject property buildings and low permeability of the soil types in the vicinity, this listing is not expected to represent a significant environmental concern and it is unlikely that further regulatory file review for this site would alter the findings of this assessment.

Based on the findings, vapor migration is not expected to represent a significant environmental concern at this time.

4.2.4 Sites of Concern Listings

No sites of concern are identified in the regulatory database report.

4.2.5 Orphan Listings

Three orphan listings are identified in the regulatory database report. The property subject property is identified as Arcata Remanufacturing on Foster Road, as discussed in Section 4.2.2.

A copy of the regulatory database report is included as Appendix C.

5.0 USER PROVIDED INFORMATION AND INTERVIEWS

In order to qualify for one of the *Landowner Liability Protections (LLPs)* offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the *Brownfields Amendments*), the *User* must conduct the following inquiries required by 40 CFR 312.25, 312.28, 312.29, 312.30, and 312.31. The *User* should provide the following information to the *environmental professional.* Failure to provide this information could result in a determination that *all appropriate inquiries* is not complete. The *User* is asked to provide information or knowledge of the following:

- Review Title and Judicial Records for Environmental Liens and AULs
- Specialized Knowledge or Experience of the User
- al Knowledge of the User
- Reason for Significantly Lower Purchase Price
- Commonly Known or *Reasonably Ascertainable* information
- Degree of Obviousness
- Reason for Preparation of this Phase I ESA

Fulfillment of these user responsibilities is key to qualification for the identified defenses to CERCLA liability. Partner requested our Client to provide information to satisfy User Responsibilities as identified in Section 6 of the ASTM guidance.

Pursuant to ASTM E1527-13, Partner requested the following site information from The Sun Valley Group, Inc. (User of this report).

User Responsibilities

Item	Provided By User	Not Provided By User	Discussed Below	Does Not Apply
Environmental Pre-Survey Questionnaire			X	
Title Records, Environmental Liens, and AULs			X	
Specialized Knowledge			X	
Actual Knowledge			X	
Valuation Reduction for Environmental Issues			X	
Identification of Key Site Manager	**Section 5.1.3**			
Reason for Performing Phase I ESA	**Section 1.1**			
Prior Environmental Reports		X		
Other		X		

PARTNER

5.1 Interviews

5.1.1 Interview with Owner

Mr. Dennis Workman, subject property owner representative, was not aware of any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the subject property; any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the subject property; or any notices from a governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products.

5.1.2 Interview with Report User

Mr. Dennis Workman, report user representative, is also the subject property owner representative, as previously discussed.

5.1.3 Interview with Key Site Manager

Mr. Dennis Workman, key site manager, is also the subject property owner and report user representative, as previously discussed.

5.1.4 Interviews with Past Owners, Operators and Occupants

Interviews with past owners, operators and occupants were not conducted since information regarding the potential for contamination at the subject property was obtained from other sources.

5.1.5 Interview with Others

As the subject property is not an abandoned property as defined in ASTM 1527-13, interview with others were not performed.

5.2 User Provided Information

5.2.1 Title Records, Environmental Liens, and AULs

Partner was not provided with title records or environmental lien and AUL information for review as part of this assessment.

5.2.2 Specialized Knowledge

No specialized knowledge of environmental conditions associated with the subject property was provided by the User at the time of the assessment.

5.2.3 Actual Knowledge of the User

No actual knowledge of any environmental lien or AULs encumbering the subject property or in connection with the subject property was provided by the User at the time of the assessment.

5.2.4 Valuation Reduction for Environmental Issues

No knowledge of valuation reductions associated with the subject property was provided by the User at the time of the assessment.

5.2.5 *Commonly Known or Reasonably Ascertainable Information*

The User did not provide information that is commonly known or *reasonably ascertainable* within the local community about the subject property at the time of the assessment.

5.2.6 *Previous Reports and Other Provided Documentation*

No previous reports or other pertinent documentation was provided to Partner for review during the course of this assessment.

6.0 SITE RECONNAISSANCE

The weather at the time of the site visit was sunny and clear. Refer to Section 1.5 for limitations encountered during the field reconnaissance and Sections 2.1 and 2.2 for subject property operations. The table below provides the site assessment details:

Site Assessment Data	
Site Assessment Performed By:	David Gerhardstein
Site Assessment Conducted On:	May 27, 2015

The table below provides the subject property personnel interviewed during the field reconnaissance:

Site Visit Personnel for 3160 Upper Bay Road (Subject Property)			
Name	**Title/Role**	**Contact Number**	**Site Walk* Yes/No**
Dennis Workman	Key Site Manager	(707) 825-5722	Yes

** Accompanied Partner during the field reconnaissance activities and provided information pertaining to the current operations and maintenance of the subject property*

Environmental concerns were identified during the onsite reconnaissance related to current and former USTs and ASTs, the storage, use, and generation of hazardous substances, and indications of subsurface investigations, as further discussed in Sections 6.1 and 6.2.

6.1 General Site Characteristics

6.1.1 Solid Waste Disposal

Solid waste generated at the subject property is disposed of in commercial dumpsters. An independent solid waste disposal contractor, Arcata Garbage Company, removes solid waste from the subject property. No evidence of illegal dumping of solid waste was observed during the Partner site reconnaissance.

6.1.2 Sewage Discharge and Disposal

Sanitary discharges from the subject property are directed to an onsite septic system, as further discussed in Section 6.1.7.

6.1.3 Surface Water Drainage

Storm water is removed from the subject property primarily by absorption into unpaved surfaces and direction to the retention pond located in the western central portion of the property.

The subject property appears to be a designated wetland area, based on information obtained from the United States Fish & Wildlife Service; however, a comprehensive wetlands survey would be required in order to formally determine actual wetlands on the subject property.

6.1.4 Source of Heating and Cooling

Heating and cooling systems as well as domestic hot water equipment are fueled by electricity and natural gas/propane provided by Pacific Gas & Electric and Sequoia Gas Company. The mechanical systems are comprised of split systems for the office buildings, large condensers for the cold storage and natural gas

and propane boiler systems for the greenhouses and hoop houses. Hot water is provided by individual natural gas hot water heater and large industrial boiler units.

6.1.5 Wells and Cisterns

The subject property is equipped with 11 agricultural supply wells. Several groundwater monitoring wells were observed in the southeastern portion of the subject property related to the ongoing groundwater monitoring program as previously discussed in Section 4.1.1.

6.1.6 Wastewater

Domestic wastewater generated at the subject property is disposed by means of the septic systems. No industrial or agricultural wastewater is directed to the septic systems.

6.1.7 Septic Systems

Two septic systems were reported to be present on the subject property.

6.1.8 Additional Site Observations

No additional general site characteristics were observed during the site reconnaissance.

6.2 Potential Environmental Hazards

6.2.1 Hazardous Substances and Petroleum Products Used or Stored at the Site

Partner identified hazardous substances used, stored, and/or generated on the subject property as noted in the following table:

Hazardous Substances and/or Petroleum Products Noted Onsite

Substance	Container Size	Location	Nature of Use	Disposal Method
Diesel	2x1,000-gallon, 1x550-gallon, 6x250-gallon and 1x50-gallon ASTs	Throughout	Equipment and backup generator fuel	N/A
Gasoline	1x1,000-gallon and 1x550-gallon ASTs	Fueling areas	Vehicle fuel	N/A
Liquefied propane	1x30,000-gallon, 1x500-gallon and 2x100-gallon ASTs	Throughout	Backup boiler and forklift fuel	N/A
Motor oil	2x120-gallon ASTs	Maintenance shop	Vehicle maintenance	N/A
Mineral spirits	5-gallon cans	Maintenance shop	Vehicle maintenance	N/A
Waste oil	55-gallon drums	Maintenance shop	Vehicle maintenance	Transported offsite by Asbury Environmental
Waste antifreeze	55-gallon drums	Maintenance shop	Vehicle maintenance	Transported offsite by Asbury Environmental
Waste oil filters	55-gallon drum	Maintenance shop	Vehicle maintenance	Transported offsite by Asbury Environmental

Hazardous Substances and/or Petroleum Products Noted Onsite				
Substance	**Container Size**	**Location**	**Nature of Use**	**Disposal Method**
Waste mineral spirits	5-gallon cans	Maintenance shop	Vehicle maintenance	Transported offsite by Asbury Environmental
Agricultural chemicals (pesticides, herbicides, fungicides, fertilizers and soil conditioners)	Various bags, plastic drums/containers and mixing tanks	Storage and mixing rooms	Flower production	Excess applied to crops

The materials were found to be properly labeled and stored at the time of the assessment with no signs of leaks, stains, or spills. Secondary containment is provided for the ASTs with the exception of the propane tanks and generators. Based on the nature of use, overall small quantities observed, presence of secondary containment, and lack of significant violations on-file with local agencies, these materials are not expected to represent a significant environmental concern.

Additionally, small quantities of general maintenance supplies were found to be properly labeled and stored at the time of the assessment with no signs of leaks, stains, or spills. The storage and use of maintenance supplies does not appear to pose a significant threat to the environmental integrity of the subject property at this time.

6.2.2 Aboveground & Underground Hazardous Substance or Petroleum Product Storage Tanks (ASTs/USTs)

No evidence of current or former USTs was observed during the site reconnaissance.

Partner observed one 30,000-gallon propane AST; two 1,000-gallon diesel ASTs; one 1,000-gallon gasoline AST; one 550-gallon diesel AST; one 550-gallon gasoline AST; one 500-gallon propane AST; six 250-gallon diesel ASTs; two 120-gallon motor oil ASTs; two 100-gallon propane ASTs; and one 50-gallon diesel fire pump AST. The ASTs are located throughout the subject property. With the exception of the propane tanks and 250-gallon diesel generators, all ASTs are equipped with secondary containment. No staining, leaks or spills were noted in the vicinity of the ASTs, and no releases were identified in regulatory agency research.

6.2.3 Evidence of Releases

No spills, stains or other indications that a surficial release has occurred at the subject property were observed.

6.2.4 Polychlorinated Biphenyls (PCBs)

Older transformers and other electrical equipment could contain PCBs at a level that subjects them to regulation by the U.S. EPA. PCBs in electrical equipment are controlled by United States Environmental Protection Agency regulations 40 CFR, Part 761. Under the regulations, there are three categories into

which electrical equipment can be classified: 1) Less than 50 parts per million (ppm) of PCBs – *"Non-PCB;"* 2) 50 ppm-500 ppm – *"PCB-Contaminated;"* and, 3) Greater than 500 ppm – *"PCB-Containing."* The manufacture, process, or distribution in commerce or use of any PCB in any manner other than in a totally enclosed manner was prohibited after January 1, 1977.

Two pad-mounted transformers were observed on the subject property. The transformers are not labeled indicating PCB content. No staining or leakage was observed in the vicinity of the transformers. Based on the good condition of the equipment, the transformers are not expected to represent a significant environmental concern.

No other potential PCB-containing equipment (interior transformers, oil-filled switches, hoists, lifts, dock levelers, hydraulic elevators, balers, etc.) was observed on the subject property during Partner's reconnaissance.

6.2.5 Strong, Pungent or Noxious Odors

No strong, pungent or noxious odors were evident during the site reconnaissance.

6.2.6 Pools of Liquid

No pools of liquid were observed on the subject property during the site reconnaissance.

6.2.7 Drains, Sumps and Clarifiers

Partner observed the following drains, sumps, and/or clarifiers located on the subject property:

Drains, Sumps, and Clarifiers Observed Onsite	
	Sumps
Number Observed:	Three
Location:	Equipment wash shed, dip tank room, chemical storage room
Point of Discharge:	N/A
Sealed/Bermed:	Yes

The sumps in the equipment wash shed and chemical storage room are pumped out as needed and applied to crops and fields. The sump in the dip tank area is pumped back into the dip tank as needed.

6.2.8 Pits, Ponds and Lagoons

No pits, ponds or lagoons were observed on the subject property.

6.2.9 Stressed Vegetation

No stressed vegetation was observed on the subject property.

6.2.10 Additional Potential Environmental Hazards

No additional environmental hazards, including landfill activities or radiological hazards, were observed.

6.3 Non-ASTM Services

6.3.1 *Asbestos-Containing Materials (ACMs)*

Asbestos is the name given to a number of naturally occurring, fibrous silicate minerals mined for their useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. The Occupational Safety and Health Administration (OSHA) regulation 29 CFR 1926.1101 requires certain construction materials to be *presumed* to contain asbestos, for purposes of this regulation. All thermal system insulation (TSI), surfacing material, and asphalt/vinyl flooring that are present in a building constructed prior to 1981 and have not been appropriately tested are "presumed asbestos-containing material" (PACM).

The subject property buildings were constructed as early as 1951. Partner has conducted a limited, visual evaluation of accessible areas for the presence of suspect ACMs at the subject property. The objective of this visual survey was to note the presence and condition of suspect ACM observed. Please refer to the table below for identified suspect ACMs:

Suspect ACMs

Suspect ACM	Location	Friable Yes/No	Physical Condition
Drywall Systems	Throughout Building Interiors	No	Good
Floor Tiles	Throughout Building Interiors	No	Good
Floor Tile Mastic	Throughout Building Interiors	No	Good
Roofing materials	Throughout Building Interiors	Yes	Good

The limited visual survey consisted of noting observable materials (materials which were readily accessible and visible during the course of the site reconnaissance) that are commonly known to potentially contain asbestos. This activity was not designed to discover all sources of suspect ACM, PACM, or asbestos at the site; or to comply with any regulations and/or laws relative to planned disturbance of building materials such as renovation or demolition, or any other regulatory purpose. Rather, it is intended to give the User an indication if significant (significant due to quantity, accessibility, or condition) potential sources of ACM or PACM are present at the subject property. Additional sampling, assessment, and evaluation will be warranted for any other use.

According to the US EPA, ACM and PACM that is intact and in good condition can, in general, be managed safely in-place under an Operations and Maintenance (O&M) Program until removal is dictated by renovation, demolition, or deteriorating material condition. Prior to any disturbance of the construction materials within this facility, a comprehensive ACM survey is recommended.

6.3.2 *Lead-Based Paint (LBP)*

Lead is a highly toxic metal that affects virtually every system of the body. LBP is defined as any paint, varnish, stain, or other applied coating that has 1 mg/cm^2 (or 5,000 ug/g or 0.5% by weight) or more of lead. Congress passed the Residential Lead-Based Paint Hazard Reduction Act of 1992, also known as "Title X", to protect families from exposure to lead from paint, dust, and soil. Under Section 1017 of Title X, intact LBP on most walls and ceilings is not considered a "hazard," although the condition of the paint

should be monitored and maintained to ensure that it does not become deteriorated. Further, Section 1018 of this law directed the Housing and Urban Development (HUD) and the US EPA to require the disclosure of known information on LBP and LBP hazards before the sale or lease of most housing built before 1978.

Based on the age of the subject property buildings (pre-1978), there is a potential that LBP is present. Interior and exterior painted surfaces were observed in good condition and therefore not expected to represent a "hazard," although the condition of the paint should be monitored and maintained to ensure that it does not become deteriorated.

Actual material samples would need to be collected in order to determine if LBP is present.

6.3.3 Radon

Radon is a colorless, odorless, naturally occurring, radioactive, inert, gaseous element formed by radioactive decay of radium (Ra) atoms. The US EPA has prepared a map to assist National, State, and local organizations to target their resources and to implement radon-resistant building codes. The map divides the country into three Radon Zones, according to the table below:

EPA Radon Zones

EPA Zones	Average Predicted Radon Levels	Potential
Zone 1	Exceed 4.0 pCi/L	Highest
Zone 2	Between 2.0 and 4.0 pCi/L	Moderate
Zone 3	Less than 2.0 pCi/L	Low

It is important to note that the EPA has found homes with elevated levels of radon in all three zones, and the US EPA recommends site-specific testing in order to determine radon levels at a specific location. However, the map does give a valuable indication of the propensity of radon gas accumulation in structures.

Radon sampling was not conducted as part of this assessment. Review of the US EPA Map of Radon Zones places the subject property in Zone 3. Based upon the radon zone classification, radon is not considered to be a significant environmental concern.

6.3.4 Lead in Drinking Water

According to onsite observations and information provided by the property owner, water for the subject property is provided by onsite groundwater wells and from the Humboldt Bay Municipal Water District. The sources of public water for the Humboldt Bay Municipal Water District are public groundwater wells located in the bed of the Mad River to the northeast of the City of Arcata. According to the 2013 Annual Water Quality Report, water supplied to the subject property is in compliance with all State and Federal regulations pertaining to drinking water standards, including lead and copper. Water sampling was not conducted to verify water quality.

6.3.5 Mold

Molds are microscopic organisms found virtually everywhere, indoors and outdoors. Mold will grow and multiply under the right conditions, needing only sufficient moisture (e.g. in the form of very high

humidity, condensation, or water from a leaking pipe, etc.) and organic material (e.g. ceiling tile, drywall, paper, or natural fiber carpet padding).

Partner observed accessible, interior areas for the subject property buildings for significant evidence of mold growth with the exceptions detailed in Section 1.5 of this report; however, this ESA should not be used as a mold survey or inspection. Additionally, this limited assessment was not designed to assess all areas of potential mold growth that may be affected by mold growth on the subject property. Rather, it is intended to give the client an indication as to whether or not conspicuous (based on observed areas) mold growth is present at the subject property. This evaluation did not include a review of pipe chases, mechanical systems, or areas behind enclosed walls and ceilings.

No obvious indications of water damage or mold growth were observed during Partner's visual assessment.

6.4 Adjacent Property Reconnaissance

The adjacent property reconnaissance consisted of observing the adjacent properties from the subject property premises. No items of environmental concern were identified on the adjacent properties during the site assessment, including hazardous substances, petroleum products, ASTs, USTs, evidence of releases, PCBs, strong or noxious odors, pools of liquids, sumps or clarifiers, pits or lagoons, stressed vegetation, or any other potential environmental hazards.

7.0 FINDINGS AND CONCLUSIONS

Findings

A *REC* refers to the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: due to release to the environment; under conditions indicative of a release to the environment; or under conditions that pose a material threat of a future release to the environment. The following was identified during the course of this assessment:

- The southern portion of the subject property was formerly occupied by the Simpson Redwood Company (Simpson) as a lumber mill and plywood manufacturer from 1951 until 1989. Prior to sale of the property, Simpson entered into a VCA with the DTSC during February 1997 to assess potential environmental liability and cleanup any impacts that existed. Simpson engaged EnviroNet to perform a thorough environmental assessment of the property in 1997 which was completed in September 1997 and revealed multiple areas of the property with potentially significant impacts to soil and groundwater. The findings identified two former 5,000-gallon gasoline USTs, one 10,000-gallon diesel UST, and one 500-gallon unidentified UST which had been closed in place by filling with sand and concrete during 1985 and 1987 with oversight from the HCEHD as well as a groundwater hotspot containing a small plume of VOCs in the southeastern corner of the property and multiple other areas of concern related to the former manufacturing and maintenance operations at the property. As a result, EnviroNet recommended development and implementation of an RAP.

  A RAP was developed and approved by the DTSC in November 1997. Remedial actions commenced which included excavation and offsite disposal of approximately 8,600 cubic yards of soil as well as extraction and treatment of approximately 1.2 million gallons of groundwater. The DTSC issued a certification in February 1999 which stated that the completed remedial actions sufficiently addressed onsite contamination with the exception of the small VOC plume in groundwater in the southeastern portion of the property. Groundwater monitoring was required to continue in that area in compliance with the 1998 Operations and Maintenance Plan implemented to monitor the natural attenuation of those impacts. Groundwater monitoring continued until 2013 which demonstrated a continued downward trend in concentrations of COCs. In September 2013 an agreement with Simpson's consultant, SHN Consulting Engineers and Geologists, Inc. (SHN), was reached with the RWQCB and DTSC to halt semi-annual groundwater monitoring with two additional events to take place in 2015 and review of the regulatory status for the case set for 2016.

  As a result of the open VCA case with ongoing groundwater monitoring at the subject property, the former use, cleanup activities and ongoing monitoring program at the subject property represent a *REC*. However, based on the certified remedial actions that were undertaken, the regulatory oversight and identification of the responsible party with ongoing participation, as well as the downward trending concentrations of COCs in the only remaining area of the property under investigation, no additional investigation is recommended at this time.

A *CREC* refers to a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls. The following was identified during the course of this assessment:

- Partner did not identify controlled recognized environmental conditions during the course of this assessment.

A *HREC* refers to a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls. The following was identified during the course of this assessment:

- Partner did not identify historical recognized environmental conditions during the course of this assessment.

An *environmental issue* refers to environmental concerns identified by Partner, which do not qualify as RECs; however, warrant further discussion. The following was identified during the course of this assessment:

- The subject property has been used for agricultural purposes since at least 1969 with agricultural chemicals such as pesticides, fungicides, herbicides and fertilizers in frequent use throughout the subject property. Based on the continued use of the subject property for agricultural purposes and the proper handing and usage of these materials to prevent potential releases, the historical and continued agricultural usage of the subject property should not represent a significant environmental concern. Should the property use change however, additional investigation may be warranted to determine the potential for agricultural chemicals to have accumulated in the subsurface.
- Three concrete sumps, in the areas of the fungicide dip tank, chemical storage room and equipment were observed at the subject property. The sumps are used to catch and accumulate runoff from fungicide dipping operations, spills during mixing and formulation of agricultural chemicals and wash/rinse water from cleaning field applicator equipment. Occasionally these features have been known to crack or otherwise degrade to the point where materials can be released to the subsurface. All three sumps appeared to be in good condition at the time of partner's visit and are not expected to represent a significant environmental concern at this time.
- The subject property is equipped with one 30,000-gallon propane AST; two 1,000-gallon diesel ASTs; one 1,000-gallon gasoline AST; one 550-gallon diesel AST; one 550-gallon gasoline AST; one 500-gallon propane AST; six 250-gallon diesel ASTs; two 120-gallon motor oil ASTs; two 100-gallon propane ASTs; and one 50-gallon diesel fire pump AST. The ASTs are located throughout the subject property. With the exception of the propane tanks and 250-gallon diesel generators, all ASTs are equipped with secondary containment. No staining, leaks or spills were noted in the vicinity of the ASTs, and no releases were identified in regulatory agency research. Based on the

good condition of equipment and lack of a release, these tanks are not expected to represent a significant environmental concern at this time.

Conclusions, Opinions and Recommendations

Partner has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-13 of 3160 Upper Bay Road in the City of Arcata, Humboldt County, California (the "subject property"). Any exceptions to, or deletions from, this practice are described in Section 1.5 of this report.

This assessment has revealed evidence of recognized environmental conditions and environmental issues in connection with the subject property. Based on the conclusions of this assessment, Partner recommends the following:

- The groundwater monitoring in the southeastern portion of the subject property should be continued in line with the DTSC Operations and Maintenance plan.

8.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

Partner has performed a Phase I Environmental Site Assessment of the property located at 3160 Upper Bay Road in the City of Arcata, Humboldt County, California in general conformance with the scope and limitations of the protocol and the limitations stated earlier in this report. Exceptions to or deletions from this protocol are discussed earlier in this report.

By signing below, Partner declares that, to the best of our professional knowledge and belief, we meet the definition of *Environmental Professional* as defined in §312.10 of 40 CFR §312. Partner has the specific qualifications based on education, training, and experience to assess a *property* of the nature, history, and setting of the subject *property*. Partner has developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Prepared By:

David Gerhardstein
Environmental Professional

Reviewed By:

Steve Kovach
Senior Author

9.0 REFERENCES

Reference Documents

American Society for Testing and Materials, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, ASTM Designation: E1527-13.

Environmental Data Resources, Aerial Photograph Decade Package, Certified Sanborn Map Report, City Directory Abstract, Historical Topographic Map Report, Radius Report, May 2015

Federal Emergency Management Agency, Federal Insurance Administration, National Flood Insurance Program, Flood Insurance Map, accessed via internet, May 2015

United States Department of Agriculture, Natural Resources Conservation Service, Web Soil Survey, accessed via the internet, May 2015

United States Environmental Protection Agency, EPA Map of Radon Zones (Document EPA-402-R-93-071), accessed via the internet, May 2015

United States Fish & Wildlife Service, Wetlands Mapper, accessed via internet, May 2015

FIGURES

1 SITE LOCATION MAP

2 SITE PLAN

3 TOPOGRAPHIC MAP

PARTNER



FIGURE 1: SITE LOCATION MAP
Project No. 15-139484.1

Drawing Not To Scale

N

PARTNER

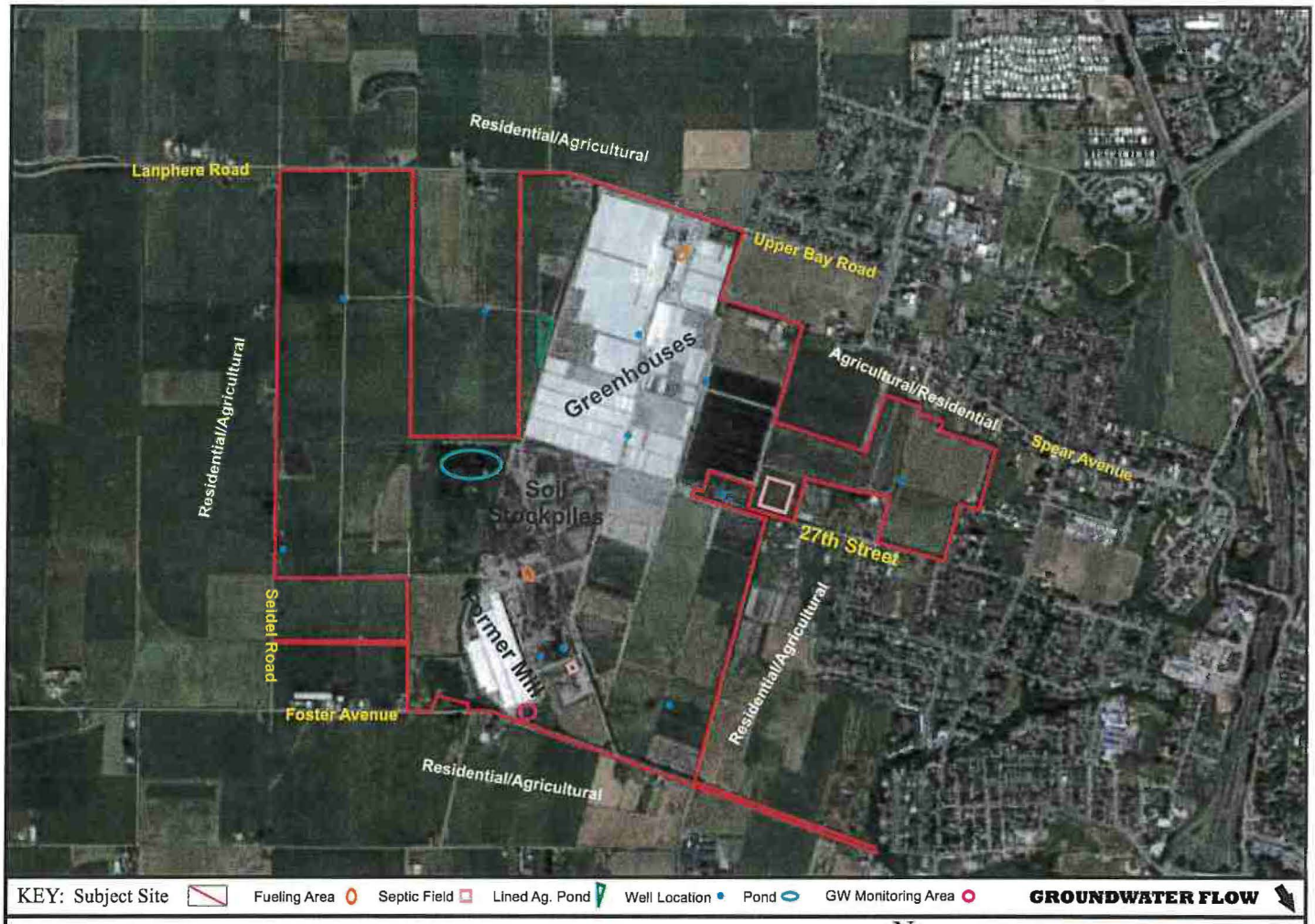
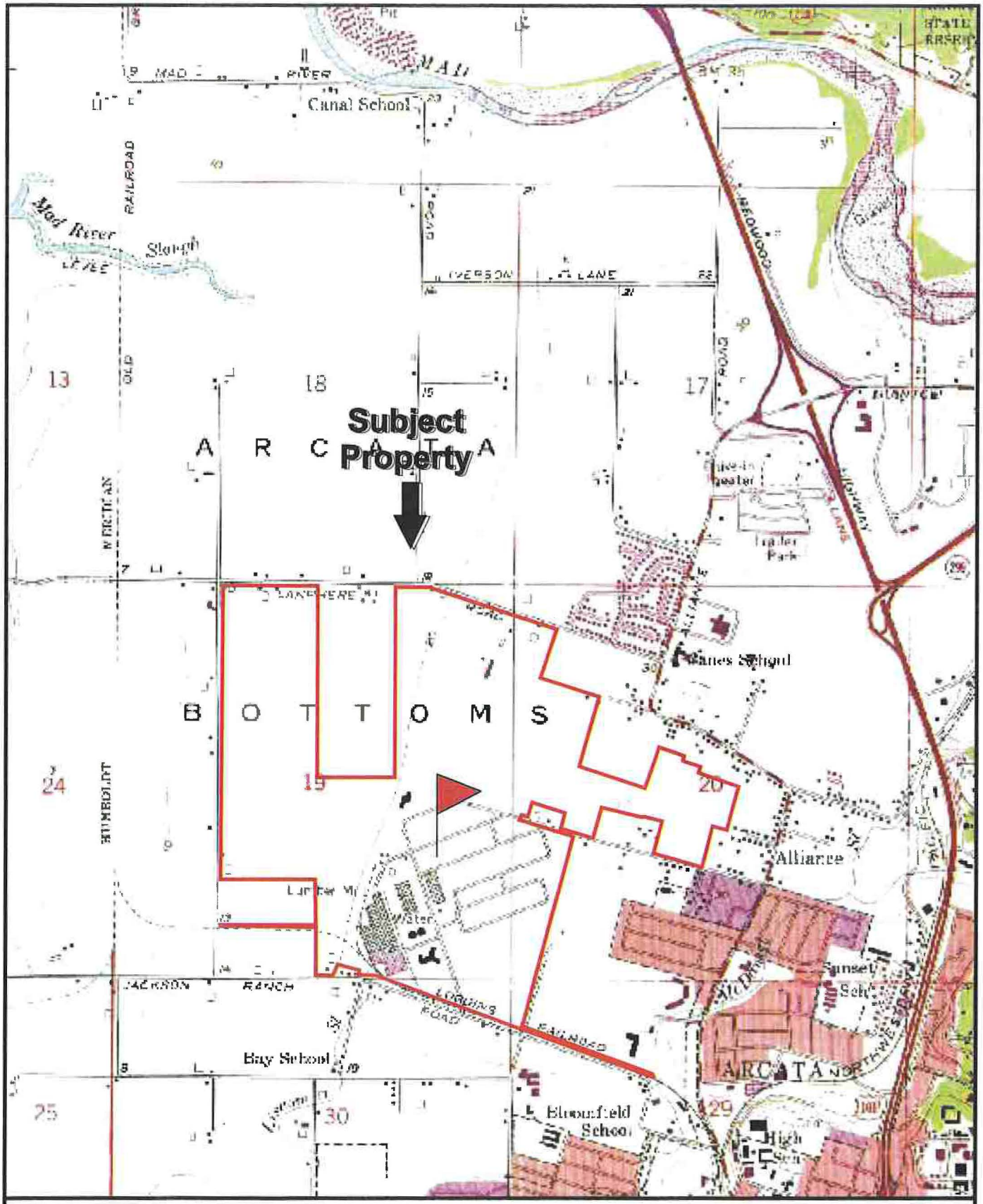


FIGURE 3: SITE PLAN
Project No. 15-139484.1

Drawing Not To Scale

N

PARTNER



USGS 7.5 Minute *Arcata North, California* Quadrangle — Created: 1959/Revised: 1972

FIGURE 3: TOPOGRAPHIC MAP

Project No. 15-139484.1

N

PARTNER

APPENDIX A: SITE PHOTOGRAPHS

PARTNER



1. View of the northern fueling area near the main office



2. View of a soil steaming area



3. View of the fungicide dip tank



4. View inside the fungicide dip tank



5. View of the dip tank sump



6. View inside a greenhouse



7. View of a boiler system



8. View of a fire cabinet in a maintenance area



9. View of condensers for the cold rooms



10. View of a bulb processing and packaging area



11. View of the main office building



12. View in a chemical storage room



13. View of a mixing station in the chemical storage room



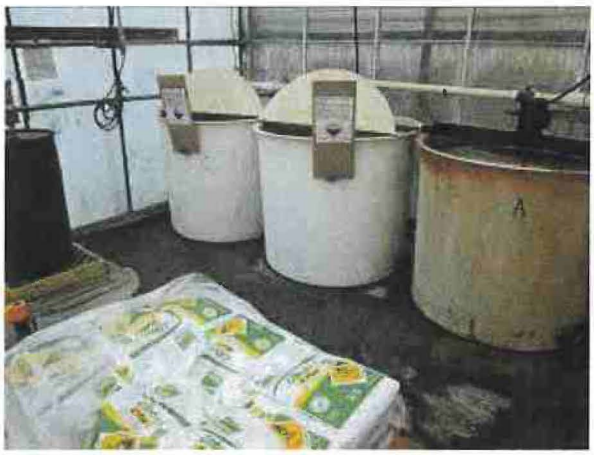
14. View of a sump in the chemical storage room



15. View inside a warehouse



16. View of fertilizers and soil conditioners in a mixing room



17. View of mixing tanks in the mixing room



18. Additional view of tanks in the mixing room



19. View of a well in the greenhouse area



20. View in another greenhouse



21. View of the lined agricultural water pond



22. View of the 30,000-gallon propane tank and a smaller propane tank



23. View of a drainage canal



24. View of the storm water pond



25. View of the southern fueling area and secondary containment



26. View of the vehicle maintenance area



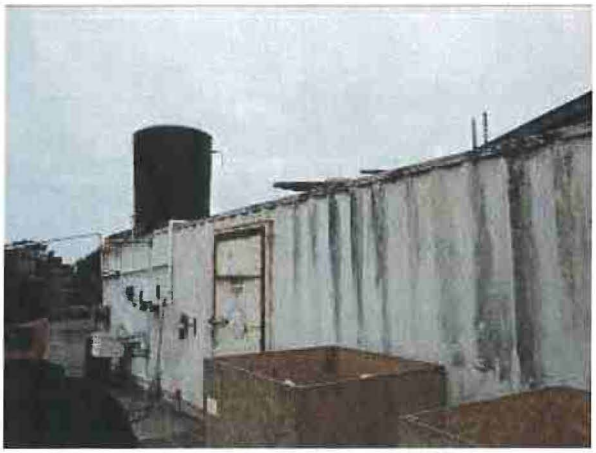
27. View of the equipment wash shed



28. View of the équipment wash shed sump



29. View inside a maintenance area



30. View of a chemical storage shed



31. View inside the chemical storage shed



32. Additional view inside the chemical storage shed



33. View of the motor oil ASTs



34. View of the former mill building from the west



35. View inside the former mill building



36. View of a diesel generator



37. View of a fire water tank



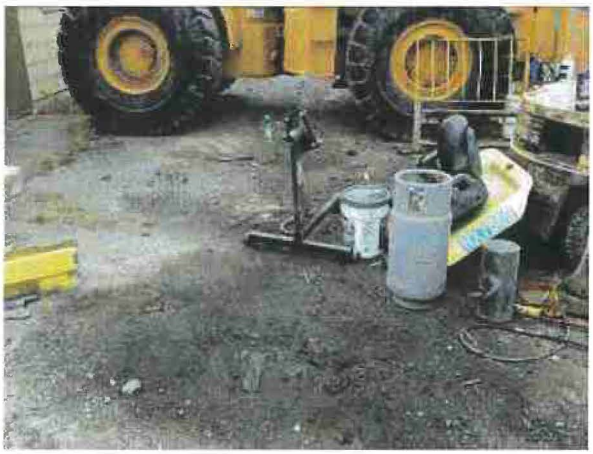
38. View of a backup diesel fire pump



39. View of a storage area inside the former mill building



40. View of a monitoring well to the southeast of the former mill building



41. View of some de minimis staining in the forklift maintenance area



42. View of hoophouses



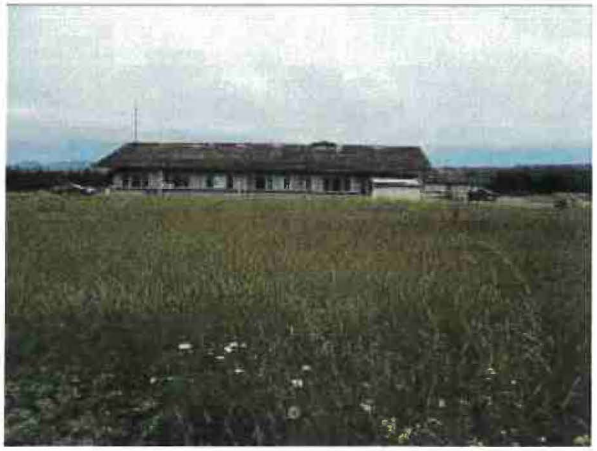
43. View of a road down the center of the subject property



44. View of the 100-gallon propane tanks by the vehicle maintenance shop



45. View of a hay field to the south of 27th Street



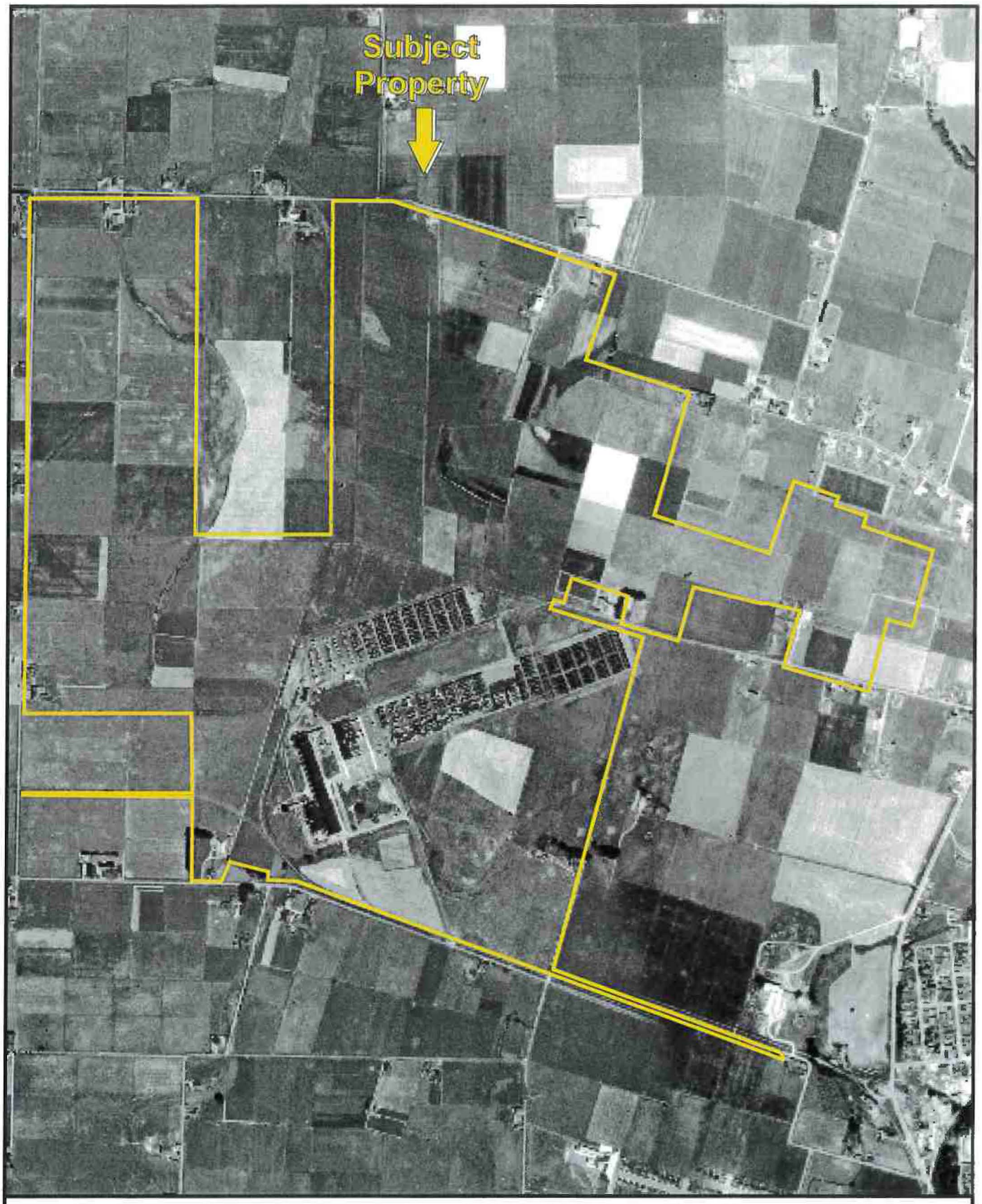
46. View of the offices to the east of the former mill building



47. View of waste storage in the vehicle maintenance shop

APPENDIX B: HISTORICAL/REGULATORY DOCUMENTATION

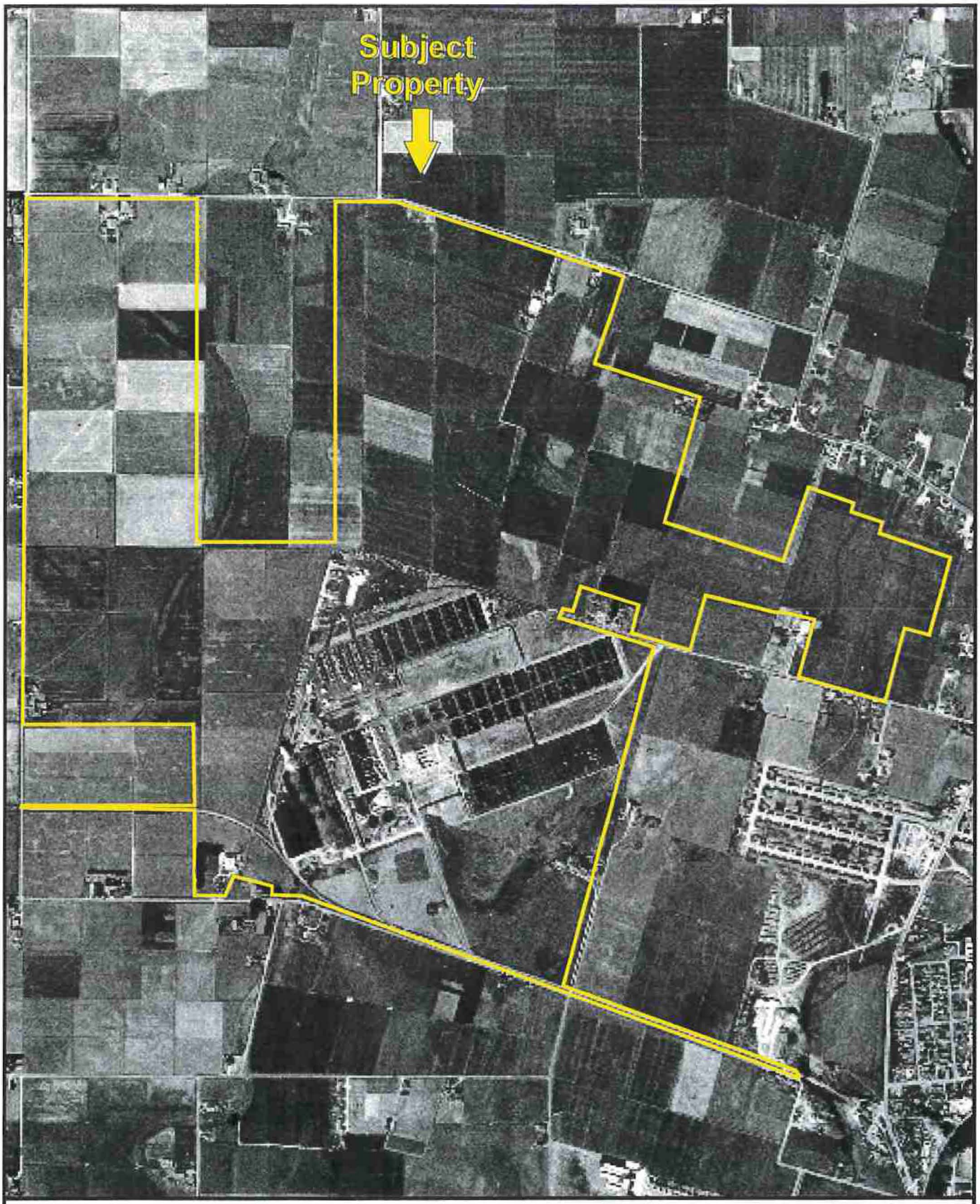
PARTNER



Date: 1954

APPENDIX B: AERIAL PHOTOGRAPHS
Project No. 15-139484.1

PARTNER

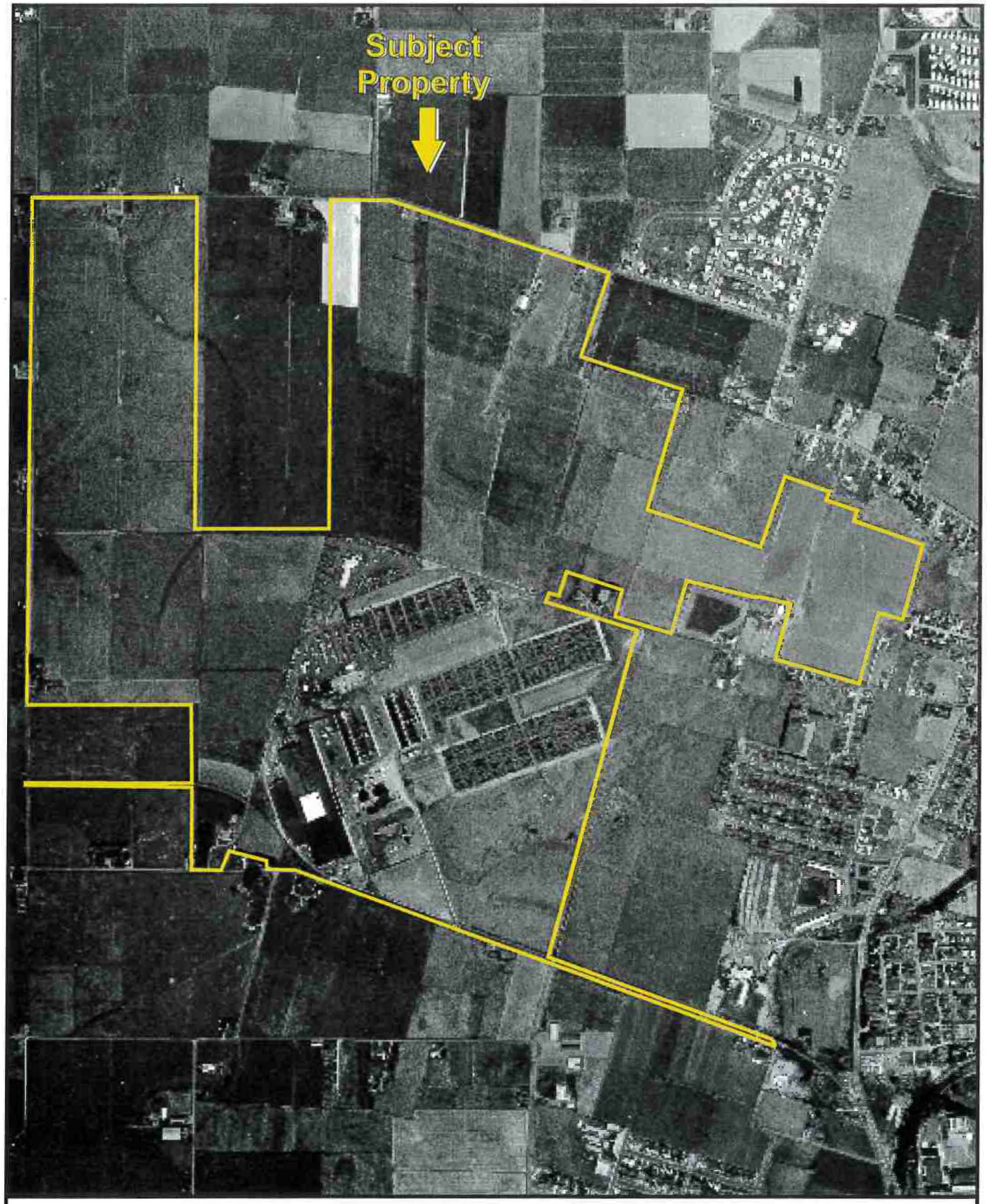


Date: 1956

APPENDIX B: AERIAL PHOTOGRAPHS

Project No. 15-139484.1

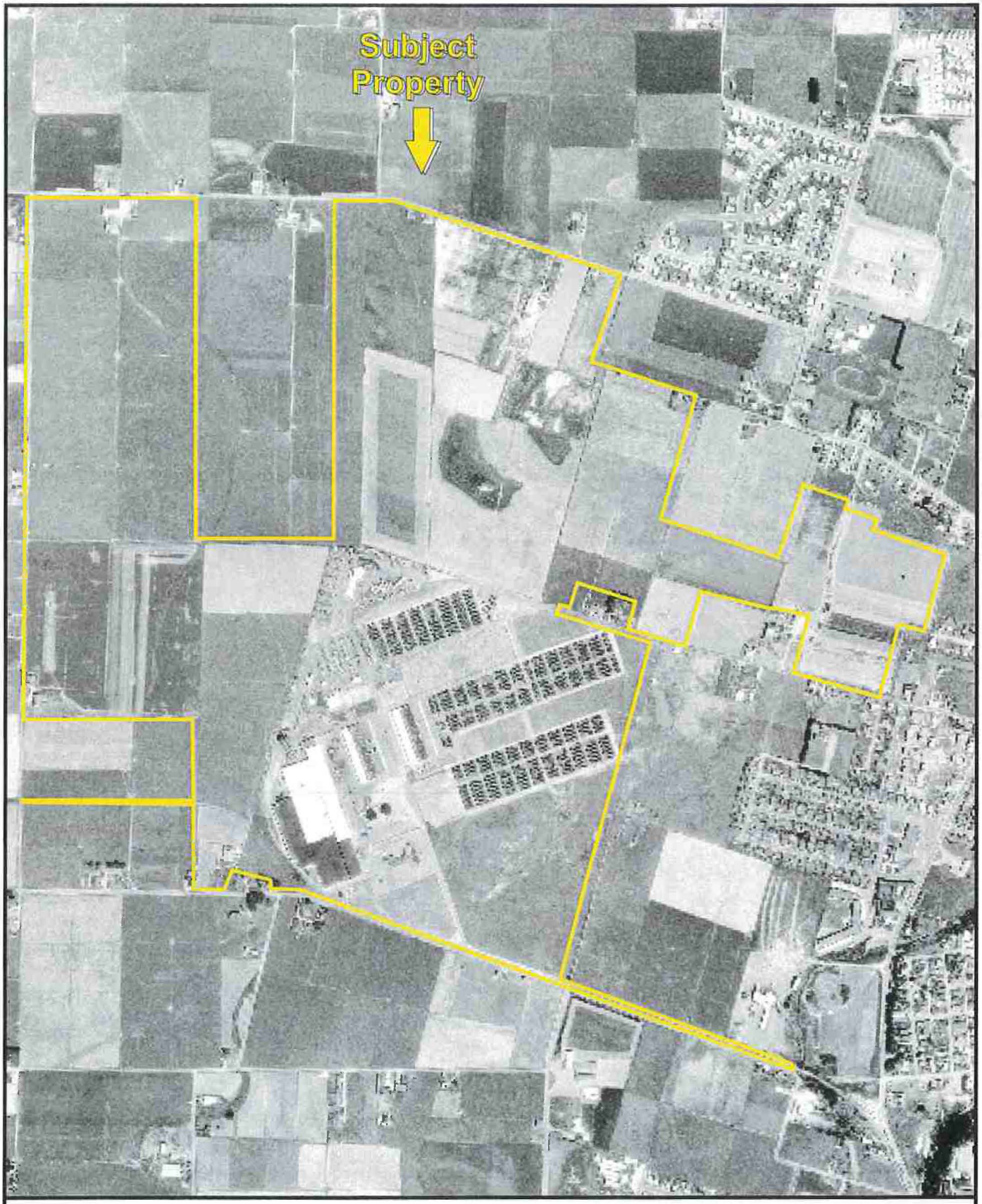
PARTNER



Date: 1969

APPENDIX B: AERIAL PHOTOGRAPHS
Project No. 15-139484.1

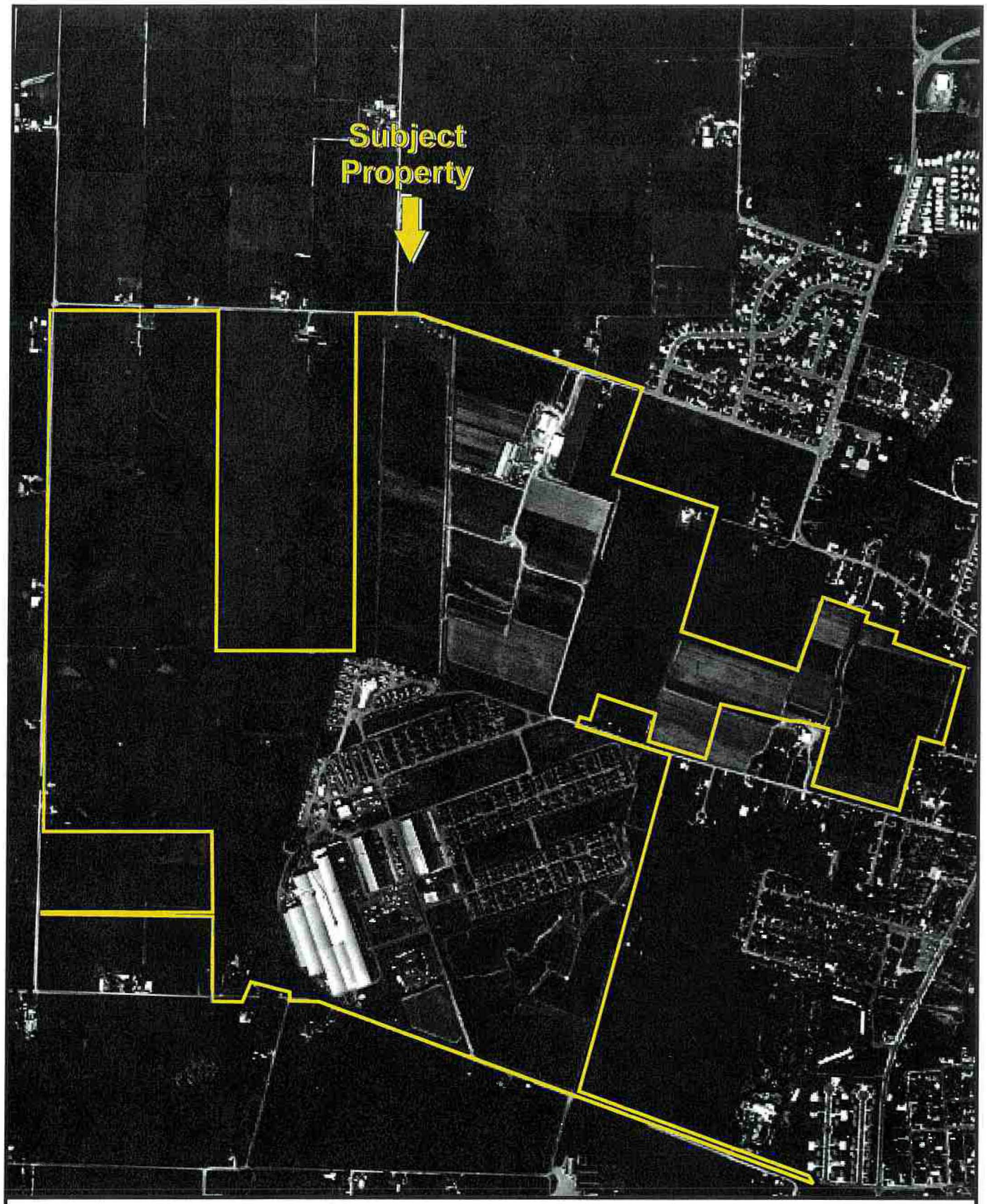
PARTNER



Date: 1972

APPENDIX B: AERIAL PHOTOGRAPHS
Project No. 15-139484.1

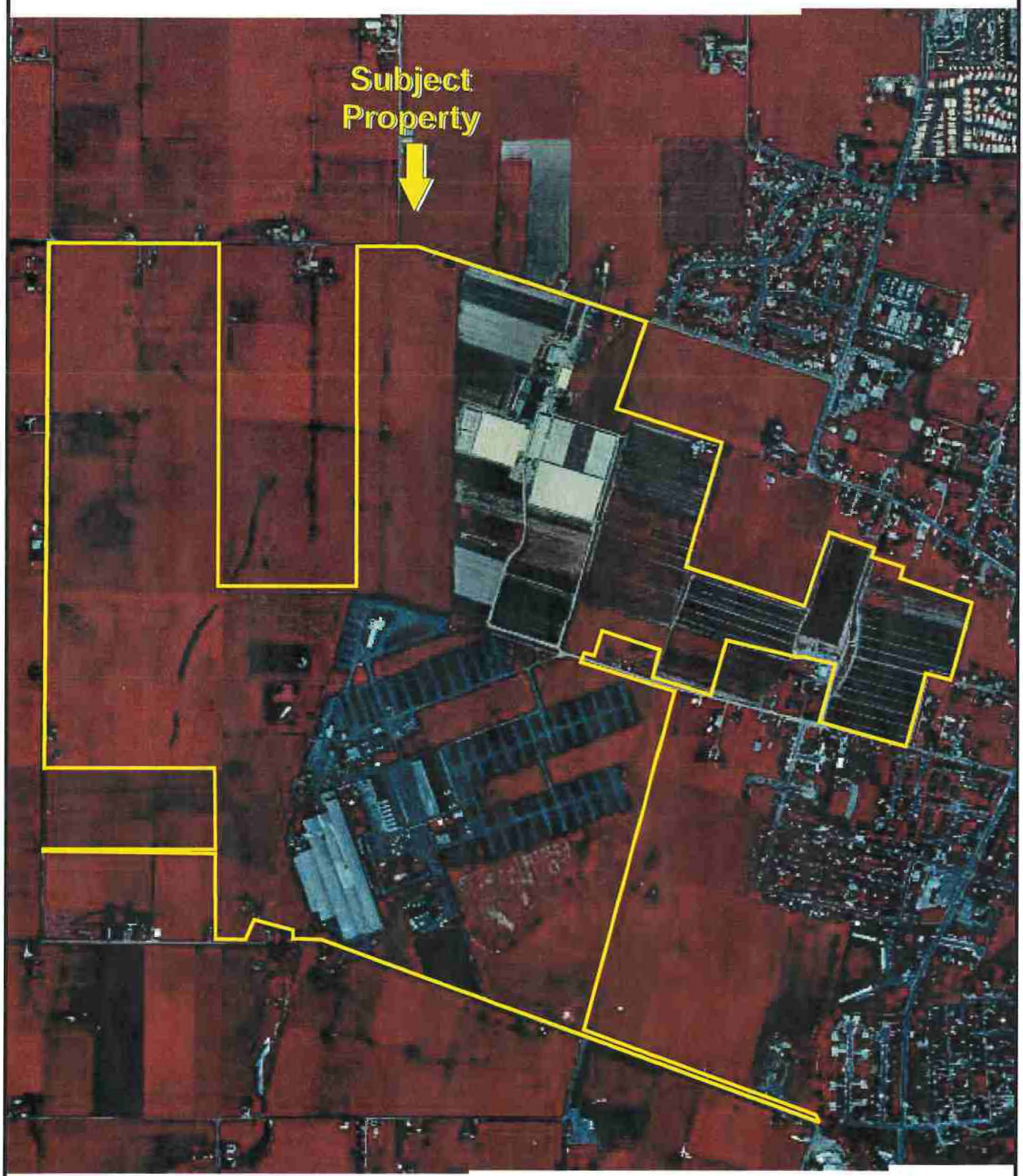
PARTNER



Date: 1982

APPENDIX B: AERIAL PHOTOGRAPHS
Project No. 15-139484.1

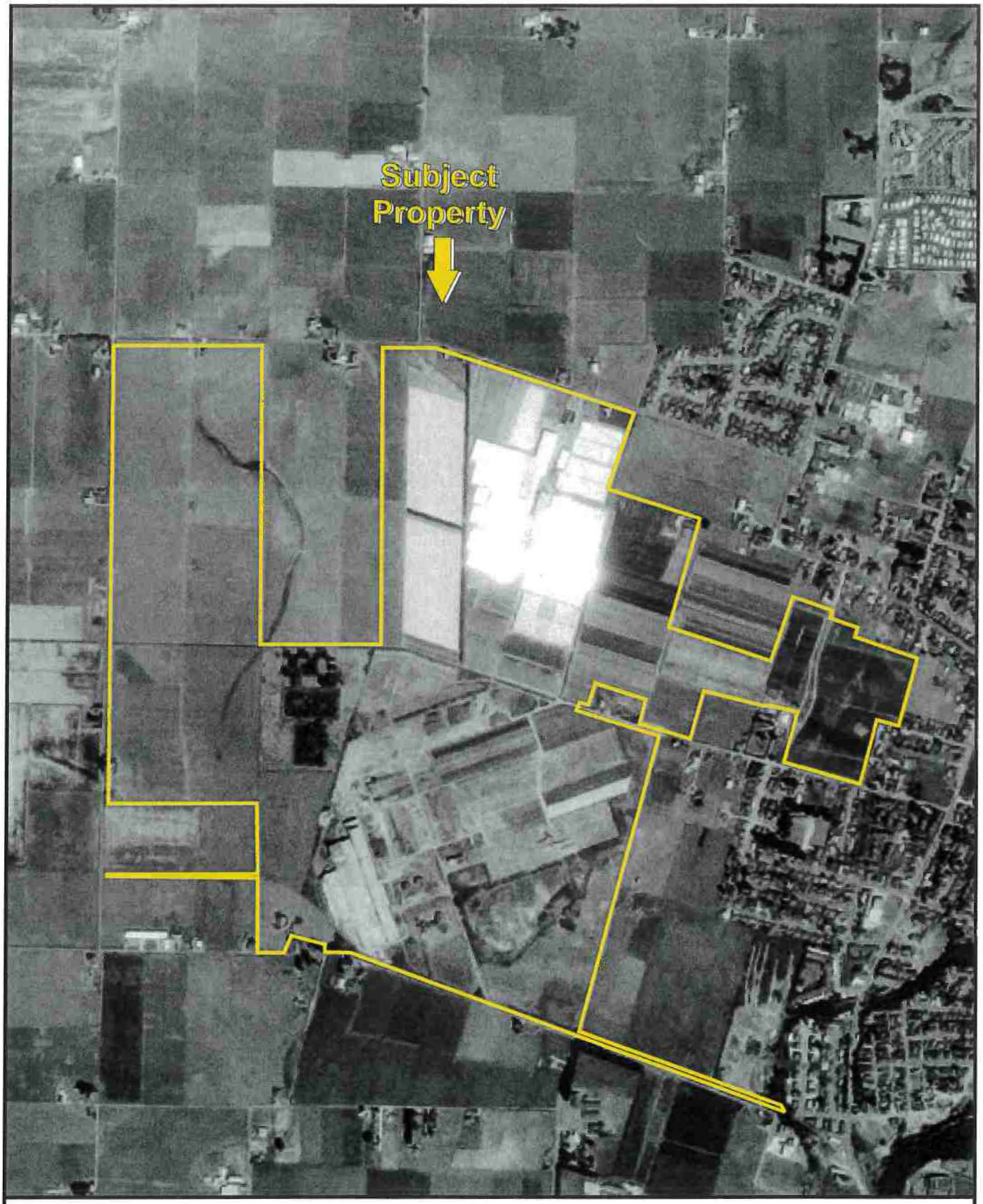
PARTNER



Date: 1989

APPENDIX B: AERIAL PHOTOGRAPHS
Project No. 15-139484.1

PARTNER

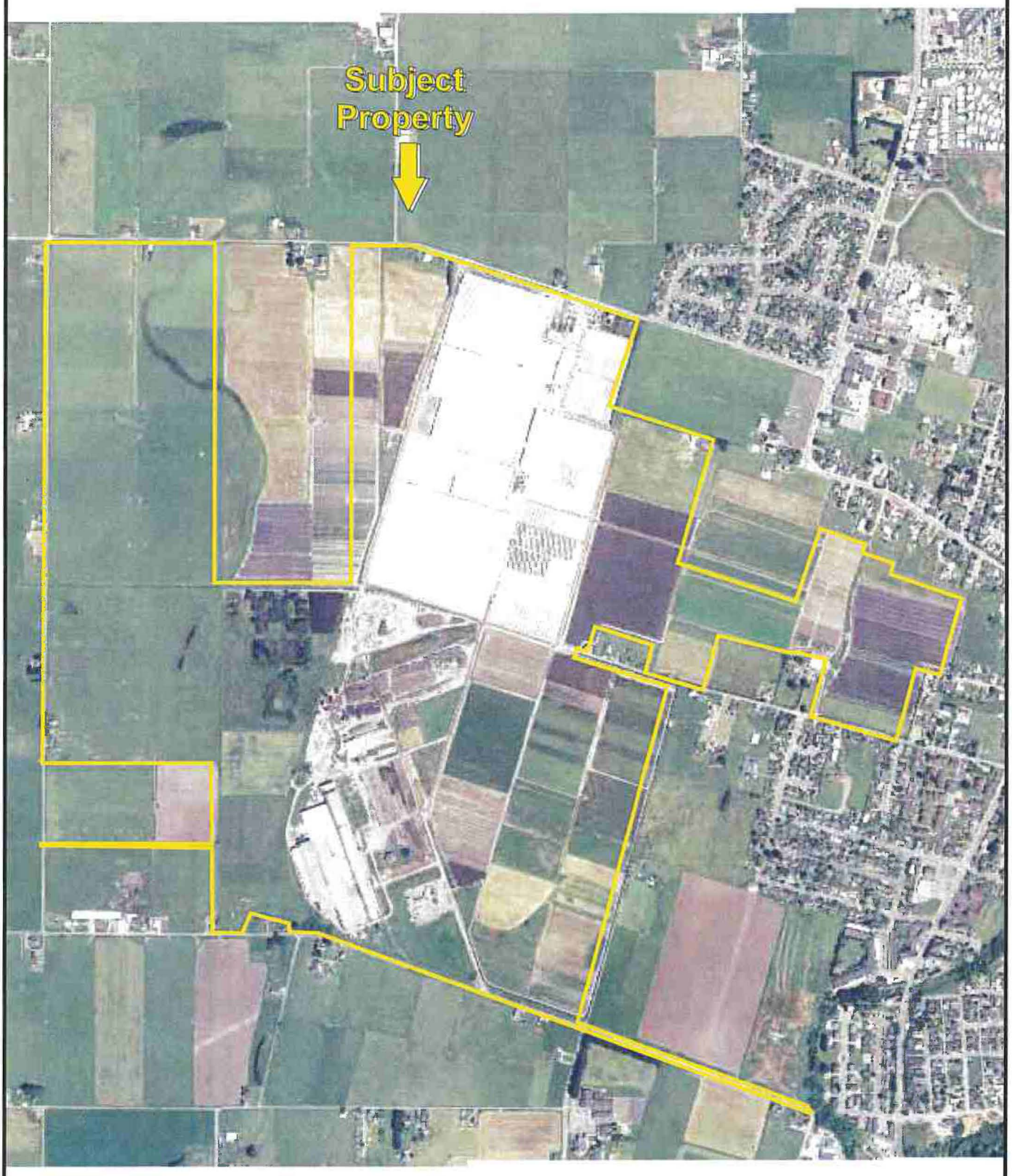


Date: 1998

APPENDIX B: AERIAL PHOTOGRAPHS

Project No. 15-139484.1

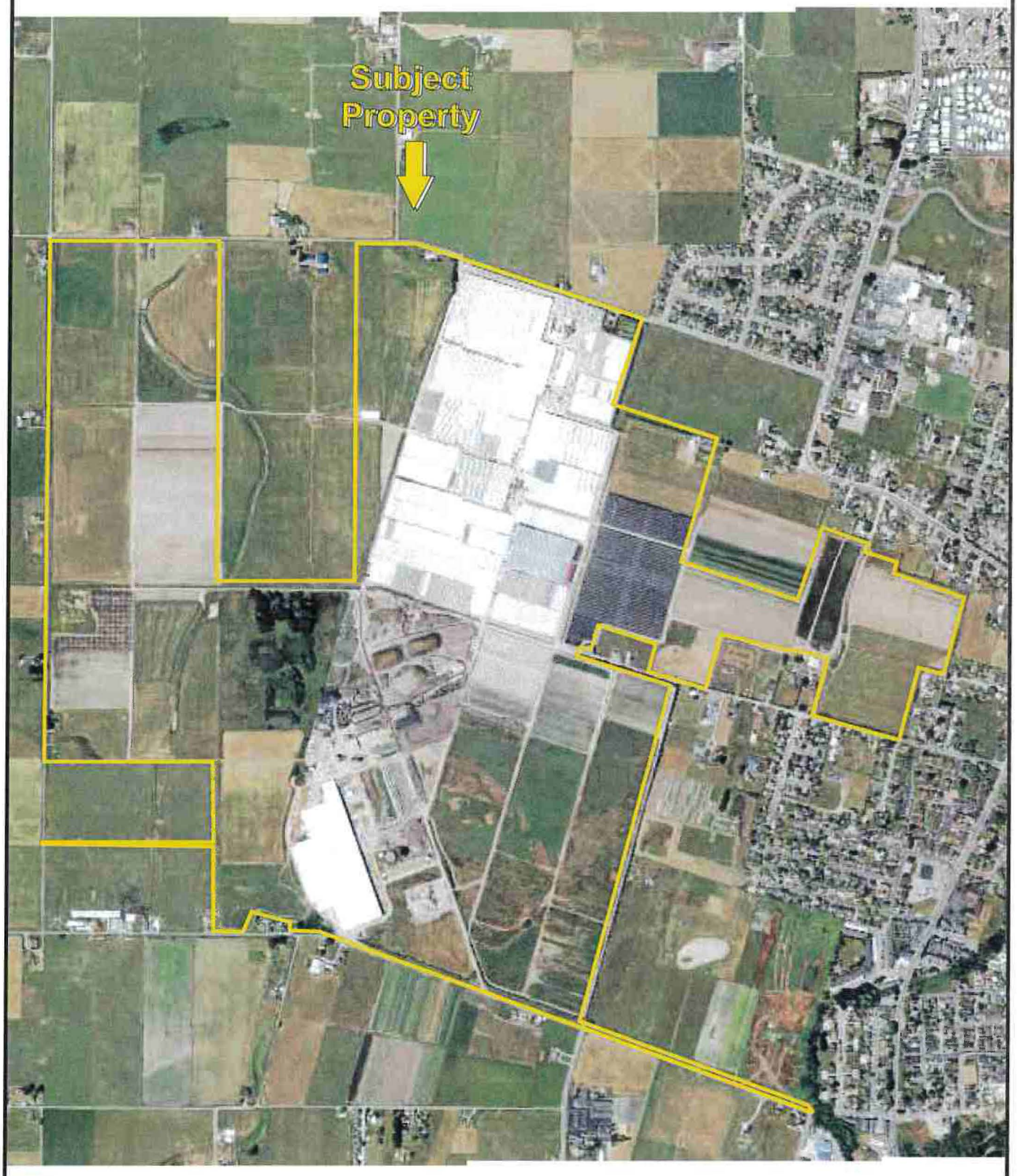
PARTNER



Date: 2005

APPENDIX B: AERIAL PHOTOGRAPHS
Project No. 15-139484.1

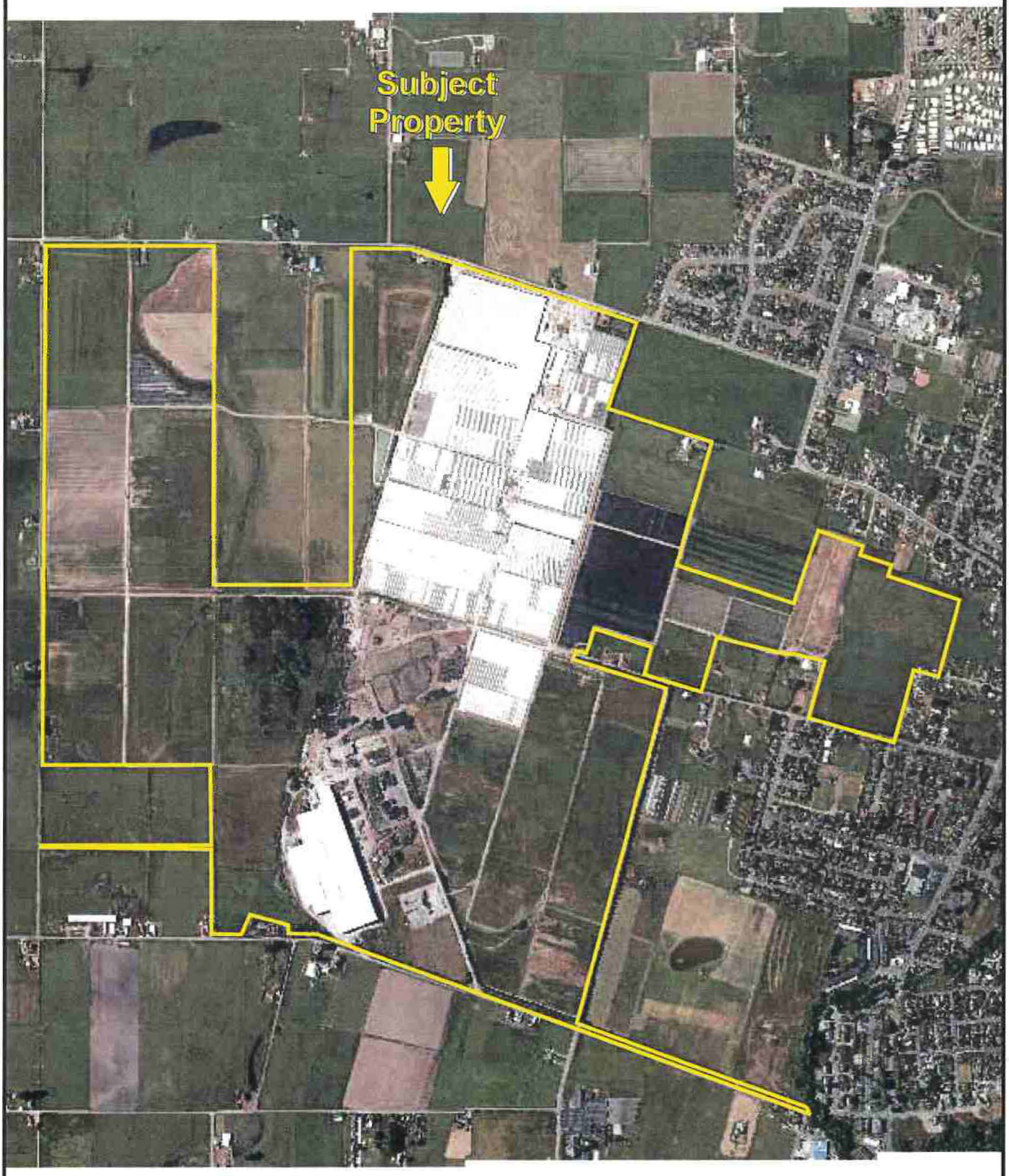
PARTNER



Date: 2009

APPENDIX B: AERIAL PHOTOGRAPHS
Project No. 15-139484.1

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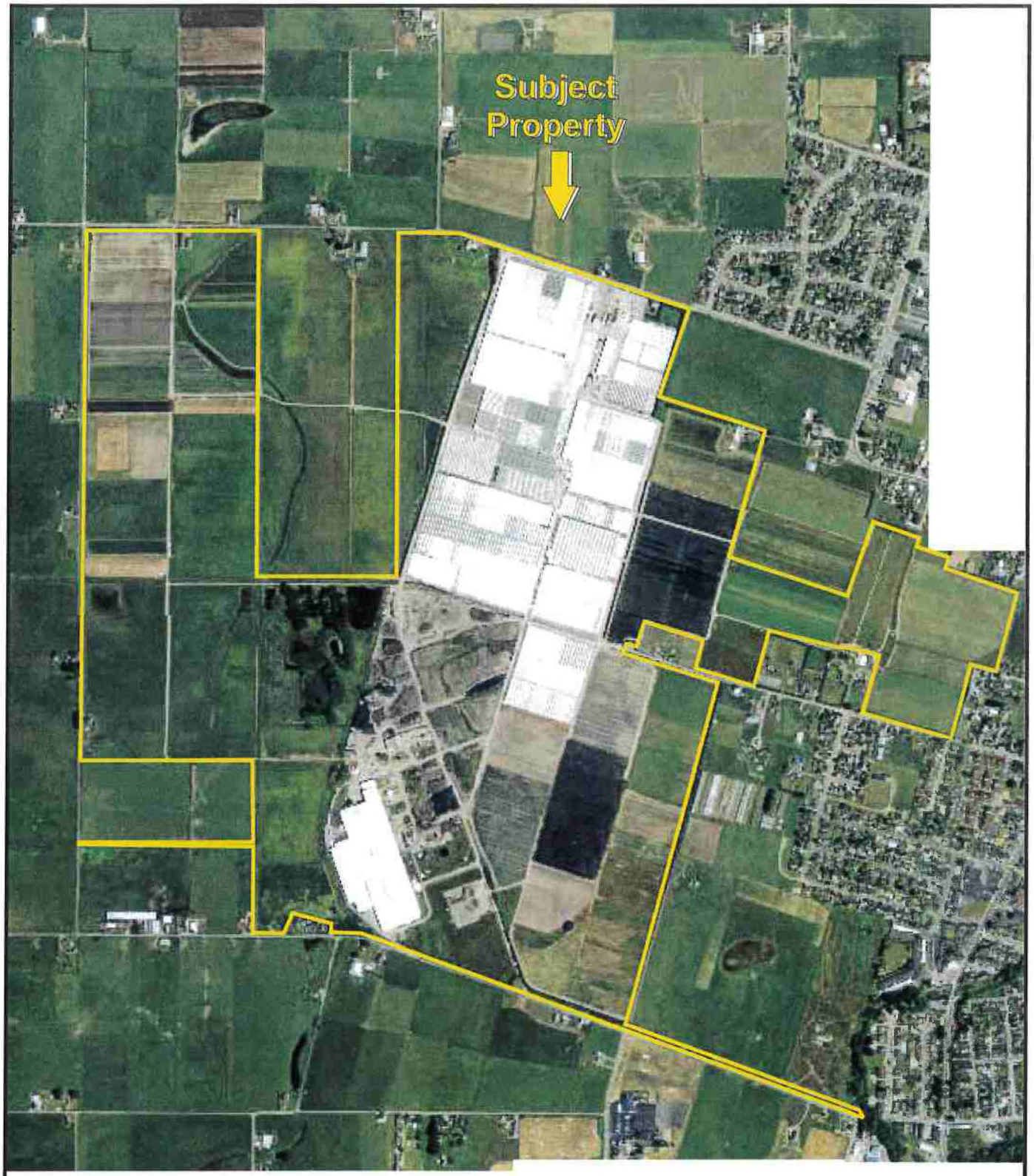


Date: 2010

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Project No. 15-139484.1

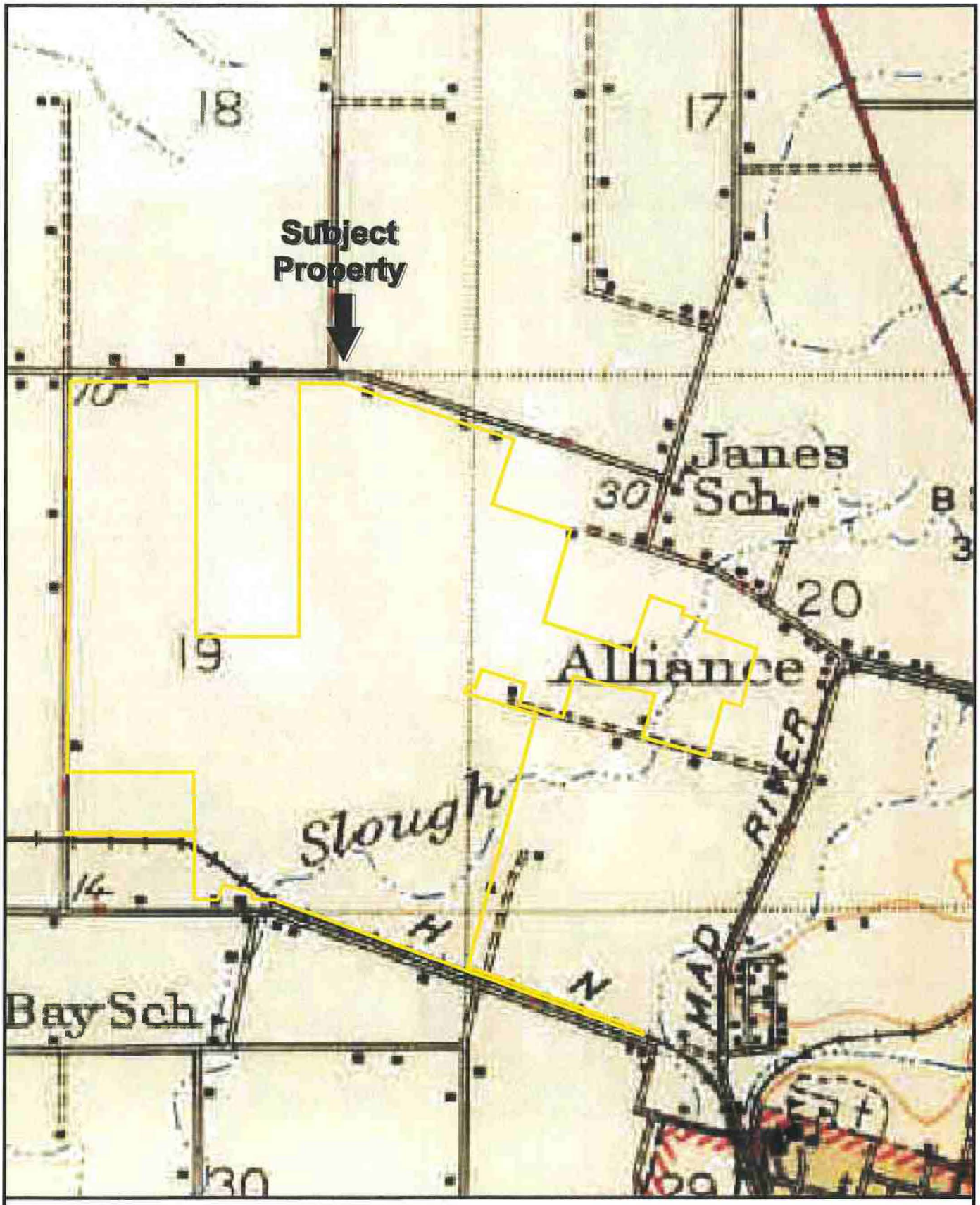
PARTNER



Date: 2012

APPENDIX B: AERIAL PHOTOGRAPHS
Project No. 15-139484.1

PARTNER

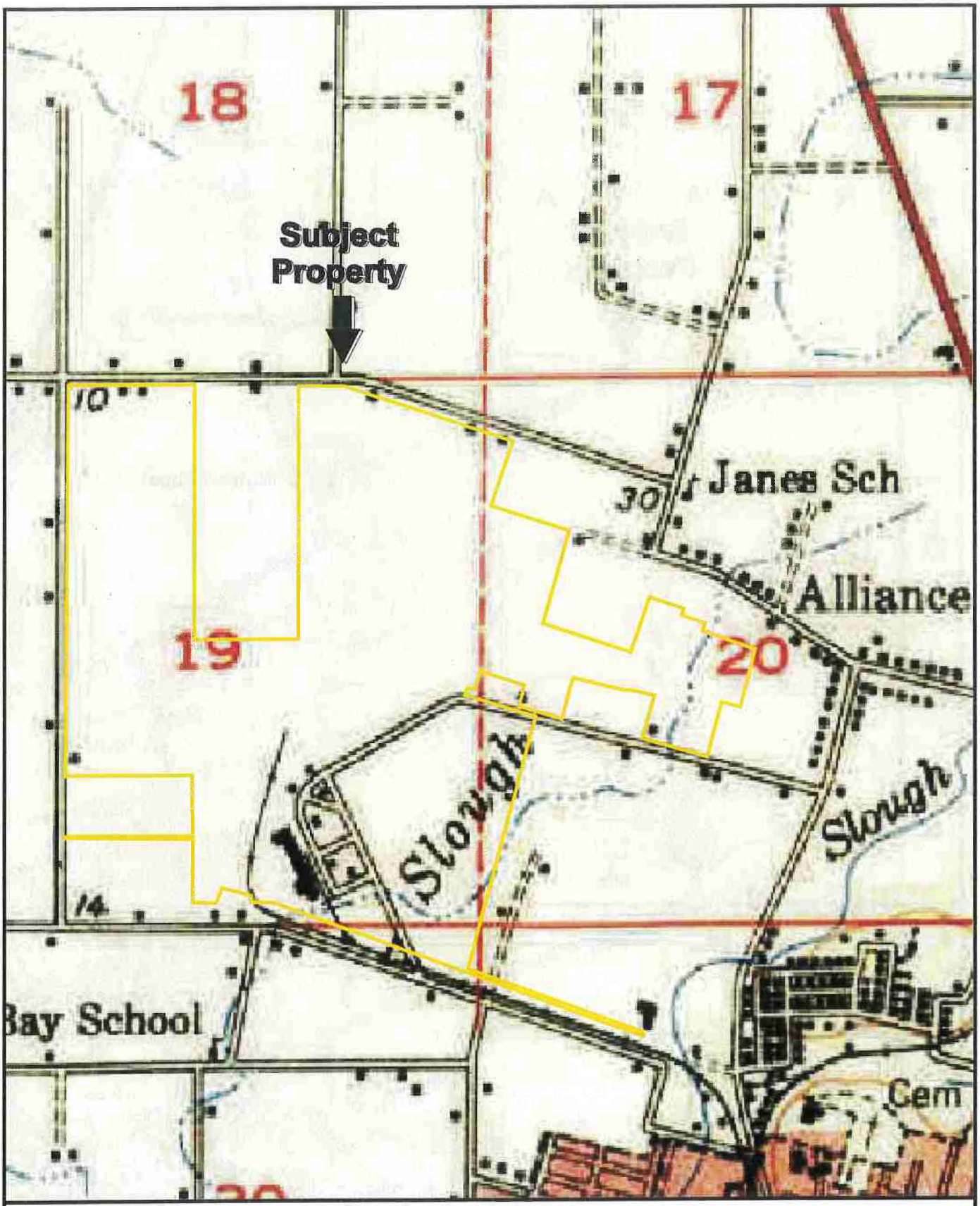


USGS 15 Minute *Eureka, California* Quadrangle — Created: 1947

APPENDIX B: HISTORIC TOPOGRAPHIC MAPS

Project No. 15-139484.1

PARTNER



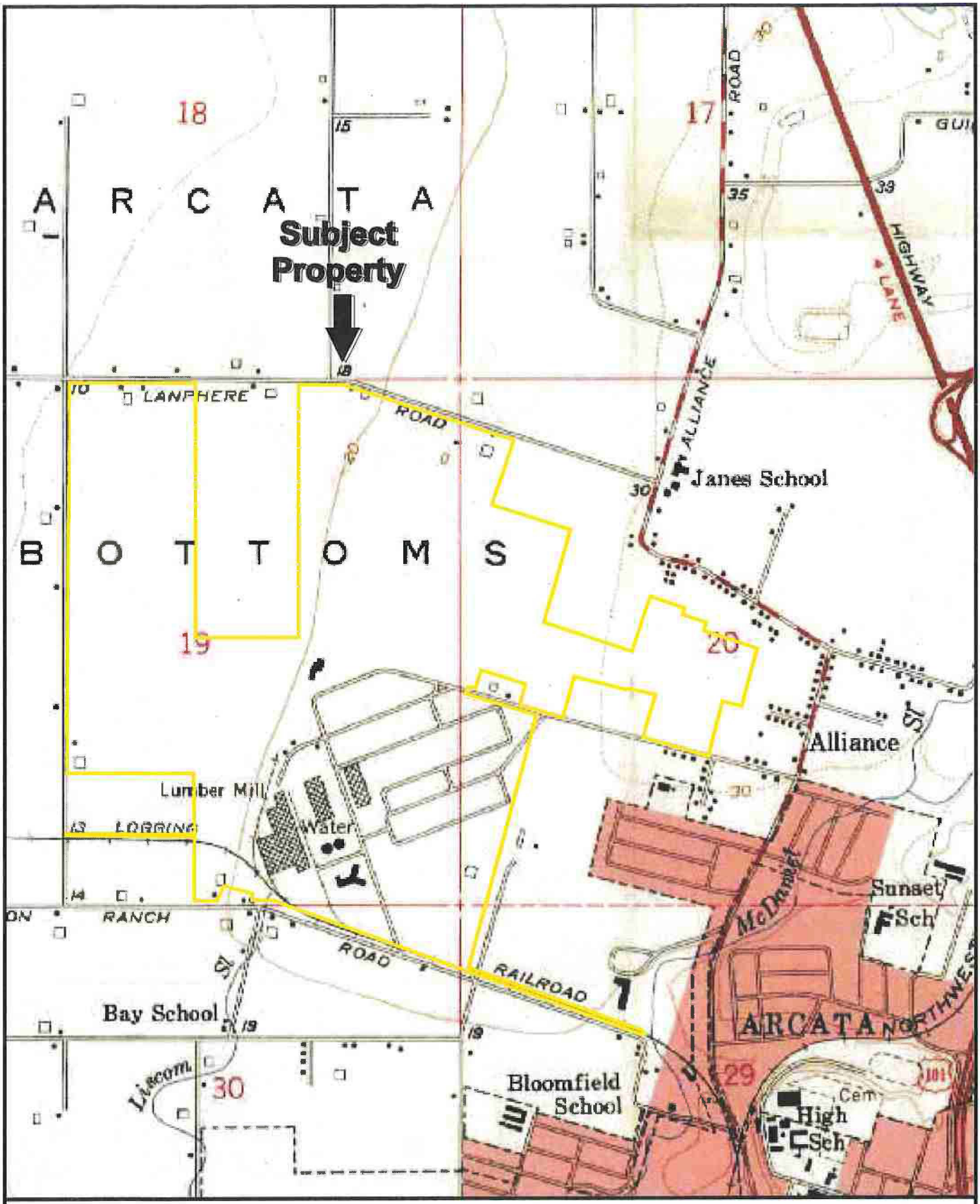
USGS 15 Minute *Eureka, California* Quadrangle

Created: 1951

APPENDIX B: HISTORIC TOPOGRAPHIC MAPS

Project No. 15-139484.1

PARTNER

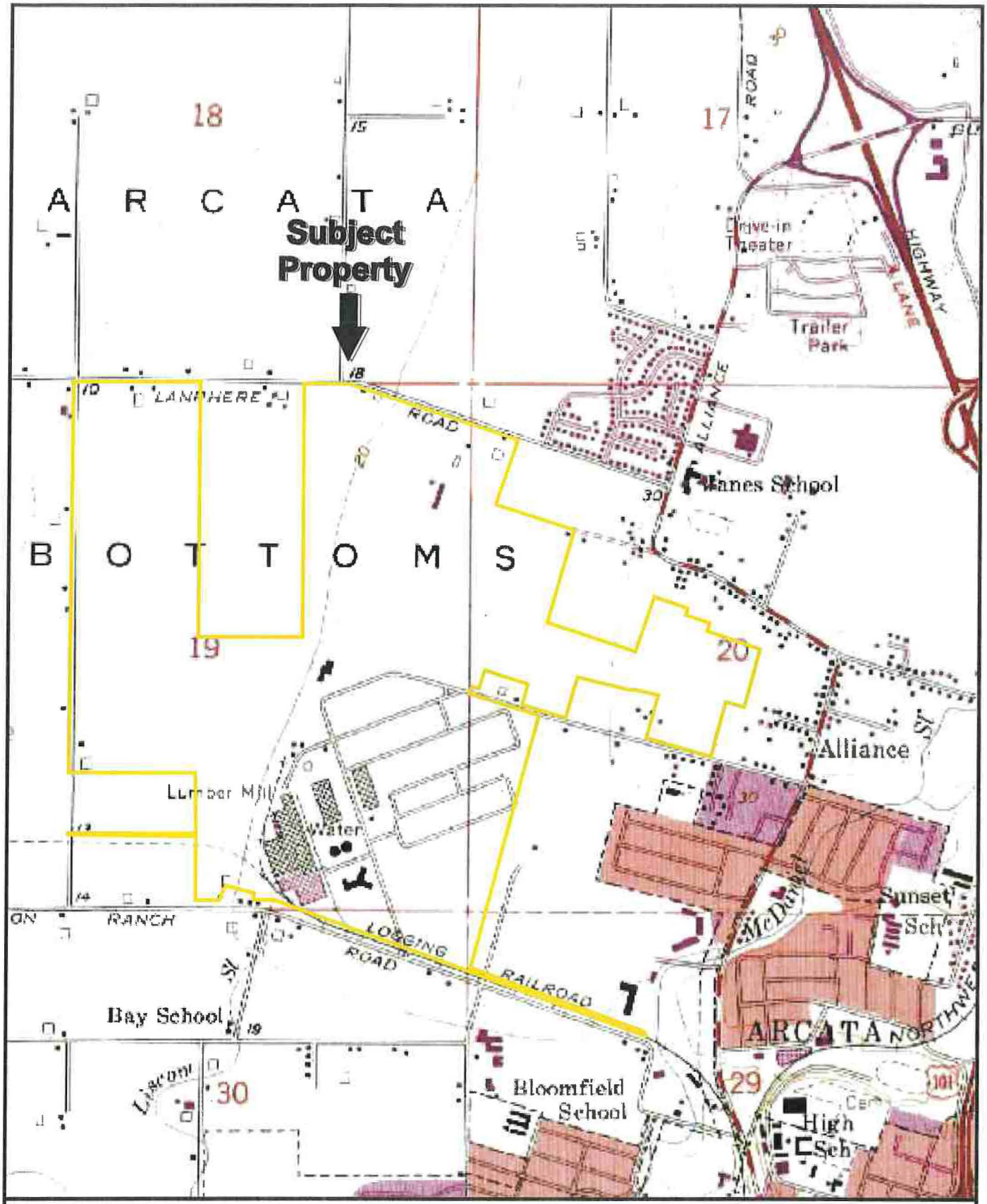


USGS 7.5 Minute *Arcata North, California* Quadrangle — Created: 1959

APPENDIX B: HISTORIC TOPOGRAPHIC MAPS

Project No. 15-139484.1

PARTNER



USGS 7.5 Minute *Arcata North, California* Quadrangle — Created: 1959/Revised: 1972

APPENDIX B: HISTORIC TOPOGRAPHIC MAPS

Project No. 15-139484.1

PARTNER

Arcata Properties
3318 Foster Avenue, 2725 Simpson Mill Road, 4044 L
Arcata, CA 95521

Inquiry Number: 4293018.6
May 22, 2015

The EDR-City Directory Image Report

EDR® Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2013	☑	☑	Cole Information Services
2008	☑	☑	Cole Information Services
2003	☑	☑	Cole Information Services
1999	☑	☑	Cole Information Services
1995	☑	☑	Cole Information Services
1992	☑	☑	Cole Information Services
1982	☑	☑	Polk's City Directory
1977	☑	☑	Polk's City Directory
1973	☑	☑	Polk's City Directory
1968	☑	☑	Polk's City Directory
1963	☑	☑	Polk's City Directory
1958	☑	☑	Polk's City Directory

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FINDINGS

TARGET PROPERTY STREET

3318 Foster Avenue, 2725 Simpson Mill Road, 4044 L
Arcata, CA 95521

Year	*CD Image*	*Source*
FOSTER AVE		
2013	pg A2	Cole Information Services
2008	pg A6	Cole Information Services
2003	pg A10	Cole Information Services
1999	pg A16	Cole Information Services
1995	pg A20	Cole Information Services
1992	pg A24	Cole Information Services
1982	pg A28	Polk's City Directory
1977	pg A31	Polk's City Directory
1973	pg A34	Polk's City Directory
1973	pg A35	Polk's City Directory
1968	pg A38	Polk's City Directory
1963	pg A42	Polk's City Directory
1958	pg A47	Polk's City Directory
1958	pg A48	Polk's City Directory

FINDINGS

CROSS STREETS

Year	*CD Image*	*Source*	
27TH ST			
2013	pg. A1	Cole Information Services	
2008	pg. A5	Cole Information Services	
2003	pg. A9	Cole Information Services	
1999	pg. A15	Cole Information Services	
1995	pg. A19	Cole Information Services	
1992	pg. A23	Cole Information Services	
1982	pg. A27	Polk's City Directory	
1977	pg. A30	Polk's City Directory	
1973	pg. A33	Polk's City Directory	
1968	pg. A37	Polk's City Directory	
1963	pg. A41	Polk's City Directory	
1958	pg. A45	Polk's City Directory	
1958	pg. A46	Polk's City Directory	
LANPHERE RD			
2013	-	Cole Information Services	Target and Adjoining not listed in Source
2008	-	Cole Information Services	Target and Adjoining not listed in Source
2003	pg. A12	Cole Information Services	
1999	-	Cole Information Services	Target and Adjoining not listed in Source
1995	-	Cole Information Services	Target and Adjoining not listed in Source
1992	-	Cole Information Services	Target and Adjoining not listed in Source
1982	-	Polk's City Directory	Street not listed in Source
1977	-	Polk's City Directory	Street not listed in Source
1973	-	Polk's City Directory	Street not listed in Source
1968	-	Polk's City Directory	Street not listed in Source
1963	-	Polk's City Directory	Street not listed in Source
1958	-	Polk's City Directory	Street not listed in Source
SEIDEL RD			
2013	pg. A3	Cole Information Services	
2008	pg. A7	Cole Information Services	

FINDINGS

Year	*CD Image*	*Source*	
2003	pg. A13	Cole Information Services	
1999	pg. A17	Cole Information Services	
1995	pg. A21	Cole Information Services	
1992	pg. A25	Cole Information Services	
1982	-	Polk's City Directory	Street not listed in Source
1977	-	Polk's City Directory	Street not listed in Source
1973	-	Polk's City Directory	Street not listed in Source
1968	-	Polk's City Directory	Street not listed in Source
1963	-	Polk's City Directory	Street not listed in Source
1958	-	Polk's City Directory	Street not listed in Source

SIMPSON MILL RD

2013	-	Cole Information Services	Street not listed in Source
2008	-	Cole Information Services	Street not listed in Source
2003	-	Cole Information Services	Street not listed in Source
1999	-	Cole Information Services	Street not listed in Source
1995	-	Cole Information Services	Street not listed in Source
1992	-	Cole Information Services	Street not listed in Source
1982	-	Polk's City Directory	Street not listed in Source
1977	-	Polk's City Directory	Street not listed in Source
1973	-	Polk's City Directory	Street not listed in Source
1968	-	Polk's City Directory	Street not listed in Source
1963	-	Polk's City Directory	Street not listed in Source
1958	-	Polk's City Directory	Street not listed in Source

UPPER BAY RD

2013	pg. A4	Cole Information Services
2008	pg. A8	Cole Information Services
2003	pg. A14	Cole Information Services
1999	pg. A18	Cole Information Services
1995	pg. A22	Cole Information Services
1992	pg. A26	Cole Information Services
1982	pg. A29	Polk's City Directory
1977	pg. A32	Polk's City Directory
1973	pg. A36	Polk's City Directory
1968	pg. A39	Polk's City Directory

FINDINGS

Year	CD Image	Source	
1968	pg. A40	Polk's City Directory	
1963	pg. A43	Polk's City Directory	
1963	pg. A44	Polk's City Directory	
1958	-	Polk's City Directory	Street not listed in Source

City Directory Images

Target Street	Cross Street	Source
-	✓	Cole Information Services

27TH ST 2013

1630	DAENG KHOUPRADIT
	OCCUPANT UNKNOWN
1632	JEFFREY EDWARDS
1636	OCCUPANT UNKNOWN
1646	OLEN FOWLER
1650	ERICA HAINES
1666	JOAQUIN HALE
1670	ROBERT SABOT
1673	MARY BOBILLOT
1674	OCCUPANT UNKNOWN
1690	PUC KINGERY
1700	JEREMY HARRIS
	MARK JENSON
	STEVEN PFEIFFER
1701	STACEY ISAACS
1741	MARGARET FRIEND
1750	JOE MACIEL
1754	ROBERT WALLIS
1758	PEDRO FURTADO
1778	DOUG DOBECKI
1800	ANDREW HOOPER
	C BRADY
	JESSICA BROWNLEE
	OCCUPANT UNKNOWN
	VANESSA SOMOHANO
1827	DAVID MOHRMANN
1875	HARRY JONES
1883	KEVIN MOSER
1886	ERIC LUND
1963	ANNIE STARWASZ
1969	ANDREW BUNNELL
1971	JAMES COTTON
1975	LEONOR MENDONCA
1977	TONI TROTTIER
1987	RENEE SORENSON
2440	JOHN BULLWINKEL

Target Street	Cross Street	Source
✓	-	Cole Information Services

FOSTER AVE 2013

1382	NICHOLAS ARTAIZ
1386	OCCUPANT UNKNOWN
1390	HILL BONNY
1396	SARAH KIEFER
1398	JESSIE GROESCHEN
1404	BRANDON SCOTT-JONES
	CIERA CAVANAUGH
	MICHAEL BOGER
	RACHAEL RIVKIN
1538	LEE ORLIKOFF
1540	KATIE CARR
	OCCUPANT UNKNOWN
1550	RICHARD DAVIS
1609	CODY DAWSON
	JON STINSON
	MOLLIE BLAHAUSZ
	NANCY VOLHEIM
1633	MICHELLE GLEDHILL
1641	ALICIA MARTINEZ
1660	ALISON KIRSKEN
	BRANDON DOCKINGS
	MICHAEL STANOWSKI
1665	AMANDA ERIBEZ
	BRENT WALLACE
	JOSH BALLANCE
	LORETTA MILLER
1983	DON NIELSEN
2665	DARREN GHISETTI
2700	CARLSON WIRELESS TECHNOLOGIES INC
3067	LANCE AVILA
3125	OCCUPANT UNKNOWN
3212	RAMONA FAIR
3266	TIFFANY WILDHARBER
3318	ABC INDOOR RV STORAGE LLC
	ARCATA LAND CO LLC
	SIERRA MADRE MUSHROOMS INC
3364	JOHN MASON
3422	JACK MASON
3805	DANIEL COHEN
4203	TIMOTHY SALLADY

Target Street	Cross Street	Source
-	✓	Cole Information Services

SEIDEL RD 2013

2353	GEORGIA COTTONE
2474	KAREN JANDEBEUR
2535	TIMOTHY DAVIS
3012	MICHELLE TAYLOR
3466	OCCUPANT UNKNOWN
3830	OCCUPANT UNKNOWN
4000	JOSE HOMEM
4002	OCCUPANT UNKNOWN
4003	OCCUPANT UNKNOWN

Target Street	Cross Street	Source
-	✓	Cole Information Services

UPPER BAY RD 2013

1963	MALORIE MCCURDY
1969	SARAH CALDWELL
1975	KRISTOPHER JUHL
1981	OCCUPANT UNKNOWN
1987	ALAN LILES
1993	JEFFRY BRANCA
1999	SETH WILSON
2021	BENJAMIN DUFF
2027	LARRY BEDNAR
2035	HELEN PEARSON
2039	ERNEST REAL
2045	GILBERT LEVY
2049	JOHN VAYO
3160	SUN VALLEY FLORAL FARMS INC
3203	MOLLY SIMAS
3326	DENNIS WORKMAN

Target Street	Cross Street	Source
-	✓	Cole Information Services

27TH ST 2008

1630	MICHELLE DAGGETT
1632	JEFFREY EDWARDS
1636	EPPERLY CONSTRUCTION
	JOHN EPPERLY
	JOHN EPPERY
1650	ERICA HAINES
1655	MARSHALL JONES
1666	JOAQUIN HALE
1670	BRENDA WILLIAMS
	ROBERT SABOT
1673	MARY BOBILLOT
1674	THERESA NEHER
1700	ERIC VIELKE
	HOLLY PITTS
	JEREMY HARRIS
	LYLA TAYLOR
1701	STACEY ISAACS
1737	T SELSER
1750	JOE MACIEL
1754	ROBERT WALLIS
1758	PEDRO FURTADO
1778	OCCUPANT UNKNOWN
1800	ANDREW HOOPER
	C BRADY
	EVAN BOWEN
	KERRY MCKEE
	OCCUPANT UNKNOWN
1827	DAVID MOHRMANN
1883	DORLINDA MOSER
1886	ERIC LUND
1969	ANDREW BUNNELL
1971	OCCUPANT UNKNOWN
1975	LEONOR MENDONCA
1987	OCCUPANT UNKNOWN
2440	MARGIE BULLWINKEL

Target Street	Cross Street	Source
✓	-	Cole Information Services

FOSTER AVE 2008

1382	ALISSA FOGG
	OCCUPANT UNKNOWN
1386	MICHAEL HEIDRICK
1390	MICHAEL HEIDRICK
1396	OCCUPANT UNKNOWN
1398	JESSIE GROESCHEN
1404	DEE GRAHAM
	ELIZABETH MEYER
	MICHAEL ELKINS
	TARA MURPHY
1538	ARCATA INTERFAITH GOSPEL CHOIR
	LEE ORLIKOFF
1540	JILLIAN GAYHERT
	OCCUPANT UNKNOWN
1550	RICHARD DAVIS
1609	ASHLEE SISKE
	DAVID ORPHAL
	LAUREN LAMET
	PETER AW-YANG
	SCOTT SEMMELINK
1633	BRITTANY DOSS
	C CHATTON
	CLARENCE TAYLOR
	MICHELLE GLEDHILL
1641	KARA HOCHNER
	KAY BALL
	MATTHEW KOELLING
1660	MICHAEL STANOWSKI
	TIFFANY NEWTON
	VALERIE EURS
1665	BLAIR WALLACE
	CARLITA FOSS
	JENNIFER HERMAN
	KEVIN RAIMEY
	RACHEL NELSON
	WILLIAM HOBSON
1983	DON NIELSEN
2665	PETER CIOTTI
3067	LANCE AVILA
	LARRY SHIELD
3125	OCCUPANT UNKNOWN
3212	RAMONA FAIR
3318	ARCATA LAND CO LLC SUN FLOWER
	OCCUPANT UNKNOWN
	SUN VALLEY FLORAL FARMS
3364	JOHN MASON
3422	BAR M
	JACK MASON
3805	BRUCE BRADY
4203	TIMOTHY SALLADY

Target Street	Cross Street	Source
-	✓	Cole Information Services

SEIDEL RD 2008

2474	KAREN JANDEBEUR
2535	OCCUPANT UNKNOWN
3012	OCCUPANT UNKNOWN
3466	LUZ BARRAGAN
4000	JOSE HOMEM
4002	MADALENA HOMEM
4003	MARC DANIELS

Target Street	Cross Street	Source
-	✓	Cole Information Services

UPPER BAY RD 2008

1963	SCOTT FERRIMAN
1969	LIAM CALDWELL
1975	STEWART WILSON
1981	GEORGE CABALZAR
1987	OCCUPANT UNKNOWN
1993	JEFFRY BRANCA
1999	SETH WILSON
2021	BENJAMIN DUFF
2027	LARRY BEDNAR
2035	OCCUPANT UNKNOWN
2039	ERNEST REAL
2045	OCCUPANT UNKNOWN
2049	JOHN VAYO
2076	OCCUPANT UNKNOWN
3160	SUN VALLEY FLORAL FARMS
3203	OCCUPANT UNKNOWN
3326	DENNIS WORKMAN

Target Street	Cross Street	Source
-	✓	Cole Information Services

27TH ST 2003

1630	ALEX BROLEY
1632	JEFFREY EDWARDS
1636	JOHN EPPERLY
	OCCUPANT UNKNOWN
1646	ANI LANCASTER
1650	KENNETH COMBS
1655	GINA GIMELLI
1664	OCCUPANT UNKNOWN
1666	ERIK BROWN
1673	MARY BOBILLOT
1674	DEBORAH STEIN
1700	CARL PFEIFFER
	JOHN KESTER
	MARC JOHNSON
1737	JOHN ELDER
1741	LOUIE SIMAS
1750	JOE MACIEL
1754	ROBERT WALLIS
1758	PEDRO FURTADO
1778	VIRGINIA WYCHE
1780	OCCUPANT UNKNOWN
1800	EVAN BOWEN
1827	DAVID MOHRMANN
1875	CLARA HILL
1883	DORLINDA MOSER
1886	OCCUPANT UNKNOWN
1963	CHRISTINE ELLICOTT
1969	ANDREW BUNNELL
1975	JOSE MENDONCA
1977	DAWN BERRY
1987	DAWN BARTLETTE

Target Street	Cross Street	Source
✓	-	Cole Information Services

FOSTER AVE 2003

1382	OCCUPANT UNKNOWN
1386	MICHAEL HEIDRICK
	OUTSIDE LANE PRINT SHOP
1390	OCCUPANT UNKNOWN
1396	JENIFER RUYLE
1398	OCCUPANT UNKNOWN
1404	DAVID HENDERSON
	E KILEY
	MATTHEW SHORTHOUSE
1538	JAMES HURWITZ
1540	AMBER POPP
	DAVID FULKERSON
1550	OCCUPANT UNKNOWN
1609	CRYSTAL HENSON
	DAVID DOLANRABIDEAU
	DAVID YOUDELL
	GREGORY MALL
	MICHAEL BARKER
	MORGAN WATTS
	S EBBERT
	SCOTT SEMMELINK
1633	AARON LUMAE
	HEIDI WYATT
	IMELDA GONZALES
	JASON HARDIN
	L NUNEZ
	SCOTT KOENIG
1641	ALEXANDRA SALAZAR
	ELISABETH OLIVER
	MATTHEW ECKHARDT
	SARA HOLCOMB
1660	CHRISTINA LASTRA
	MICHAEL STANOWSKI
	VALERIE EURS
1665	KAREN SHOEMAKER
	KEEGAN FINLEY
	KEVIN RAIMEY
	LEAH MCALPIN
	LORI KLEINHEKSEL
1983	DON NIELSEN
2665	OCCUPANT UNKNOWN
3067	ANGELA FLYNN
	LANCE AVILA
	OCCUPANT UNKNOWN
3125	OCCUPANT UNKNOWN
3212	RAMONA FAIR
3266	OCCUPANT UNKNOWN
3318	ARCATA LAND CO
	SUN VALLEY FLORAL FARMS PRSNL
3364	JOHN MASON

FOSTER AVE 2003 (Cont'd)

3422	JACK MASON
	JOHN MASON
3805	BRUCE BRADY
4203	TIMOTHY SALLADY

Target Street	Cross Street	Source
-	✓	Cole Information Services

LANPHERE RD 2003

1	JANET DEMELLO

Target Street	Cross Street	Source
-	✓	Cole Information Services

SEIDEL RD 2003

2353	OCCUPANT UNKNOWN
2474	KAREN JANDEBEUR
2535	OCCUPANT UNKNOWN
3830	OCCUPANT UNKNOWN
4002	MADALENA HOMEM
4003	JOSE HOMEN
	MARC DANIELS

Target Street	Cross Street	Source
-	✓	Cole Information Services

UPPER BAY RD 2003

1963	SCOTT FERRIMAN
1969	OCCUPANT UNKNOWN
1975	ARTHUR MACHADO
1981	GEORGE CABALZAR
1993	JEFFRY BRANCA
1999	SET WILSON
2021	BENJAMIN DUFF
2027	LARRY BEDNAR
2035	IAN MION
2039	ERNEST REAL
2045	IDA SNYDER
2049	DAPHNE VAUGHN
2076	OCCUPANT UNKNOWN
3160	SUN VALLEY FLORAL FARMS
3203	OCCUPANT UNKNOWN
3326	OCCUPANT UNKNOWN
3626	DENNIS WORKMAN

Target Street	Cross Street	Source
-	✓	Cole Information Services

27TH ST 1999

1630	MICHELLE DAGGETT
1632	JEFFREY EDWARDS
	OCCUPANT UNKNOWN
1636	JOHN EPPERLY
	OCCUPANT UNKNOWN
1646	OCCUPANT UNKNOWN
	OLEN FOWLER
1650	ERICA HAINES
1655	MARSHALL JONES
	OCCUPANT UNKNOWN
1666	JOAQUIN HALE
	OCCUPANT UNKNOWN
1670	BRENDA WILLIAMS
	DWIGHT VANDERPAS
	OCCUPANT UNKNOWN
	ROBERT SABOT
1673	MARY BOBILLOT
1674	AKASH PATEL
	ROBERT COFFREN
1700	ERIC VIELKE
	JEFFREY MARSZAL
	JEREMY HARRIS
	LYLA TAYLOR
1701	OCCUPANT UNKNOWN
	STACEY ISAACS
1737	T SELSER
1741	DEBORAH KRUG
1750	JOE MACIEL
1754	ROBERT WALLIS
1758	PEDRO FURTADO
1780	OCCUPANT UNKNOWN
1800	ANDREW HOOPER
	CARSON BRADY
	KERRY MCKEE
1827	OCCUPANT UNKNOWN
	ROBIN RETHERFORD
1883	DORLINDA MOSER
1886	ERIC LUND
1963	ANNIE STARWASZ
1969	ANDREW BUNNELL
1975	LEONOR MENDONCA
1977	DAWN BERRY
1987	OCCUPANT UNKNOWN
2440	MARGIE BULLWINKEL

Target Street	Cross Street	Source
✓	-	Cole Information Services

FOSTER AVE 1999

1382	ALISSA FOGG
1386	MICHAEL HEIDRICK
	OUTSIDE LANE PRINT SHOP THE
1390	MICHAEL HEIDRICK
1398	JESSIE GROESCHEN
	OCCUPANT UNKNOWN
1404	PATRICK PHILLIPS
1538	LEE ORLIKOFF
	OCCUPANT UNKNOWN
1540	NEIL HARRIS
1550	OCCUPANT UNKNOWN
	RICHARD DAVIS
1609	ASHLEE SISKE
	RACHEL HAUFE
	SCOTT SEMMELINK
	TARA NUTH
1633	C CHATTON
	CLARENCE TAYLOR
	DAVID MARCHINIAK
	JAKE HANNAN
	K COLEMAN
	M COWAN
	MARK FERRO
	MICHELLE GLEDHILL
	TRACY MATHEWS
1641	JAMIE HAYNES
	MATTHEW KOELLING
1660	ALISON KIRSKEN
	MICHAEL STANOWSKI
	VALERIE EURS
1665	BLAIR WALLACE
	DAVID MCBROOME
	JENNIFER HERMAN
	KEVIN RAIMEY
	RACHEL NELSON
	WILLIAM HOBSON
1983	DON NIELSEN
2665	B HOLLISTER
3067	LANCE AVILA
3125	OCCUPANT UNKNOWN
3212	RAMONA FAIR
3266	OCCUPANT UNKNOWN
3318	NORTHCOAST ENVIRONMENTAL CONSTRUCTION
3364	JOHN MASON
3422	JACK MASON
3805	DANIEL COHEN
4203	TIMOTHY SALLADY

Target Street	Cross Street	Source
-	✓	Cole Information Services

SEIDEL RD 1999

2474	KAREN JANDEBEUR
2535	VALERIE FOSTER
3012	MICHAEL LORENZEN
4002	MADALENA HOMEM
4003	JOSE HOMEM

Target Street	Cross Street	Source
-	✓	Cole Information Services

UPPER BAY RD 1999

1963	SCOTT FERRIMAN
1969	LIAM CALDWELL
1975	OCCUPANT UNKNOWN
	STEWART WILSON
1981	GEORGE CABALZAR
1987	HUGH LILES
1993	JEFFRY BRANCA
1999	SETH WILSON
2021	BENJAMIN DUFF
2027	LARRY BEDNAR
2039	ERNEST REAL
2045	OCCUPANT UNKNOWN
2049	JOHN VAYO
	OCCUPANT UNKNOWN
3160	SUN VALLEY FLORAL FARMS MAIN OFFICE
	SUN VALLEY FLORAL FARMS PERSONNEL OFFICE
3326	DENNIS WORKMAN

Target Street	Cross Street	Source
-	✓	Cole Information Services

27TH ST 1995

1630	KOKE, NANCY
1636	EPPELY, DOUG
	EPPERLY, DOUGLAS
1646	JACQUES, FRANK
1650	OCCUPANT UNKNOWNN
1655	LIGHT FANTASTIC
	OCCUPANT UNKNOWNN
1664	RILLING, NORMAN
1666	TOMS, JIM
1670	BROWNELL, RANDAL D
1673	BOBILLOT, MARY J
1674	FREW, GARY
1700	ENGELKE, MICHAEL H
	PFEIFFER, CARL A SR
	PHEIFFER, CARL
1701	OCCUPANT UNKNOWNN
1741	SIMAS, LOUIE
1750	MACIEL, JOE
1754	OCCUPANT UNKNOWNN
1758	FURTADO, PEDRO
1778	DOBECKI, DOUGLAS A
1800	OCCUPANT UNKNOWNN
1827	MOHRMANN, DAVID C
1883	MOSER, ALBERT L
1963	AVELAR, FRED L
1969	DAMME, ANITA J
1971	AVELAR, M L
1975	MENDONCA, JOSE
1987	HORNSTEIN, JOHN H

Target Street	Cross Street	Source
✓	-	Cole Information Services

FOSTER AVE 1995

0	DAVIS, AUDREY M
1386	STMARIE, JOHN T
1390	OCCUPANT UNKNOWNN
1396	KOMAROMI, J
1404	DANIELLO, EMILY
	GLENN, BILLY
	MCDONALD, GUTHRIE
	MILLER, DAVID S
	PEZZOLO, TONY
1538	OCCUPANT UNKNOWNN
1540	BREWSTER, KEVIN
	MARTIN, KAREN
1550	WARD, RICHARD
1609	BRITOS, JOSEPH
	HASPER, SCOTT
	JOHNSON, TERRY
	SCHAEFFER, WILLIAM
	WILLIS, K
1633	COLEMAN, TONIA A
	LEBECK, K
	STIRNLEY, MATT
1641	ECK, JAMES S
1665	SORENSEN, JOAN
	WASILCHIN, TOM
1983	NIELSEN, DON
2665	TAYLOR, JAMES A
3067	OCCUPANT UNKNOWNN
3085	MARSHALL, JEREMY
3125	AVILA, LANCE
3212	OCCUPANT UNKNOWNN
3266	SALLADY, TIMOTHY
3364	MASON, JOHN
3422	MASON, JACK
3805	DAY, MARY S
4203	SALLADY, EDWARD B

Target Street	Cross Street	Source
-	✓	Cole Information Services

SEIDEL RD 1995

3830	BALLEW, JASON
4000	HOMEM, JOSE L JR
4002	OCCUPANT UNKNOWNN

Target Street	Cross Street	Source
-	✓	Cole Information Services

UPPER BAY RD 1995

1963	HAGAN, KENNETH
1969	ODELL, THARON E
1975	MACHADO, ARTHUR S
1981	CABALZAR, GEORGE
1987	VOGEL, ROBERT H
1993	BRANCA, JEFFRY A
1999	KANDUS, RICHARD
2021	DUFF, B
	NEEBE, JANET
2027	BEDNAR, LARRY
2035	STEWART, SCOTT
2039	OCCUPANT UNKNOWNN
2045	BEAL, BRENDA U
2049	OCCUPANT UNKNOWNN
2076	BREWER, BEN
3160	SUN VALLEY FLORAL FARMS

Target Street	Cross Street	Source
-	✓	Cole Information Services

27TH ST 1992

1630	COKE, GABRIEL
1636	EPPERLY, DOUGLAS
1646	JACQUES, FRANK
1655	LIGHT FANTASTIC
	TRACY, JOSEPH
1664	FORD, HOWARD
	HOWARDS BODY SHOP
1666	TOMS, JIM
1673	BOBILLOT, MARY J
1674	POHL, J
1701	COSTELLO, JULIE
1741	SIMAS, LOUIE
1750	MACIEL, JOE
1758	FURTADO, PEDRO
1780	SUN VALLEY FARMS
1800	BRUNNER, ERIC
	HANS, WILLIAM
	PLOUGH & THE STARS
	PLOW & STARS INN
1971	AVELAR, M L
1975	MENDONCA, JOSE
17001	PFEIFFER, CARL A SR

Target Street	Cross Street	Source
✓	-	Cole Information Services

FOSTER AVE 1992

0	DAVIS, AUDREY M
	SIMPSON TIMBER CO
1386	STMARIE, JOHN T
1404	BURNETT, TIMOTHY D
	PATERSON, IAN
	RUSSELL, LISA
	SCHMITT, DIXON C
1540	DOMINGS, MARC
	MARTIN, KAREN
1550	DAVIS, RICK
1609	DONOHO, GAVIN
	GUSS, BECCA
1633	LUNDIN, THOMAS
1641	PAMBIANCO, DAN
	SHERBURNE, JASON A
1660	FIELD, GREGORY D
	LAMB, JAMES
1665	CARNICELLI, TERI
	SIMPSON, RAYMEAL
	WASILCHIN, TOM
1983	NIELSEN, DON
3067	AVILA, JOHNNIE
3125	HIBBARD, C J
3266	SALLADY, TIMOTHY
3364	MASON, JOHN
3422	MASON, JACK
	WYMORE, IVAN
4203	SALLADY, EDWARD B

Target Street	Cross Street	Source
-	✓	Cole Information Services

SEIDEL RD 1992

3466	RAMIREZ, GUSTAVO M
3830	BALLEW, JASON
4000	HOMEM, JOSE L JR
4002	PONTONI, AL

Target Street	Cross Street	Source
-	✓	Cole Information Services

UPPER BAY RD 1992

1975	MACHADO, ARTHUR S
1981	CABALZAR, GEORGE
1987	VOGEL, ROBERT H
1993	BRANCA, JEFFRY A
2021	DUFF, B
	NEEBE, J
2027	BEDNAR, LARRY
2035	STEWART, SCOTT
2045	BEAL, BRENDA U
2049	SEERY, MARILYN L
2076	THOMPSON, SHELLEY
3160	FARLEY, TRACY J
	SUN VLY BULB FARMS
3203	HILKER, E J

27TH ST 1982

AAMCO TRANSMISSIONS
LICENSED DEALER
World's Largest Transmission Specialists
1607 5th Street Eureka, Calif. 95501

19TH ST—Contd
3105★Consoli Mark
3122 Monroe Thos H Jr ◎
3157 Portee Louie E 442-2523
3158 Robison Leonard J ◎ 443-7607
3164 Harper Brent E ◎ 442-0460

66

23D ST —FROM MC FARLAN ST EAST

ZIP CODE 95501
2367 Benamor High School 445-9687
DEAN ST INTERSECTS
2379 Planned Parenthood Assn Of Humboldt educ & media info 445-2018
2405 Vacant
2408 Clemens Morrin O ◎ 443-5396
2430 Blackburn Walter K ◎ 442-8062
HARDY DR INTERSECTS

74

24TH ST (ARCATA)—FROM 2404 PACIFIC CT EAST

ZIP CODE 95521
475★Stanley Tim
540 Vacant
544 Vacant
546★Lanphear David W 822-9349
548 No Return
550 Tipple Joel C 822-1106
552 Vacant
554 Vacant
556★Hamilton John B 822-0928
560 Tate Hector V ◎ 822-2689

74

26TH ST (ARCATA)—FROM FRONTAGE RD EAST

ZIP CODE 95521
PACIFIC AV INTERSECTS
G ST INTERSECTS

82

27TH ST (ARCATA)—FROM ALLIANCE RD WEST 1 NORTH OF STROMBERG AV

ZIP CODE 95521
1630 Davis S G 822-6215
1636 Smith Kiel 822-7364
1636½★Epperly John
1650 Meng John A 822-1696
1655 Peters Martin ◎ 822-3505
1660 Westwood Trailer & Body Repair 822-4108
1664 Ford Howard 822-8532
1666 Toms Jim 822-4732
1670 Boltzen Donald
1673 Rael Dennis 822-3373
1674 Sabot Robt 822-5584
1700 Apartments.
1 Pfeiffer Carl A ◎ 822-3510
2★Nagel Colleen
3★Bradford Elmer
4★Swanson Carl
1701 Shelit Dana M 822-8179
1737 Simas Louie ◎ 822-2678
1750 Maciel Joe ◎ 822-4249
1778 Vacant
1780 Sun Valley Bulb Farms Inc 822-4420
1800a Czarnecki James B 822-5215
1800b Leberman Helen ◎ 822-5772
1875 Duran Sheri 826-1675
1883 Moser Albert L ◎ 822-4511
1886 Bernardi Gino G ◎ 822-4270
1963 Avelar Fred
1969★Tomer Randy ◎
1975 Vacant
2440★Bullwinkel Robt E ◎ 822-8179
1971 Avelar Mary Mrs 822-0296
1987★Wethey Jack 822-6703

74

28TH ST (ARCATA)—FROM 2780 G ST NORTH

ZIP CODE 95521

82

29TH ST (ARCATA)—FROM 2889 ALLIANCE RD WEST

ZIP CODE 95521
1620★Laughlin Thos
1633 Williams Forrest E Jr ◎ 822-4325
1634 Horton Roy D Rev ◎ 822-4131
1635★Martin Tony 822-8280
1665 Gallacci Eug A ◎ 822-3898
1672 Silveira Maria P Mrs 822-8825
1680 Battilocchi Alf 822-1193
1687★Dessaider Loyce ◎ 822-1206
1688 Williams Jackie
1694 Trimm Kelsie 822-2648
1698 No Return
1705 Nicholson Gerald M ◎ 822-0125

82

30TH ST (ARCATA)—FROM 3018 ALLIANCE RD EAST

ZIP CODE 95521
1250 Steinruck Eug D 822-4007
1260 Douglas Michl 822-3348
1312 Hankes Dorothy Mrs ◎ 822-2143
1312½★Claunch Don

92

A AVENUE (MC KINLEYVILLE)—FROM 2056 PARK RD SOUTH

ZIP CODE 95521
1736 Hall Clyde J ◎ 839-1377
1758 Clinton Charles E ◎ 839-2163
1762★Markwell Sarah
1770 Alexander Bob 839-2066
1788★Moon Wayne 839-2154
1790 Vacant
1ST RD INTERSECTS
1821 Adams Charles M ◎ 839-1397
1864★Phillips Walter D 839-4706
1867 Hatfield Wm A ◎ 839-3090
1872 No Return
1876 Thornton Roseann 839-3791
1887 House Danl ◎ 839-3318
1894★Moe John
2D RD INTERSECTS
1905 Levine Linda 839-0264
1911★Tankersley R 839-3706
1919 Yarbrough Kenneth 839-0577
1922 Duning Richd A 839-2500

600 F Street, Suite 12A, Union Town Square, Arcata
& OTHER BUSINESS MACHINES
LEASING AVAILABLE
826-0563

1049 Littlefield James H ◎ 725-2345
1098 Illes Paul F ◎ 725-2114
1099 Lenardo Frank G ◎ 725-2357
KENMAR RD INTERSECTS
ROSS HILL RD BEGINS

82

FOSTER AV (ARCATA)—FROM END OF EASTERN AV WEST 1 SOUTH OF CENTER AV

ZIP CODE 95521
1382 Phillips Jim L ◎ 822-2394
1386★Doyka Mimi 826-0855
1390 Vacant
1396 Escano Dustin R 822-0761
1404 Foster Avenue Apartments
1 Vacant
2 Montgomery Ricky G 822-7135
3 Mauzey D 822-3427
4★Brittain Billy 822-3814
5 Nannery Kathleen
6 Vacant
7 No Return
8 Vacant
1538 Lingerfelt Millard V ◎ 822-0738
1540 Haight David A ◎

68

FRANK ST —FROM 3914 GLENWOOD AV SOUTH

ZIP CODE 95501
2303 Sudori Lois Mrs ◎ 442-4402
2316 Schmidt Earl 445-1556
2320 Retzloff Mitzi L Mrs ◎ 442-3174

Target Street	Cross Street	Source
-	✓	Polk's City Directory

UPPER BAY RD 1982

14TH ST INTERSECTS
15TH ST INTERSECTS
16TH ST INTERSECTS
E 17TH ST INTERSECTS
1700 First Baptist Church 822-0367

81

UPPER BAY RD (ARCATA)—FROM 3018 JANES RD WEST

ZIP CODE 95521
1963 Backman Sally Mrs ◎ 822-1946
1969★Odell Tharon
1975 Machado Arth S 822-3448
1981 Cabalzar Geo A ◎ 822-3385
1987 Dick Willis K ◎ 822-8626
1993★Macari Steve 822-7134
1999 Rothman Rande H
2021★Brooks Howard D 826-0326
2027 Trimeloni Brad D ◎ 822-8234
2035 Benjamin Geo R ◎
2039 Real Ernest F ◎ 822-5402
2045 Beal Brenda U ◎ 822-4029
2049★Seery Marilyn L ◎ 822-8612

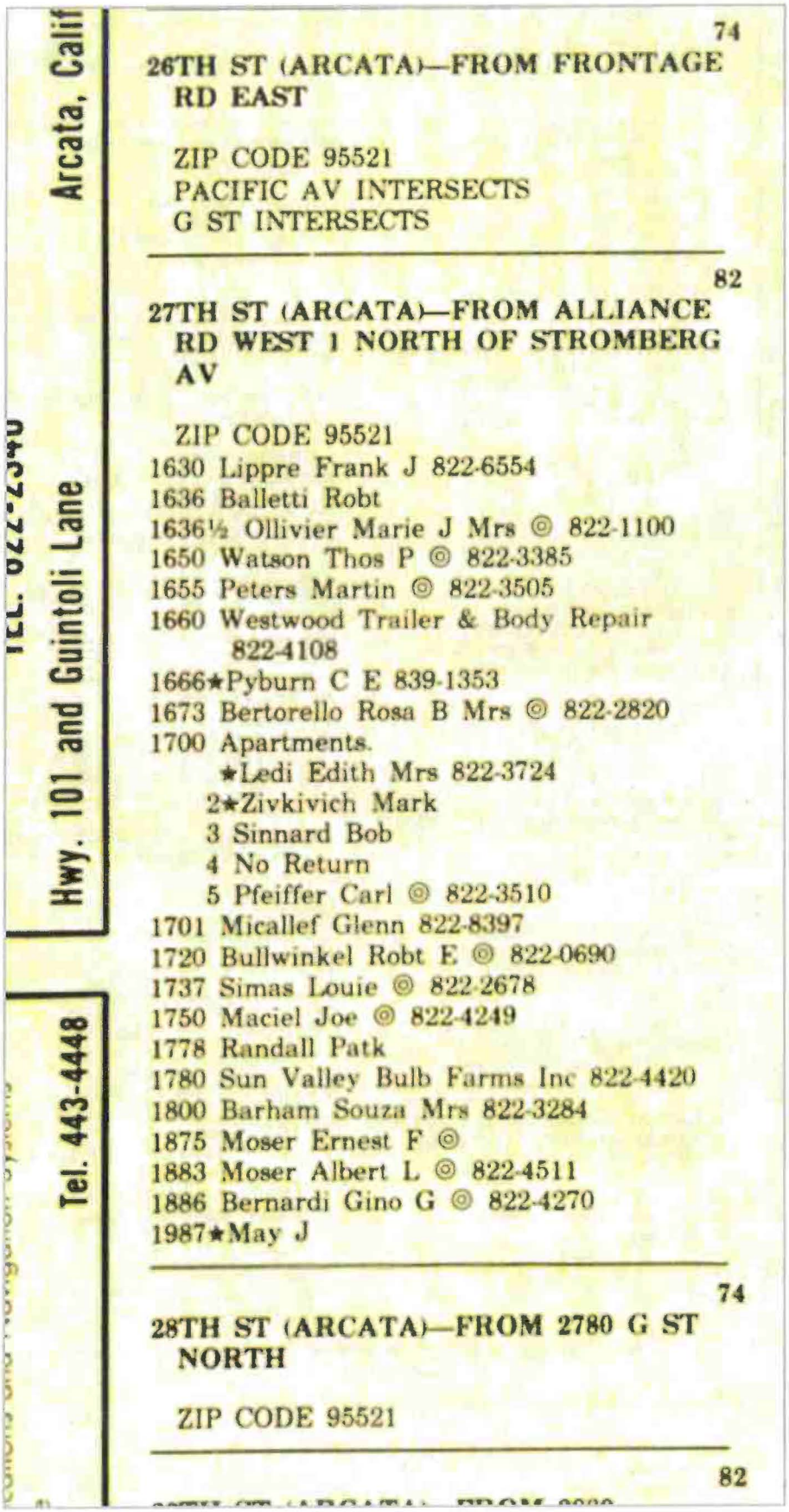
15

UTAH ST —FROM SOUTH AV SOUTH 1 EAST OF NEVADA ST

ZIP CODE 95501

Target Street	Cross Street	Source
-	✓	Polk's City Directory

27TH ST 1977



74

26TH ST (ARCATA)—FROM FRONTAGE RD EAST

ZIP CODE 95521
PACIFIC AV INTERSECTS
G ST INTERSECTS

82

27TH ST (ARCATA)—FROM ALLIANCE RD WEST 1 NORTH OF STROMBERG AV

ZIP CODE 95521
1630 Lippre Frank J 822-6554
1636 Balletti Robt
1636½ Ollivier Marie J Mrs ◎ 822-1100
1650 Watson Thos P ◎ 822-3385
1655 Peters Martin ◎ 822-3505
1660 Westwood Trailer & Body Repair 822-4108
1666★Pyburn C E 839-1353
1673 Bertorello Rosa B Mrs ◎ 822-2820
1700 Apartments.
★Ledi Edith Mrs 822-3724
2★Zivkivich Mark
3 Sinnard Bob
4 No Return
5 Pfeiffer Carl ◎ 822-3510
1701 Micallef Glenn 822-8397
1720 Bullwinkel Robt E ◎ 822-0690
1737 Simas Louie ◎ 822-2678
1750 Maciel Joe ◎ 822-4249
1778 Randall Patk
1780 Sun Valley Bulb Farms Inc 822-4420
1800 Barham Souza Mrs 822-3284
1875 Moser Ernest F ◎
1883 Moser Albert L ◎ 822-4511
1886 Bernardi Gino G ◎ 822-4270
1987★May J

74

28TH ST (ARCATA)—FROM 2780 G ST NORTH

ZIP CODE 95521

82

Target Street	Cross Street	Source
✓	-	Polk's City Directory

FOSTER AVE 1977

√ QUALITY √ SERVICE √ COURTESY
7th & G STS., EUREKA 95501 442-1741

S FORTUNA BLVD (F)—Contd
2★Hays Mark
3 Jones Walt
4 Dinnell Vernon
5★Brower Cheryl
6 Stinson T J
7 Salas Martin 725-3522
8 Vacant
9 Floyd Harold 725-5695
10 Grummert Winona
558 Derryberry James T 725-3416
569 Mays & Townsend Auto Sales 725-3611
572 Blake Dale 725-3103
580 Electric Motor Works 725-4346
591 Debets & Associates Realtors 725-4456
592 Fortuna Truck Repair truck repr 725-3769
611 Sleepy Motel 725-3845
Quillen Rollen L ◎
2D ST INTERSECTS
629 Allen Howard S ◎ 725-2617
635 Krenz Cecil D
650 Fortuna Nursery & Landscaping 725-2131
659 Vacant
664 Cotter's Cafe 725-4241
664a Cotter Melvin D ◎
679 Scribner Gay A ◎ 725-4184
682 Whitchurch Geo W ◎ 725-2778
684 Whitchurch Ed
706 Stark Jim R 725-5968
728 S & H Garage 725-4673
736 Christiansen Alan S 725-3770
754 Iversen Glen S 725-4042
776 Waters Richd L ◎
786★Edgmon E R ◎
796 Barnes Beverly 725-5205
822 B & E Garage auto dlr & repr 725-4117
900 Warehouse
903 Stien Gloria
910 Hillard W A Elder
910½★Williams Dale
927 Vacant
Coleman Dennis H 725-5902
957 Miller Roger
999a Laizure Robt C ◎ 725-2813
999b Frazier Michl
999c Vacant
1049 Littlefield James H ◎ 725-2345
1098★Illes Paul F ◎ 725-2114
1099 Lenardo Frank G ◎ 725-2357

82

FOSTER AV (ARCATA)—FROM END OF EASTERN AV WEST 1 SOUTH OF CENTER AV

ZIP CODE 95521
1382 Phillips Jim L ◎ 822-2394
1382½★Streiff Robt
1386★Hanna Tim 822-6438
1390 Bock Gary
1396★O'Donnell Dan 822-1968
1398★Mc Bride Jim
1404 Foster Avenue Apartments
1 Channell R A
2 Myers C
3 Douscheuce Mark
4★Kerker Bill
5 Newport Charles 822-3747
6 Ashodian Judy
7 Hansen James
8 Smith Robt
1538 Lingerfelt Millard V ◎ 822-0738
1540 Samuels Carl V ◎ 822-4514

68

FRANK ST —FROM 3914 GLENWOOD AV SOUTH

ZIP CODE 95501
2303 Sudori Lois Mrs ◎ 442-4402
2316 Schmidt Earl 445-1556
2320 Retzloff Mitzi L Mrs ◎ 442-6172
2333 Hale Phyllis I ◎ 442-1988
2356 Tuel E S
2370 Anderson Carl 443-8812
PENNSYLVANIA AV INTERSECTS
2407 Pollock Wm H 445-2448
2410 Wahlund John E Jr ◎ 443-1527
2412 Skipper G Dee ◎ 443-9451
2424 Stoffer Kenneth M ◎ 443-9972
2425 Pearson Helen L Mrs ◎ 442-6533
2435 Wright Geo L 443-6482
2440 Wittwer J Roy ◎
2447 Beckman Valmer ◎ 442-6352
2450 Wilson Paul A ◎ 442-1895

78

FREDRICK AV (ARCATA)—FROM 2149 HAEGER AV NORTH

ZIP CODE 95521
2034 No Return
2041 Graham Edw ◎ 822-3496
2042 Scott Wallace
2049 Alders Sylvia ◎ 822-2167
2050 Harris Richd ◎ 822-6464
2057 Resendes Vasco ◎ 822-5424
2058 Smith Richd J ◎ 822-6767
2066 Vacant
2101 Nicholson David 822-1937
2102 Short Wendell ◎ 822-5205
2109 Pimentel Sylvester ◎ 822-6677
2110 Creek Larry
2117 Mc Guffey James R ◎ 822-3537
2118 Edwards Allen
2125 Pialorsi Angelo ◎ 822-1308
2126 Litza Edmond ◎ 822-2692
2133 Smith Ron ◎ 822-5780
2134 Sells Wayne L ◎ 822-2352
2142 Jensen Lorna
2150 Brimble James A ◎ 822-5220
2158 Hendricks Herbert W ◎ 822-3991

amn Sales, Service and Supplies (707) 822
1905 Heindon Road, Arcata, Calif. (95521)
COAST Eureka, Ca.
ANY DRAINAGE FAILURE TEL. 445-0571
2103 3d St., P.O. Box 1326
SEWER-DRAIN SERVICE
Angelo's PIZZA PARLOR
"FOOD AND FUN FOR THE ENTIRE FAMILY"
Free Private Party Room For Celebrations and Gatherings
OPEN DAILY 11:00 A.M. - ORDERS TO GO
215 West 7th Street Eureka 95501 443-3262
575 H Street Arcata 95521 822-3172
McKinleyville Shopping Center 95521 839-3611



1183 Palmquist Peter E ◎ 822-3857
12TH ST INTERSECTS
1266 Thurber Dan M ◎ 822-4165
13TH ST INTERSECTS
14TH ST INTERSECTS
15TH ST INTERSECTS
16TH ST INTERSECTS
E 17TH ST INTERSECTS
1700 First Baptist Church 822-0367

81

UPPER BAY RD (ARCATA)—FROM 3018 JANES RD WEST

ZIP CODE 95521
1963 Backman Axel O ◎ 822-1946
1969 O'Dell Tharon E 822-5895
1975★Machado Arth 822-3448
1981 Warlick Chester M Jr ◎
1987 Dick Lynn 822-8626
1993 Daniels Hollis V 822-2617
1999 Davis Cary E 822-5536
2021★Mc Clard David 822-0101
2027★Moore Merle A 822-8266
2035 Benjamin Geo R ◎ 822-3228
2039 Real Ernest F ◎ 822-5402
2045 Beal Brenda U ◎ 822-4029
2049 No Return

15

UTAH ST —FROM SOUTH AV SOUTH 1 EAST OF NEVADA ST

ZIP CODE 95501
3356 Murdock Frank ◎ 442-5039
3376★Freeman Gary ◎
3380 Pettersen C B ◎ 442-7498
GIBSON AV INTERSECTS
3406 Daiute Monte H ◎
3426 Denlinger Delmar A ◎ 442-3932

PACIFIC AV INTERSECTS
725★Ernst Rodney 822-0691
730★Cherin Pat L
731★Wennerberg Kim
G ST INTERSECTS

82

27TH ST —FROM ALLIANCE RD WEST 1 NORTH OF STROMBERG AV

ZIP CODE 95521
1630 Lippre Frank J 822-3706
1636 No Return
1636½ Ollivier Marie Mrs ◎ 822-1100
1650 Watson Thos P ◎ 822-3385
1655 Peters Martin ◎ 822-3505
1660 Westwood Trailer & Body Repair 822-4108
1666★Mortiz Michl K
1673 Bertorello Rosa Mrs ◎ 822-2820
1700 Apartments
1★Strawns Robt
2★Curtis Brad
3 Simmard Bob
4 Freeman Kenneth
5 Pfeiffer Carl ◎ 822-3510
1701★Thomas James
1720 Bullwinkel Robt E ◎ 822-0690
1737 Simas Louie ◎ 822-2678
1750 Maciel Joe ◎ 822-4249
1800 Barham James W
1875 Moser Ernest F ◎
1883 Moser Albert L ◎ 822-4511
1886 Bernardi Gino ◎ 822-4270

74

28TH ST —FROM 2780 G ST NORTH

ZIP CODE 95521
790 Apartments
1 Sauer Barbara
2★Cleary David

Eureka 95501
30 W. Wabash Av.
442-5954

Target Street	Cross Street	Source
✓	-	Polk's City Directory

FOSTER AVE 1973

74

FOREST AV —FROM N HWY 101 EAST 1 NORTH OF RIDGE RD

74

ZIP CODE 95521
416 Stevens John A ◎
474★Rowe John
476 Blanchard Harley R ◎ 822-4296
482 Johnson Fred L ◎ 822-2009
490 Vacant
LAKE WAY INTERSECTS
495★Comet Delbert E ◎ 822-1279
504 Johnson Jewell B Mrs ◎ 822-5077
508★Belt Allan J 822-8159

82

FOSTER AV —FROM END OF EASTERN AV WEST 1 SOUTH OF CENTER AV

ZIP CODE 95521
1382 Phillips Jim L ◎ 822-2394
★Scott Wm L
1386 Dobie Paul B 822-2239
1390 Larsen Donald G
1396★Petrat Steve 822-2324

Phone 443-4505

Target Street	Cross Street	Source
✓	-	Polk's City Directory

FOSTER AVE 1973

Eureka

PHONE 443-0837

FOSTER AV (A)—Contd

1404 Foster Avenue Apartments
1 Vacant
2★Meyer Stephen R 822-6458
3 No Return
4 No Return
5★Morgan Marilyn
6★Olsen Chris O
7 No Return
8★Rapp Ronald 822-5880
1538 Lingerfelt Millard V ◎ 822-0738
1540 Samuels Carl V ◎ 822-4514

78

FREDRICK AV —FROM 2149 HAEGER AV NORTH

ZIP CODE 95521
2042 Vacant (2042-2102)
2050 Vacant
2058 Vacant
2066 Vacant
2102 Vacant
2158 Hendricks Herbert W ◎ 822-3991

Sanders Robt

16TH ST INTERSECTS

1640 Anderson Gregory M ◎ 822-4226
1650 Nave Fred 822-3267

E 17TH ST INTERSECTS

1700 First Baptist Church 822-0367

82

UPPER BAY RD —FROM 3018 JANES RD WEST

ZIP CODE 95521

1963 Backman Axel ◎ 822-1946
1969 Ball Fred M ◎ 822-3285
1975 Klingensmith Ed L 822-0409
1981 Warlick Chester M Jr ◎
1987 Bankson Roy E ◎ 822-3078
1993 Vacant
1999 Friend Robt
2021 Iversen Kathrina Mrs ◎ 822-0117
2027 Mc Clain A Dan 822-0326
2035 Benjamin Geo R ◎ 822-3228
2039 Real Ernest F ◎ 822-5402
2045 Isaak David 822-6720
2049 No Return

74

VALLEY EAST BLVD —FROM VALLEY WEST BLVD EAST THEN NORTH

ZIP CODE 95521

4700 International Woodworkers Am A F L-C I O Loc 3-98 839-3812
4766 Apartments
R★Parker Merle L 822-0822

Target Street	Cross Street	Source
-	✓	Polk's City Directory

27TH ST 1968

730 STAPP LA VERNA MRS 822-1445
731 JOHNSON VIRGINIA MRS
---G INTERSECTS

82

27TH ST -FROM ALLIANCE RD WEST 1
NORTH OF STROMBERG AV

---ZIP CODE 95521
1636 ELLIOTT CAROLINE
1636½ OLLIVIER ELOI D • 822-1100
HERRIOTT CAROLYN T 822-5846
1650 WATSON THOS P • 822-3385
1655 PETERS MARTIN • 822-3505
1660 WESTWOOD TRAILER & BODY
REPAIR 822-4108
1666 VACANT
1673 BERTORELLO GUISEPPE •
822-2820
1700 APARTMENTS.
1 DEATHERIDGE CHARLES S
822-1378
2 SOUSA JOSE 822-5732
3 SIMMARD BOB
4 WOLFE ROBT E
5 PFEIFFER CARL A •
1701 COOK AUG
1737 SIMAS LOUIE • 822-2678
1800 SOUZA JOE C • 822-3284
MANNING JERRY C 822-3061
1883 MOSER ALBERT L • 822-4511
1886 BERNARDI GINO • 822-4270

74

28TH ST -FROM 2780 G NORTH

---ZIP CODE 95521
790 APARTMENTS
REAR NO RETURN
2 MATHENY KEITH O 822-6910

Target Street	Cross Street	Source
✓	-	Polk's City Directory

FOSTER AVE 1968

504 JOHNSON JEWELL B MRS •
822-5077
508 POFF HIRAM M • 822-1638

82

FOSTER AV -FROM END OF EASTERN AV
WEST 1 SOUTH OF CENTER

---ZIP CODE 95521
1382 PHILLIPS JIM L • 822-2394
1386 BERONIO DAVID 822-2200
1396 GOMEZ JOE C
1398 ELLSMORE PHILLIP C 822-6898
1404 FOSTER AVENUE APARTMENTS
1 GAIER STEPH W 822-5779
2 VAN SLEET ROBT 822-6980
3 THIPPS STEVE 822-5500
4 ZARAMSKAS STANLEY 822-6895
5 WARNSLEY LARRY 822-5584
6 MANSFIELD PAMELA
7 EGGERT JEFFREY
8 JOHNSON ROSS
1405 CADRA MARBRY MRS 822-4904
1538 STRETCH TOM W • 822-4748
1540 SAMUELS CARL C • 822-4514

76

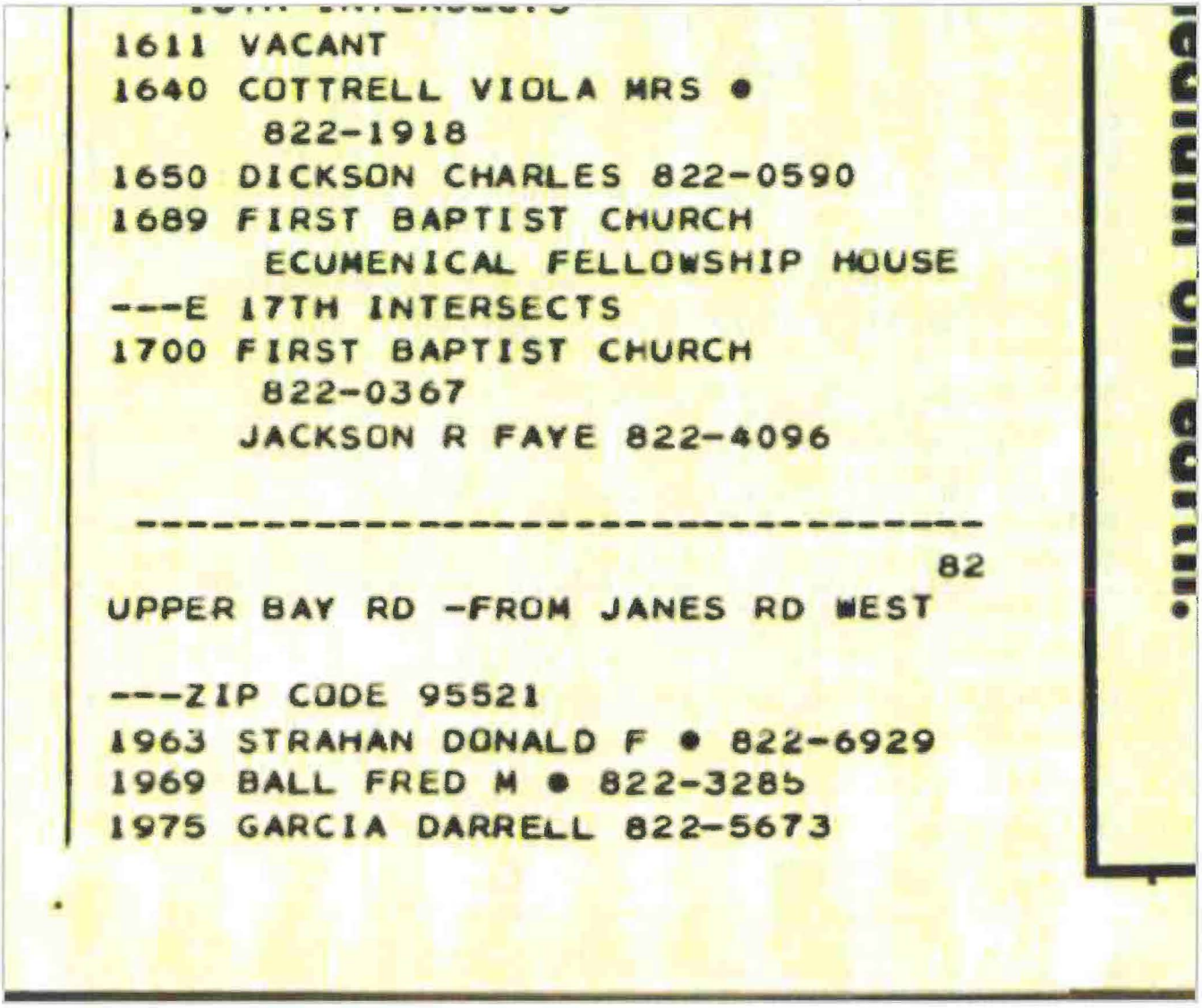
FRONT ST -FROM D WEST, 3 SOUTH OF
ED

76

G STREET -FROM FRONT NORTH, 1
WEST OF E

Target Street	Cross Street	Source
-	✓	Polk's City Directory

UPPER BAY RD 1968



1611 VACANT
1640 COTTRELL VIOLA MRS •
822-1918
1650 DICKSON CHARLES 822-0590
1689 FIRST BAPTIST CHURCH
ECUMENICAL FELLOWSHIP HOUSE
---E 17TH INTERSECTS
1700 FIRST BAPTIST CHURCH
822-0367
JACKSON R FAYE 822-4096

82

UPPER BAY RD -FROM JANES RD WEST

---ZIP CODE 95521
1963 STRAHAN DONALD F • 822-6929
1969 BALL FRED M • 822-3285
1975 GARCIA DARRELL 822-5673

ARTIST SUPPLIES

F. A. MATTHE

WHOLESALE Since 1

Paints - Wallpaper - Artist's Su

520 F Street Eureka

UPPER BAY RD—Contd

1981 WARLICK CHESTER M JR •
1987 BANKSON ROY • 822-3078
1993 LANGEBERG ESTHER M MRS •
1999 GIPSON DON 822-3938
2021 CAREY DUANE D • 822-1823
2027 MOSS AHMED H • 822-4069
2035 BENJAMIN ETHEL C MRS • 822-3228
2039 REAL ERNEST
2045 EWART PHILIP J • 822-2084

78

VILLA WAY -FROM 11TH NORTH 1 WEST OF AUSTIN WAY

---ZIP CODE 95521

1110 RING KENNETH G • 822-1119
1115 MEUCCI DARIO • 822-3147
1120 GRAVES OSSMAN P • 822-0716
1130 MORANDA EARL L •
1131 SOULIGNY EUG W • 822-3519

Target Street	Cross Street	Source
-	✓	Polk's City Directory

27TH ST 1963

G INTERSECTS

82

27TH (A) -FROM ALLIANCE RD W, 1 N OF STROMBERG AV

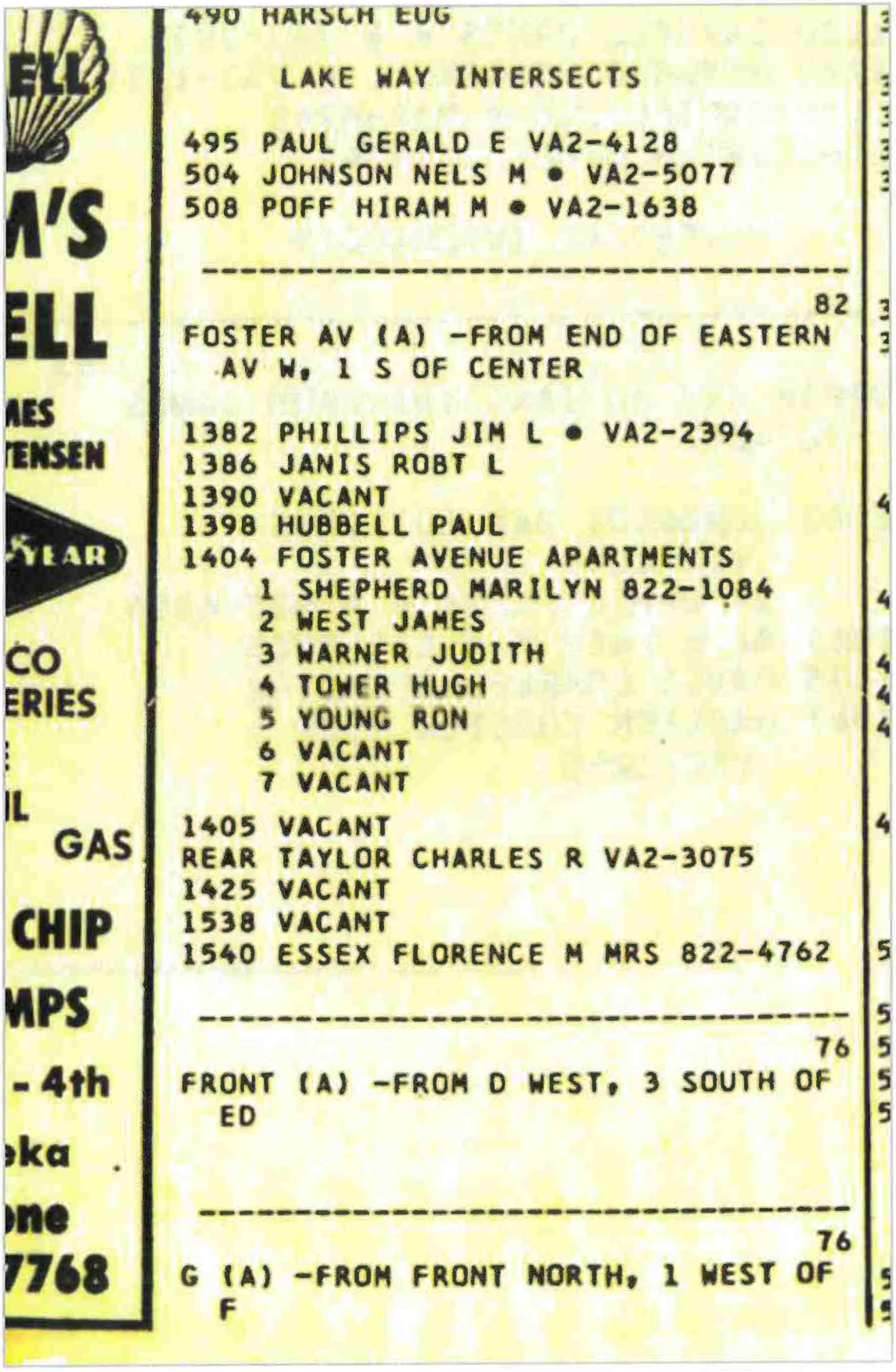
1630 BERTOLINI BRUNA MRS •
VA2-4015
1636 WILSON TOM E 822-3184
1636½ OLLIVIER ELOI D • VA2-1100
THORNHILL GILBERT VA2-5029
1650 WATSON THOS P • VA2-3385
1655 PETERS MARTIN • VA2-3505
1660 WESTWOOD BODY SHOP VA2-4108
1666 REYNIER JOS J • 822-4389
1673 BERTORELLO GUISEPPE •
VA2-2820
1700 APARTMENTS.
1 PFEIFFER CARL A • VA2-3510
2 DLOUHY ALVIN E VA2-3174
3 SIMMARD BOB
4 VACANT
5 MURPHY CHARLES
1701 VACANT
1737 SIMAS LOUIE • VA2-2678
1800 MANNING JERRY C 822-3061
1883 MOSER ALBERT L VA2-4511
1886 BERNARDI GINO VA2-4270

74

28TH (A) -FROM 2780 G NORTH

Target Street	Cross Street	Source
✓	-	Polk's City Directory

FOSTER AVE 1963



490 HARSCH EUG

LAKE WAY INTERSECTS

495 PAUL GERALD E VA2-4128
504 JOHNSON NELS M • VA2-5077
508 POFF HIRAM M • VA2-1638

82

FOSTER AV (A) -FROM END OF EASTERN AV W, 1 S OF CENTER

1382 PHILLIPS JIM L • VA2-2394
1386 JANIS ROBT L
1390 VACANT
1398 HUBBELL PAUL
1404 FOSTER AVENUE APARTMENTS
1 SHEPHERD MARILYN 822-1084
2 WEST JAMES
3 WARNER JUDITH
4 TOWER HUGH
5 YOUNG RON
6 VACANT
7 VACANT
1405 VACANT
REAR TAYLOR CHARLES R VA2-3075
1425 VACANT
1538 VACANT
1540 ESSEX FLORENCE M MRS 822-4762

76

FRONT (A) -FROM D WEST, 3 SOUTH OF ED

76

G (A) -FROM FRONT NORTH, 1 WEST OF F

Target Street	Cross Street	Source
-	✓	Polk's City Directory

UPPER BAY RD 1963

1180 CARVELL JAMES R • VA2-3039
1181 HAYWOOD KENNETH L • VA2-1179
1190 MACIEL JOE • VA2-4249
1191 SMITH OTHO 822-4044

HAEGER AV INTERSECTS

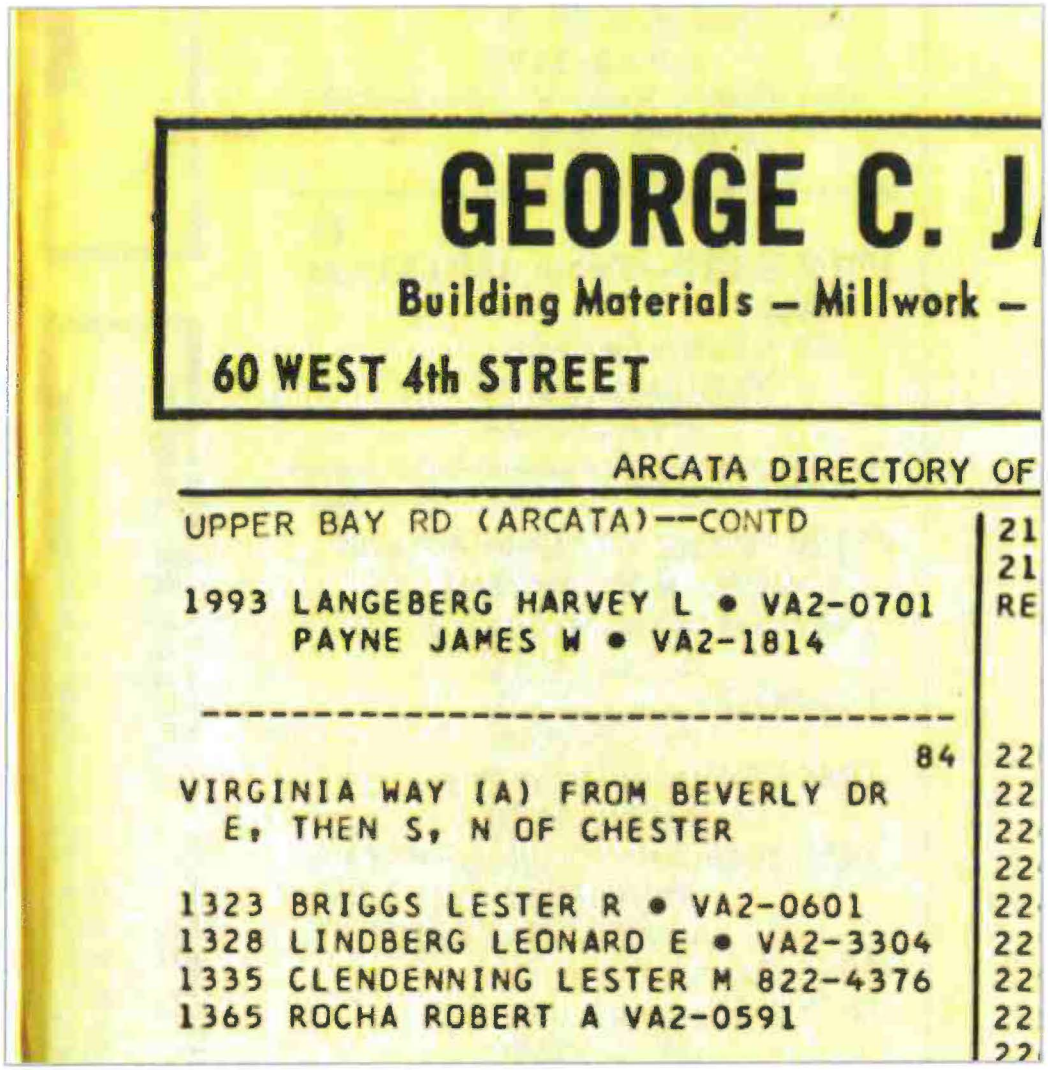
82

UPPER BAY RD (ARCATA)-FROM JANES RD WEST

1963 HUMBOLDT BAY BUILDERS
VA2-1555
STROMBERG KENT E • 822-4054
1969 BALL FRED M • 822-3285
1975 DAVIS CHARLES 822-2602
1981 WARLICK CHESTER M JR •
VA2-1260

Target Street	Cross Street	Source
-	✓	Polk's City Directory

UPPER BAY RD 1963



GEORGE C. J

Building Materials – Millwork –

60 WEST 4th STREET

ARCATA DIRECTORY OF

UPPER BAY RD (ARCATA)--CONTD

1993 LANGEBERG HARVEY L • VA2-0701
PAYNE JAMES W • VA2-1814

84

VIRGINIA WAY (A) FROM BEVERLY DR E, THEN S, N OF CHESTER

1323 BRIGGS LESTER R • VA2-0601
1328 LINDBERG LEONARD E • VA2-3304
1335 CLENDENNING LESTER M 822-4376
1365 ROCHA ROBERT A VA2-0591

Target Street	Cross Street	Source
-	✓	Polk's City Directory

27TH ST 1958

921 Church Robt W
ΔVA2-2136
931 Hertz Robt V ΔVA2-0667
J intersects

74

19TH EAST—From 1884 Union east
39 Brown DeLyle
Milligan Lyle W
ΔVA2-3793

82

27TH—From Alliance rd west, 1 north of Stromberg av
1630 Bertolini Bruner ◎
ΔVA2-4015
1636 Ollivier Chas L
ΔVA2-2702
1636½ Ollivier Eloi D ◎
ΔVA2-1100
1650 Westwood Village Body & Paint Shop auto body reprs ΔVA2-4108
1666 Reynier Joe ◎
1673 Bertorello Joe ◎
ΔVA2-2820
1700 **Apartments**
1 Pfiffer Carl A ◎
ΔVA2-3510
2 Vacant
3 Brazeal Leslie
4 Ramos Carl Mrs
5 Cahill Michl J ΔVA2-0231
Street continued
1701 No return
1720 Vacant
1737 Simas Louie ◎ ΔVA2-2678
1800 Kitchen Luther W
ΔVA2-2396
Thomas Chas K
ΔVA2-2825

UN
Henderson and E Streets Eureka Telephone HI Ilside 3-2771
Your Marshall Wells Store
S & H Green Stamps

Target Street	Cross Street	Source
-	✓	Polk's City Directory

27TH ST 1958

NORTHERN MARI
FRANK BRE
SPORTING GOODS – JOHNS
COMMERCIAL FISHERMEN'S SU
2nd and E Streets Eureka

27TH—Contd

1883 Moser Albert L
ΔVA2-4511

74

A—From 10th north, continuation of Prospect

1063 Adams Irene A Mrs
ΔVA2-3565

1089 Knapp Frank J ΔVA2-3600

11th intersects

1124 Rohrbach Wilbert ◎

1340 Church of the Nazarene

Target Street	Cross Street	Source
✓	-	Polk's City Directory

FOSTER AVE 1958

270 Downing Wesley W
279 Brookins Lee H ◎
ΔVA2-3723
279½ Vacant
280 Biondini Jos A ◎

82

FOSTER AV (Sunset Addn)—
From end of Eastern av west, 1 south of Center

1385 Phillips Jim ◎
ΔVA2-2394
1386 Ames Richd C
ΔVA2-2869
1390 Riu David E
1396 Vacant
1398 Le Var Vincent ◎
ΔVA2-0478

Western av intersects

1404 **Lima Apartments**
1 Jennings Ernest L
2 Larsen Donald G
3 Vacant
4 Vacant
5 Giacomini Helen C Mrs
6 Rice Martin L
7 Vacant
8 Vacant

Street continued

1405 Taylor Edna C Mrs ◎
ΔVA2-3075
1425 Speier's Mach Shop
ΔVA2-2844
1520 Vacant
1540 Samuels Carl V ◎
ΔVA2-0644

E A PERSON OR FIRM

Target Street	Cross Street	Source
✓	-	Polk's City Directory

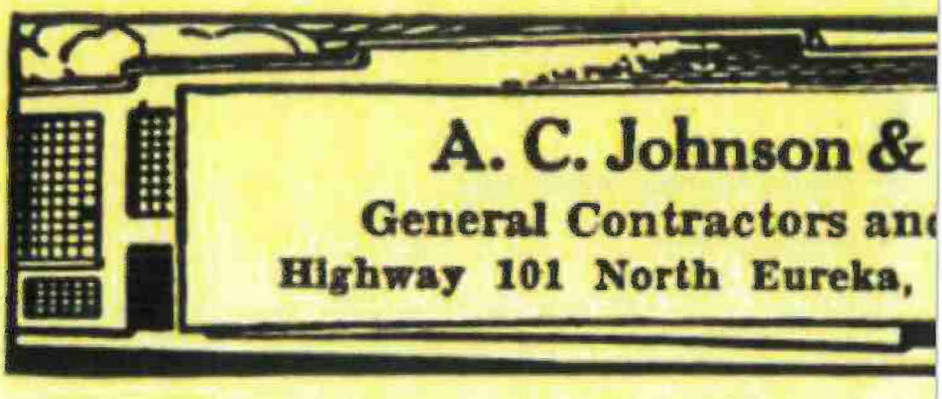
FOSTER AVE 1958

BAIL BONDS

call any time for

RAY GENUNG

HIllside 2-5796



A. C. Johnson &
General Contractors an
Highway 101 North Eureka,

76
FRONT—From D west, 3 south of 3d

74
FRONTAGE ROAD—From Arcata blvd to Granite av parallel to Redwood hwy

2010 R K Ta Motel
ΔVA2-3872
2150 Jansen's Store gro
ΔVA2-1074
2350 Bim's Drive-In restr

Arcata Properties
3318 Foster Avenue, 2725 Simpson Mill Road, 4044 L
Arcata, CA 95521

Inquiry Number: 4293018.3
May 13, 2015

Certified Sanborn® Map Report

6 Armstrong Road, 4th Floor
Shelton, Connecticut 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

5/13/15

Site Name:
Arcata Properties
3318 Foster Avenue, 2725
Arcata, CA 95521

Client Name:
Partner Engineering and
2154 Torrance Blvd, Suite 200
Torrance, CA 90501-0000

EDR Inquiry # 4293018.3

Contact: Brett Nielsen

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The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Site Name: Arcata Properties
Address: 3318 Foster Avenue, 2725 Simpson Mill Road,
City, State, Zip: Arcata, CA 95521
Cross Street:
P.O. # NA
Project: 15-139484.1
Certification # B85E-434E-81D6

Sanborn® Library search results
Certification # B85E-434E-81D6

UNMAPPED PROPERTY

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The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ✓ Library of Congress
- ✓ University Publications of America
- ✓ EDR Private Collection

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EnviroNet

CONSULTING

REPORT OF INVESTIGATION
(REVISED)

FOR THE

Former Simpson Timber Company Remanufacturing Plant Site
Located at:

3315 Foster Avenue
Arcata, California
APN: 506-231-05, 506-231-02,
506-231-01, 505-151-04,
505-151-03, 505-181-07

AND

The Simpson Common Paymaster Company

APN: 505-151-05, 506-131-11
506-231-04, 506-241-16
505-161-09, 505-161-10,
505-161-29

Project Number 7102.1

EnviroNet Consulting
3601 Regional Parkway, Suite A
Santa Rosa, California 95403

Date Prepared:
July 31, 1997

Date Revised:
September 12, 1997

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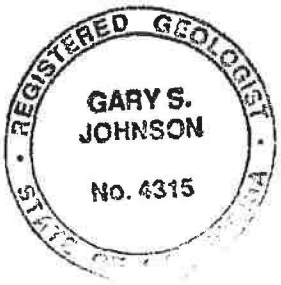
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GLOSSARY OF TERMS
ABBREVIATIONS and ACRONYMS

AGT	Above Ground Storage Tank
ARARs	Applicable or Relevant and Appropriate Requirements
bgs	below ground surface
CAL/EPA	California Environmental Protection Agency
CEG	Certified Engineering Geologist
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response Compensation & Liability Act
cy	cubic yards
DRAW	Draft Removal Action Work Plan
DTSC	Department of Toxic Substance Control
HBMWD	Humboldt Bay Municipal Water District
HCDEH	Humboldt County Department of Environmental Health
ug/L	Micrograms per liter (ppb)
mg/kg	Milligrams per kilogram (ppm)
mg/L	Milligrams per liter (ppm)
NCCCOB	Northern California Coastal Cleanup Operations Branch
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NCRWQCB	North Coast Regional Water Quality Control Board
ND	Not Detected
NPDES	National Pollution Discharge Elimination System
OSWER	Office of Solid Waste and Emergency Response
PCBs	Polychlorinated Biphenyls
PCP	Pentachlorophenol
ppb	Parts per billion
ppm	Parts per million
PRG	Preliminary Remediation Goal
QA/QC	Quality assurance/quality control
RAP	Remedial Action Plan
RAW	Removal Action Work Plan
RG	Registered Geologist
SARA	Superfund Amendments & Reauthorization Act
STLC	Soluble Threshold Limit Concentration
TBC	To be considered
TCLP	Toxicity Characteristic Leaching Procedure
TTLC	Total Threshold Limit Concentration
USEPA	United States Environmental Protection Agency
USGS	United States Geological Services
UST	Underground Storage Tank
WDR	Waste Discharge Requirement
8260	EPA Analytical Method for Volatile Organics
8270	EPA Analytical Method for Semivolatile Organics

EXECUTIVE SUMMARY

The Arcata Remanufacturing Plant of Simpson Redwood Company, doing business as Simpson Timber Company (Simpson) was built at the 3315 Foster Avenue location (Site) in Arcata between 1951 and 1959. The railroad spur into the Site was constructed during this time and is currently owned by the Simpson Common Paymaster Company. Prior to construction of the plant facilities and railroad spur, the land was agricultural. The plant was operated from 1952 until its closure in June of 1989. The majority of the equipment was removed from the plant and sold in 1990 and 1991. The plant was used to process rough sawn boards into finished lumber and siding. The adjoining railroad spur has been in continuous use to this date for shipping of processed materials. Since the closure of the plant, the railroad spur has been used as a shipping point for other Simpson Timber lumber products which are trucked to the Site.

Simpson put the property up for sale in June of 1989. Up until 1996, several environmental assessments of the property were made due to possible property transfer to others. Simpson contracted with EnviroNet Consulting (EnviroNet) to complete a thorough environmental assessment for the purposes of a recent possible property transfer and the environmental assessment was conducted primarily during the first half of 1997.

Initial review of the Site and its history identified 22 potential areas of investigation which were:

1) Previously closed in-place underground fuel storage tanks (USTs)
2) Former transformer areas
3) Former boiler blowdown and overflow ponds
4) Former steam cleaning/wash rack area (including ditch)
5) Fork lift maintenance building
6) Above-ground fuel storage tanks (AGTs) and Concrete Vault
7) Former teepee burner area
8) Evaporation ponds
9) Former kilns
10) Existing dry kiln building
11) Pasture area
12) Mound areas
13) Debris disposal area
14) Agricultural use areas
15) Former used glue vault area
16) Southern lunch room area
17) Former dip tank area
18) Former and current septic systems
19) Storm drains and drop inlets

20) Former paint line and finger joint area
21) Railroad Spur
22) Car loading area

One additional area was investigated in response to sample results from a water sample collected by the local water district from a vault (Vault 47) on the Site. Due to a suspect detection of contaminants, a limited investigation was conducted in and around the vault in June of 1997. No contaminants or any subsurface pathways into the vault were found.

The car loading area, the former and current dry kiln buildings, much of the herbicide application activity, and the previous transformer areas were investigated and/or remediated during prior Site investigations. Several of these areas were sampled and/or examined to verify the results of the prior investigations. Based on the results obtained during the prior investigations and the observations made and data collected during the EnviroNet investigation, none of these areas or activities are of environmental concern.

EnviroNet's investigation of the remaining areas of environmental concern found evidence of a release to the environment at seven locations. They were 1) the ditch near the wash rack/steam cleaning area; 2) the teepee burner area; 3) the 20,000 gallon diesel above ground storage tank location; 4) the 20,000 gallon Bunker "C" above ground tank location; 5) the former dip tank area; 6) the debris disposal area; and 7) the former southern lunch room area.

Contaminated soil found while investigating all seven of these areas has been removed and stockpiled separately in the main building. During the course of the investigation, contaminated soil was removed to non-detect levels from ditch near the wash rack/steam cleaning area, from the teepee burner area and from the areas of the two AGTs. In addition, initial investigation did not reveal the presence of significant levels of contamination in the debris disposal area.

The remainder and the majority of the investigation then focused on the former dip tank and southern lunch room areas. In the former dip tank and the southern lunch room areas, traces of material believed to have been placed in the southern lunch room area were detected in groundwater samples.

The investigation proceeded in phases. First soil borings and sample analyses were performed. Since an ex-employee identified the general area as the location where paint residue was placed, the next phase, consisting of digging small pits, was implemented to locate the paint residue. The paint residue was not found so large pits were excavated and finally the dried paint residue was located along the access road at the south end of the main building. All soil excavated to this time was sampled and analyzed and found to be non-hazardous and mostly non-detect.

The large excavation in the southern lunch room area was undertaken to locate the area where paint residue was deposited, which was believed to be the source of the groundwater contamination detected during the investigation and to search for areas where containers may have been emptied. The large excavation was undertaken because neither the source of groundwater contamination nor possible buried containers were found by either drilling or by the digging of small pits. The excavation eventually extended from the fence on the south side of the main building at the Site to the access driveway along the south end of the main building. The paint residue was finally found near the former southern lunch room location and very near the current access driveway at the south end of the main building. No buried containers were found during the excavation.

The drilling and sampling defined both the lateral and vertical extent of the material which has impacted groundwater in the southern lunch room area. Most of the soil and groundwater samples with elevated levels of contaminants were collected either in the area where paint residue was placed or in close proximity to it. An area estimated at 150 feet by 150 feet off-site of the Simpson property has detectable levels of solvents in groundwater at an average concentration of 20 ug/L. A soil impact was found to be only in the immediate vicinity of the area where paint residue was disposed.

Most of the source area containing dried paint residue was removed during the investigation of the area. In addition, most of the previously existing impacted groundwater appears to have been removed during pit dewatering activities which were required to prevent the pit from collapsing. A small area of dried paint still remains in the soil and elevated levels of paint materials are detectable in groundwater from around the perimeter of the source of contamination. The area where paint residue was placed on the south side of the main building appears to be the source of groundwater contamination detected in shallow pits and borings in its vicinity. Additional removal activity is required to remove the source of soil and groundwater contamination from this area of the Site.

On July 7, 1997 dried paint and paint cans were found buried in a small portion of the debris disposal area. It is unknown whether the paint was dry at the time of its placement in the debris disposal area. All further activities related to the investigation and clean-up of the debris disposal area were halted on July 7, 1997 pending submission and approval of a work plan to remediate and further investigate this area. The debris disposal area requires additional investigation to determine if an impact has occurred due to paint material and paint cans recently discovered in the area. If an impact has occurred, the investigation would be continued to determine the lateral and vertical extent of contamination.

No soil contamination was detected off-site. The level of groundwater contamination detected off-site is in the parts per billion range.

It is recommended that a Removal Action Work Plan (RAW) be prepared and submitted to the Department of Toxic Substances Control (DTSC) for approval pursuant to the Health and Safety Code Section 25356.1(h) to address any remaining chemicals in soil and groundwater.

1.0 INTRODUCTION

1.1 Purpose

The Simpson Timber Company Arcata Remanufacturing Plant located west of Arcata, California (Plate 1, Appendix A) operated from 1952 to 1989. Prior to construction of the plant facilities and railroad spur, which began in 1951, the land was apparently used for both cattle grazing and crop production. Site construction and improvement continued through 1959. Plant operations included the use of fuel petroleum hydrocarbons, paints, solvents, and Woodlife, a commercial product that contained approximately 3% to 5% pentachlorophenol (PCP). In addition, both past and current pesticide use occurred on portions of the Site. Simpson put the property up for sale in June of 1989. Simpson contracted with EnviroNet to conduct an environmental assessment in early 1997. The purpose of this assessment was to determine if past practices resulted in the release or threatened release of the hazardous materials used on-site which now pose a threat to the public health or the environment.

1.2 Scope of Work

The scope of work consisted of several tasks. The initial task was to determine the areas where contamination could occur. This was achieved by reviewing past Site records and documents related to operational practices and by interviewing past and current employees familiar with site operations.

Once the areas were identified where releases to the environment may have occurred, those areas were examined and evaluated. It was determined, based on the initial examination and evaluation, that additional investigation was required in most of these areas to verify that each area was now free of environmental concerns. Most areas were investigated through a program of surface and subsurface soil sampling to determine if contaminants were present which could pose a threat to the public health or the environment. Several areas were identified where soil was contaminated and groundwater may have been impacted. The extent of contamination in most of those areas was delineated by use of a backhoe or excavator to determine the lateral and vertical extent of contamination. Confirmation samples were collected to verify that the extent of contamination had been fully delineated and to determine whether or not a groundwater impact had occurred. During the course of the investigation to delineate the extent of soil contamination, any contaminated soils which were excavated were removed from the area.

2.0 SITE DESCRIPTION

The Site is bordered on the south by Foster Avenue and then primarily pasture land to Arcata Bay; residential and agricultural land on the west, and east; and with Sun Valley Farms (flower grower-distributer) on the north-northeastern side. The Site is approximately eight miles north of Eureka, California in Humboldt County. The main Site contact person is Mr. Fred Jacobson who can be contacted at: Simpson Timber Company, Redwood Division, P. O. Box 68, Korbel, California 95550-0068, (707) 668-4526. The land is currently zoned industrial and agricultural exclusive.

A Site location map (Plate 1, Appendix A) shows the general location of the Site relative to its surrounding area. Major highways and other significant features are identified. Plate 2 (Appendix A) shows all significant Site features. All areas of environmental concern are either shown on Plate 2 or are shown on detail maps which are also included in Appendix A.

3.0 SITE BACKGROUND

The Site was constructed on agricultural land beginning in 1951 and continuing through 1959. Imported fill (gravel) was used along with native soils to reconfigure the Site to suit the construction and desired surface drainage. The Site was used to process rough sawn boards into finished dimensional lumber and siding from 1952 through 1989.

The processing of the lumber included the on-site painting, staining, and preservation of some of the lumber beginning in 1961. A dip tank was operated at the Site from 1961 through 1965 at the southwest end of the main building. The product Woodlife, consisting of 3% to 5% PCP as the active ingredient and mineral spirits as the carrier, was use to treat lumber. A paint line was placed in service in 1966 in the south end of the main building and operated more or less continuously until 1969. The paint line use continued sporadically until 1972 after which it was no longer used. Lead based, oil based paint, wood stains consisting of mineral spirits and pigment, and mineral spirit solvents were the primary chemicals and products used on the paint line. It is believed that methyl ethyl ketone (mek) and chlorinated solvents were obtained locally and used as cleaners in this process.

Most of the operations on the Site ceased in 1987; however, limited Site activity continued until June 30, 1989. The plant equipment was sold in 1989. Since 1991, the Site has been used as a shipping point for lumber processed at other facilities.

In December 1996 a potential purchaser of the property contracted with EnviroNet to perform an environmental review of the Site. The review was limited to collecting soil classification data as well as confirmation data on the closure of a former polychlorinated biphenyls (PCBs) impacted area and several closed in-place underground storage tanks (USTs). The environmental review was initially to confirm recommendations made in a May 1995 Phase I Environmental Site Assessment performed by SHN Consulting Engineers & Geologists (SHN) of Eureka, California. The Phase I was performed for the City of Arcata which had contemplated purchasing the Site.

In addition, EnviroNet reviewed a government agency records file report for the Site which is enclosed in Appendix F. The report indicated that a release of petroleum hydrocarbons had occurred at the Eel River Sawmill, located at 2000 Foster Avenue; and a Proposition 65 Notification for pesticides had been made by Sun Valley Floral Farms, located at 3160 Upper Bay Road. Neither of these two off-site releases, due to their distance from the Site and the limited nature of the releases, have the potential of impacting the Site.

The vicinity of the Site was examined in conjunction with the government agency file review and no off-site sources of contamination were identified which pose a threat to the soil and/or groundwater beneath the Site. In addition, an on-site source area was identified for each area of impacted soil and/or groundwater.

In January 1997, Simpson Timber Company hired EnviroNet to conduct a full environmental investigation and evaluation of the Site. The results of the investigation and evaluation are presented in this Report of Investigation which is being submitted to the DTSC pursuant to a Voluntary Cleanup Agreement between Simpson and the DTSC.

4.0 ENVIRONMENTAL SETTING

The Site is within "the Bottoms" which is an uplifted coastal plain area which is just a few feet above sea level. The Site is characterized by a low permeability cap of soil of variable thickness consisting of clay and/or silt which was identified as being anywhere from a few feet to in excess of 20 feet thick throughout the Site. Beneath the lower permeability surface soil, zones of both sand and gravel were detected with highly permeable gravel layers in excess of ten feet thick being encountered in some portions of the Site.

The gravel layers contain well rounded gravel ranging in size from pea gravel up to cobbles in excess of four inches in diameter. The gravel was either deposited in a very active river bed or in an active near shore environment. Based on the location of the Site near the Mad River to the north and the Pacific Ocean to the west, either scenario is possible.

The gravel layers are typically saturated with groundwater, although the shallowest gravel layers may become dewatered during the summer due to the pumping activities of the nearby farmers and ranchers.

Surface water flows seasonally in shallow streams and sloughs on both the east and west sides of the Site. Surface water flows to the south where it eventually empties into Arcata Bay, located less than two miles to the south of the Site. A small finger of Arcata Bay is present to the west of the Site at a distance less than two miles from the Site. The finger of the Bay to the west is very shallow and is more akin to marsh land. Shallow groundwater is expected to mimic the surface water in its flow direction. It was noted on several occasions during the spring that shallow pits would fill with water during high tide but could easily be mechanically pumped dry during low tide, thus indicating that groundwater flow beneath the Site is inhibited by ocean water during high tide conditions.

The Site contains two water supply wells, one located near the north end of the main building, and one located north of the main office building. One domestic well was identified at a house on Foster Avenue just to the west of the Site. One agricultural well located approximately 1/4 mile south of the Site was identified and sampled. It is anticipated that other water supply wells are present throughout the general area of the Site. Domestic water supplies in the area are either from wells or from the Humboldt Bay Municipal Water District which has a major pipeline that traverses the southern portion of the Site.

4.1 Factors Related to Soil Pathways

The thickness of the uppermost clay and silt layer (low permeability layer) at any location at the Site has a strong influence on the possible transport of contaminants in the subsurface. A boring drilled

on the west side of the Site (LLB-1, Plate 2) encountered clay from the surface to a depth exceeding 20 feet (See Boring Log, Appendix B). Contaminants leaked in this area would tend to absorb into the clay and not migrate any appreciable distance.

Very little if any clay and silt were encountered at the surface in one or two borings (LRB-77 and LRB-79) drilled on the south side of the Site in the southern lunch room area (Plate 2, #4a and Plate 7, Appendix A). It is not clear whether the clay and silt were removed and replaced with permeable baserock during plant construction or if the clay and silt layer was not deposited in this area. As an example, boring LRB-77, drilled just south of the main building (Plate 7, Appendix A) encountered gravel from the surface to a depth of 18 feet (See Boring Log, Appendix B). The gravel has high permeability and typically contained groundwater. Both the sand and gravel contain sufficient water and have sufficient permeability to be considered aquifer zones. Contaminants released in this area would have nothing to inhibit their vertical migration to groundwater.

Free groundwater was noted as shallow as three feet bgs and as deep as ten feet bgs during drilling. Water levels in the main excavation in the southern lunch room area had dropped several feet by July of 1997, presumably due to lack of rain and increased well pumping for agricultural purposes.

4.2 Factors Related to Water Pathways

4.2.1 Groundwater Pathways

The primary factors affecting groundwater at the Site are the thickness of the clay and silt soil at the surface and the amount of gravel present below the clay and silt layer. Numerous areas of gravel were identified during the investigation which would provide very little resistance to flow. Groundwater is anticipated to flow toward Arcata Bay to the south and the groundwater gradient is anticipated to be affected by high and low tides. Based on the investigation conducted to date, only the shallow water-bearing zone from approximately 6 to 25 feet bgs has been impacted. The soil samples collected from the clay beneath the shallow water-bearing zone indicate that contamination has not migrated to deeper water-bearing zones.

4.2.2 Surface Water Pathways

Surface water drains from the Site into sloughs and small surface drainages both to the east and west of the Site which flow to the south and then into Arcata Bay. The closest surface water to any source area of contamination is the Liscom Slough which is located approximately 300 to 400 feet west-southwest of the area was paint residue was disposed of near the former southern lunch room. Liscom Slough contains water seasonally and is dry most of the summer until the rainy season.

4.3 Factors related to Air Pathways

The Site is on flat land with an elevation 20 to 25 feet above sea level. There are no surface impediments related to air pathways at the Site other than the buildings which alter the wind paths due to their height. The prevailing wind appeared to be from north to south during the winter and spring.

All of the contamination observed at the Site during this investigation was detected either in soil or in groundwater. The contaminants are generally not airborne. Contaminated soil has been temporarily placed inside the main building. Contaminated groundwater which was collected from the excavated area to the south of the building, was filtered through activated carbon prior to discharge at the Eureka Sewage Treatment facility. Airborne transport of contaminants does not appear to be a problem at this Site.

Staff of the local Air Pollution Control District also visited the Site and indicated that Site investigation activity was in compliance with Air Pollution Control District guidelines and requirements. A copy of the letter documenting the Site visit is included in Appendix G.

5.0 AREAS EXAMINED, INVESTIGATED, AND SAMPLED WITH RESULTS

5.1 Previously Closed In-Place Underground Fuel Storage Tanks

There are three former USTs which have been closed in-place at the Site. The Humboldt County Department of Environmental Health (HCDEH) records indicate that precision tightness tests were conducted in 1987 on the two 5,000 gallon gasoline USTs (Plate 2, #18 and Plate 3, Appendix A), and the one 10,000 gallon diesel UST (Plate 2, #17 and Plate 3, Appendix A). The records show that all three tanks passed the tightness tests. There was no mention of piping tests or fuel dispensing area testing. No soil tests were required by the HCDEH in 1987, and the tanks were subsequently triple rinsed and filled with concrete slurry in 1987 and the closure permit was finaled on December 9, 1987. In 1995 SHN found a final record of closure for the tanks in the HCDEH file. A copy of the finalized permit from Humboldt-Del Norte County to close one 10,000 gallon and two 5,000 gallon capacity USTs is enclosed in Appendix G. A 500 gallon UST (Plate 2, location #5a) is also reported as closed in-place with concrete and sand in 1985. This UST could not be located and may have been subsequently removed.

Three soil borings were drilled on January 7, 1997 to investigate the two 5,000 gallon closed in-place gasoline USTs. The three borings (B-1, B-2, and B-3) were located on the north, west, and south sides of the concrete pad over the two closed in-place 5,000 gallon USTs, respectively (Plate 3, Appendix A). The borings were drilled through asphalt, approximately one foot from the edge of the concrete slab. Below the asphalt was gray baserock fill consisting of well graded gravel which contained a perched water zone at about one foot below ground surface (bgs). Odor and elevated photoionization detector (PID) readings were noted in the baserock just beneath the asphalt in boring B-1. The baserock extended to a depth of 2.5 feet bgs in B-1, 5.5 feet bgs in B-2, and 9.0 feet bgs in B-3. Sheen and a faint odor were noted along the baserock/clay contact in boring B-3 at 9.0 feet bgs. An attempt to sample the baserock/clay contact in boring B-2 was not successful (See Boring Logs, Appendix B). Mr. Brent Whitener of HCDEH was on-site to observe some of the drilling and abandonment of the borings during this drilling event.

Below the baserock was dark brown sandy silty clay. The top surface of the clay apparently formed a confining layer for the water perched in the baserock in boring B-1. A dark gray sandy clayey silt layer was encountered in borings B-2 and B-3 at a depth of 11 to 12 feet. Borings B-2 and B-3 were drilled to 13 feet bgs and did not encounter the bottom of the silt layer. No odors, elevated PID readings or sheen were noted from the soil samples collected from the native silty clay or silt layers. Gasoline, benzene, toluene, ethylbenzene, and xylenes (BTEX) were not detected in the samples collected from the three borings (Table 1, Appendix C, analytical reports included in Appendix D, Volume 1).

A grab groundwater sample (B2-WU) was collected from the water just beneath the asphalt in boring B-2. This sample was analyzed for gasoline and BTEX and contained traces of gasoline (0.099 mg/L) and ethylbenzene (0.00074 mg/L) (Table 2, Appendix C, analytical report included in Appendix D, Volume 1). A Hydropunch® groundwater sample was collected from boring B-2 at 13.0 to 15.0 feet bgs. The Hydropunch® sample was collected by drilling a second boring approximately two feet away from the original boring. The second boring was drilled to the top of the water level (in the native soil) as determined in the first boring, the sampler was driven two feet into the clay and then the sampler cover was pulled up two feet to expose a temporary well screen. The groundwater sample was collected using a clean stainless steel bailer which was lowered into the sampler. This method collects a discreet interval groundwater sample of the top of the water, to collect potential floating hydrocarbons, and avoids cross contamination with the upper perched water within the baserock. The sampler was left in boring B-2 overnight in order to collect enough water for a sample. A Hydropunch® sample was attempted in boring B-1, but this location did not yield water to the sampler, presumably due to the low permeability of the clay. This sample was analyzed for BTEX and gasoline. No contamination was detected in the Hydropunch® water sample (B2-WL) from boring B-2 (Table 2, Appendix C, analytical reports included in Appendix D, Volume 1).

A 10,000 gallon diesel UST (Plate 2, #17) was previously closed in-place by filling with concrete slurry. The area of the 10,000 gallon diesel UST was investigated on January 7, 1997 with the drilling of borings B4 and B6 at the locations shown on Plate 3 (Appendix A). The borings indicated a lithology of surface asphalt underlain by baserock and then clay (See Boring Logs, Appendix B).

Odor and sheen were noted in the baserock and water from just below the asphalt. The odor and sheen are attributed to placement of the asphalt during construction of the plant Site. The analytical results confirmed the visual observations, as petroleum hydrocarbons were detected in the soil and water samples from just beneath the asphalt in borings B1, B2, and B4, while soil and water samples from the level of the USTs were non-detect for petroleum hydrocarbons (Tables 1 and 2, Appendix C, analytical reports included in Appendix D, Volume 1). Mr. Derek Whitworth of the DTSC was on-site on January 7, 1997 to observe the initial investigation activities. In addition, a representative of the HCDEH visited the Site to determine permit compliance for the drilling of the borings. The area where odor and sheen were observed just below the asphalt was also excavated and sampled on January 17, 1997. Shallow soil samples continued to indicate the presence of diesel and motor oil (See analytical report, Appendix D, Volume 1 for samples Diesel UST-CON1, -CON2, and -CON3). Total petroleum hydrocarbon (diesel range) was detected in the three samples ranging from 6.2 to 39 mg/kg and total petroleum hydrocarbon (motor oil range) was detected in only one sample at a level j of 55 mg/kg which is just above the detection limit of 50 mg/kg. Visual observations indicated that the petroleum hydrocarbons were confined to the baserock layer just beneath the asphalt.

The area of the 500 gallon UST, which was said to be closed in place, was examined and a depression was observed on January 10, 1997 (Plate 2, #5a). The area of the depression was excavated to a depth of 2.5 feet on January 16, 1997 and no abandoned tank was found in the area of the depression. EnviroNet concluded that the UST may have been removed. A soil sample collected at a depth of 2.5 feet in the area identified as the previous location of the UST was non-detect for petroleum hydrocarbons, and a stockpile believed to be from the depression was subsequently sampled and was also non-detect for petroleum hydrocarbons (Table 3, Appendix C, and analytical report, Appendix D, Volume 1).

The analytical reports for these and all subsequent analyses summarized in this report are presented in Appendix D, Volumes 1 through 16 and Appendix E, Volumes 1 through 4.

Based on the information gathered during the investigation of the closed in place USTs, no significant release to the environment occurred from the USTs and no additional investigation related to the USTs is warranted.

5.2 Former Transformer Areas

According to existing documentation, the former transformer areas were previously remediated to non-detect levels (Plate 2, #2f and #20). No closure document could be located; however, a letter from the North Coast Regional Water Quality Control Board (NCRWQCB) dated February 2, 1994 (Appendix G) indicates that cleanup of PCBs associated with a substation that served the facility was successfully completed in 1993. EnviroNet drilled boring B-5 on January 7, 1997 through the former transformer area near the wash rack (Plate 2, #20 and Plate 3, Appendix A) to confirm that no PCBs were present. Samples from borings B-4 and B-6, drilled near the former 10,000 gallon diesel, closed in-place UST which is very near the former exterior transformer area (Plate 3, Appendix A) were also analyzed for PCBs. No PCBs were detected in either soil or groundwater samples collected and analyzed from these borings (Tables 1, 2, and 4, Appendix C, analytical report included in Appendix D, Volume 1). Boring B-5 encountered clay to total depth (See Boring Logs, Appendix B). Native soil was encountered at two feet bgs under the concrete cap.

Boring B-5 was located 6.5 feet west of an unnamed PVC pipe which is located in the center of the concrete cap over the former transformer area. The total depth of the PVC pipe is approximately 9.5 feet. Based on the lithology encountered in boring B-5 (See Boring Log, Appendix B), the PVC pipe is entirely within a clay unit. A water sample (W-1) was collected from the PVC pipe on December 20, 1996. The sample was non-detect for petroleum hydrocarbons and PCBs. It was also non-detect for metals except for 0.035 mg/L zinc (Table 4, Appendix C, analytical report included in Appendix D, Volume 16). Soil samples collected at depths of 5 and 9.5 in boring B-5 feet were non-detect for PCBs (Table 4, Appendix C, analytical report included in Appendix D, Volume 1). A grab

groundwater sample from boring B-5 was also non-detect for PCBs (Table 4, Appendix C, analytical report included in Appendix D, Volume 1). The soil and groundwater analytical results from boring B-5 are summarized in Table 4 (Appendix C). The analytical report is enclosed in Appendix D, Volume 1.

Based on the information gathered during the investigation of the transformer areas and information gathered regarding prior transformer area cleanup activities, no significant release to the environment from the transformers is present and no additional investigation related to the transformer areas is warranted.

5.3 Former Boiler Blowdown and Overflow Ponds

In the vicinity of the former blowdown and overflow ponds, three test pits were excavated and examined on December 20, 1996. This was done as part of an investigation for a potential purchaser of the property. The pits were excavated in fill material with no visible evidence of contamination. Because native soil was not observed, its condition could not be evaluated from the pit examinations.

On January 8, 1997, boring B-7 was drilled nine feet southwest of one test pit to collect soil and groundwater samples to determine whether oil from the compressor placed in the overflow pond had impacted either the soil or the groundwater. The boring was drilled to 14 feet bgs (Plate 5, Appendix A). Pond fill consisting of silty sand was encountered from the surface to 10.5 feet bgs. Groundwater was encountered at approximately six feet bgs (See Boring Log, Appendix B). Elevated PID readings of up to 160 ppm were recorded at 6.5 feet, the readings diminished to 20 ppm by the bottom of the boring.

On January 8, 1997 boring B-8 was drilled in the center of the blowdown pond. This was located eight feet from the test pit excavated in December of 1996 in the blowdown pond. Silty sand fill was encountered to 10.5 feet bgs, the excavation ended at 13.0 feet bgs in native well graded sand (Plate 5, Appendix A). PID readings of 20 and 12 ppm were recorded from fill soil from 7.5 feet bgs and 10.5 feet bgs, respectively (See Boring Log, Appendix B).

The analytical results for the soil and groundwater samples from borings B-7 and B-8 were virtually non-detect for diesel and phenolics with no diesel being detected in soil samples, while 0.053 mg/L diesel was detected in a water sample from B-8. Phenolics were detected in three soil samples from boring B-7 at levels of 10, 3.5, and 1.9 mg/kg respectively and in two soil samples from boring B-8 at levels of 2 and 5 mg/kg, respectively (Table 5, Appendix C, analytical report included in Appendix D, Volume 1). The levels detected for the diesel were not of concern, while the levels of phenolics detected were determined to be a product of the hydrolysis of redwood by hot water which leaches humic acids, which contain phenolics, from the wood. Because the phenolics are created

during natural processes and do not pose any known threat to the environment or to the public health at low concentrations, phenolics are not present at levels of concern. One boring was drilled through the center of the former overflow pond and former blowdown pond. One boring through each pond area was deemed sufficient to determine if a significant impact to either soil or groundwater had occurred from either of these former ponds.

Based on the information gathered during the investigation of the former blowdown and overflow pond areas, no significant release to the environment from the blowdown or overflow ponds is present and no additional investigation or remediation related to the former blowdown or overflow pond areas is warranted.

5.4 Former Steam Cleaning/Wash Rack Area (Including Ditch)

An initial examination of the ditch beneath the former steam cleaning/wash rack area on December 20, 1996 as part of a preliminary Site inspection revealed the presence of discolored, oily soil. The source of the oily material was apparently the steam cleaning and wash rack process itself. In addition, some used oil from the fork lift maintenance building may have entered the ditch.

Investigation of the former steam cleaning/wash rack area began on January 11, 1997. The vegetation in the ditch was removed beginning at the wash rack and progressing easterly. Oily soil appeared to extend from the wash rack to approximately 35 feet east of the wash rack. The soils were placed within a bermed area in the main building. A dam was built across the ditch at 45 feet east of the wash rack and adjacent to the wash rack, then the water flowing in the ditch was pumped to the drop inlet to the west (Plate 3, Appendix A) to enable the investigation to continue.

This investigation covered an area with an average ditch width of ten feet and extended from the wash rack 45 feet east and 100 feet to the west (Plate 3). All visible evidence of contamination was removed to determine the extent of contamination after which confirmation samples were collected at the locations shown on Plate 3. One area (CON-2), which contained 30 mg/kg diesel and 230 mg/kg motor oil (Table 6, Appendix C, analytical report included in Appendix D, Volume 1),was further investigated at an additional sample (Ditch-CON) collected at the same location (CON-2 location, Plate 3)) was non-detect for diesel and motor oil (Table 6, Appendix C). Sample CON-4 contained 0.42 mg/kg PCBs while all other samples were non-detect for PCBs (Table 6, Appendix C, analytical report included in Appendix D, Volume 1). Soil was removed from the ditch until all subjective evidence of contamination was gone at which point confirmation soil samples were collected at an interval of one sample approximately every 20 feet. This was deemed sufficient to indicate that the extent of contamination had been defined.

The Preliminary Remediation Goal (PRG) established by the U.S. EPA for PCBs in soil is 0.066 mg/kg. All confirmation results for soil samples collected in the transformer area were non-detect. PCBs were detected in only one sample (COC-4) which contained 0.42 mg/kg PCBs which is above the PRG for PCBs. However, it is below the 1 mg/kg soil action level established by the U.S. EPA for residential scenarios in their guidance document, "Guidance on Remedial Actions for Superfund Sites with PCB Contamination" [EPA/540/G-80/007] and in OSWER Directive No. 83555.4-01FS (August 1990).

The soil removed from the ditch during the investigation was temporarily placed in a separate, plastic lined stockpile in the main building. Petroleum hydrocarbon degrading bacteria were added to the soil. The stockpile will be sampled and analyzed for petroleum hydrocarbons and PCBs to determine if the soil is suitable to be recycled and used on the Site as an inert material after approval of the RAW.

After completing the investigation of the former steam cleaning/wash rack area and ditch, there appears to be no residual soil contamination.

5.5 Fork Lift Maintenance Building

Borings B-1 and B-3 were drilled adjacent to the fork lift maintenance building as part of the investigation of the former 5,000 gallon USTs (Plate 3, Appendix A). Soil samples from the borings were analyzed for gasoline and BTEX. The two borings were drilled down-gradient of the building. No visible evidence of contamination from the fork lift maintenance building was observed in the borings. The combination of the analytical results from soil samples, the visual appearance of the soil samples, combined with the visual appearance of the area around the building were deemed sufficient to indicate that no major release of contaminants into the environment had occurred from this area.

All surface drainage from the area flows to an open ditch through a culvert that daylights across the railroad tracks from the fork lift building (Plates 2 and 3, Appendix A). Soil and water samples were taken at the outlet and no contaminants were found. The drainage ditch goes underground and eventually combines with the drainage system. Both the drainage ditch and the drop inlet near the fork lift building discharge into an open surface drainage through a culvert (Plate 2). The culvert discharge point was sampled for a broad range of contaminants, none of which were detected (Samples D-3-S and D-3-W, Table 24A, analytical report included in Appendix D, Volume 16). This activity is further discussed in Section 5.19.

Based on the information gathered during investigations in the immediate vicinity of the fork lift maintenance building, there is no evidence of a significant release to the environment from the fork

lift maintenance building. Any surface release at this location would have traveled into the ditch which was investigated as part of the steam cleaning/wash rack area and ditch investigation activities. No additional investigations related to the fork lift maintenance building are warranted.

5.6 Above-Ground Fuel Storage Tanks and Concrete Vault

Two steel, 20,000 gallon AGTs were removed from the property in January of 1997. One AGT contained diesel fuel and was located near the former blowdown ponds (Plate 2, #6b, and Plate 5, Appendix A). It is referred to in the text as AGT-1. The second 20,000 gallon AGT located near the northeast portion of the main building (Plate 2, #6a, and Plate 4, Appendix A) contained Bunker "C" fuel oil. It is referred to in the text as AGT-2. It was noted during removal that the soil was stained with petroleum hydrocarbons around the fill pipes for both tanks. Removal of the two AGTs was conducted at the request of Simpson. It is our understanding that no permits were required to remove these tanks.

The two steel 20,000 gallon tanks were emptied, triple rinsed, and cut up in January of 1997. The pieces were removed prior to the investigation.

AGT-1

Eight wood pilings of approximately one-foot diameter remained under the former base of AGT-1. Investigation of the extent of impacted soil began on January 13, 1997. The extent of contaminated soil was determined by excavation. The limits of contamination were approximately 25 by 30 feet to a depth of 10 feet bgs. The excavated soils were placed in clay lined bermed cells on the asphalt in the main building.

Please note that the above ground tanks use the abbreviation AGT, while samples collected from AGT locations are identified by the abbreviation AST which stands for above ground storage tank.

Further investigation to determine the extent of contamination at the AGT-1 location continued in January 1997. Six test pits were subsequently dug around the perimeter of the excavation to determine if the area of investigation needed to be extended. Sample results were all non-detect for petroleum hydrocarbons (Analytical reports enclosed in Appendix D, Volume 13). All small pit soil and groundwater appeared to be clean based on visual observations. Confirmation soil samples were also collected from the bottom of the main area of investigation, which was under water. The soil from the bottom of the main area of investigation was a gray sandy gravel to a well graded sand. These included bottom soil samples AST1-CON1 through AST1-CON5. The maximum contaminant level detected in soil was 540 mg/kg diesel; a water sample (AST1-Water) from the

main area of investigation contained 230 mg/L diesel (Table 7, Appendix C, analytical reports included in Appendix D, Volumes 1 and 13).

Due to the detection of diesel in one sample at a level of 540 mg/kg, investigation of the AGT-1 area continued on January 24, 1997. The long-reach excavator was used to reach into the center of the main area of investigation and remove the loose odorous sand. Bottom soil confirmation samples AST1-CON6 through AST1-CON11 and sidewall soil confirmation samples AST1-SW1 through AST1-SW4 were collected on January 24, 1997 AST1-CON6 was a retest after deepening the main area of investigation around the AST1-3 and AST1-4 locations. The results were generally non-detect for diesel and motor oil with 720 mg/kg diesel being detected in one confirmation soil sample (AST1-CON10). Additional soil was excavated and another sample of the same area (AST1-CON11) was non-detect for diesel. Table 7 (Appendix C, analytical report included in Appendix D, Volumes 1 and 13) presents the AST1-CON series sample results. Final dimensions of the area of investigation were roughly 50 feet by 40 feet by 12 feet.

In February, 1997 a water sample from the main area of investigation was tested by an on-site laboratory (Mobile One) for TPH-g (gasoline), TPH-d (diesel), and TPH-mo (motor oil). TPH-d was detected at 3.9 mg/L (Table 7 in Appendix C, analytical report included in Appendix D, Volume 1). Approximately 40,000 gallons of water were pumped from the main area of investigation into two 21,000 gallon capacity Baker tanks. A water sample was subsequently collected from each Baker tank and analyzed. The samples were non-detect for TPH-g, TPH-d, and TPH-mo (Table 7, Appendix C, analytical report enclosed in Appendix D, Volume 1) After discussing the non-detect results with the DTSC, the contents of both Baker tanks were discharged into the on-site evaporation ponds.

Based on the size of the excavation, a sufficient number of samples were collected to demonstrate that the source of contamination had been removed. Confirmation samples of both soil and groundwater indicated that no significant soil contamination remained in the area of the former diesel AGT during the investigation of the extent of impacted soil (Table 7, Appendix C and analytical report, Appendix D, Volumes 1 and 13).

The soil from the AGT-1 investigation area was temporarily placed in a separate, plastic lined stockpile in the main building. The stockpile will be sampled and analyzed to determine if the soil is suitable for reuse on the Site as an inert material.

AGT-2

The 20,000 gallon steel Bunker "C" AGT (AGT-2) was removed in January of 1997 and it appeared that gravelly oil-soaked soil extended under the clay berm surrounding the tank's former location.

The clay berm was moved into the main building and used to construct clay-bermed temporary placement cells for the soil. The pit created during the investigation was not dewatered while digging. A water sample from the area of investigation was analyzed for petroleum hydrocarbons. TPH-d was detected at 1.1 mg/L while TPH-mo was non-detect (Table 8, Appendix C, analytical report enclosed in Appendix D, Volume 13). The area of investigation was expanded to determine the limits of all impacted soil as indicated by stain, sheen, odor and/or elevated PID readings. When it appeared that clean soil had been reached, confirmation soil samples were collected. Confirmation soil sampling began on January 17, 1997 with collection of soil samples AST2-CON1, AST2-CON2, AST2-CON3, AST2-CON4, and AST2-CON5 which were non-detect for TPH-d and TPH-mo (Table 8, Appendix C, and analytical report included in Appendix D, Volume 1). Based on the size of the excavation, a sufficient number of samples were collected to demonstrate that the source of contamination had been removed.

In January of 1997, holes were cut through the concrete slab of the former boiler house to confirm that impacted soil/groundwater did not extend under the concrete slab (Plate 4, Appendix A). The samples were collected from approximately four feet bgs, no odor or sheen was noted in the soil. Samples AST2-CON6 and AST2-CON10 through and adjacent to the concrete slab were non-detect for diesel and motor oil as were the remaining three confirmation soil samples, AST2-CON7 through AST2-CON9 (Table 8, Appendix C and analytical report, Appendix D, Volume 13).

Based on the observations and analytical results, only the top four feet of soil beneath the Bunker "C" tank appeared to be impacted by petroleum hydrocarbons.

The soil from the AGT-2 investigation area was temporarily placed in a separate, plastic lined stockpile in the main building. The stockpile will be sampled and analyzed to determine if the soil is suitable for reuse on the Site as an inert material.

In January of 1997 the water which was in the area of investigation was pumped into two 21,000 gallon Baker Tanks and an 8,000 gallon steel, skid-mounted tank. Following almost complete dewatering of the area of investigation, it was filled with "river run backfill" which was pushed into place using a D-7 bulldozer. For dewatering approximately 48,000 gallons of water were pumped out of the area of investigation into the two 21,000 gallon Baker tanks and the 8,000 tank. In February, 1997 one water sample was collected from each of the Baker tanks and analyzed for petroleum hydrocarbons. Both samples were non-detect for TPH-g, TPH-d, and TPH-mo (analytical report in Appendix D, Volume 1). After discussing the non-detect results with the DTSC, the contents of both Baker tanks were discharged into the on-site evaporation ponds. The water in the 8,000 gallon tank was not sampled because it was dispensed on the stockpiles from the AGT areas of investigation. Based on the lack of volatility of Bunker "C", one sample from each Baker tank

was deemed adequate to demonstrate that the water in the tanks was not impacted and that the groundwater in the vicinity of the AGT had not been impacted.

Concrete Vault

The area around the concrete vault (Plate 2, #15), which contained two gasoline storage tanks of either 5,000 or 10,000 gallon capacity, was examined and no areas of surface staining or other evidence of leakage from the vault were noted. Because there was no evidence of any releases to the environment, no further investigation was conducted in this area. The tanks were removed from the concrete vault approximately seven years ago.

Based on the information gathered during the investigation of the AGT areas, no further investigation is warranted in these areas.

5.7 Former Teepee Burner Area

Soil sample S-1 was collected from the Teepee Burner area in December, 1996 and analyzed for TPH-g, BTEX, MTBE, TPH-d and TPH-mo. The sample was analyzed for petroleum hydrocarbons due to past possible use of these substances for weed control. TPH-d of 7 mg/kg and TPH-mo of 160 mg/kg were detected in the sample (Table 9, Appendix C, and analytical report included in Appendix D, Volume 16).

Further investigation of the Teepee Burner area (Plate 2, #19) as performed in January, 1997. Approximately one foot of the surface soil was removed. Three soil samples (S1-CON1, S1-CON2 and S1-CON3) were then collected. Based on the prior detection of TPH-d and TPH-mo, the samples were analyzed on-site by Mobile One Laboratories for TPH-d and TPH-mo which were non-detect (Table 9, Appendix C, analytical reports in Appendix D, Volume 13). The Teepee Burner area is small and three samples were deemed sufficient to demonstrate that additional contaminated soil was not present. Due to the removal of only one foot of material, the area was left as is after removal was completed. The sample analysis reports are enclosed in Appendix D.

The soil from the Teepee Burner area was placed in a separate, plastic lined stockpile in the main building. The stockpile will be sampled and analyzed to determine if the levels of contamination in the soil would allow the soil to be recycled and used on the Site as an inert material.

Based on the information gathered during the investigation of the Teepee Burner area, no further investigation is required in this area.

5.8 Evaporation Ponds

A water sample was collected from the main evaporation pond on January 28, 1997. EnviroNet evaluated the past Site use and the volatility of the substances used at the Site. Based on that evaluation, the sample was analyzed for diesel, motor oil, gasoline, BTEX, formaldehyde, and five metals (Pb, CR, CD, Ni, and Zn) and was non-detect for all analytes tested (except for zinc which was present at a level of 0.024 mg/L (Table 10, Appendix C, the analytical report is enclosed in Appendix D, Volume 1).

The water sample collected from the main evaporation pond did not indicate the presence of any analytes tested at levels of concern. Pond sediment was not tested. Based on the information gathered during the investigation of the evaporation pond area, no evidence of a release to the environment was observed, therefore further investigation is not warranted in this area. In order to verify the preliminary sample results, sediment sampling from the bottom of the pond will be conducted after the RAW is approved.

5.9 Former Kilns

No areas of concern were noted relative to the former kilns. These structures were demolished between late 1990 and early 1991. Asbestos was present in roofing material which was removed and disposed of under manifest at the local landfill (Appendix G). No local permits were required for this activity. Asbestos was previously removed from these areas during an abatement process . The existing literature for the Site indicates that small pieces of asbestos may have remained in the former kiln areas. A visual inspection of these areas did not reveal any evidence of contamination or of residual asbestos. No further investigation is warranted for these areas.

5.10 Existing Dry Kiln Building

No areas of concern were noted relative to the existing dry kiln building (Plate 2 #7). Asbestos was previously removed from this building during an abatement process. No local permits were required for this activity. The existing literature for the Site indicates that small pieces of asbestos may have remained in the area of the existing dry kiln building. A visual inspection of this area did not reveal any evidence of contamination or of residual asbestos. No further investigation is warranted for these areas.

5.11 Pasture Area

The pasture area located primarily in the southeast portion of the Site (Plate 2, Field) consists of relatively flat pasture land with isolated patches of blackberry brush. The pasture includes a small

slough (Liscom Slough, Plate 2) which transects the pasture. A small, steel culvert is located at the eastern end of the slough where the access road crosses the slough into the pasture.

The slough transects the pasture from east to west and flow is toward the west. The slough area was investigated on February 26 through February 28, 1997 by drilling four exploratory borings (DSA B-1 through DSA B-4, Plate 2).

Exploratory borings were drilled near the slough to further define subsurface lithology and assess soil and groundwater conditions in the vicinity of the slough. The lithology in the area consisted of sand with variable silt and clay content to total depth (See Boring Logs DSA B-1 through DSA B-4, Appendix B). Acetone was detected at 0.012 mg/kg in one soil sample, while naphthalene was detected in three of four soil samples and in the laboratory blank at the same general level (Tables 12A and 12B, Appendix C, and analytical report included in Appendix D, Volume 2). The traces of chemicals detected were below levels of concern.

In February, 1997 two areas of discolored vegetation were observed near the slough in the western portion of the pasture and were investigated. Near surface soil samples were collected from the two discolored areas (DSA-1 and DSA-2, not plotted on any plate) and one area (GSA-1, not plotted on any plate) which was not discolored. The samples were collected by removing the surface grass and root zone soil using a backhoe after which a brass soil tube was pushed into the soil at a depth of 0.5 feet bgs. No contamination was detected in these samples (Table 13, Appendix C, analytical report included in Appendix D, Volume 2).

Two exploratory borings (DSA B-1 and DSA B-2, Plate 2) were drilled in the areas of discolored vegetation adjacent to the surface sample locations, where cows commonly lay. The borings were drilled to further define subsurface lithology and assess soil and groundwater conditions beneath the discolored areas. Boring DSA B-3 was drilled in an area of the pasture near the slough (Plate 2) where discoloration was not observed. The locations of the borings are shown on Plate 2. The results from all the samples collected from the pasture area were generally non-detect for the analytes tested except for traces of naphthalene which may have been an introduced contaminant as it was also detected in the laboratory blank (Tables 12A and 12B, Appendix C, analytical report enclosed in Appendix D, Volume 2). One boring (DSA B-4, Plate 2) was also drilled near the slough just to the west of the debris disposal area and near a culvert. Samples from this boring were also free of contamination. Four boring locations in the pasture area around the slough were deemed sufficient to demonstrate that a significant impact to soil or groundwater had not occurred. Based on past Site use, analysis for volatile and semi-volatile organics and pesticides was selected as the most appropriate analytical set to determine if any local impact to soil or groundwater had occurred.

The lithology encountered in the borings in the pasture area is dominated by sand and is shown on the boring logs (See Boring Logs, Appendix B).

Based on the information gathered during the investigation of the pasture area, no further investigation is required in this area.

5.12 Mound Areas

Four separate mounded areas were observed during a drive through of the Site. These areas were targeted for examination to determine soil types as requested by a potential purchaser of the property. The mound examination was conducted on February 19 and February 20, 1997. The examination included excavation and backfill of nine exploratory trenches.

Observations made during the excavation of each mound and examination results of samples collected were recorded on daily reports which indicated that each mound consisted of top soil. It appears that the mounds may have been created when the Site was initially graded and paved.

All mounds were composed of top soil with no visible evidence of any contamination or debris.

Based on the information gathered during the examination of the mound areas, they are composed of top soil suitable for agricultural use. No further examination was requested.

5.13 Debris Disposal Area

A Site inspection was performed on February 14, 1997 during which non-soil related disposal material (wood, and construction debris such as asphalt and concrete pieces) was observed in the debris disposal area (Plate 2, Appendix A).

An aerial photograph of the Site taken in 1979 shows an area of disturbed soil at the location of the debris disposal area. The photograph also shows that a portion of the western part of the pasture was apparently used for storage. Due to the small scale of the photograph, interpretation of the type of debris present or what was stored in the pasture was not possible. No evidence of disposal activities elsewhere on-site were visible on this photograph. Photographs of the Site taken in 1954, 1958, circa 1962, and 1981 were also reviewed. Evidence that disposal activities occurred at other locations on the Site was not visible on any of the photographs.

The debris disposal area is located on the north side of the pasture near a fence with gated access nearby (Plate 2). The ground surface in this area is irregular and some debris is visible at ground surface. Investigation of the debris disposal area was conducted between February 14 and February 28, 1997 and again in June of 1997. The investigation included visual surface mapping of debris, excavation and backfill of nineteen exploratory trenches, drilling two exploratory borings, collection of debris, soil, and groundwater samples, and performing a land survey of the debris disposal area.

Nineteen exploratory trenches (EP-1 through EP-19, Plate 12) were excavated to collect data regarding the type and extent of the debris in the debris disposal area.

Each trench was excavated to the bottom of the debris, if encountered, or to a minimum depth of two to three feet bgs in areas where no debris was observed. A summary of observations made during trenching is presented in the table on the next page.

Soil samples were collected based on observations made in the field (i.e. visible or suspected contamination) and for confirmation of clean areas. The sample results indicated the presence of traces of petroleum hydrocarbons as motor oil in the soil at the location of the buried oil filters in the debris disposal area. Elevated lead and zinc levels were detected in samples EP15 and EP16 (Plate 12, Table 11A, Appendix C, analytical reports in Appendix D, Volume 4). The areas with elevated levels of motor oil and metals were segregated and are currently stockpiled on-site pending off-haul for disposal. The elevated levels of metals are attributed to metals disposed of in the debris disposal area. The majority of the debris in the debris disposal area was subsequently filtered out of the soil and is also currently stockpiled on the asphalt on the south air-dry lot pending off-haul for disposal.

A decision was made to remove all the solid debris from the debris disposal area by filtering the material through a screen. Soil was to be saved, while all oversized material was to be filtered out for subsequent off-site disposal. Early on in the filtering process approximately six empty containers were found. Based on the material dried on the containers, they apparently contained tar, perhaps for patching roofs, etc. Two surface soil samples were subsequently collected and analyzed from the container location in the debris disposal area on June 10, 1997. Low levels of motor oil and traces of solvents were detected (Table 11B, Appendix C; analytical report in Appendix D, Volume 12). A boring was also drilled in the debris disposal area on June 12, 1997 after the analytical results were received from the two surface samples. The boring, LFB-1 (Plates 2 and 12), was drilled at the identified location where the containers were found and sampled to a depth of 14 feet. Traces of petroleum hydrocarbons as diesel and motor oil were detected in soil (Table 12C, Appendix C; analytical report in Appendix D, Volume 16). No evidence of contamination was detected while drilling the boring.

On July 7, 1997 during the continued screening of the debris disposal area to remove solid debris, dried paint and paint cans were discovered. It could not be immediately ascertained whether the paint and paint cans were dry at the time of their placement in the debris disposal area, nor was it possible to determine if the paint and paint cans were placed into a hole or if they were merely placed on the ground. All debris disposal area screening activity was halted to prevent any mixing of the soil from the identified area of paint and paint cans with the soil previously screened from the other solid debris in the debris disposal area. Remediation, of this area will be discussed in the RAW and then implemented when the RAW has been approved.

One exploratory boring (DSA B-4) was drilled in February, 1997 near the culvert at the end of the slough, just southwest of the debris disposal area in the presumed down gradient direction from the debris disposal area (Plate 2). Soil and groundwater samples were collected during drilling to assess whether soil and groundwater had been impacted by debris disposal activities. The location of the boring is shown on Plate 2. The samples were tested for EPA 8260 and EPA 8270 compounds and were virtually non-detect for the analytes tested (Tables 12A and 12B, Appendix C, analytical reports in Appendix D, Volume 2). Naphthalene was detected in the soil sample at 0.0085 mg/kg; however, it was also detected in the laboratory blank, while 4-Methylphenol was detected in the water at 0.0034 mg/L which is less than the detection limit for this chemical.

5.14 Agricultural Use Areas

As previously mentioned, the Site was used for agricultural purposes prior to the building of the plant which began in 1951. In addition, undeveloped portions of the property have been and continue to be used by tenant farmers for crop production and cattle grazing. Herbicides have been sprayed in various areas of the Site for weed control. It is suspected that the discolored areas observed in the pasture land may be due to excessive use of fertilizer or herbicides or cattle urine. Surface soil samples collected and analyzed for pesticides and herbicides of the discolored areas (southeastern field) indicate that no residual contamination at levels of concern is present in these areas (Table 13, Appendix C, analytical report enclosed in Appendix D, Volume 2).

Based on the investigations conducted at the Site, no additional investigation regarding previous and current agricultural use areas is warranted.

5.15 Former Used Glue Vault Area

The former used glue vault area was located adjacent to the former southern lunch room (Plate 2, #4a and #2h). Examination of the area began on February, 1997 when a hole was dug adjacent to the southern lunch room building. A soil sample was collected from a depth of five feet and a water sample was also collected. The soil sample (BLDG 4A PW#1) was analyzed for EPA 8270

compounds while the water sample (BLDG 4A #1@4.5') was analyzed for both EPA 8240 and 8270 compounds. None were detected. Subsequent investigation of the area revealed that neither the shallow, low permeability soil nor water in the shallow soil had been impacted.

5.16 Southern Lunch Room Area

Depositions of former employees and eye witness information claimed that paint residue and solvents had been placed in the vicinity of the southern lunch room (Plate 2, #4a and Plates 7 and 7A). The southern lunch room was actually constructed at the Site after use of the paint residue area had ceased. Information gathered at the time indicated that the top of the paint residue was only a few feet below the surface and it was located somewhere between the main building and the fence to the south. Paint, solvents, and perhaps Woodlife, a commercial product that contains approximately 3 to 5% PCP and was used for a very limited time as an additive to paint, may have been placed in the area.

Examination of the area began on February 23, 1997 beginning with the drilling of boring LRB-1 (Lunch Room Boring 1). Five borings were drilled and sampled in the general area of the southern lunch room (LRB-1 through LRB-5) by the end of February, 1997 (Plate 7). Significant soil and groundwater contamination were detected in boring LRB-3. The main contaminants detected in LRB-3 were ethylbenzene, toluene, xylenes, and total petroleum hydrocarbons identified as gasoline but probably mineral spirits. Other solvents were also detected in the samples from LRB-3 (Tables 14A and 14B and Table 15A and 15B, Appendix C, analytical reports enclosed in Appendix D, Volumes 1, 2, and 3). Mr. Brent Whitener of HCDEH was on-site on February 24, 1997 and February 25, 1997 to observe the drilling and abandonment of borings.

The former southern lunch room was demolished and removed from the area in early March of 1997. The lunch room was removed due to differential settling of the floor presumably due to construction of the building on poorly compacted material.

Based on the detection of contamination in boring LRB-3, this area was subsequently investigated by excavation to determine the source of contamination. The contamination around LRB-3 appeared to be somewhat localized as there was no additional evidence of contamination spreading out laterally from the LRB-3 location. The only thing of note encountered in this exploratory excavation was the fire suppression pipeline which was present approximately five feet bgs. Five soil samples were collected from this exploratory excavation on March 18, 1997 and analyzed. The results indicated only low levels of analytes (Table 16C, Appendix C, and analytical reports enclosed in Appendix D, Volumes 4 and 6).

Shallow Exploratory Pits

Due to the presumed shallow depth of the top of the dried paint residue, ten shallow exploratory pits were dug with a backhoe throughout the area in question on March 1, 1997 (Plate 7A, Appendix A). Both soil and groundwater samples were collected from the shallow pits. No significant soil contamination was detected or visually observed (Tables 16A and 16B, Appendix C, analytical reports enclosed in Appendix D, Volume 2). Groundwater contamination was detected in pits LRP-5, LRP-8, and LRP-10 (Tables 17A and 17B, Appendix C, analytical reports enclosed in Appendix D, Volume 2). Shallow water was pumped from these three pits into tanks. The tank water was subsequently filtered through activated carbon and then hauled to the Eureka Sewage Treatment facility for disposal (see Appendix G for disposal permit). Two shallow pits (M4AT1 and M4AT2) were excavated in the southern lunch room area in a mound of dirt on February 20, 1997 and no PCP or TCP was detected (Table 16B, Appendix C, and analytical report included in Appendix D, Volume 2). These two pits were located just east of the southern lunch room and south of the driveway. Theor locations are not shown on any plate.

The pit at the LRP-8 location was adjacent to the fire suppression pipeline (Plates 7 and 7A) and may have been impacted either by migration of contaminants along the pipeline or by a localized spill. This excavation was left open. The LRP-8 pit was dewatered several times until the water recharging into the pit was free of contaminants. It was then backfilled.

Boring Investigation

On March 11, 1997 a boring program was initiated to find the source of the contamination and define the extent of groundwater contamination. In an effort to identify the source of the groundwater contamination detected in the shallow pits and previous borings, 28 additional borings (LRB-6 through LRB-33) were drilled and sampled between March 11, 1997 and March 18, 1997. Soil samples were collected from the borings from the approximate location of the top of the shallow water-bearing zone and of the clay/silt aquitard which occurs at a depth of roughly 22 to 27 feet bgs. A grab groundwater sample was typically collected from each boring as soon as sufficient free water was present in the boring to sample. After the shallow water sample was collected, the boring was extended to the gravel zone just above the clay/silt aquitard where a Hydropunch® was pushed into the gravel and then pulled back to expose the screen. A water sample was then collected. In at least two instances, a deep water sample was also collected through the Hydropunch® from a water bearing zone beneath the clay/silt aquitard. Soil and groundwater samples collected in this area were analyzed for volatile organics to identify solvents, chlorinated solvents, and other paint products, and for semi-volatile organics to identify PCP and any other associated wood preservative products.

There is generally no lithologic separation between the shallow, grab water sample and the deeper water sample other than the shallow lithology is dominated by sand while the slightly deeper lithology is dominated by gravel. A source of groundwater contamination was not found during this drilling program. HCDEH personnel also inspected the Site pursuant to issued drilling permits on March 17, 1997.

Additional borings (LRB-34 through LRB-60) were drilled during the week of April 7, 1997. During the week of June 9, 1997 borings LRB-61 through LRB-99 were drilled. Mr. Brent Whitener of the HCDEH was on-site on April 7, 1997 and April 10, 1997 to observe the drilling and abandonment of borings. Derek Whitworth, Steve Cimperman, and Mike Kenning of the DTSC visited the Site on April 7, 1997 and again on May 6, 1997 to determine the Site status and to provide regulatory oversight.

The analytical results from the borings indicated that no detectable soil contamination was present except in the immediate vicinity of the former southern lunch room (Plates 2 and 7, Appendix A and Tables 14A, 14B, 15A, and 15B, Appendix C, analytical reports in Appendix D, Volumes 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, and 15). Traces of groundwater contamination were detected in the samples collected in the vicinity of and generally to the south (down-gradient) of the former southern lunch room location (Tables 14A, 14B, 15A, and 15B, Appendix C, analytical reports enclosed in Appendix D, Volumes 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, and 15). Traces of groundwater contamination were detected on the south side of Foster Avenue (Plate 7, Appendix A and Tables 14A, 14B, 15A and 15B, Appendix C, and analytical reports included in Appendix D, Volumes 8, 9, 10, 12, 13, and 14). No PCP has been detected off-site except in one sample from one boring (LRB-54) on the south side of Foster Avenue. PCP was detected at a level of 1 ug/L in one sample from boring LRB-54 (Table 15B, Appendix C, analytical report enclosed in Appendix D, Volume 9). The value detected is at the detection limit of 1 ug/L and may therefore not be scientifically reliable.

No PCP was detected in groundwater in an additional boring (LRB-71, Plate 7 and Table 15B, Appendix C, analytical report in Appendix D, Volume 12) subsequently drilled in the same area as boring LRB-54. Four soil samples (LRB-10-5', LRB-10-9', LRB-10-26', and LRB-11-3') were analyzed for pH and Total Organic Carbon. The pH ranged from 6.6 to 7.0 while the Total Organic Carbon content ranged from 2,500 to 5,500 mg/kg. These results are not presented in a table (analytical report included in Appendix D, Volume 3). These numbers indicate that sufficient organic carbon is present in the soil to bind up trace levels of PCP released at the Site.

One soil sample was collected from each of four borings (LRB-85, LRB-87, LRB-98, and LRB-99, Plate 7, Appendix A and boring logs, Appendix B) of a thin orange layer of soil encountered at approximately nine feet bgs and analyzed for metals. Metals were detected in the four samples

within background ranges (Table 14C, Appendix C, and analytical report enclosed in Appendix D, Volumes 13 and 15). The same orange layer was observed in the excavation sidewalls in the vicinity of the former southern lunch room location. Groundwater samples were also collected from water in contact with the orange layer and analyzed for metals. All results were either non-detect or within background ranges for metals in groundwater (Table 14D, Appendix C, and analytical report enclosed in Appendix D, Volumes 13 and 15).

Based on the boring program, little or no soil contamination was detected outside the immediate vicinity of the dried paint residue.

The drilling indicated very similar lithology throughout the area with a typical surface layer of silt and clay underlain by silty sand, sand, and gravel until an aquitard of silt and clay is encountered at depths generally ranging from 22 to 27 feet (See Boring Logs, Appendix B). North-south (A-A') (Plate 9, Appendix A) and east-west (B-B') (Plate 10, Appendix A) cross sections through the area indicate the variability in the sand and gravel content of the permeable units, but the rather homogeneous nature of the lithology in the southern lunch room area when comparing high permeability with low permeability layers. The lithology generally consists of approximately five feet of low permeability material at the surface, underlain by approximately 15 feet of high permeability material, which in turn is underlain by low permeability material. The low permeability material starting at 22 to 27 feet bgs was found to be at least 12 feet thick in places where it was penetrated in the southern lunch room area (See Boring Logs LRB-66 and LRB-69, Appendix B). HCDEH personnel also inspected the Site pursuant to issued drilling permits on June 6, 1997, June 9, 1997, and June 10, 1997.

The clay and silt layer is present beneath the entire southern lunch room area at depths ranging from approximately 22 to 27 feet bgs. Numerous soil samples have been collected from this low permeability layer (Tables 14A and 14B, Appendix C, analytical reports enclosed in Appendix D, Volumes 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, and 15) which demonstrate that this layer has prevented any vertical migration of contaminants.

The groundwater contamination present has been broken down into four groups which are: 1) cis-1,2-Dichloroethene, 2) PCP, 3) benzene, ethylbenzene, toluene and xylenes (BETX), and 4) other 8260 compounds. In addition, groundwater sampling from the borings was designed to sample both the upper and lower portions of the shallow water-bearing zone. The four groups of contaminants for both the upper and lower water portions of the shallow water-bearing zone are contoured on Plates 7B through 7I. The contouring shows higher concentrations over a larger area in the lower portion of the aquifer. In most portions of the southern lunch room area, the lower portion of the aquifer contains more gravel, while the upper portion of the aquifer is typically dominated by sand (Plates 9 and 10, Appendix A, and Boring Logs, Appendix B). The gravel has higher permeability

than the sand which therefore allows for a more rapid spread of the contaminants in the gravel than in the sand.

Investigation by Excavation

By March 20, 1997 over 30 borings had been drilled and no source of contamination had been identified. A decision was made to locate the source of the groundwater contamination by additional excavation. Excavation started at the southern fence and proceeded to the north based on depositions and third-person accounts that paint had been deposited in the area during the 1960s. This paint residue was considered to be the most likely source of the groundwater contamination. Excavation continued away from the fence and no source of contamination was found. By the end of March, 1997 three separate excavations existed, one in the vicinity of LRB-3, one adjacent to the fence to the south, and one west of the paint storage building at the LRP-8 location (Plates 2, 7, and 7A). Again, no source of contamination had been found. Soil samples from the bottom and sidewalls of the pits were sampled on March 18, 1997 and March 19, 1997. Soil and groundwater samples collected in this area were analyzed for volatile organics to identify solvents, chlorinated solvents, and other paint products. The samples were analyzed for semi-volatile organics to identify PCP and any other associated wood preservative products. In addition, soil and groundwater samples collected from an orange colored layer were analyzed for metals. Traces of solvents and some PCP were detected in the samples (Table 18, Appendix C, analytical reports are enclosed in Appendix D, Volumes 4, 5, and 6). All soil excavated was non-hazardous and was stored separately in the main building. Derek Whitworth and Steve Cimperman of the DTSC visited the Site on March 27, 1997 to determine the Site status and to witness the search for containers and the location where paint residue was placed at the south end of the Site.

Since the initial investigation to date had not determined the location of the source of contamination, a former Simpson employee, Mr. Kirby, was invited to the Site on April 1, 1997 to assist in identifying the exact location of the source of contamination. Mr. Kirby indicated that to the best of his knowledge no drums had been disposed on the Site. Mr. Kirby indicated that the dried paint residue was located at the end of the asphalt; however, the asphalt had been extended since his employment, and he was not sure of the exact location. Mr. Kirby felt that the former dried paint residue was deposited closer to the main building than the current southern excavation. Mr. Kirby further indicated that a wood platform used to set drums on before they were emptied would be found adjacent to the dried paint residue area.

The excavation was shifted further to the north and the dried paint residue location was subsequently found along with the wood platform Mr. Kirby discussed. The paint residue was situated generally over and adjacent to the main fire suppression pipeline which ran through the area (Plate 7, Appendix A). A portion of the pipeline was removed and the excavation was continued to

determine the lateral extent of the paint residue which appears to be the source of groundwater contamination. The majority of the paint residue (source of groundwater contamination) was removed during the investigation phase to determine the extent of the impact. By this time the LRB-3 excavation, the south excavation along the fence, and the north excavation in search of the source area of contamination had been combined into one pit (Plate 7) as the investigation had expanded.

A total of approximately 3,000 cubic yards of soil was excavated from the area and was placed in separate stockpiles in the main building. The soil containing dried paint residue and its immediate vicinity was stockpiled separately.

After the paint residue location was found, four soil samples were collected on April 26, 1997 (B1-N, SW1-N, SW1A-N, SW2-W, Plate 7J) at depths of four to six feet bgs near the paint material . The samples showed very little impact to the soil from the paint at this depth (Table 18, Appendix C and analytical report enclosed in Appendix D, Volume 11). Two soil samples were collected (PAINT WOOD LAYER, PAINT SOIL, Plate 7J) of the obvious paint material on April 27, 1997 and analyzed. The two samples contained elevated levels of solvents and PCP (Table 18, Appendix C and analytical report in Appendix D, Volume 11). Five additional bottom and sidewall soil samples (B2-N, SW3-N, B3-E, B4-SE, SW4-S, Plate 7J) were collected on this day which again showed very little impact to shallow soil but a significant impact to soil from the 10 to 12 foot depth. The source of the groundwater contamination had been located. The analytical results are summarized in Table 18 (Appendix C). The analytical reports are enclosed in Appendix D, Volume 11. It appeared at this time as if most of the source of groundwater contamination had been removed during the investigation with only a small area of paint residue remaining.

Four additional soil samples (EX-B-N-4, EX-B-N-5, EX-SW-N-5, EX-SW-N-6) were collected from the location after the water pipeline had been removed. The four soil samples were collected on May 1, 1997 after removal of all visible paint residue. Again, detectable levels of solvents and PCP were detected in the bottom soil samples, while the sidewall soil samples were virtually free of solvent and paint contamination (Table 18, Appendix C, analytical report included in Appendix D, Volume 11). A small area of residual paint was subsequently noted after a portion of the sidewall collapsed into the excavation. An attempt was made to remove this residual paint; however, it became evident that it was another subcell of the initially located paint residue.

A work plan to continue the investigation of the source area of groundwater contamination was submitted to the DTSC and approved by letter dated May 27, 1997 (Appendix G) which was subsequently amended by letter dated June 6, 1997 (Appendix G). The investigation of the extent of the source of groundwater contamination resumed and the excavation was extended to the access driveway to the north. On May 30, 1997 one sample of the actual paint (RED LAYER-10', Plate 7J), one sample of a red stained sand (RED SAND-10', Plate 7J), one excavation sample of the water

flowing out of the source area of contamination (GW-X, Plate 7J), three excavation sidewall samples (SW-10-6', SW-11-6', and SW-12-6', Plate 7J) and five excavation bottom samples (SW-10-12', SW-11-12', SW-12-12', SW-13-12', and SW-14-12', Plate 7J) were collected. The sample results continued to show very little impact to the shallow surface soils, with the significant impact confined to the deeper soil and groundwater in contact with or very near the location of the paint residue (Tables 18, 19A and 19B in Appendix C, analytical report in Appendix D, Volume 14). Sample locations for the north portion of the excavation are shown on Plate 7J and south sample locations are shown on Plate 7K.

During the excavation periodic groundwater sampling was performed. Analysis consistently showed detection of solvents, primarily in the north excavation. Final samples from the west excavation were clean (Table 19A, Appendix C, analytical report enclosed in Appendix D, Volumes 4, 5, 11, 12, 14, and 15).

Derek Whitworth of the DTSC visited the Site on May 30, 1997 to determine the Site status and to provide on-site regulatory oversight.

Water was pumped from the main excavation into Baker tanks which were initially sampled on March 20, 1997 (Table 19B, Appendix C, and analytical report in Appendix D, Volume 5). The results indicated that filtration of the water would be required before disposal to meet the Eureka Sewage Treatment facility requirements.

Water samples were collected from the north and south excavations on May 9, 1997 to determine the overall quality of the water disregarding any associated groundwater contamination. All water parameters were within normal ranges for good quality groundwater (Table 19C, Appendix C and analytical report enclosed in Appendix D, Volume 11).

Water removed from the excavation was passed through an activated carbon filtration system, analyzed, and then disposed of at the Eureka Sewage Treatment facility after the facility manager reviewed the laboratory reports. If the analytical results did not meet the Eureka Sewage Treatment facility requirements, the water was reprocessed and analyzed again until it was acceptable for disposal. The total amount of groundwater filtered and transported to the Eureka Sewage Treatment facility from the source area of groundwater contamination is in excess of 1,000,000 gallons of water as of June 30, 1997.

Based on all evidence at hand, the paint residue was placed in the sand and gravel beneath the thin layer of silt and clay which caps most of the Site. The sand and gravel have very little ability to absorb contaminants and primarily act as a support structure through which groundwater migrates.

Based on the thorough investigation of the Site, it appears that the contaminants were and currently are being released from the area of paint residue into the shallow groundwater. The contamination appears to be confined to the shallow groundwater between the surface silt and clay layer and the low permeability aquitard at 22 to 27 feet bgs. Groundwater samples were collected from beneath the aquitard in two borings (LRB-66 and LRB-69) with the samples being non-detect for all analytes tested. Current pit dimensions are roughly 150 feet in the north-south direction by roughly 70 feet in the east-west direction by roughly 12 feet deep (Plate 7).

Fire Suppression Pipeline Sampling

Samples were collected around the fire suppression pipeline due to the hypothesis that contamination may have migrated along the pipeline to the east and west of the paint residue. Three soil samples (PIP, PIP2, PIP-North) were collected from just above the fire suppression pipeline in the vicinity of the paint residue on April 26, 1997 (not shown on any plate) and five additional soil samples (Pipetrench-1 through Pipetrench-5) and one water sample (Pipetrench-1) were subsequently collected (Plate 7). The samples were analyzed for EPA 8260 and 8270 compounds. No EPA 8270 compounds were detected, while traces of EPA 8260 compounds were detected (Table 20, Appendix C). The analytical reports are included in Appendix D, Volumes 11, 12, and 13. Soil and groundwater samples collected in this area were analyzed for volatile organics to identify solvents, chlorinated solvents, and other paint products, and for semi-volatile organics to identify PCP and any other associated wood preservative products. The samples were collected from backhoe and excavator dug pits adjacent to the pipeline and at a minimum spacing achievable with the equipment

.

Evidence of odor and a non-rusted pipe indicated that contamination may have passed along the pipeline to the west of the source area of groundwater contamination in the past. In addition, the soil on top of and around the pipeline to the east of the excavation was low permeability silt and clay. The soil on top of the pipeline to the west of the excavation was high permeability sand and gravel. It appears that the permeability of the material placed around the pipeline may have been the determining factor whether there was contaminant flow along the outside of the pipeline.

Off-Site Domestic and Agricultural Wells

An agricultural well (Well Arcata) in the pasture south of the Site was sampled on March 21, 1997. Only chloroform was detected in the water sample at a level of 1.0 ug/L. The source of the chloroform is believed to be a chlorination system which was observed between the well and the sample collection point. Chloroform is commonly detected in water wells and drinking water supplies as it is a breakdown product observed after water has been chlorinated. Chloroform has not been identified elsewhere during the investigation on Site. The analytical report is enclosed in Appendix D, Volumes 5 and 11.

A residence is located immediately to the west of the Site on the north side of Foster Avenue. On May 20, 1997 the domestic well was sampled at the residence and analyzed for EPA 8260 and 8270 compounds. The sample, identified simply as House, was non-detect for all analytes. The analytical report is enclosed in Appendix D, Volume 11.

Reports and Results on the Former Southern Lunch Room Area

Interim reports on the southern lunch room area investigation were submitted to the DTSC on May 8, 1997, May 12, 1997, May 13, 1997, and May 22, 1997. The May 8, 1997 document summarized soil sampling data; the May 12, 1997 document described the carbon filtration of the excavation water; the May 13, 1997 document was a work plan for additional soil investigation and additional groundwater dewatering; the May 22, 1997 document was a work plan to drill additional borings and to conduct pit sampling. These four documents were acknowledged and concurred with by the DTSC by letter dated May 27, 1997.

Maximum contaminant levels (MCLs) represent levels of contaminants in water which shall not be exceeded in drinking water supplied to the public. MCLs have not been established for the majority of the analytes detected in the groundwater in the southern lunch room area. Examples of compounds or groups of compounds for which MCLs have not been established are gasoline, kerosene, acetone, and naphthalene. The areas where chemicals were detected at levels exceeding the MCLs were generally confined to the immediate vicinity of the source area and have been largely removed during the investigation.

Two compounds have been detected at levels equal to or exceeding their MCLs off-site south of Foster Avenue. PCP, with an MCL of 1 ug/L, was detected in a groundwater sample from off-site boring LRB-54 at a level of 1 ug/L which was at the detection limit of 1 ug/L PCP. A subsequent boring (LRB-71) drilled just to the south of LRB-54 (Plate 7) contained no detectable PCP. The compound cis-1,2-Dichloroethene has an MCL of 6 ug/L which was equaled or exceeded in groundwater samples collected and analyzed from off-site borings LRB-54 (7.3 ug/L), LRB-55 (26 ug/L), LRB-56 (50 ug/L), LRB-69 (6.0 ug/L) and LRB-71 (21 ug/L) (Plate 7). The groundwater contamination will be addressed in the RAW.

5.17 Former Dip Tank Area

Information available at the beginning of the investigation identified a location inside the main building as the former above ground dip tank location where wood was treated with Woodlife . The active ingredient in Woodlife was PCP (3 to 5 percent), while the remainder of the product was mineral spirits. Solvents were reportedly used to clean the equipment in this area. (Plate 2, #24 enclosed, and Plate 6, Appendix A). Investigation in the area began on February 24, 1997 with the

drilling of soil borings from which both soil and groundwater samples were collected and analyzed. Boring DTB-1 was drilled outside the main building, while the remainder of the borings in the former dip tank area were drilled inside the main building (Plate 6, Appendix A). The lithology in the vicinity of the former dip tank area consists of silty sand to well graded sand to a depth of approximately 17 feet underlain by gravels with variable silt, sand and clay content. The clay layer which acts as an aquitard was encountered at depths of approximately 21 to 22 feet. Mr. Mark Piros of the DTSC was on-site on February 25, 1997 to conduct a Site inspection and to provide regulatory guidance on the drilling and other investigation activities. Mr. Derek Whitworth of the DTSC was present on February 28, 1997 to provide similar guidance.

As previously stated, Mr. Kirby, a retired Simpson Timber Company employee who worked in the dip tank and painting areas at the plant in the 1960s, visited the Site on April 1, 1997. Mr. Kirby identified the exact area where the dip tank formerly sat above ground on a concrete pad, which still exists. The dip tank had a drip pan collection system to prevent the Woodlife product from dripping onto the asphalt and concrete in the main building. Mr. Kirby also marked an area where the containers of product were kept near the dip tank (Excavation B, Plate 6, Appendix A).

A total of twelve borings were eventually drilled in the former dip tank area. The borings were drilled between February 24, 1997 and June 13, 1997. All of the borings were completed in the same general lithology and all were drilled down until the aquitard was encountered (See Boring Logs DTB-1 through DTB-12, Appendix B). Soil and groundwater samples collected in this area were analyzed for volatile organics to identify solvents, chlorinated solvents, and other paint products, and for semi-volatile organics to identify PCP and any other associated wood preservative products.

Traces of naphthalene and acetone were detected in soil samples from three of the 12 borings, with the highest detection being 0.023 mg/kg naphthalene (Tables 21A and 21B, Appendix C, analytical reports included in Appendix D, Volumes 1, 2, 3, 4, 6, 7, and 12). Naphthalene was also detected in the laboratory blank and therefore is probably not present at detectable levels in the soil in this area. PCP was detected in the water samples from DTB-3, DTB-9, and DTB-10 (Table 22A, Appendix C, analytical reports included in Appendix D, Volumes 1, 2, 3, 4, 6, 7, and 12).

The general areas where PCP was found in the groundwater were excavated to a depth of roughly eight feet to determine if any residual soil contamination from the dip tank process was present. No visual or other evidence of soil contamination was observed in these areas when they were excavated (Excavations A and B, Plate 6, Appendix A). Groundwater was pumped out of Excavation A to maintain its stability. The excavation was subsequently backfilled with concrete because no other non-permeable backfill material was available locally at that time. Excavation B was also dewatered to stabilize the pit. The water extracted from the pits was passed through an activated carbon filtration system, analyzed, and then disposed at the Eureka Sewage Treatment facility.

Water samples were periodically collected from the pits to determine the levels of contamination present, before being pumped into tanks for carbon filtration and disposal. The first pit sample (DT-PW) was collected on March 17, 1997 and contained 0.63 mg/L PCP. The next pit sample (PB-Pit-N) was collected on March 20, 1997 and was non-detect for EPA 8260 and 8270 analytes. Additional samples were collected on March 24, 1997 which were non-detect for all analytes tested. Based on information obtained from Mr. Kirby on April 1, 1997, a third small pit was excavated at a location where containers had been kept. The pits were sampled on April 3, 1997 and the samples (PR-Pit-South and PR-Pit-North) were non-detect for EPA 8260 and 8270 compounds. Pit water was sampled on May 14, 1997, June 6, 1997 and June 13, 1997 and traces of solvents were detected in the water from the samples (Ash Pit) collected in June of 1997 at a maximum level of 0.0065 mg/L (Table 22B, Appendix C, analytical reports included in Appendix D, Volumes 4, 5, 6, 7, 11, 12, and 15).

A soil sample (PR-S-12.0') collected from the third dip tank pit location on April 27, 1997 was non-detect for 8270 compounds with a detection of 0.0054 mg/kg xylenes (Table 22B, Appendix C, analytical report enclosed in Appendix D, Volume 11).

Investigations indicate that no detectable PCPs are in soil, that an isolated groundwater impact was detected in the former dip tank area which may have been removed during the investigation activities, and that no PCP contamination is detected in the presumed down gradient direction (south) from the former dip tank area (DTB-11 boring water samples). All small pits and excavations in the former above-ground dip tank area have now been backfilled and compacted with low permeability material.

The soil from the small excavations in this area was placed in a separate, plastic lined stockpile on pavement in the main building.

5.18 Former and Current Septic Systems

Three septic systems operated at the Site, one to the north of the administration building, one to the northwest of the main building (Plate 2, #27, two locations) and one historic septic system located to the west of the administration building (Plate 2, #25). The septic systems to the north and west of the administration building serviced this building which consists of office space and meeting rooms. The system to the west was abandoned. The system to the north is operational. Information gathered during this project indicated that no hazardous chemicals or other materials were ever stored in the main office building, therefore, the possibility of such chemicals being introduced into the septic system which service the main office building either in the past or present did not warrant an investigation. Based on the activity which occurred in this building (office work) no investigation of these two septic systems was conducted.

The septic system which serviced the main plant building was considered to have possibly been impacted by improper disposal of materials due to its use to service the main building and other work buildings. The septic system area was investigated on February 28, 1997 with the drilling of one boring in the leachfield area (LLB-1, Plate 2) and the excavation of one small pit (LLP1) on March 10, 1997. The boring was drilled to a depth of 21.5 feet and encountered clay from the surface to total depth (See Boring Log, Appendix B). Soil and groundwater samples collected in this area were analyzed for volatile organics to identify solvents, chlorinated solvents, and other paint products, and for semi-volatile organics to identify PCP and any other associated wood preservative products which were used in the main building. No other chemicals which could threaten soil or groundwater were indicated to have been used in the main building. The analytical results from the boring samples were non-detect for EPA 8260 and 8270 compounds (Tables 23A and 23B, Appendix C, analytical reports included in Appendix D, Volumes 2 and 3). The small pit was excavated within ten feet of LLB-1 and contained 0.0083 mg/kg naphthalene in the soil, while a water sample collected from the pit was non-detect for EPA 8260 and 8270 compounds. The level of naphthalene detected in soil is not of concern as it does not pose a threat to the public health at this level and no groundwater impact has occurred.

5.19 Storm Drains and Drop Inlets

Sediment sample D-3-S and a storm water discharge water sample (D-3-W) were collected on December 20, 1996, from a location two feet beyond the end of the two concrete storm drain culverts located to the southwest of the shipping shed (Plate 2, #11). The sample analytical results were non-detect for analytes of concern (Table 24A, Appendix C, analytical reports included in Appendix D, Volume 16).

Sediment sample GRDO-1-1.5' was collected on February 21, 1997 and contained detectable levels of TPH-d and TPH-mo (Table 24B, Appendix C, and analytical report enclosed in Appendix D, Volume 2).

Sediment sample DRO2-1-1.5' was collected on February 27, 1997 from the end of the four foot diameter culvert located west of the finger joint area of the main building (Plate 2, #2a). Due to the detection of contaminants in the sample (both diesel and motor oil were detected), this location was deepened to 3.5 feet bgs on March 6, 1997 after which confirmation sample GRDO2-2-3.5' was collected. The compound 2-Butanone, at a level of 0.018 mg/kg was the only compound detected in this sample (Table 24B, Appendix C, and analytical report, Appendix D, Volume 2); however, the confirmation sample was analyzed for EPA Method 8260 and 8270 constituents only. This area will be resampled and if necessary remediated during the implementation of the RAW.

In general, these samples were collected from accessible areas and analyzed for those compounds and chemicals which were identified upstream of the drop inlets. The samples were analyzed for TPH-g, TPH-d, TPH-mo, BTEX, EPA 8260 compounds and EPA 8270 compounds as appropriate for the location of the drop inlet in relation to source areas of identified contamination.

5.20 Former Paint Line and Finger Joint Area

During his visit on April 1, 1997, Mr. Kirby, the former Simpson employee, indicated the exact location of the former paint line and finger joint area. The location was roughly 200 feet east of the dip tank area inside the main building (Plate 8, Appendix A). Three borings were drilled in this location on April 9, 1997. Soil and groundwater samples collected in this area were analyzed for volatile organics to identify solvents, chlorinated solvents, and other paint products, and for semi-volatile organics to identify PCP and any other associated wood preservative products. Three borings were generally sufficient to surround the area of concern. No significant contamination was detected in these borings, although PCP was indicated in two samples from the upper water at the method detection limit of 1 μg/L (Tables 25A and 25B, Appendix C, analytical reports included in Appendix D, Volume 9). No significant soil contamination was detected in the samples from this location (Tables 26A and 26B, Appendix C, analytical reports included in Appendix D, Volume 9).

5.21 Railroad Spur

The railroad spur leading into and through a portion of the Site is owned by the Simpson Common Paymaster Company. An examination of government agency files did not reveal any known releases or spills to the environment related to the railroad spur or on the railroad spur property. Visual examination of the railroad tracks at the Site revealed the presence of railroad ties with no other evidence of any release of any environmental concern. Railroad ties may leave creosote residue in soil. Numerous soil borings were drilled between the railroad tracks on the south side of the Site as part of the investigation of the source area of groundwater contamination (Plate 7). No contamination attributable to the railroad tracks or the rail spur was either observed or detected in any soil or groundwater samples collected from borings drilled through or near the railroad tracks.

5.22 Vault 47

On May 19, 1997 the Humboldt Bay Municipal Water District (HBMWD) collected a water sample from inside the vault (Vault 47) just to the south of the administration building (Plate 2, #1) at the Site. The analysis indicated the presence of 0.46 ug/L PCP. A concern was raised that PCP contaminated groundwater might be entering the vault and pose a threat to either the water in the pipeline or to HBMWD employees working on the pipeline. A backhoe was mobilized to the Vault 47 area on June 11, 1997 to excavate down to the pipeline and collect water samples on the outside

of the pipeline to determine if PCP contaminated groundwater had migrated along the pipeline to the vault. An excavation was made on west side of the vault and native silt and clay soil was encountered to a depth of eight feet bgs, well below the bottom of the vault. Groundwater was not present, nor was there any visible evidence of any past groundwater in the area.

The vault itself was also closely examined and only two possible water entry points into the vault were observed. Those were by rainwater entering through the top of the vault or by percolation of water through a man made seam in the vault located approximately three feet below the top of the vault. A water sample was collected from the bottom of the vault (Vault 47 - Water) and analyzed for 8260 and 8270 constituents and no analytes were detected (analytical report included in Appendix D, Volumes 12 and 15). A soil sample (Vault 47 - South - 0.5 feet) was collected from the same depth as the seam on the south side of the vault. The sample was also analyzed for 8260 and 8270 components and no analytes were detected in this sample (analytical report included in Appendix D, Volumes 12 and 15). The seam was exposed to the air on the other sides of the vault and did not appear to be a possible entry point into the vault except by rain water.

Based on the information gathered, the initial detection of PCP is suspect due to the result being near the detection limit for the analytical method conducted. The subsequent investigation indicated that there are no identified pathways, other than rain water or possible surface migration for water to enter the vault. There is no visible or analytical evidence to indicate that contaminants can migrate in groundwater from other areas of the Site into the vault.

5.23 Excavated Soil

Soil was excavated and stockpiled from several areas during the Site investigation activities. Those areas include the two 20,000 gallon AGTs, the ditch adjacent to the wash rack area, the dip tank area, and the southern lunch room area. Soil from each of these areas has been segregated into individual stockpiles. Samples have been periodically collected and analyzed from the various stockpiles to determine the levels of contamination present (analytical reports enclosed in Appendix D, Volumes 1, 2, 3, 4, 6, and 7). In addition, soil from the southern lunch room area has been further segregated based on the presence or absence of obvious paint material (Plate 11).

Stockpile samples have been collected and analyzed from the soil removed from the southern lunch room area. The stockpiles were last sampled on June 13, 1997 when 30 soil samples were collected from 23 different stockpiles (Plate 11). Of the 30 samples collected, 22 samples from 15 different stockpiles were either non-detect or contained detectable analytes at concentrations below levels of concern (see Table 27, Appendix C, analytical reports included in Appendix D, Volume 16). The eight stockpiles identified as RR-11, CLO-2, COL-12, COL-14, COL-22, COL-34, COL-35, and C-2 (Plate 11) contained analytes at detectable levels, primarily PCP (Table 27, Appendix C, and

enclosed analytical reports, Appendix D, Volume 16). Based on sampling and investigation conducted to date, soil from the source area of groundwater contamination is typically non-detect for contaminants, except for soil containing obvious paint.

Characterization of all stockpiled soil will be performed after approval of the RAW. Each stockpile will be tested for the analytes detected in the area of the stockpile's origin.

5.24 Extracted Groundwater

Groundwater was extracted from the two AGT locations, from the dip tank area pit, and from the southern lunch room area. The water was pumped into tanks. The water from the two 20,000 gallon AGT locations was pumped into four Baker tanks and one 8,000 gallon tank. The water in the Baker tanks was sampled and found to be non-detect for petroleum hydrocarbons at which point it was disposed in the on-site evaporation ponds after informing DTSC. The water in the 8,000 gallon tank was placed on the bermed and lined with plastic petroleum hydrocarbon contaminated soil stockpiles.

Water from the southern lunch room excavation and from the dip tank pits was collected and analyzed on several occasions. The pit water sampling results are summarized in Tables 19A and 19B (Appendix C). PCP was detected in groundwater from the pit samples. After dewatering the pits in the dip tank room, the water samples collected from the pit were non-detect for PCP and other analytes tested. The levels of contaminants detected in groundwater in the southern lunch room area were initially much higher and showed a continuing declining trend as the groundwater was extracted, filtered, and then disposed under permit at the Eureka Sewage Treatment facility. However, each time another section of the southern lunch room area was exposed, the levels of analytes detected in the groundwater in the main pit would show a significant increase (Table 19A, Appendix C, analytical reports enclosed in Appendix D, Volumes 4, 5, 11, 12, 14, and 15).

Water extracted from the southern lunch room area and former above ground dip tank pits was processed through activated carbon filtration systems and then disposed of at the Eureka Sewage Treatment facility. No water was delivered to the facility until the facility had received analytical reports indicating the water was acceptable for discharge under the facility discharge limits established by the State of California for the facility. Copies of the analytical reports for the extracted and disposed of water are enclosed in Appendix E.

The Chain-of-Custody forms for sample numbers 274589, 768-6-2, 1961-5-31, and 1835-5-31 were left out of the July 31, 1997 report and are included in this revised report for reference in revised Appendix E. Please note in addition that the Chain-of-Custody form for Invoice #7934a report is with the Chain-of-Custody for Invoice #7934 report.

6.0 BASELINE RISK ASSESSMENT

This risk assessment will evaluate the potential threat to human health and the environment in the absence of any remedial action at the Site. The risk assessment provides a basis for determining the need for remedial action and the justification for performing any remedial actions(s) at the Site.

6.1 Contaminants Identified at the Site

Several different environmental contaminants have been investigated and detected at the Site. Contamination in the form of heavy hydrocarbons in the motor oil range have been detected in the ditch next to the steam cleaning and wash rack area, beneath a former 20,000 gallon AGT, in the teepee burner area, in the debris disposal area, and in drop inlet sediments. The motor oil in all of these areas appeared to be confined to soil.

Petroleum hydrocarbons as diesel have been detected at the Site in samples collected from just beneath the asphalt, in the ditch next to the wash rack and steam cleaning area, in the teepee burner area, from beneath a 20,000 gallon AGT, and in the debris disposal area. As with the heavier hydrocarbons, the diesel contamination appears to have been confined to the soil with little or no groundwater impact.

Phenolics were detected in soil at levels less than 10 mg/kg in the blowdown and overflow pond areas.

Solvents and thinners have been detected at low levels in soil samples collected from the debris disposal area and in both soil and water samples collected from the southern lunch room area to the south of the main building. The solvents acetone and cis-1,2-Dichloroethene, due to their mobility, have been selected as indicator chemicals for solvents in the southern lunch room area.

The chemical PCP has been detected at trace levels in both soil and groundwater in the former above ground dip tank area and in the southern lunch room area where paint, solvents, and possibly Woodlife were placed. In addition, PCP was detected in groundwater at the detection limit in the paint room/finger joint area.

PCBs were detected in one sample at 0.42 mg/kg in the drainage ditch.

The laboratory results form the soil and groundwater samples for these chemicals were evaluated to determine if chemicals were present at concentrations that may be of toxicological concern. In general, chemical levels in soil were compared against U.S. EPA Region IX PRGs or background levels for the chemical. No PRGs have been established for diesel or motor oil; however, these

chemicals are typically not naturally present in shallow soil and any detection is considered to be a release to the environment. The toxicity of long-term exposure to diesel or motor oil has not been established. A separate level was established for PCBs based on the rationale presented below. Chemical levels in groundwater were compared to the lower of Federal and State maximum contaminant levels (MCLs). If concentrations were less than the MCL or PRG, then that chemical was not considered further. See Table A (Appendix C) for these values. Based on this evaluation, the contaminants identified at the Site are diesel, motor oil, PCBs, phenolics, solvents, chlorinated solvents, and PCP. The diesel, motor oil, and phenolics are confined to soil, while the solvents, chlorinated solvents, and PCP have been detected in both soil and groundwater.

The applicable ARAR for PCBs can be found in 40 CFR 761 (Fed. Regist. 59:61788), the Toxic Substances Control Act 40 CFR 761 Subpart G, the National Oceanic and Atmospheric Administration Screening Guidelines (HAZMAT Report 94-8) and in OSWER Directive No. 93555.4-01FS (August 1990). Values there range from less than or equal to 1 ppm at the soil surface to less than or equal to 10 ppm at depths greater than 10 inches to specifications for excavation and replacement with clean soils to total PCB concentrations of less than 1 ppm. The residential soil action level specified by the U.S. EPA OSWER is 1 ppm. The U.S. EPA Region IX preliminary remedial goal for PCBs is 0.06 ppm. A U.S. EPA guidance document "Guidance on Remedial Actions for Superfund Sites with PCB Contamination" [EPA/540/G-80/007] recommends a soil action level for residential land use of 1 ppm which corresponds to a 10^{-5} risk level. The U.S. EPA risk assessment includes basic standard exposure assumptions for residential scenarios (ingestion, inhalation, and dermal contact) consistent with U.S. EPA's Risk Assessment Guidance. U.S. EPA stated that some of the assumptions used may be overly conservative on a site-specific basis. For example, in calculating the inhalation pathway, the assessment assumed that someone is on the site 24 hours a day for 30 years.

6.2 Exposure Assessment

The investigation conducted at the Site indicated the presence of TPH-mo under the asphalt at several locations. It is believed that this material was used in preparation of the asphalted areas when the asphalt placed at the Site. The motor oil range hydrocarbons beneath the asphalt do not volatilize to any extent and therefore do not provide a pathway for exposure through the air. TPH-mo was detected in soil beneath the former location of a 20,000 gallon AGT used to store Bunker "C" fuel oil. TPH-mo was detected in the ditch next to the steam cleaning and wash rack area. No odor was detected nor did air monitoring results indicate any air born exposure from the motor oil range petroleum hydrocarbons. Water samples collected from both surface water and groundwater indicate no water impact from motor oil range petroleum hydrocarbons at the Site. TPH-mo has been detected almost exclusively in soil at the Site. Exposure pathways in soil occur when the soil

is excavated or otherwise removed from below the ground surface. Exposure pathways would exist under these circumstances.

The investigation conducted at the Site indicated the presence of TPH-d under the asphalt at several locations. It is believed that petroleum hydrocarbons as diesel represent the lighter fraction of material placed on the baserock in preparation for asphalting when the asphalt placed at the Site. The diesel range petroleum hydrocarbons beneath the asphalt do not volatilize to any extent and therefore do not provide a pathway for exposure through the air unless there is significant soil disturbance. In addition, TPH-d was detected in soil beneath the former location of a 20,000 gallon AGT and in the debris disposal area. TPH-d has been detected primarily in soil at the Site. Exposure pathways in soil would occur when the soil is excavated or otherwise removed from below the ground surface. Exposure pathways would exist under these circumstances.

Phenolics were detected at the Site in the overflow and blowdown ponds. The phenolic compounds are an artifact and result from the interaction of wood and hot water. The phenolics were detected at levels ranging from non-detect to 10 mg/kg (Table 5). Phenolics were not detected in groundwater so the only identified exposure pathway would be contact with soil.

Wood coating products (chemicals, paints, and solvents) have been detected at the south end of the Site. Investigations performed to date indicate that these materials were found beneath a surface layer of either impermeable asphalt and concrete or a low permeability layer of clay and silt or a combination of both. Air monitoring revealed that the only time any exposure occurred by air was during excavation of soil in contaminated area.

The PCP, solvents, and other used paint products detected have different solubility in water. The dried paint residue was either initially placed in groundwater, was mobilized into groundwater due to downward percolation by rainwater, or subsequently came into contact with groundwater as the water table rose during the rainy season. These materials have impacted the groundwater in the shallow water aquifer which occurs at the south end of the Site from roughly 10 to 25 feet bgs. Investigation of a silt clay aquitard which is present from roughly 25 to 40 feet bgs and the next aquifer beneath it indicate that the exposure pathway is limited to the shallow water bearing zone from 10 to 25 feet bgs. Wells tapping into the shallow water in the vicinity of the source of groundwater contamination would provide an exposure point to anything or anyone coming in contact with the impacted groundwater through ingestion of the water and possibly inhalation of fumes from the water.

The Site and Site vicinity have been investigated as part of the exposure pathway analysis and no actual exposure points for receptors have been identified. Potential exposure points for receptors

have been identified as including on-site water supply wells and off-site water supply wells to the south and southwest of the Site.

Petroleum hydrocarbons in both the diesel and motor oil range were removed during the course of investigation to either non-detectable levels or to levels where they do not pose a risk to groundwater at the Site or to any off-site areas during the investigation of these materials. This was determined from soil and water samples collected from borings and open excavations. Phenolics were detected at levels in soil which do not pose a risk to groundwater as determined by the non-detect groundwater results from samples collected in the same borings where phenolics were detected in soil. Paint residue, along with solvents and possibly Woodlife were placed at the south end of the Site approximately 25 to 35 years ago. Based on the distribution and concentration of chemicals detected in groundwater, these chemicals spread out from the source of groundwater contamination and reached a point of non-detection at a distance of roughly 200 feet down-gradient from the source of groundwater contamination. Since placement of this material at the Site ceased over 25 years ago, the conclusion is reached that the area of groundwater impact will not increase in size but will actually decrease in size over time since the large majority or all of the source area has been or will be removed. There are no actual or potential receptors within the area which has been impacted. Groundwater monitoring wells will be installed to confirm the results of the drilling program.

6.3 Toxicity Assessment

Petroleum hydrocarbons can be toxic to aquatic organisms at high concentrations and can increase the risk of cancer in human populations. The increase in cancer risk for most petroleum hydrocarbons such as gasoline, diesel, and mineral spirits, has not been determined due to the variation in the chemical composition of these compounds.

Chlorinated solvents, and other solvents used in paints have been detected in groundwater at the site. Long-term exposure to these chemicals has been identified as increasing the cancer risk due to the exposure. Aquatic toxicity might also occur if these chemicals were to enter surface water.

6.4 Risk Characterization

Petroleum hydrocarbons in the motor oil range have been detected at the Site. Many of these materials were purposefully placed as part of Site development (asphalting). Unintentional releases occurred in the wash rack and steam cleaning area, in the debris disposal area, and beneath a 20,000 gallon AGT which held heating fuel. The motor oil range hydrocarbons were removed from the wash rack and steam cleaning area and from beneath the 20,000 gallon AGT to non-detectable levels during the investigation of these areas. Sampling indicates that low levels of motor oil range petroleum hydrocarbons may be present in shallow surface soil in isolated portions of the debris

disposal area. The results of the investigation and the removal activities indicate that there are no significant exposure pathways for this material and there is no remaining significant risk at the Site from motor oil range petroleum hydrocarbons.

Petroleum hydrocarbons in the diesel range have been detected at the Site. Many of these materials were purposefully placed as part of Site development (asphalting). Unintentional releases may have occurred in the wash rack and steam cleaning area, in the debris disposal area, and beneath a 20,000 gallon AGT which held diesel fuel. The diesel range hydrocarbons were removed from the wash rack and steam cleaning area and from beneath the 20,000 gallon AGT to non-detectable levels during the investigation of these areas. Sampling indicates that low levels of diesel range petroleum hydrocarbons may be present in shallow surface soil in isolated portions of the debris disposal area. The results of the investigation and the removal activities indicate that there are no significant exposure pathways for this material and there is no remaining significant risk at the Site from motor oil range petroleum hydrocarbons.

Phenolics resulting from hot water leaching wood, have been detected at the Site, but are at levels determined not to be a threat to either human health or the environment.

Paint residue, which is composed of solids and a carrier solvent , and possibly Woodlife used to protect the wood surface from fungal staining, were placed at the south end of the Site. Investigations to date reveal that there has been no impact beyond the presence of the paint itself from the solid portion of the paint. Various solvents, petroleum hydrocarbons and PCP have been detected in the groundwater at the Site. As the majority of the source area has been or will be removed, groundwater will be the primary exposure pathway. The material was disposed of 25 to 35 years ago. Based on an evaluation of the distribution of contaminants in groundwater , and the subsurface lithology and aquifer permeability, the level of contaminants in groundwater should now begin to decline in concentration as the source area of groundwater contamination has been largely removed and may be completely removed in the near future. Since there are no identified actual or potential receptors within the zone of impacted groundwater or within the area anticipated to be impacted in the foreseeable future, the Site poses little or no threat to human health or the environment which will be confirmed by the installation and sampling of monitoring wells.

7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 Summary and Conclusions

Numerous areas throughout the Site were identified as having potential environmental problems. All of those areas have been examined during the course of the investigation. All but one of the areas of significant soil contamination have been investigated to the point where the degree of soil contamination is no longer significant or is non-detect.

Groundwater contamination has been detected at several locations; however, dewatering activities associated with existing excavations has eliminated much or all of the detectable groundwater contamination. Residual contaminants at the south end of the main building are still a source of contamination of the groundwater. Groundwater monitoring wells will be installed to confirm this evaluation.

PCP has been detected in soil at the Site at low levels on average well below the PRG for residential areas of 2.5 mg/kg. Two soil samples contained PCP in excess of the residential PRG. Since only low levels of PCP were detected at the Site in soil, it was not deemed necessary to test for dioxins which are created as trace contaminants during the PCP manufacturing process. Since only low levels of PCP have been detected at the site and since dioxins occur in PCP at trace levels, dioxins are not deemed likely to be present at detectable levels at the Site. In addition, dioxins are typically found in soil and not groundwater and groundwater has been demonstrated to be the mode of transport of contaminants in the areas where PCP has been detected.

7.2 Recommendations for Further Action

EnviroNet recommends that the residual contamination be removed and groundwater be monitored. The proposed work can be addressed in a Removal Action Workplan.

The Removal Action Workplan should address removal of the residual soil contamination at the south end of the main building and installation of groundwater monitoring wells to determine the extent of groundwater contamination. The Removal Action Workplan should include a proposal to remove the recently discovered dried paint residue and paint cans in the debris disposal area. Once the obvious paint residue and paint cans have been separated, the area should be investigated to determine if there has been any impact on soil and/or groundwater from the paint residue. Any other contaminants should be removed.

Additional sampling of the evaporation pond area and all stockpiles is also recommended.

APPENDIX A

- PLATES -

FROM

REPORT OF INVESTIGATION

FOR THE

FORMER SIMPSON TIMBER COMPANY REMANUFACTURING

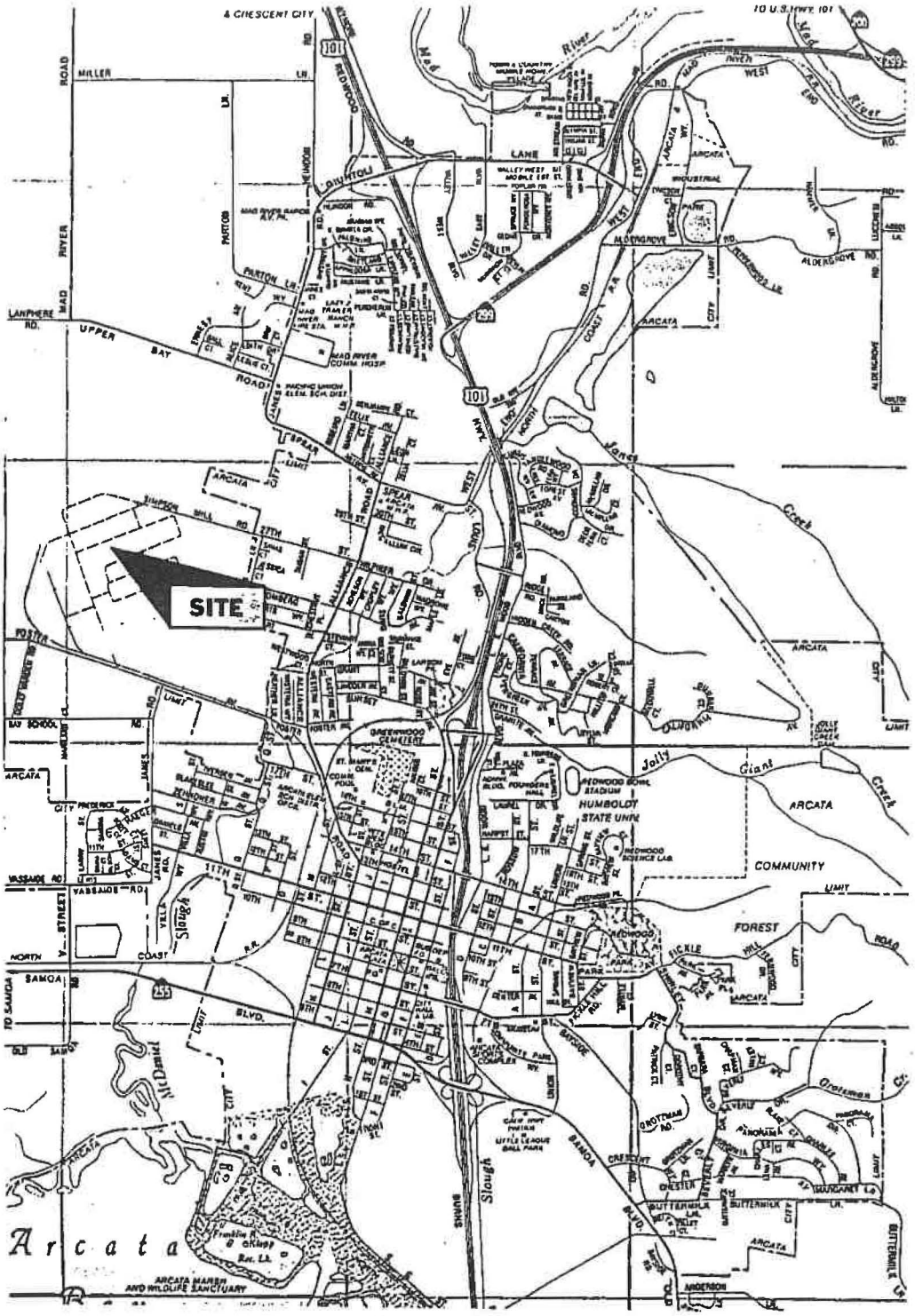
PLANT SITE LOCATED AT:

3315 FOSTER AVENUE

ARCATA, CALIFORNIA

FOR SEPTEMBER 12, 1997

REVISED REPORT



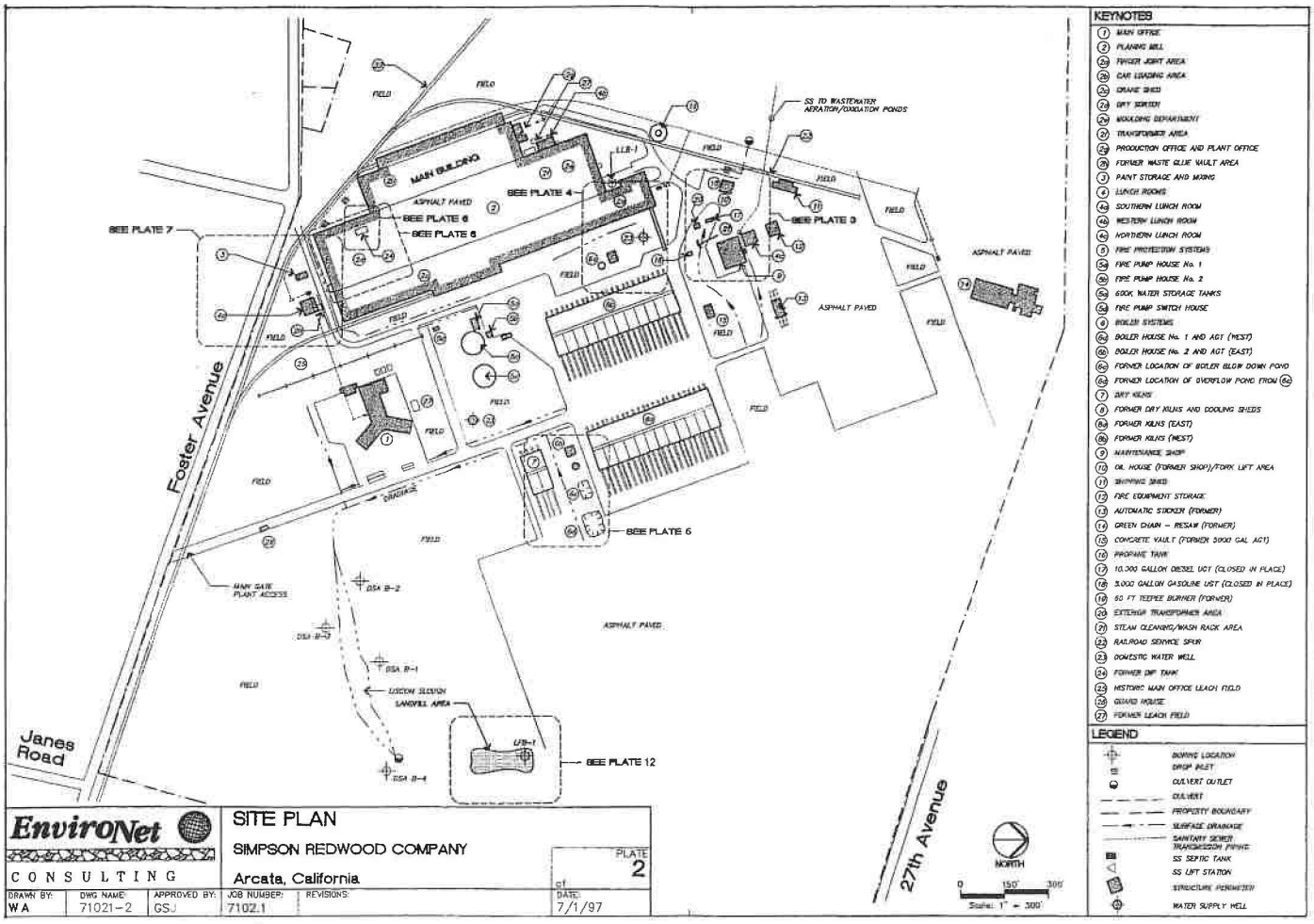
EnviroNet CONSULTING

SITE LOCATION MAP

Simpson Lumber Company
Arcata, California

PLATE 1

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
			7102.1		5/12/97



KEYNOTES

1. MAIN OFFICE
2. PLANING MILL
2a. FINGER JOINT AREA
2b. CAR LOADING AREA
2c. CRANE SHED
2d. DRY SORTER
2e. MOULDING DEPARTMENT
2f. TRANSFORMER AREA
2g. PRODUCTION OFFICE AND PLANT OFFICE
2h. FORMER WASTE GLUE VAULT AREA
3. PAINT STORAGE AND MIXING
4. LUNCH ROOMS
4a. SOUTHERN LUNCH ROOM
4b. WESTERN LUNCH ROOM
4c. NORTHERN LUNCH ROOM
5. FIRE PROTECTION SYSTEMS
5a. FIRE PUMP HOUSE No. 1
5b. FIRE PUMP HOUSE No. 2
5c. 600K WATER STORAGE TANKS
5d. FIRE PUMP SWITCH HOUSE
6. BOILER SYSTEMS
6a. BOILER HOUSE No. 1 AND AGT (WEST)
6b. BOILER HOUSE No. 2 AND AGT (EAST)
6c. FORMER LOCATION OF BOILER BLOW DOWN POND
6d. FORMER LOCATION OF OVERFLOW POND (FROM 6c)
7. DRY KILNS
8. FORMER DRY KILNS AND COOLING SHEDS
8a. FORMER KILNS (EAST)
8b. FORMER KILNS (WEST)
9. MAINTENANCE SHOP
10. OIL HOUSE (FORMER SHOP)/FORK LIFT AREA
11. SHIPPING SHED
12. FIRE EQUIPMENT STORAGE
13. AUTOMATIC STACKER (FORMER)
14. GREEN CHAIN – RESAW (FORMER)
15. CONCRETE VAULT (FORMER 5000 GAL AST)
16. PROPANE TANK
17. 10,000 GALLON DIESEL UST (CLOSED IN PLACE)
18. 5,000 GALLON GASOLINE UST (CLOSED IN PLACE)
19. 60 FT TEEPEE BURNER (FORMER)
20. EXTERIOR TRANSFORMER AREA
21. STEAM CLEANING/WASH RACK AREA
22. RAILROAD SERVICE SPUR
23. DOMESTIC WATER WELL
24. FORMER DIP TANK
25. HISTORIC MAIN OFFICE LEACH FIELD
26. GUARD HOUSE
27. FORMER LEACH FIELD

LEGEND

- BORING LOCATION
- DROP INLET
- CULVERT OUTLET
- CULVERT
- PROPERTY BOUNDARY
- SURFACE DRAINAGE
- SANITARY SEWER TRANSMISSION PIPING
- SS SEPTIC TANK
- SS LIFT STATION
- STRUCTURE PERIMETER
- WATER SUPPLY WELL

EnviroNet CONSULTING

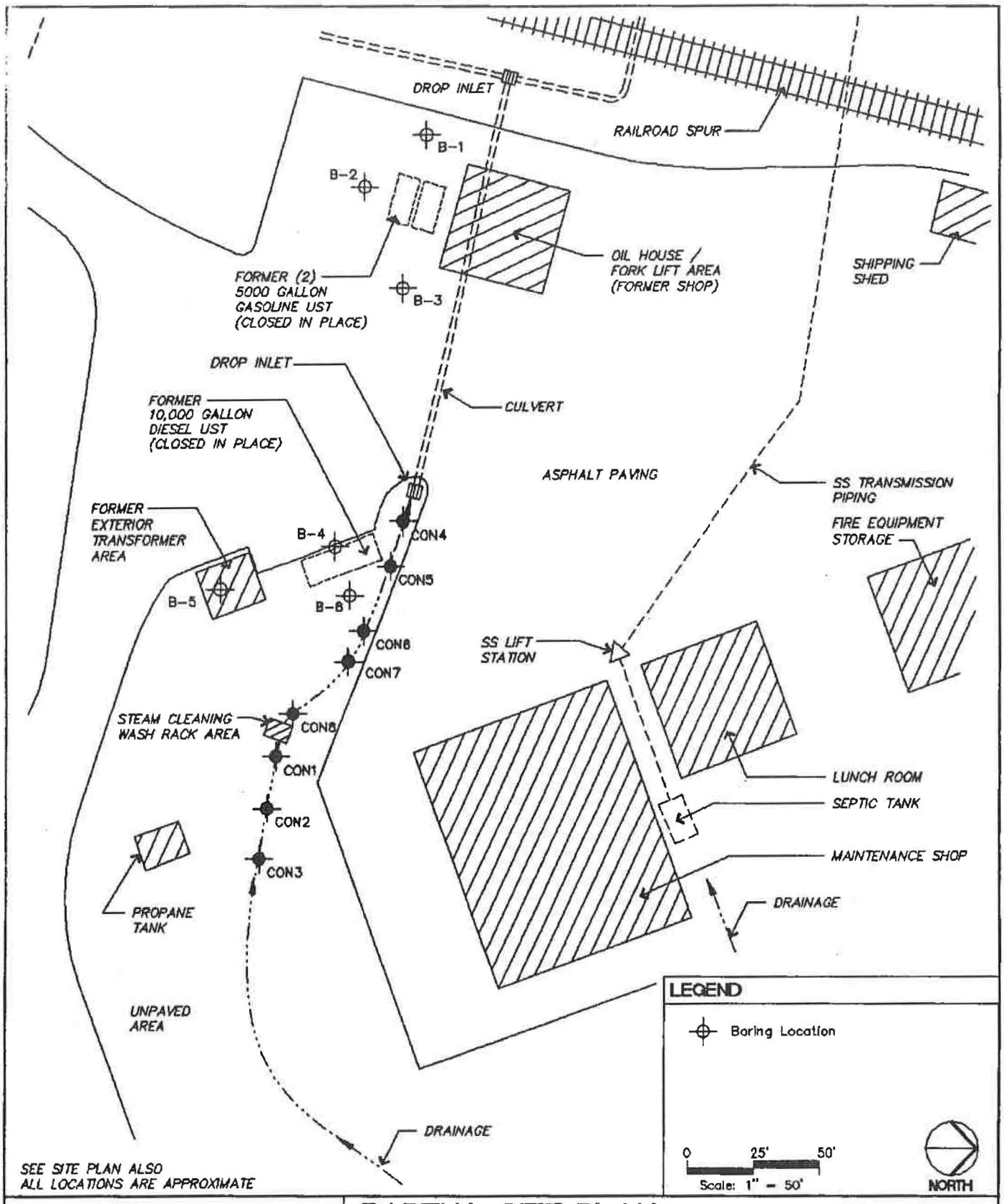
SITE PLAN

SIMPSON REDWOOD COMPANY

Arcata, California

PLATE 2

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
WA	71021-2	GSJ	7102.1		7/1/97

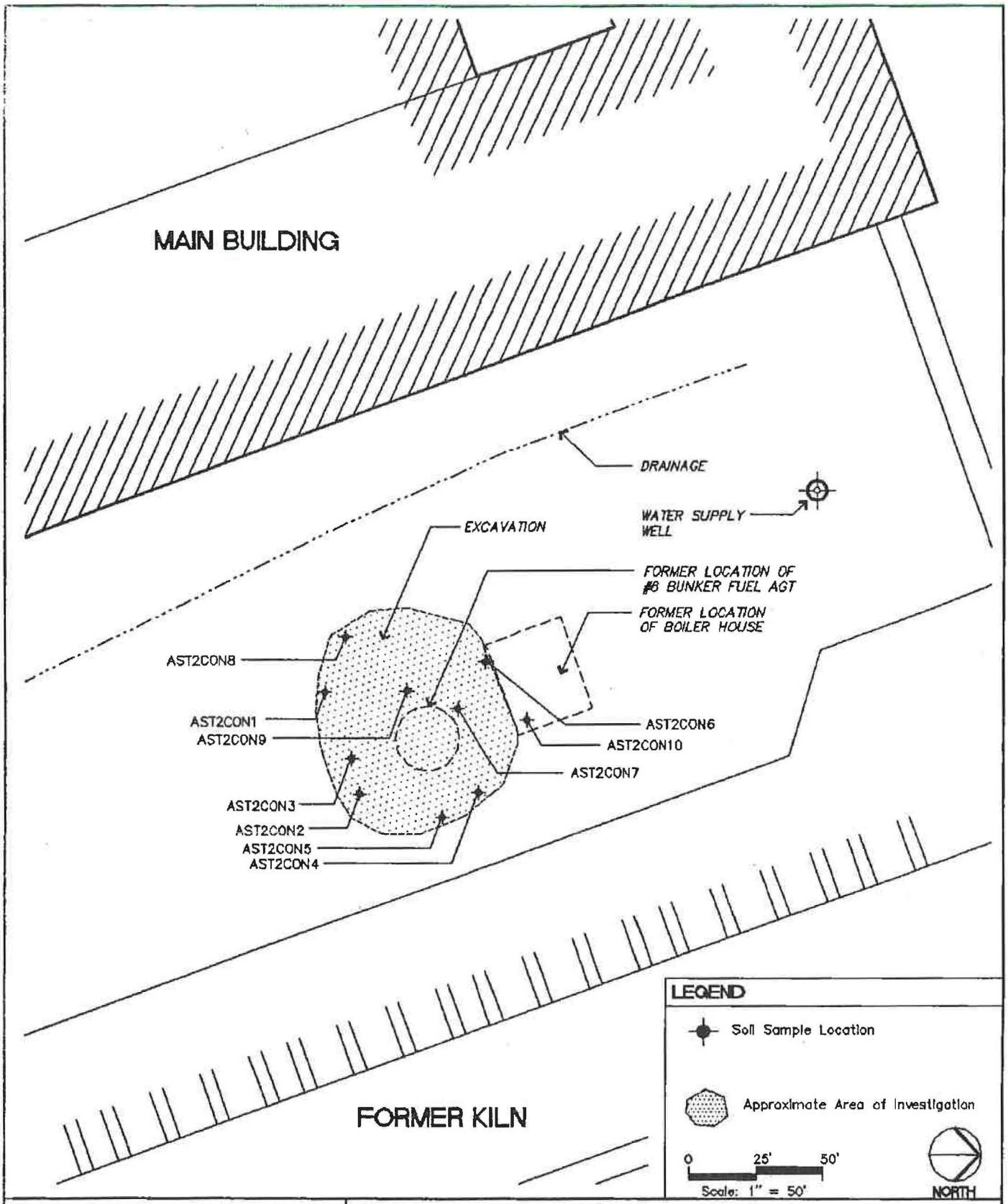


EnviroNet
CONSULTING

PARTIAL SITE PLAN
Boring Locations
Simpson Redwood Company
Arcata, California

PLATE 3

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
WA	71021-3A	GSJ	7102.1		7/24/97



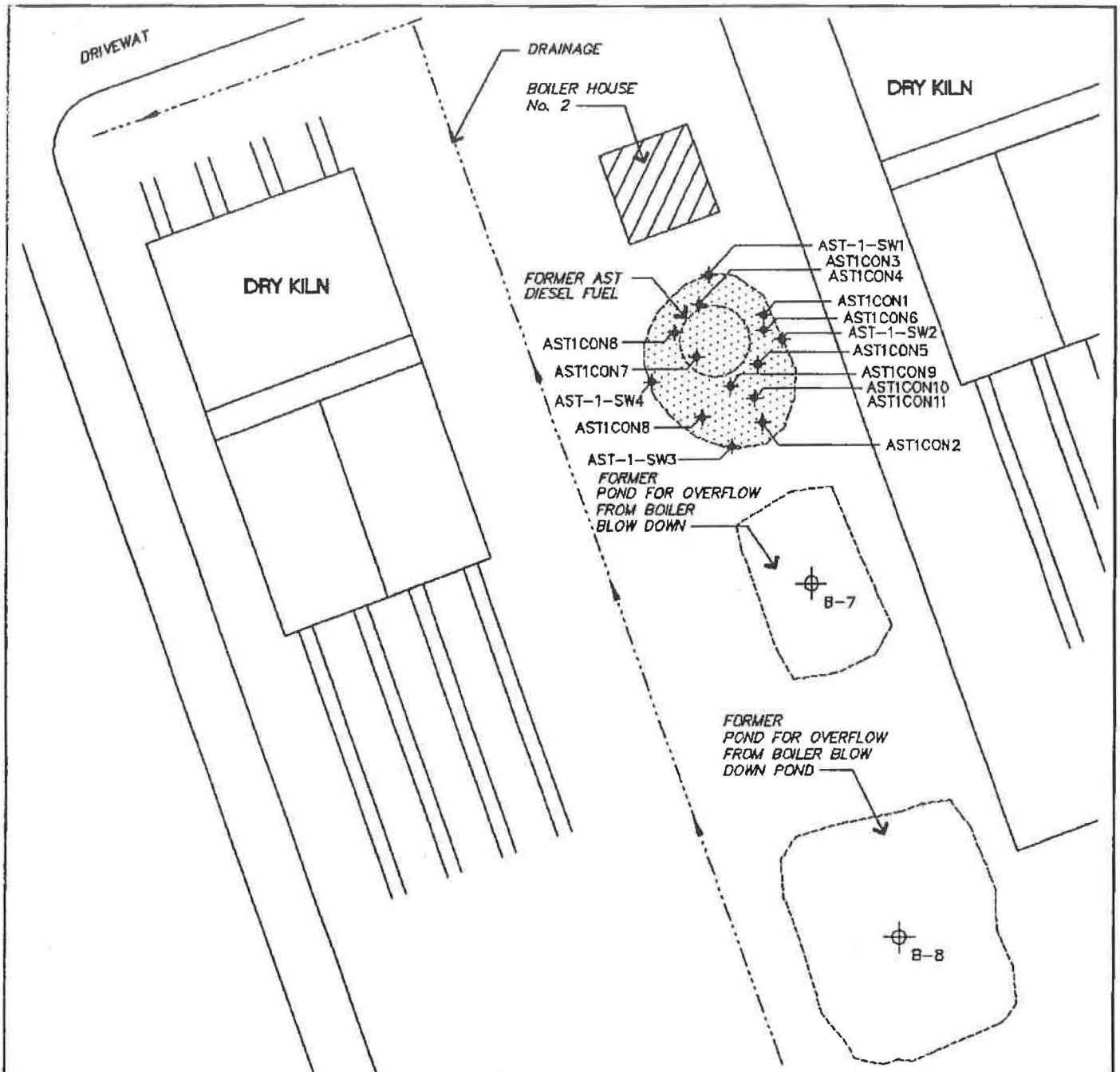
EnviroNet CONSULTING

PARTIAL SITE PLAN

Bunker "C" AGT Area
Simpson Redwood Company
Arcata, California

PLATE 4

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
WA	71021-48	GSJ	7102.1		7/17/97

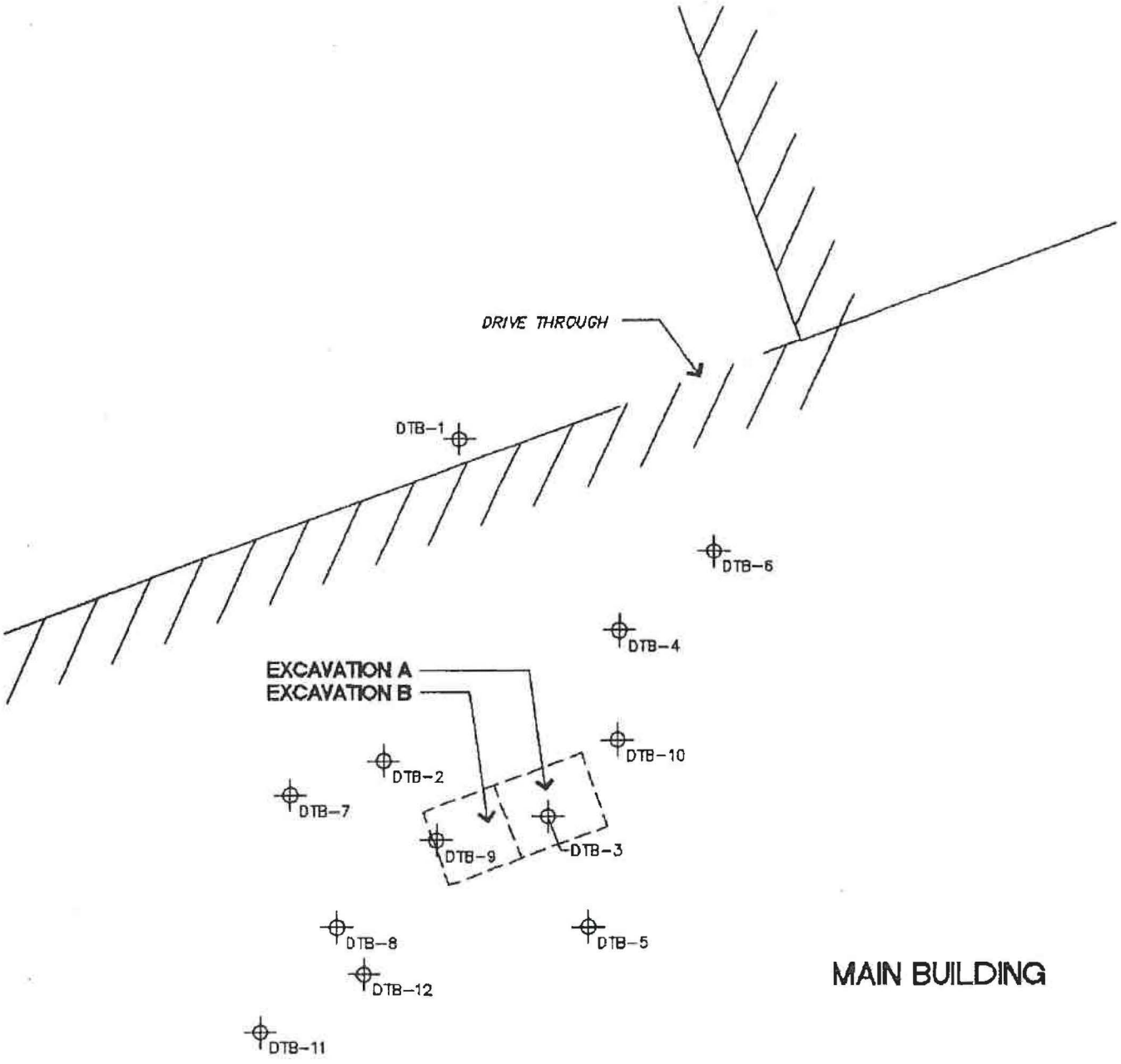


EnviroNet CONSULTING

PARTIAL SITE PLAN
Diesel AGT Area
Simpson Redwood Company
Arcata, California

PLATE 5

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
WA	71021-5C	GSJ	7102.1		7/17/97



LEGEND

Boring Location

10' 20'

Scale: 1" = 20'

NORTH

EnviroNet CONSULTING

PARTIAL SITE PLAN

Boring and Excavation Locations
Simpson Redwood Company
Arcata, California

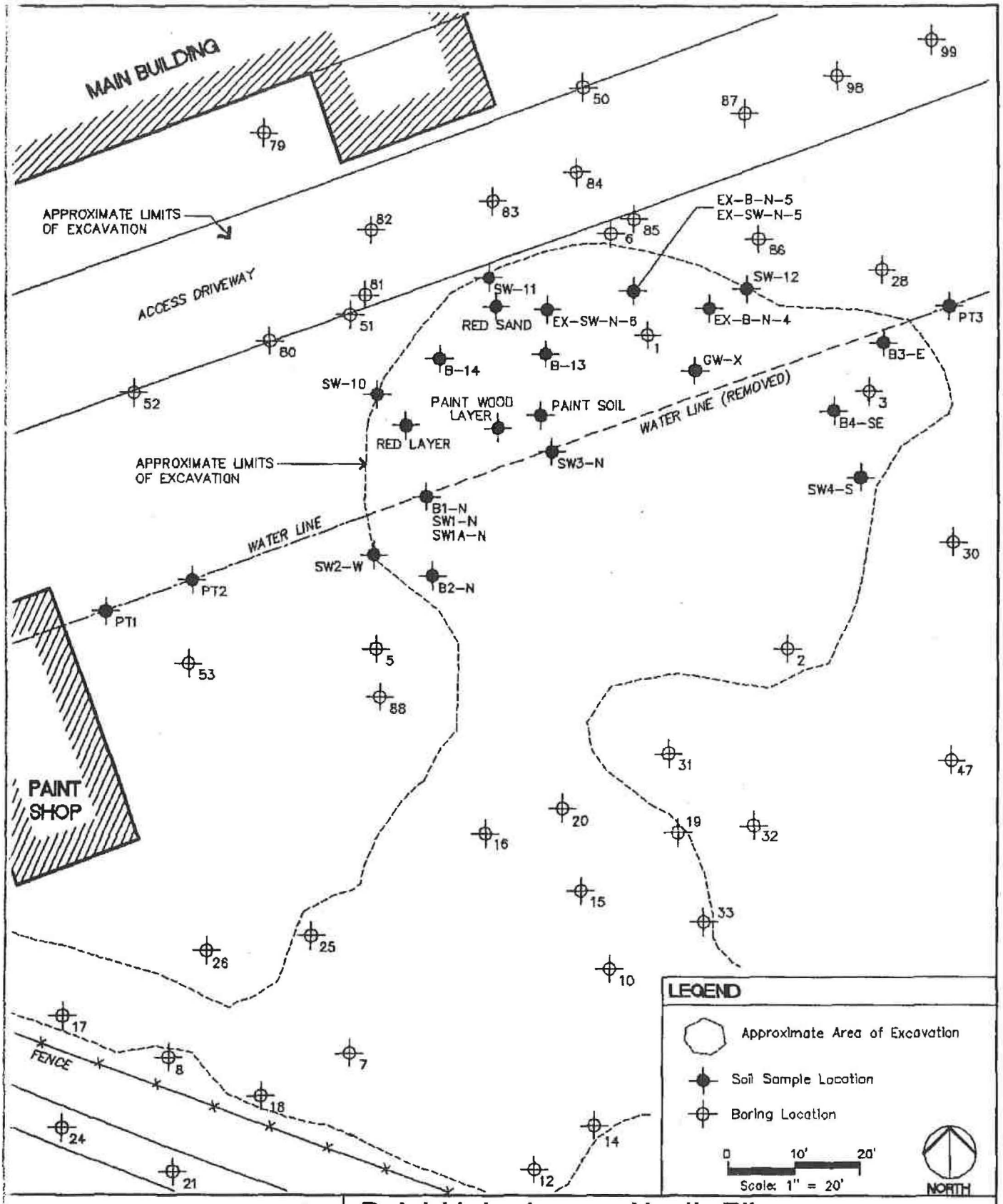
PLATE 6

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
WA	71021-6A	GSJ	7102.1		7/1/97

The following plates are oversize and are not included in the electronic version of this document:

Plate 7: Former South Lunch Room Area
Plate 7A: Former South Lunch Room Area - Small Pits
Plate 7B: Contour Map - cis-1,2-Dichloroethene - Upper Water
Plate 7C: Contour Map - cis-1,2-Dichloroethene - Lower Water
Plate 7D: Contour Map - PCP - Upper Water
Plate 7E: Contour Map - PCP - Lower Water
Plate 7F: Contour Map - BTEX - Upper Water
Plate 7G: Contour Map - BTEX - Lower Water
Plate 7H: Contour Map - 8260 Other - Upper Water
Plate 7I: Contour Map - 8260 Other - Lower Water

If you would like to view these plates, please contact the DTSC Berkeley Regional Central File room [(510)-540-3800] to complete a Public Records Act Request (PRAR).



EnviroNet

CONSULTING

Paint Hole Area - North Pit

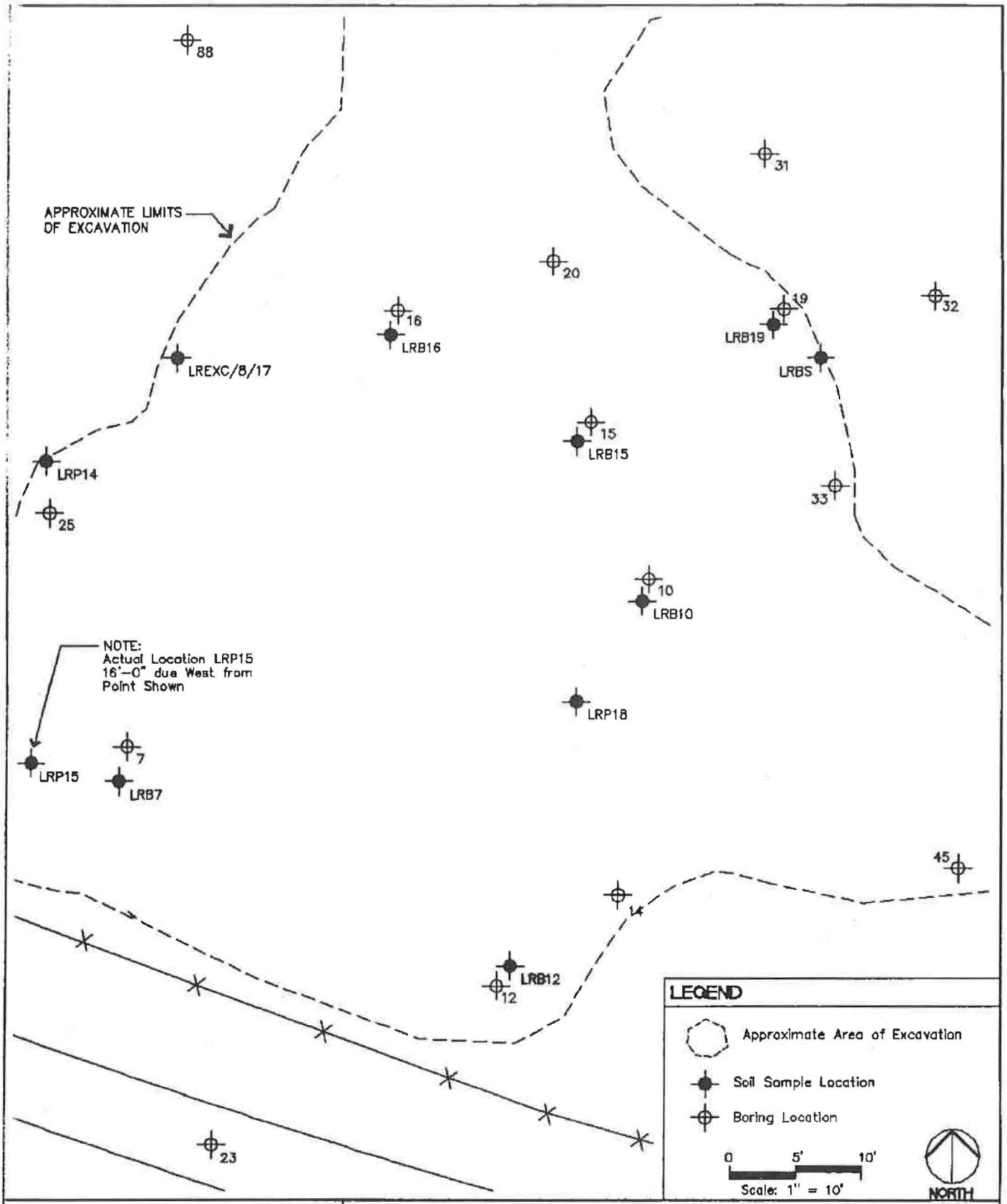
Soil Sample, Boring and Excavation Limits

Simpson Redwood Company

Arcata, California

PLATE 7J

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
WA	71021-7J	GSJ	7102.1		7/15/97



EnviroNet CONSULTING

Paint Hole Area - South Pit

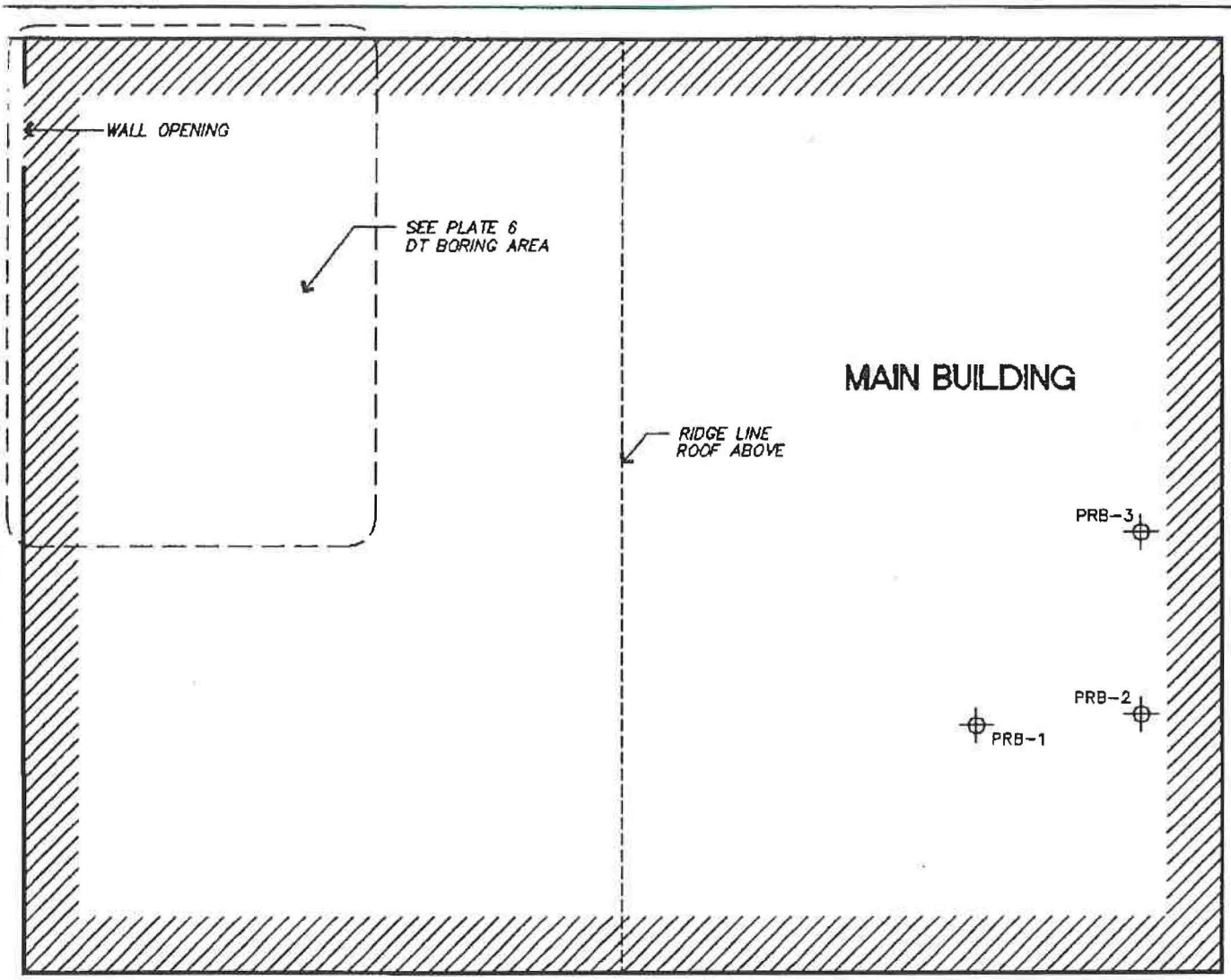
Soil Sample, Boring and Excavation Limits

Simpson Redwood Company

Arcata, California

PLATE 7K

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
WA	71021-7K	GSJ	7102.1		7/17/97



Road

SEE SITE PLAN ALSO

LEGEND

Boring Location

0 15' 30'

Scale: 1" = 30'

NORTH

EnviroNet CONSULTING

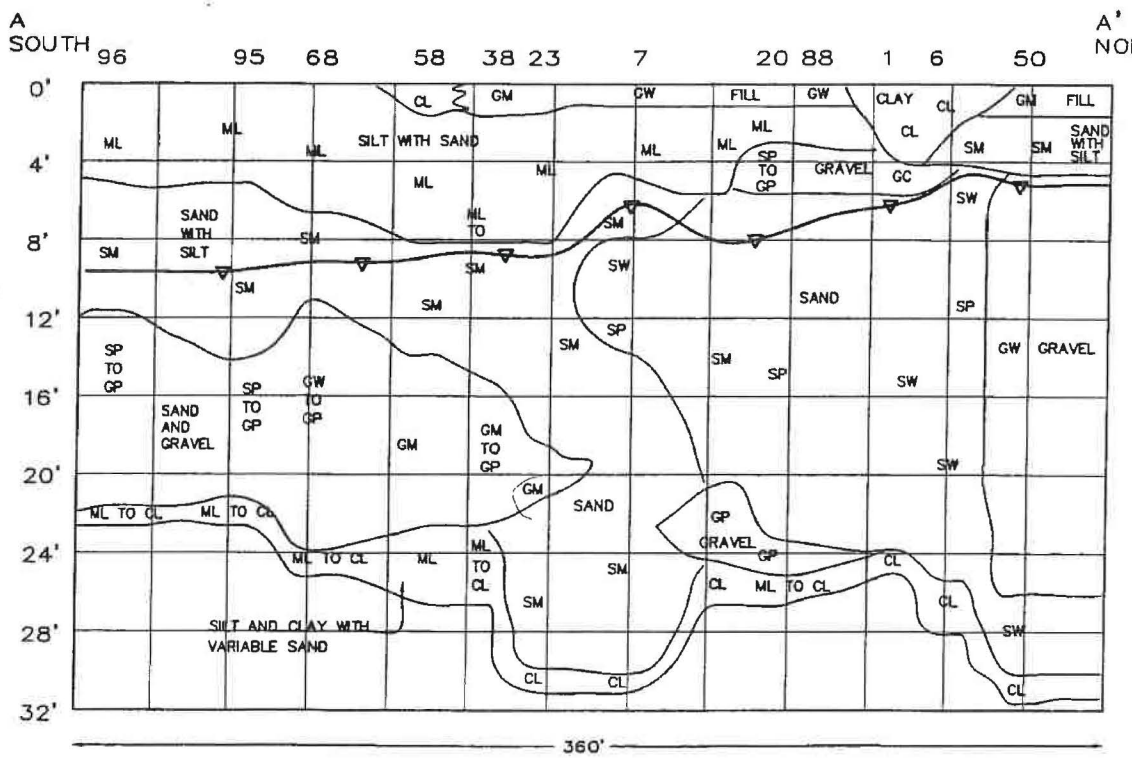
PARTIAL SITE PLAN

Boring Locations
Simpson Redwood Company

Arcata, California

PLATE 8

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
WA	71021-8A	GSJ	7102.1		6/25/97



EnviroNet
CONSULTING

CROSS SECTION A-A'
Soil and Groundwater Investigation
Simpson Lumber Company
Arcata, California

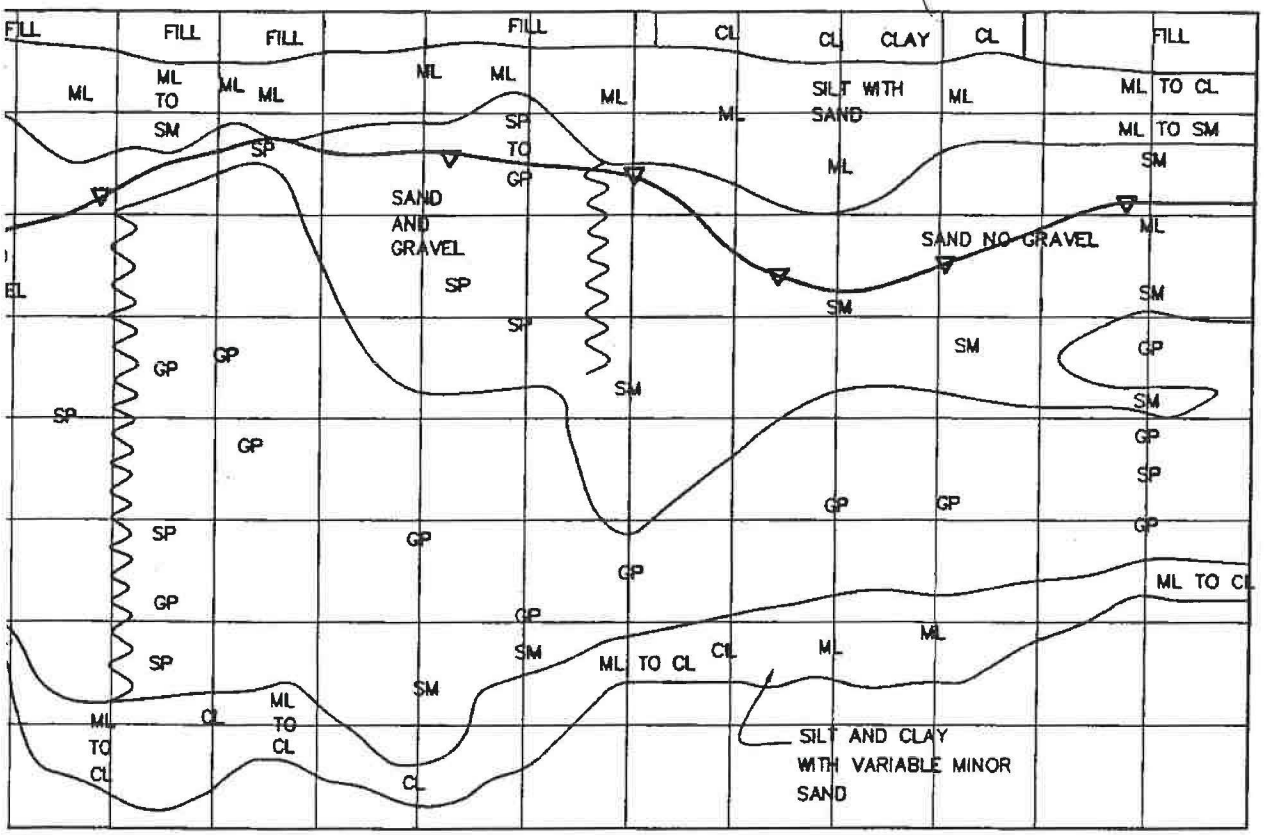
PLATE 9 of

NOTE: Horizontal Scale 1" = 50'

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
AJH/RWC	sl-sect.a	GSJ	7102.1		8-18-97

B'
EAST

'6 74 44 27 26 88 20 32 47 59 90



360'

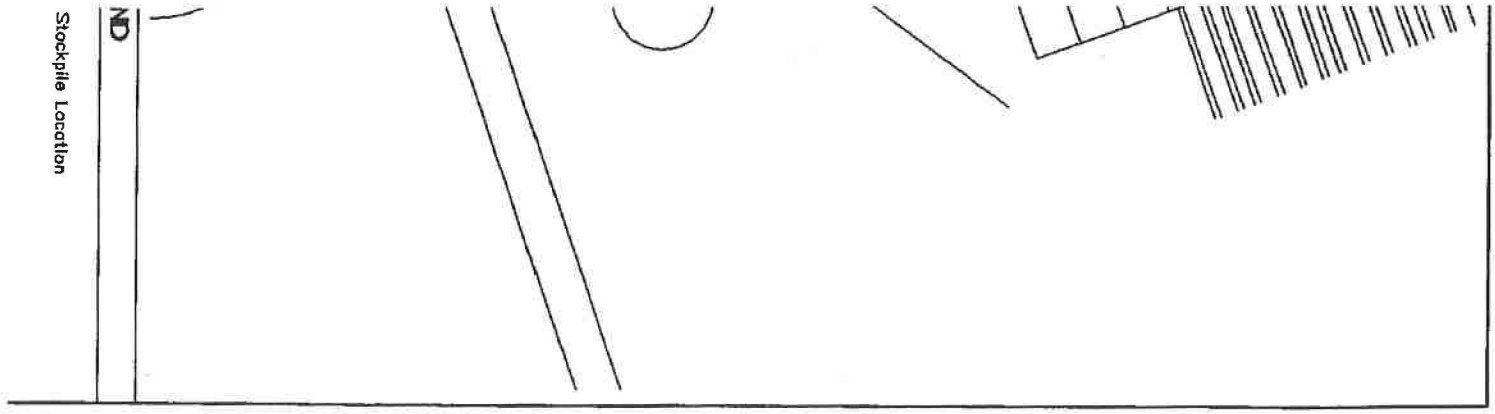
CROSS SECTION B-B'

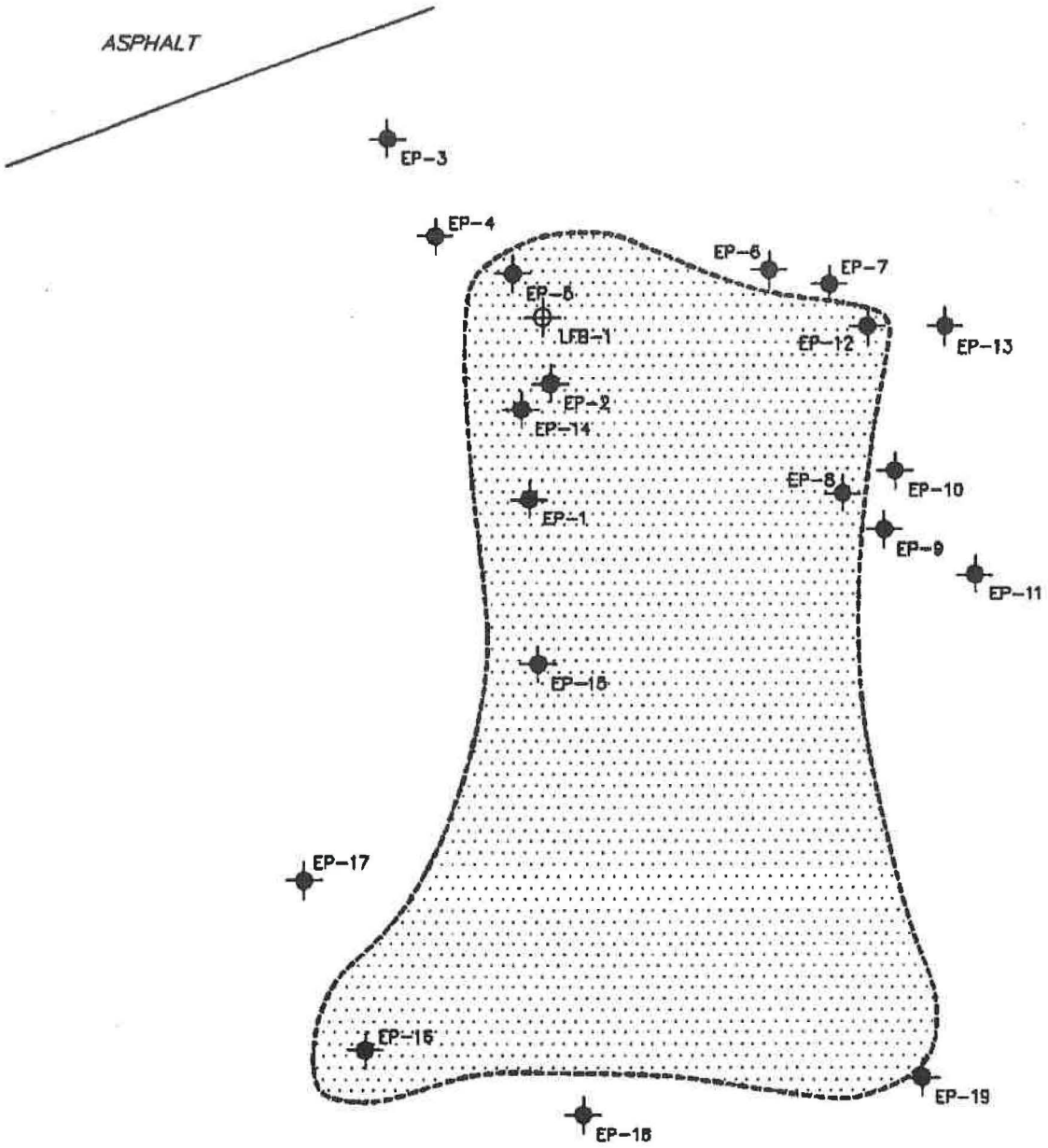
Soil and Groundwater Investigation
Simpson Lumber Company
Arcata, California

PLATE 10 of

JOB NUMBER:	REVISIONS:	DATE:
7102.1		8-18-97

NOTE: Horizontal Scale 1" = 50'





LEGEND

- Boring Location
- Trench Location
- Approximate Area of Investigation

0 20' 40'

Scale: 1" = 40'

NORTH

EnviroNet CONSULTING

PARTIAL SITE PLAN

Debris Disposal Area
Simpson Redwood Company
Arcata, California

PLATE 12

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
WA	71021-4C	GSJ	7102.1		8/7/97

APPENDIX B

- BORING LOGS -

INCLUDED IN JULY 31, 1997

REPORT ONLY

FROM

REPORT OF INVESTIGATION

FOR THE

FORMER SIMPSON TIMBER COMPANY REMANUFACTURING

PLANT SITE LOCATED AT:

3315 FOSTER AVENUE

ARCATA, CALIFORNIA

NOT INCLUDED IN

SEPTEMBER 12, 1997

REVISED REPORT

APPENDIX C

- ANALYTICAL TABLES -

SOIL AND GROUNDWATER SAMPLES

TABLE A ONLY

TABLES 1 THROUGH 27

INCLUDED IN JULY 31, 1997

REPORT ONLY

FROM

REPORT OF INVESTIGATION

FOR THE

FORMER SIMPSON TIMBER COMPANY REMANUFACTURING

PLANT SITE LOCATED AT:

3315 FOSTER AVENUE

ARCATA, CALIFORNIA

SEPTEMBER 12, 1997

REVISED REPORT

Table A: PRGs and MCLs for Chemicals of Concern

Contaminant	PRG res soil mg/kg	PRG tap water ug/L	MCL drinking water ug/L
Pentachlorophenol	2.5	0.56	1.0
ethylbenzene	230	1300	700
toluene	790	720	150
xylenes	320	1400	1750
cis-1,2-Dichloroethene	31	6.1	6.0
Total Petroleum Hydrocarbons	NE	NE	NE
acetone	2100	610	NE
Polychlorinated biphenyls	0.066	0.0087	0.0005
trans-1,2-Dichloroethene	120	10	78
Naphthalene	240	240	NE

NE = None Established

APPENDIX D

- ANALYTICAL REPORTS -

SOIL AND GROUNDWATER SAMPLES

VOLUMES 1 THROUGH 16

INCLUDED IN JULY 31, 1997

REPORT ONLY

FROM

REPORT OF INVESTIGATION

FOR THE

FORMER SIMPSON TIMBER COMPANY REMANUFACTURING

PLANT SITE LOCATED AT:

3315 FOSTER AVENUE

ARCATA, CALIFORNIA

NOT INCLUDED IN

SEPTEMBER 12, 1997

REVISED REPORT

APPENDIX E

- ANALYTICAL REPORTS -

BAKER TANK SAMPLES

VOLUMES 1 THROUGH 4

INCLUDED IN JULY 31, 1997

REPORT ONLY

FROM

REPORT OF INVESTIGATION

FOR THE

FORMER SIMPSON TIMBER COMPANY REMANUFACTURING

PLANT SITE LOCATED AT:

3315 FOSTER AVENUE

ARCATA, CALIFORNIA

ONLY MISSING CHAIN OF CUSTODY FORMS INCLUDED IN

SEPTEMBER 12, 1997

REVISED REPORT

SPARGER TECHNOLOGY, INC.
Analytical Laboratory
3050 Fite Circle, #112 Sacramento, CA 95827
Phone: (916) 362-8947
FAX: (916) 362-0947

CHAIN OF CUSTODY RECORD

C.O.C. No. 10883 (7966)
Page 1 of 1
STAL Invoice Number:

Company: EnviroNet
Phone: (707)546-9461
Project Manager: Linda Mackey
FAX: (707)544-5769

Report Address: (Fax) 544-5769 and 826-2049

Billing Name & Address:

Project Name: Simpson Timber Company
Project/Job#: 7102

Project Location: Arcata
P.O.#:

ANALYSIS REQUEST

REMARKS: 24 hr. No SIM 24-HOUR RUSH

Sampler's Name: Jim Crook

		All OK	None OK	Some OK
Cooler Temp.	°C			
Sample Condition				
pH				

WET(STLC)
TCLP

NO.	SAMPLE ID	Sampling: Date	Sampling: Time	Container: 40 mL VOA	Container: Brass Sleeve	Container: 1 L amber bottle	Container: 250 mL Plastic	Container: Other:	Preservative Used: HCl/HNO3/ICE	Preservative Used: None	Preservative Used: Other:	Matrix: Water	Matrix: Soil	Matrix: Air	Matrix: Other:	TCLP: BTEX (602/8020)503.1	TCLP: BTEX/TPHgas (602/8020/8015)	TCLP: TPHdiesel/TPHmotor oil/kerosene(8015)	TCLP: EPA 601/8010/502.2/504	TCLP: EPA 602/8020	TCLP: EPA 608/8080 (Pesticides)/505/508	TCLP: EPA 608/8080 (PCB'S)	TCLP: EPA 624/8240/524.2	TCLP: EPA 625/8270/525	TCLP: Total Oil & Grease (5520)	TCLP: Non-Polar O & G/TRPH (418.1)	TCLP: Organic Lead	TCLP: RCI	TCLP: 8260	Total: CAM-17 Metals	Total: CAM-5 Metals (Cd, Cr, Pb, Ni, Zn)	Total: Lead	TAT: Standard	TAT: Rush Services (72hr / 48hr / 24hr / 12hr)	TAT: Holiday/Weekend Rush
1	Baker Tank 1961-5-31	5/31/97	2p	3		2				X		X												X					X						
2																																			
3																																			
4																																			
5																																			
6																																			
7																																			
8																																			
9																																			
10																																			

Relinquished by:	Received by:	Relinquished by:	Received by:
Date: 5/31/97 Time: 2pm	Date: 6/3/97 Time: 12:00	Date:	Time: Date: Time:

PLEASE READ [illegible]

SPARGER TECHNOLOGY, INC.
Analytical Laboratory
3050 Fite Circle, #112 Sacramento, CA 95827
Phone: (916) 362-8947
FAX: (916) 362-0947

CHAIN OF CUSTODY RECORD

C.O.C. No. 10882 (1865)
Page 1 of 1
STAL Invoice Number:

ANALYSIS REQUEST

Company: EnviroNet
Phone: (707)546-9461
Project Manager: Linda Mackey
FAX: (707)544-5769

REMARKS: NO SHEEN! 24 hr.

Sampler's Name: Jim Crook

Report Address: (Fax) 544-5769 and 826-2049

Billing Name & Address:

Project Name: Simpson Timber Company
Project/Job#: 7102

Project Location: Arcata
P.O.#:

		All OK	None OK	Some OK
Cooler Temp.	°C			
Sample Condition				
pH				

WET(STLC)
TCLP

NO.	SAMPLE ID	Sampling: Date	Sampling: Time	Container: 40 mL VOA	Container: Brass Sleeve	Container: 1 L amber bottle	Container: 250 mL Plastic	Container: Other:	Preservative Used: HCl/HNO3/ICE	Preservative Used: None	Preservative Used: Other:	Matrix: Water	Matrix: Soil	Matrix: Other: (DIESEL)	TCLP: BTEX (602/8020)503.1	TCLP: BTEX/TPHgas (602/8020/8015)	TCLP: TPHdiesel/TPHmotor oil/kerosene(8015)	TCLP: EPA 601/8010/502.2/504	TCLP: EPA 602/8020	TCLP: EPA 608/8080 (Pesticides)/505/508	TCLP: EPA 608/8080 (PCB'S)	TCLP: EPA 624/8240/524.2	TCLP: EPA 625/8270/525	TCLP: Total Oil & Grease (5520)	TCLP: Non-Polar O & G/TRPH (418.1)	TCLP: Organic Lead	TCLP: RCI	TCLP: 8260	Total: CAM-17 Metals	Total: CAM-5 Metals (Cd, Cr, Pb, Ni, Zn)	Total: Lead	TAT: Standard	TAT: Rush Services (72hr / 48hr / 24hr / 12hr)	TAT: Holiday/Weekend Rush
1	Baker Tank 1835-551	5/31/97	2pm	3		2				X		X											X					X						
2																																		
3																																		
4																																		
5																																		
6																																		
7																																		
8																																		
9																																		
10																																		

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
	5/31/97	2pm		6/2/97	12:00
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

BY FAX SIGNIFIES ACCEPTANCE OF TERMS AND CONDITIONS

Analytical Laboratory A5E

3050 Fite Circle, #112 Sacramento, CA 95827

Phone: (916) 362-8947

FAX: (916) 362-0947

C.O.C. No. 10876 7872

Page 1 of 1 **STAL Invoice Number:**

Company: EnviroNet Phone: (707)546-9461

Project Manager: Linda Mackey FAX: (707)544-5769

Report Address: (Fax) 544-5769 and 826-2049

Billing Name & Address:

Project Name: Simpson Timber Company Project/Job#: 7102

Project Location: Arcata P.O.#:

ANALYSIS REQUEST

REMARKS: 24-HOUR RUSH NO SIM 24

Sampler's Name: Jim Crook

		All OK	None OK	Some OK
Cooler Temp.	°C			
Sample Condition				
pH				

WET(STLC) | TCLP

NO.	SAMPLE ID	Sampling: Date	Sampling: Time	Container: 40 mL VOA	Container: Brass Sleeve	Container: 1 L amber bottle	Container: 250 mL Plastic	Container: Other:	Preservative Used: HCl/HNO3/ICE	Preservative Used: None	Preservative Used: Other:	Matrix: Water	Matrix: Soil	Matrix: Air	Matrix: Other:	TCLP: BTEX (602/8020)503.1	TCLP: BTEX/TPHgas (602/8020/8015)	TCLP: TPHdiesel/TPHmotor oil/kerosene(8015)	TCLP: EPA 601/8010/502.2/504	TCLP: EPA 602/8020	TCLP: EPA 608/8080 (Pesticides)/505/508	TCLP: EPA 609/8080 (PCB'S)	TCLP: EPA 624/8240/524.2	TCLP: EPA 625/8270/525	TCLP: Total Oil & Grease (5520)	TCLP: Non-Polar O & G/TRPH (418.1)	TCLP: Organic Lead	TCLP: RCI	TCLP: 8 0 6 2 8	Total: CAM-17 Metals	Total: CAM-5 Metals (Cd, Cr, Pb, Ni, Zn)	Total: Lead	TAT: Standard	TAT: Rush Services (72hr / 48hr / 24hr / 12hr)	TAT: Holiday/Weekend Rush
1	768-6-2	6/2/97	2 PM	3		2				X		X												X					X						
2																																			
3																																			
4																																			
5																																			
6																																			
7																																			
8																																			
9																																			
10																																			

Relinquished by:	Received by:	Relinquished by:	Received by:
Date: 6/2/97 Time: 2 PM	Date: 6/3/97 Time: 1300	Date: Time:	Date: Time:

PLEASE READ REVERSE SIDE FOR TERMS AND CONDITIONS

APPENDIX F

GOVERNMENT AGENCY

RECORDS REVIEW REPORT

INCLUDED IN JULY 31, 1997

REPORT ONLY

FROM

REPORT OF INVESTIGATION

FOR THE

FORMER SIMPSON TIMBER COMPANY REMANUFACTURING

PLANT SITE LOCATED AT:

3315 FOSTER AVENUE

ARCATA, CALIFORNIA

NOT INCLUDED IN

SEPTEMBER 12, 1997

REVISED REPORT

APPENDIX G

- REGULATORY DOCUMENTS -

FROM

REPORT OF INVESTIGATION

FOR THE

FORMER SIMPSON TIMBER COMPANY REMANUFACTURING

PLANT SITE LOCATED AT:

3315 FOSTER AVENUE

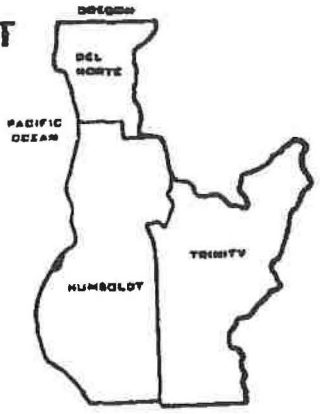
ARCATA, CALIFORNIA

INCLUDED IN

SEPTEMBER 12, 1997

REVISED REPORT ONLY

NORTH COAST UNIFIED AIR QUALITY MANAGEMENT DISTRICT
2300 Myrtle Avenue, Eureka, CA 95501
Phone (707) 443-3093 Fax (707) 443-3099



August 21, 1997

Michele Shacklett
Environet
3601 Regional Parkway Suite A
Santa Rosa, CA 95403
FAX (707) 544-5769

Subj: Simpson Timber, Foster Road, Arcata

Dear Ms. Shacklett:

As you requested, I am sending this letter to inform you of my inspection findings at the above referenced site.

Our office received a notification for demolition of building #40 (classroom/bathrooms) from Jim Crook of Northcoast Environmental Construction as required by the Asbestos NESHAP (National Emissions Standards for Hazardous Air Pollutants), Title 40, CFR, Part 61. This regulation requires that a the owner or operator of a facility notify the EPA or its designee, in this case, the North Coast Unified Air Quality Management District, of demolitions of industrial structures.

On March 3, 1997, I conducted an inspection of this structure to check for compliance with the Asbestos NESHAP. I did not discover any suspect asbestos containing materials in the structure at the time nor did I discover any other violations of this regulation or other air quality regulations.

If you have any questions, please feel free to call me at (707) 443-3093.

Sincerely,

Tami Pallingston
Air Pollution Inspector

TP: infoltr/pal

RECEIVED 8/27/97

23849

HUMBOLDT-DEL NORTE COUNTY
DEPARTMENT OF PUBLIC HEALTH

RECEIVED APR 29 1987

727 CEDAR STREET
GARBERVILLE, CA. 95440
923-2779

MAIN OFFICE
529 I STREET
EUREKA, CA. 95501
445-6215

909 HWY. 101, NORTH
CRESCENT CITY, CA. 95531
464-7237

FEE 11.50
DATE PAID
PERMIT # (A.P.)

APPLICATION FOR PERMIT TO CLOSE UNDERGROUND
HAZARDOUS MATERIALS STORAGE TANK(S)

LOCATION: ARCATA, CA.
FACILITY NAME: ARCATA REMANUFACTURING PLANT
OWNER/OPERATOR: SIMPSON TIMBER CO. TELEPHONE: 1-707-822-0371
MAILING ADDRESS: P.O. DRAWER V, ARCATA, CA. 95521
CONTRACTOR: SHEPPARD CONSTRUCTION CO. LICENSE#: 290-057 TELEPHONE: 668-545

TANK # 1 DATE INSTALLED UNKNOWN VOLUME 10,000 GAL CONSTRUCTION STEEL MATERIAL STORED DIESEL
TANK # 2 DATE INSTALLED 74 VOLUME 5,000 GAL CONSTRUCTION STEEL MATERIAL STORED UNLEADED
TANK # 3 DATE INSTALLED 74 VOLUME 5,000 GAL COSNTRUCTION STEEL MATERIAL STORED UNLEADED

IF NOT CURRENTLY IN USE, INDICATE LAST DATE USED FOR STORAGE:

PIPING CONSTRUCTION: STEEL
REMAINING PRODUCT TO BE REMOVED BY: SIMPSON OIL

DESCRIBE SOIL/WATER SAMPLING PLAN FROM EXCAVATION (INDICATE LOCATION ON PLOT PLAN)
NO SAMPLING - TANKS UNDER 2' THICK CONCRETE CAP
METHOD OF DETERMINING IF PIPING RUNS ARE CONTAMINATED: SAMPLING PLAN ATTACHED - PRESSURE TESTING BEFORE REMOVAL

SAMPLES WILL BE COLLECTED BY: TIM CURRIE TELEPHONE: 822-0371
SAMPLES WILL BE ANALYZED BY: NORTH COAST LABS TELEPHONE: 822-4649
WHO WILL HAUL TANKS?: N/A DOHS HAULER #: N/A
FINAL TANK(S) DESTINATION: N/A TELEPHONE:

ATTACH A PLOT PLAN DRAWN TO SCALE OF THE PARCEL, TANK(S), PIPING AND STRUCTURES NEAR THE TANK(
TANKS TO BE FILLED WITH MINERAL MATERIAL & EXTERIOR PIPING REMOVED

I HAVE RECEIVED A COPY OF THE UNDERGROUND STORAGE TANK CLOSURE POLICY AND WILL PERFORM THE WORK AS APPROVED IN THIS APPLICATION.

OWNER: Timothy J. Currie, SIMPSON TIMBER CO. DATE: 4/2/87
AGENT: DATE:

FOR OFFICE USE ONLY:

PERMIT APPROVED BY: James W Clark R.E. DATE: EXPIRES:
WORK COMPLETED AS APPROVED: James W Clark R.E. DATE: 4-29-

Rev. 11/86 Underground Storage Tank

STATE OF CALIFORNIA - CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

Simps Timber Co. Arcata Remanufacturing Plant FYI

PETE WILSON, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
NORTH COAST REGION
5550 SKYLANE BLVD. SUITE A
SANTA ROSA, CA 95403
PHONE: (707) 576-2220

for
/
Route to FCLM
FYI

February 2, 1994

Anna Sparks
Humboldt County Board of Supervisors
825 Fifth Street
Eureka, CA 95501

Dear Ms. Sparks:

Subject: Simpson Timber Company, Arcata Remanufacturing Plant, Arcata, California

During our February 3, 1994 telephone conversation you asked if the Regional Board was aware of any contamination problems at the Simpson Timber Company, Arcata Remanufacturing Plant located in Arcata.

The Arcata Remanufacturing Plant began operations in the late 1950s to process old growth redwood lumber from company sawmills. The plant processed rough sawn boards into finished dimensional lumber and siding for the marketplace. The facility operated continuously until its closure in June of 1989.

In February of 1992, in response to some citizens complaint, I requested information from Simpson regarding the use of wood treatment chemicals at the plant. Pentachlorophenol (5% solution in a product called WoodLife) was used as a wood preservative from approximately 1964 to 1972. Wood products were treated with WoodLife only by special order of the buyer. Routine applications did not occur. The chemical was delivered in 55 gallon drums and applied in a "closed-loop" applicator within an enclosed building on a paved floor. After the wood products were treated, they were stored in a warehouse until shipped off-site by rail car.

In 1987, Simpson Timber Company contracted with SHN Consulting Engineers and Geologists to do a "Post Closure Site Assessment" related to the WoodLife activities. The work included soil borings in areas most likely to detect residual pentachlorophenol and water analysis of on site wells. The results were negative. No pentachlorophenol was detected in the soil borings or the wells.

Cleanup of PCBs associated with a substation that served the facility was successfully completed in 1993.

I hope this answers your questions concerning this facility. If not, please call me at (707) 576-2683.

Sincerely,

William T. Rodriguez
Sanitary Engineering Associate

WTR:lmf/annal

cc: Jerry Soehnlein, Simpson Timber Company, Third and Franklin, Shelton WA 98584

STATE OF CALIFORNIA—ENVIRONMENTAL PROTECTION AGENCY
PETE WILSON, Governor

DEPARTMENT OF TOXIC SUBSTANCES CONTROL
400 P Street, 4th Floor
P.O. Box 806
Sacramento, CA 95812-0806

October 21, 1992

SIMPSON TIMBER CO
PO BOX 1169
ARCATA, CA 95521

Dear PRESIDENT:

SUBMITTAL OF IMPROPERLY COMPLETED MANIFESTS

The Department of Toxic Substances Control (DTSC) has received improperly completed manifests from your facility. Enclosed please find the certified copies of your original blue manifests. The DTSC is returning these copies to you pursuant to the California Health and Safety Code, Section 25160.5, which states:

> "If any producer required to send a copy of a manifest to the department submits an improperly completed manifest, and the department returns the manifest to the person who completed the manifest, producer shall submit a fee of twenty dollars ($20) to the department to accompany the resubmitted manifest."

These manifests must be corrected and resubmitted along with a check for the amount indicated on the attached Manifest Error Fee/Penalty invoice within 30 days of receipt of this letter.

In addition, an Enforcement Order has been issued for violating the California Health and Safety Code (H&SC), Section 25189.2 and/or Title 22 of the California Code of Regulations by failing to complete fully and accurately the manifests on the attached list. This penalty is separate from the $20 reprocessing fee. All attachments to this Order should be carefully read. They identify your right to an informal conference with the Department, your right to request a formal hearing within 15 days of the issuance of this order, and other rights and procedures involved in this process.

If you wish to participate in the scheduled informal conference as indicated in the enclosed document entitled "Statement to Respondent", you must call and confirm your intentions. This conference will be located at our offices in Sacramento or you may request a telephone conference call if it is not convenient for you to travel to our offices.

In order to comply with the requirements of this Order and State Hazardous Manifesting requirements, you are hereby required to do the following:

1. Correct the attached manifests and resubmit them to the Department of Toxic Substances Control.

2. Submit the appropriate amount for both the Manifest Reprocessing Fee and the Enforcement Order.

3. Return the bottom portion of the Manifest Error Fee/Penalty Invoice with your payment.

4. Complete and sign the enclosed Certificate of Compliance and return.

Please note that all of the above items should be returned in the same envelope for proper processing within 30 days unless you choose to request a hearing on this matter. If you choose to request a hearing, you are required to notify the Department within fifteen days of your receipt of the enclosed Order.

Pursuant to the H&SC, Section 25188, a penalty of up to $25,000 per day may be imposed for failure to comply with this Order. If you have any questions regarding this letter, please contact Mr. Patrick Rodriguez of my staff at (916) 324-1818.

Sincerely,

Kit Davis, Chief
Manifest Enforcement Unit
Surveillance and Enforcement
Department of Toxic Substances Control

Enclosures: Manifests 18
Checklist
Invoice No. C102192009
Docket No. FO 92/93-5-067

cc: Charlene Williams
Branch Chief, Region 2
Department of Toxic Substances Control
2151 Berkeley Way, Annex 9
Berkeley, CA 94704

STATE OF CALIFORNIA
ENVIRONMENTAL PROTECTION AGENCY
DEPARTMENT OF TOXIC SUBSTANCES CONTROL

In the Matter of: Simpson Timber Co. P.O.Box 1169 Arcata, CA 95521 Status: Generator EPA ID # CAD009215138 Respondent	Docket No. FO 92/93-5-067 ENFORCEMENT ORDER Health and Safety Code Section 25187

1. On 10-20-92, the Department of Toxic Substances Control (Department) reviewed Uniform Hazardous Waste Manifests submitted by Respondent.

2. The Department hereby determines that Respondent violated the Hazardous Waste Control Act (Health & Safety Code section 25100 et seq.) and related requirements and assesses a penalty of $1000, as specified on page 2 et seq., Determination of Violations and Penalties.

3. Respondent shall begin to correct the violations immediately. Respondent shall complete corrective action and send a signed Certification of Compliance to the person who issued this Order within 30 days of the date of issuance.

Date of Issuance: October 21, 1992.

Patrick F. Rodriguez
(Signature)

Name and Title: Pat Rodriguez
Associate Hazardous Materials Specialist
Department of Toxic Substances Control

Address: P.O. Box 806
Sacramento, CA 95812-0806

Telephone No: (916) 324-1818

Simpson

Simpson Timber Company
Redwood Division POST OFFICE BOX 68
KORBEL, CALIFORNIA 95550 (707) 822-0371

November 17, 1992

Mr. Pat Rodriguez
Associate Hazardous Materials Specialist
Department of Toxic Substances Control
P.O. Box 806
Sacramento, California 95812-0806

Dear Mr. Rodriguez

Pursuant to your enforcement order Docket No. FO 92/93-5-067, attached, we have enclosed our check for $1,360.00, covering the full assessment. Even though we paid the full amount assessed, there were two manifest with alleged discrepancies that were either not our responsibility and/or the information submitted was correct and should not have been penalized.

I. MANIFEST NO. 90036593
Simpson Timber Company was not the generator of this waste. Simpson Paper Company was the responsible generator of this waste. You can contact this company at the address listed below:

Simpson Paper Company
P.O. Box 9600
Eureka, California 95502-9600
Attn: Ms. Heather Bartlett

II. MANIFEST NO. 90029513
The manifest assesses penalties for listing inaccurate quantity. However, it is our position that the volumes stated in this manifest were correct and properly listed. The receiving landfill operator also verified that the quantity was accurate.

5 Y	=	5 CU YD
1,200P	=	1,200 POUNDS

To the best of our ability we believe that we have made the corrections which were addressed in your enforcement order referred to above, if however you scrutinize our resubmitted manifests and you find anymore errors, please do not hesitate to contact us.

Yours truly,

Fred A. Jacobson

FAJ/vs

xc: T. Elfers
H. Bartlett
J. Soehnlein

CITY OF EUREKA
531 K Street • Eureka, California 95501-1165

May 12, 1997

Mr. Derek Whitworth
California Department of Toxic Substances Control
700 Heriz Avenue, Suite 200
Berkeley, CA 94710-2737

Dear Mr. Whitworth,

Treated water from the Simpson Timber, Arcata environmental cleanup project is being hauled to the Greater Eureka Area (Elk River) Wastewater Treatment Plant (WWTP) by tanker trucks. The tanker trucks are permitted through North Coast Environmental Construction (Holding Tank Sewer Use Permit Numbers 14-95 A,B,C &D) and through Humboldt Bay Forest Products (Holding Tank Sewer Use Permit Number 10-93). The permitted haulers are required to comply with the City of Eureka Holding Tank Sewer Use Permit Conditions and Restrictions.

Mr. Jim Crook of North Coast Environmental Construction is the project manager. Mr. Crook is responsible for complying with the City's requirements for the submission of analytical data for each 20,000 gallon Baker storage tank of treated water. Once the analytical reports are received, reviewed, and approved by the Pretreatment Coordinator (or the Utilities Operations Manager), Mr. Crook arranges for the water to be hauled to the WWTP. Thus far, the treated water has met all of the City's requirements for disposal at the WWTP.

Please contact me at (707) 441-4362 or fax (707) 441-4366 if you have any further questions or concerns.

Sincerely,

Tracy Wyhlidko
Pretreatment Coordinator

cc. Mr. David McGinty, Director of Community Services, City of Eureka
Mr. Clay Yerby, Utilities Operations Manager, City of Eureka
Mr. William T. Rodriguez, NCRWQCB
Mr. Jim Crook, Project Manager, North Coast Environmental Construction

CITY OF EUREKA
HOLDING TANK SEWER USE PERMIT
CONDITIONS AND RESTRICTIONS
March 1997

I. This permit is valid for the discharge of wastewater of residential septic tank, or portable toilet origin, or contaminated water (see section E below) into the City's wastewater system. The discharge shall only occur at the Greater Eureka Area Wastewater Treatment Plant at 4301 Hilfiker Lane. The user shall meet the following conditions.

A. The user must have a current Waste truck Operator's License issued by the Humboldt County Department of Public Health.

B. The user must have a current City of Eureka Holding Tank Sewer Use Permit.

C. The quality of the waste to be discharged shall meet the criteria set forth in Sections 5-5.201, 5-5.202, and 5-5.203 of the Eureka Municipal code. (See attached.)

D. For each load to be discharged, the user shall provide a load ticket containing the following information.

1. Truck tank capacity in gallons

2. Origin of the waste material, including the address and phone #

3. Signature of the originator of the waste material; and

4. Signature of the discharger

E. Special conditions for discharge of contaminated water:

1. Notify the City of Eureka Pretreatment Coordinator of the location, origin, and quantity of the contaminated water, the project name, and the project manager(s) involved.

2. The analytical requirements for the contaminated water will be determined on a project specific basis. Analytical testing will typically include BTXE & TPHC-Gasoline, TPHC-Diesel & Motor Oil and/or any additional constituents reasonably expected to be present.

3. Sampling and analytical testing must be performed within 45 days of the submittal of analytical results to the City of Eureka Pretreatment Section for approval. Analytical results must be mailed to the City of Eureka, Pretreatment Coordinator, 531 K Street, Eureka, CA 95501 or faxed to (707) 441-4366.

4. The water sampling is to be performed from the container in which the contaminated water is stored before the water is brought to the WWTP. The acceptability of composite samples will be determined on a project specific basis

CITY OF EUREKA
HOLDING TANK SEWER USE PERMIT
CONDITIONS AND RESTRICTIONS
(CONTINUED)

5. Approval from the Pretreatment Coordinator or the Operations Manager must be given to the waste hauler before any discharge to the treatment plant is allowed.

6. The contaminated water brought into the treatment plant may be tested by the City to assure compliance with the City of Eureka's specific pollutant limitations. The testing will be performed by a state certified laboratory at the waste hauler's expense.

II. The receiving station facilities shall be used only between 8:00 a.m. and 4:00 p.m. during normal treatment plant operating hours.

III. The discharger shall ensure that any spillage is contained within the sloped concrete apron. Spillage shall not be allowed to enter the adjacent valley gutters. In the event that spillage enters the valley gutters, the discharger must notify plant personnel immediately. The discharger is liable to the City for the cost of cleanup resulting from un-contained spillage.

IV. Each discharger shall clean the receiving station after each use.

V. The permit may be voided or the discharger's use of the receiving facilities restricted if, in the opinion of the Director of Utilities, the continued unrestricted use by the discharger would adversely affect treatment plant operation.

VI. User fees shall be determined in accordance with the following schedule:

A. For septic tank dischargers, $48.00 per truck load plus $4.55 per 100 gallons of tank capacity in excess of 500 gallons.

B. For portable toilet dischargers with truck tanks of less than 500 gallons, $14.90 per truck load.

C. For contaminated water, $48.00 per truck load plus $0.205 per 100 gallons of tank capacity in excess of 500 gallons.

VII. Tanks shall only be dumped at the proper receiving facilities located at the Greater Eureka Area Wastewater Treatment Plant, 4301 Hilfiker Lane, Eureka, California.

Eureka Municipal Code

Chapter 5 Title 5 Sewers and Sewage Disposal

Article 2 General Sewer Use Requirements

Sec. 5-5.201 Prohibited Discharge Standards

No person shall discharge any substances directly into a manhole or other opening in a community sewer other than through an approved building sewer unless, upon a written application by the user and the payment of the applicable user charges and fees, the City of Eureka issues a permit for such direct discharges.

No person shall introduce or cause to be introduced into the POTW any pollutant or wastewater which causes pass through or interference. These general prohibitions apply to all users of the POTW whether or not they are subject to categorical pretreatment standards or any other National, State or local pretreatment standards or requirement. Furthermore, no person may contribute the following substances to the POTW:

A. Pollutants which create a fire or explosive hazard in the municipal wastewater collection and POTW, including, but not limited to, wastestreams with a closed-cup flashpoint of less than 140 degrees F (60 degrees C) using the test methods specified in 40 CFR 261.21.

B. Any wastewater having a pH less than 5.0 or more than 12.5, or otherwise causing corrosive structural damage to the POTW or equipment, or endangering City personnel.

C. Solid or viscous substances in amounts which will cause obstruction of the flow in the POTW resulting in interference, but in no case solids greater than one inch (1") or twenty five and four tenths (25.4 mm) millimeters in any dimension.

D. Any wastewater containing pollutants, including oxygen demanding pollutants (BOD, etc.), released in a discharge at a flow rate and/or pollutant concentration which, either singly or by interaction with other pollutants, will cause interference with either the POTW, or any wastewater treatment or sludge process; or which will constitute a hazard to humans or animals.

E. Any wastewater having a temperature greater than 150 degrees F, (65.5 degrees C), or which will inhibit biological activity in the treatment plant resulting in interference, but in no case wastewater which causes the temperature at the introduction into the treatment plant to exceed 104 degrees F. (40 degrees C).

F. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin, in amounts that will cause interference or pass through.

G. Any pollutants which result in the presence of toxic gases, vapors or fumes within the POTW in a quantity that may cause acute worker health and safety problems.

H. Any trucked or hauled pollutants, except at discharge points designated by the City of Eureka in accordance with Sec. 5-5.305.

Eureka Municipal Code

Chapter 5 Title 5 Sewers and Sewage Disposal

Article 2 General Sewer Use Requirements

Sec. 5-5.201 Prohibited Discharge Standards (Continued)

I. Any noxious or malodorous liquids, gases, solids, or other wastewater which, either singly or by interaction with other wastes, are sufficient to create a public nuisance, a hazard to life, or to prevent entry into the sewers for maintenance and repair.

J. Any wastewater which imparts color which cannot be removed by the treatment process, such as, but not limited to, dye wastes and vegetable tanning solutions, which consequently imparts color to the treatment plant's effluent thereby violating the City of Eureka's NPDES permit. Color (in combination with turbidity) shall not cause the treatment plant effluent to reduce the depth of the compensation point for photosynthetic activity by more then 10 percent from the seasonably established norm for aquatic life.

K. Any wastewater containing any radioactive wastes or isotopes except as specifically approved by the City Manager in compliance with applicable State or Federal regulations.

L. Storm water, surface water, ground water, artesian well water, roof runoff, subsurface drainage, swimming pool drainage, condensate, deionized water, noncontact cooling water, and unpolluted industrial wastewater, unless specifically authorized by the City Manager.

M. Any sludges, screenings, or other residues from the pretreatment of industrial wastes.

N. Any medical wastes, except as specifically authorized by the City Manager in a wastewater discharge permit.

O. Any wastewater causing the treatment plant's effluent to fail a toxicity test.

P. Any wastes containing detergents, surface active agents, or other substances which may cause excessive foaming in the POTW.

Q. Any discharge of fats, oils, or greases of animal or vegetable origin is limited to 100 mg/l.

Wastes prohibited by this section shall not be processed stored in such a manner that they could be discharged to POTW. All floor drains located in process or materials storage areas must discharge to the industrial user's pretreatment facility before connecting with the POTW.

Sec. 5-5.202 Federal Categorical Pretreatment Standards

The national categorical pretreatment standards found at 40 CFR Chapter I, Subchapter N, Parts 405-471 are hereby incorporated.

May 27, 1997

Cal/EPA

Department of Toxic Substances Control

700 Heinz Avenue, Suite 200 Berkeley, CA 94710-2737

Pete Wilson
Governor

James M. Strock
Secretary for Environmental Protection

Mr. David W. Kaney
Simpson Redwood Co.
P. O. Box 1089
Arcata, CA 95518-1089

Dear Mr. Kaney:

SIMPSON REDWOOD CO, FOSTER AVENUE, ARCATA, CALIFORNIA

Subsequent to our letter of May 9, 1997, the Department of Toxic Substances Control (DTSC) has received the following reports and workplans:

* May 8, 1997 letter and report with summary data from soil sampling.
* May 12, 1997 letter describing the carbon filtration of excavation water.
* May 13, 1997 workplan for additional soil investigation and groundwater dewatering.
* May 22, 1997 workplan for additional soil boring and pit sampling.

Following discussions with staff from the Regional Water Quality Control Board, Mr. Fred Jacobsen, your consultants on the project EnviroNet, and your attorney Ms. Rona Sandler, DTSC will allow completion of the additional excavation specified in, and limited to, the proposed scope of work in the May 13, 1997 workplan.

The data indicate that the soils which have already been excavated do not represent a threat to public health. The purpose of this excavation is to remove the source of potential contamination to the groundwater. We understand that this excavation will be completed in less than one day and that the work is covered under your county excavation permit. A DTSC staff person shall be present to observe the excavation.

DTSC finds that it is technically sound to continue implementation of the dewatering plan specified in the scope of work in the May 13, 1997 workplan. This will also serve to stabilize existing excavations and enable completion of the site investigation, specified in the May 22, 1997 workplan. Disposal of the water from the dewatering program will be conducted under the permit granted to the City of Eureka Waste Water Treatment Plant.

A report documenting all the environmental investigations performed at the site since January 1, 1997, shall be submitted to DTSC by July 3, 1997. Before any additional excavations or removal activities are performed Simpson will submit a Removal Action Workplan or a Remedial Action Plan to DTSC.

This letter does not constitute a waiver by DTSC of any of its enforcement authority. Further this letter does not authorize any other removal activities.

If you have any questions or comments, please contact Derek Whitworth at (510) 540-3838.

Sincerely,

Barbara J. Cook, P.E., Chief
Northern California - Coastal
Cleanup Operations Branch

cc:

Mr. Bob Clark
North Coast Air Quality Management District
2300 Myrtle Avenue
Eureka, CA 95501

Ms. Patty Clary
CATS
860 1/2 11th Street
Arcata, CA 95521

Mr. Dennis Kalson
Humboldt County Environmental Health
100 H St., Suite 100
Eureka, CA 95501

Ms. Linda S. Mackey
EnviroNet Consulting
3601 Regional Parkway, Suite A
Santa Rosa, CA 95403

Ms. Rona H. Sandler
Pillsbury, Madison & Sutro
P.O. Box 7880
San Francisco, CA 94120-7880

Ms. Susan Warner
California Regional Water Quality Control Board
5550 Skylane Blvd., Suite A
Santa Rosa, CA 95403

RECEIVED
6/10/97
7102.1

June 6, 1997

Cal/EPA

Department of Toxic Substances Control

700 Heinz Avenue, Suite 200 Berkeley, CA 94710-2737

Pete Wilson Governor

James M. Strock Secretary for Environmental Protection

Mr. David W. Kaney
Simpson Redwood Co.
P. O. Box 1089
Arcata, CA 95518-1089

Dear Mr. Kaney:

SIMPSON REDWOOD CO, FOSTER AVENUE, ARCATA, CALIFORNIA

Subsequent to our letter of May 27, 1997, the Department of Toxic Substances Control (DTSC) has received comments from the North Coast Regional Water Quality Control Board. The Board would like to see the following changes to the May 22, 1997 workplan for additional sampling. Specially the following items should be incorporated by amendment or addition to the workplan.

1) Samples should be analyzed by both 8260 and 8270 to investigate for the presence of pentachlorophenol.

2) Sampling should be conducted along the water line in the north east direction.

3) Investigations to date have focussed on the horizontal extent of contamination. Effort should be made to determine the vertical extent of contamination. The lower aquifer, i.e. below the clay layer you found at around 17 ft below ground surface, should be sampled and analyzed. The planned offsite borings, located at what is believed to be downgradient from the suspected point source, can be extended to sample the lower aquifer.

If you have any questions or comments, please contact Derek Whitworth at (510) 540-3838.

Sincerely,

Stephen Cimperman P.E., Unit Chief
Northern California - Coastal
Cleanup Operations Branch

k:\simpson\kaney2.ltr

EnviroNet CONSULTING

COPY

March 20, 1998
Project No. 7102.1

Mr. Derek Whitworth, Ph.D., P.E.
California Environmental Protection Agency
Department of Toxic Substances Control, Region 2
Site Mitigation Branch
700 Heinz Avenue, Suite 200
Berkeley, California 94710-2737

Re: Revised Removal Action Work Plan Implementation Report and Results of Initial Groundwater Monitoring for the Former Simpson Remanufacturing Plant, Foster Avenue, Arcata, California

Dear Mr. Whitworth:

EnviroNet Consulting (EnviroNet) is pleased to present this Revised Removal Action Work Plan Implementation Report and the Results of the December 1997 Groundwater Monitoring for the Former Simpson Remanufacturing Plant, at 3315 Foster Avenue in Arcata, California (Plate 1, Appendix A). This report revises the February 13, 1998 Removal Action Work Plan Implementation Report and Results of Initial Groundwater Monitoring for the Former Simpson Remanufacturing Plant, Foster Avenue, Arcata, California. The analytical reports (Appendix D), groundwater sampling forms (Appendix E), and the disposal manifests (Appendix F) are enclosed with the February 13, 1998 report only; however, they are referenced in this revised report. Please refer to the February 13, 1998 report for the Appendix D, E, and F documents.

The remedial action consisted of excavation of paint waste material and impacted soil from the south lunch room area, transport and disposal of contaminated soil, treatment, transport and disposal of groundwater, installation, development, and sampling of four groundwater monitoring wells, and collection of additional soil, surface water, and groundwater samples to complete the site characterization. The work was performed in accordance with EnviroNet's November 13,

1997, Final Removal Action Workplan, Former Simpson Timber Company Remanufacturing Plant Site Located at 3315 Foster Avenue, Arcata, California (Final RAW). The Final RAW was prepared in accordance with current Department of Toxic Substances Control (DTSC) guidance and was submitted to the DTSC for approval pursuant to California Health and Safety Code Section 25356.1(h).

INTRODUCTION

The Arcata Remanufacturing Plant was built on 209 acres of agricultural land between 1951 and 1959 and operated from 1952 until its closure in June of 1989. The plant was a lumber remanufacturing facility, used to process rough sawn boards into finished dimensional lumber and siding. The adjoining railroad spur has been in continuous use to this date for shipping of processed materials.

An investigation was conducted and subsequently focused on approximately 20 locations at the site to determine if past practices at the site had resulted in the release or threatened release of hazardous substances which pose a threat, or potential threat, to human health or the environment.

The initial investigation consisted of drilling, excavation, and sampling to determine the presence of and to delineate the extent of soil and shallow groundwater contamination. Releases were identified at the following locations: 1) a steam cleaning/wash rack area; 2) a teepee burner; 3) two above ground storage tank areas; 3) a dip tank area; 4) a debris disposal area; and, 5) the former south lunch room area (see Plate 2, Appendix A, for the general locations of these areas). Soil excavated during all investigations was placed in the main building prior to characterization and disposal. Dewatering was also necessary in the excavated area south of the main building and to a minor extent in the dip tank area. See EnviroNet Consulting's Report of Investigation for the Former Simpson Remanufacturing Plant Site dated July 31, 1997, the Revised Report of Investigation dated September 12, 1997, and the Final RAW dated November 13, 1997 for additional details.

Limited contamination of soil by petroleum hydrocarbons was found in the steam cleaning/wash rack area, beneath the two above ground fuel storage tanks, and in the teepee burner area. These soils were removed and placed in stockpile cells in the main building. Sample analytical results presented in the July 31, 1997 Report of Investigation and the September 12, 1997 Revised Report of Investigation indicate that virtually no contamination remains in these areas.

Sampling in the dip tank area indicated that no contaminated soil remained in this area. Investigation information was presented in the July 31, 1997 Report of Investigation and the September 12, 1997 Revised Report of Investigation.

After the initial investigation work conducted in the first half of 1997, the only identified remaining area of significant soil or groundwater contamination was found in the vicinity of the former south lunch room. The primary groundwater contaminants detected in this area included pentachlorophenol (PCP), cis-1,2-dichloroethene, benzene, toluene and total xylenes. PCP was the primary contaminant found in soil in this area. Additionally, contaminated soil was found in the debris disposal area, primarily within the debris disposal pile itself.

Although the evaporation pond sediment and sediment in the bottom of several drop outlets were partially characterized during initial investigations, additional samples were collected and analyzed to ensure complete characterization of these areas.

Site Description and Background

Site Location

The former Simpson Remanufacturing Plant is located at 3315 Foster Avenue, Arcata, Humboldt County, California as shown on Plates 1 and 2, enclosed in Appendix A. The site is bordered on the south by Foster Avenue and then primarily pasture land to Arcata Bay; on the west and east by residential and agricultural land, and on the north by Sun Valley Farms (flower grower-distributor). The area is known as "the Bottoms".

Type of Facility and Operational Status

The site was constructed on agricultural land beginning in 1951 with construction continuing through 1959. Imported fill (gravel) was used along with native soils to reconfigure the site to suit the construction and desired surface drainage. From 1952 to 1989 the site was used to process rough sawn boards into finished dimensional lumber and siding. The plant equipment was then sold. Since 1991, the site has been used as a shipping point for lumber processed at other facilities.

Structures/Topography

The currently existing site structures are shown on Plate 2, Appendix A, with details of areas shown on Plates 3 through 8, 12 and 13, enclosed in Appendix A. The entire site is flat and at an elevation of roughly 20 to 25 feet above mean sea level.

Hydrogeology and Geology

The site is within "the Bottoms" which is an uplifted coastal plain area bounded on the south by Arcata Bay, on the north by the Mad River, on the west by a marshy finger of Arcata Bay and then the Pacific Ocean, and on the east by the City of Arcata. The site is characterized by a low permeability cap of soil consisting of clay and/or silt which was identified as being anywhere from

a few feet to in excess of 20 feet thick throughout the site. Beneath the lower permeability surface soil, zones of both sand and gravel were observed with highly permeable gravel layers in excess of ten feet thick in some portions of the site. Plates 9 and 10, Appendix A, present cross sections through the southern portion of the site, while Plate 8, Appendix A, indicates the location of the cross sections. The letter symbols on the cross sections, such as SP, SW, and GM, represent different soil types, and are from the Unified Soils Classification System, a copy of which is included in Appendix B. The numbers along the top of the cross sections correspond to the boring numbers. As an example 96 at the top of Plate 9 is in the approximate location of boring LRB-96 projected onto the cross section line.

The gravel layers contain well rounded gravel ranging in size from pea gravel to cobbles in excess of four inches in diameter. The gravel was either deposited in a very active river bed or in an active near shore environment. Based on the location of the site near the Mad River to the north and the Pacific Ocean to the west, either scenario is possible.

The gravel layers are typically saturated with groundwater, although the shallowest gravel layers may become dewatered due to water table fluctuations. Water table fluctuations during the summer may be partly influenced by pumping activities by nearby farmers and ranchers.

Surface water on and around the site flows seasonally in shallow streams and sloughs on both the east and west sides of the site. It flows generally to the south where it eventually empties into Arcata Bay, located less than two miles to the south of the site. A small finger of Arcata Bay is present to the west of the site at a distance of less than two miles. The finger of the Bay to the west is very shallow and is more akin to being marsh land. Shallow groundwater was generally expected to mimic the surface water in its flow direction but may be affected by nearby pumping and variable subsurface stratigraphy. It was noted on several occasions during the spring that shallow pits would fill with water during high tide but could easily be mechanically pumped dry during low tide, thus indicating that groundwater flow beneath the site is inhibited by ocean water during high tide conditions.

The initial measured groundwater flow direction in the recently installed monitoring wells was due east at a fairly substantial gradient of 0.017 toward an exposed section of Liscom Slough approximately 200 yards away. This was unanticipated and may indicate a more complicated subsurface groundwater flow regime than originally expected. It may also indicate that a portion of the Liscom Slough just to the west of the site is currently acting as a shallow groundwater recharge area.

Surrounding Land Use

The site is bounded by agricultural land used primarily for grazing and some crop production. The parcels are typically either strictly farmland or are occupied by one or more residences. The town of Arcata begins roughly one half to three quarters of a mile to the east of the site.

Sensitive Ecosystems

There are no known sensitive ecosystems in the immediate vicinity of the site. Liscom Slough passes through the site; however, the slough has only seasonal flow with no known sensitive ecosystem. The slough drainage also runs underground for considerable distances beneath the site.

Meteorology

The climate of the area is typically cool, wet winters and mild, windy summers. High temperatures range from 50 to 80 degrees Fahrenheit. Low temperatures range from 20 to 50 degrees Fahrenheit. The average wind speed and direction is 5-15 miles per hour from the west. Rainfall averages 40 inches per year in the Humboldt Bay region with the majority of the rain falling in the winter.

Source, Nature, Extent and Magnitude of Contamination

A preliminary site inspection and limited sampling was conducted in December 1996. Subsequently a series of detailed investigation programs were conducted at approximately 20 locations at the site from January through July 1997. The investigation showed that the site was impacted by petroleum hydrocarbons, solvents, chlorinated solvents, PCP, lead, and zinc. Full details of the investigation are presented in a Report of Investigation (July 31, 1997, revised September 12, 1997) and in the Final RAW dated November 13, 1997. The details of the contamination at six locations where the soil and/or, groundwater were impacted at potential levels of concern are summarized below.

Steam Cleaning/Wash Rack

The location of this area is shown on Plates 2 and 3, Appendix A. This area was impacted by petroleum hydrocarbons (diesel and motor oil) from vehicle cleaning and washing activities. Investigations were conducted by visual inspection and by excavation. Excavation was continued until the extent of contamination was delineated by sampling (Plate 3, Appendix A). Approximately 100 cubic yards of soil were excavated and moved to the main building. The soil is currently stockpiled in cell CP-4 in the main building (Plate 11B, Appendix A). The stockpiled soil was analyzed for hazardous substances and the petroleum hydrocarbon contaminated soil is currently being profiled. After the initial investigation was completed only soils with low levels of petroleum hydrocarbons and PCBs remained in place. The level of PCBs detected was near the PRG for PCBs. Additional sampling was necessary to determine both the level of PCBs and the level of organic

carbon in order to make a determination if the residual PCBs posed a threat to human health or the environment. The initial investigation results were presented in the July 31, 1997 Report of Investigation which was revised on September 12, 1997.

Above Ground Fuel Storage Tanks

The locations of these areas are shown on Plates 2, 4A (bunker C tank location), and 4B (diesel tank location), enclosed in Appendix A. These areas had two 20,000 gallon tanks which were used for storing diesel and bunker C oil. After their removal it was noted that the soil around the pipes appeared to be stained with petroleum products. To determine the extent of contamination, soil was excavated around the areas of contamination. Approximately 200 cubic yards were excavated from a test pit around the former bunker C tank and 1,010 cubic yards from a test pit around the diesel tank. The location of these test pits, and other sampling points are shown on Plates 4A and 4B, enclosed in Appendix A. The soils were moved to the main building where they are currently stockpiled in discrete cells (Cells CP-2, CP-3, COL-28, COL-32, and RR-10, Plate 11B, Appendix A). The stockpiled soil was analyzed for hazardous substances and petroleum hydrocarbons. Based on sampling analytical results presented in the July 31, 1997 Report of Investigation as revised September 12, 1997, no impacted soils remain in place at these two locations.

Teepee Burner

The location of this area is shown on Plates 2 and 5, enclosed in Appendix A. This area was impacted by petroleum products. To determine the extent of contamination, approximately 40 cubic yards of soil with visible contamination were scraped from the soil surface of the Teepee Burner location. The soil was moved to the main building and stored in a discrete cell. The soil was subsequently combined with the soil from the above ground diesel storage tank and is now present in Cell CP-3, Plate 11B, Appendix A). The stockpiled soil was analyzed for hazardous substances and petroleum hydrocarbons. Based on analytical results from samples collected at the locations shown on Plate 5, Appendix A, and presented in the July 31, 1997 Report of Investigation as revised on September 12, 1997, no hazardous substances were detected and no contaminated soils remain in place in the teepee burner area.

Debris Disposal Area

The location of this area is shown on Plates 2 and 6, enclosed in Appendix A. This area contained construction debris and other debris including paint cans, dried paint waste, drums, and oil filters. Elevated levels of lead and zinc were noted in soil at one location. Soil with elevated levels of lead and zinc consisting of approximately 20 cubic yards was segregated and placed in the main building. The portion of the debris pile, consisting of approximately 860 cubic yards, containing the paint containers and paint waste was loaded into trucks and moved inside the main building in September of 1997 to prevent the leaching of possible contaminants into Liscom Slough. Investigations were

conducted by visual inspection for distressed vegetation and soil discoloration, trenching, and by drilling of soil borings. The initial trenching and sampling points are shown on Plate 6, Appendix A. The results of the initial investigation in this area were presented in the July 31, 1997 Report of Investigation as revised on September 12, 1997.

No contamination was detected in any of the groundwater samples collected during drilling. The majority of the debris in the debris disposal area was separated out of the soil stockpiled on the asphalt on the south air-dry lot. The soil and some smaller debris was also stockpiled on the south air-dry lot where it remains today in four stockpiles totaling approximately 2,000 cubic yards. The different types of impacted soil were kept separate. A total of approximately 860 cubic yards of soil and debris were excavated and removed from the area and stored in the main building. The remainder of the debris disposal area was removed to grade and the material was segregated to the extent feasible and stockpiled inside the main building. This soil was subsequently tested and approximately 800 cubic yards of soil (Stockpiles C-3, COL-11, COL-25, and LANDFILL, Plate 11A, Appendix A) were disposed of at Forward Landfill. Analytical results profiling the soil for disposal are summarized in Table 1, Appendix C. Copies of the analytical reports were either submitted in the July, 1997 Report of Investigation or are included in Volumes 1 and 4 of Appendix D. Approximately 60 cubic yards of soil from the debris disposal area remains inside the main building in Cell COL-10, Plate 11B, Appendix A. The stockpiled soil in stockpile COL-10 was analyzed hazardous substances could be detected (Table 2, Appendix C).

No native soil was removed from the debris disposal area. All material removed from this area had been previously deposited in the area during prior disposal activities. The main effort was to remove this material so that it could be properly characterized and then disposed.

Dip Tank

A former employee of the plant identified the prior location of an above ground dip tank which had been used for a short period of time for surface coating of lumber when the plant was operational. A former storage location for containers of coating materials was also identified adjacent to the above ground dip tank. The above ground dip tank location is shown on Plates 2 and 7, Appendix A. The areas were investigated by drilling soil borings and excavating approximately 20 cubic yards of soil at the locations shown on Plate 7, Appendix A. This soil was initially stored in a discrete cell in the main building. The excavation required dewatering. This water was passed though an activated carbon filter, to meet discharge limits, before being sent to the Eureka Sewage Treatment Plant. After being passed through the activated carbon filter, water was shown to be free of contaminants. When there was no evidence of contaminated soil in the trench, the excavation was backfilled with clean fill. Excavated soils were placed in a cell (RR-17) in the main building, sampled and analyzed. No hazardous substances could be detected. Copies of the disposal manifests are enclosed in Appendix F for the soil from the dip tank area and the south lunch room area. Based

on sampling analytical results which were presented in the report of investigation, no impacted soils remain in place.

South Lunch Room

The location of this area is shown on Plates 2 and 8, Appendix A. According to a former employee at the plant, in the 1960s paints and other materials used in wood remanufacturing were released in this area which is to the south of the main building. A lunch room was subsequently built in this area. A very extensive soil boring program was undertaken covering the entire area. The sampling points in this area are shown in Plate 8, Appendix A and the results were presented in the July 31, 1997 Report of Investigation as revised on September 12, 1997. Sampling results showed shallow groundwater contamination by PCP, chlorinated solvents, and other organic chemicals, but did not reveal the source of contamination. To identify the source of the contamination, trenching and excavation were undertaken. In addition, the lunch room was demolished during this period so the underlying soil could be examined. The extent of the excavation and sampling points are shown in Plate 8, Appendix A. Approximately 3,300 cubic yards of soil were excavated from this area during the early investigation.

Soils removed from different locations during the excavation were placed in discrete cells within the main building (Plates 11A and 11B, Appendix A). Since classification would be required prior to disposal or reuse of these soils. Soil samples were collected from the cells for initial characterization purposes and additional samples were collected in early October and early December of 1997 to complete the characterization of the stockpiles. The stockpiled soil was analyzed for hazardous substances and the results are shown in Table 2, Appendix C with supporting data in Volumes 1 and 4 of Appendix D.

In order to maintain the excavation and continue investigations, the pit had to be dewatered. This water was passed though an activated carbon filter, to meet facility discharge limits, before being sent to the Eureka Sewage Treatment Plant for ultimate disposal.

Soil with unacceptably high levels of contaminants was removed from the site and disposed of at Forward Landfill in Manteca, California. Between December 4 and December 9, 1997 approximately 1,950 cubic yards of soil from the south lunch room area (Stockpiles C-2, COL-2, COL-22, COL-29, COL-34, and COL-35, Plate 11A, Appendix A) were disposed of at Forward Landfill under manifest. Soil profile analytical results for disposal are summarized in Table 1, Appendix C. Copies of the analytical reports were either submitted in the July Report of Investigation or are included in Volumes 1 and 4 of Appendix D. Copies of the disposal manifests are enclosed in Appendix F.

The remaining 1,350 cubic yards of soil which consisted mainly of uncontaminated overburden remains stockpiled in cells in the main building. Those cells are C-1, COL-1, NEW COL-3, COL-

12, NEW COL-14, and RR-17, Plate 11B, Appendix A. These cells have been sampled and analyzed and based on the analytical results are proposed to be reused on-site. The stockpiled soils were analyzed for hazardous substances and none were detected (Table 2, Appendix C). Method detection limits are indicated in the analytical reports, Volumes 1, 2, 3, and 4 of Appendix D.

EXCAVATION OF ADDITIONAL SOIL FROM THE SOUTH LUNCH ROOM AREA

An area of additional paint waste was identified near the driveway along the south side of the main building. This area was proposed for excavation in the Final RAW. The excavation of the area occurred on November 7, 8, and 9, 1997 at which time approximately 1,900 cubic yards of soil including a very small area with identified paint waste material were removed. The limits of the excavation were based on odor and visual evidence.

The area excavated extended to a maximum depth of 25 feet and soil with subjective evidence of contamination was removed. After soil with subjective evidence of contamination and paint waste material had been removed, verification soil samples were collected around the general perimeter and bottom of the excavation to document the residual levels of contamination remaining in soil. The verification soil sample locations are shown on Plate 12, Appendix A, and the analytical results from the verification samples are summarized in Table 3, Appendix C. The results indicate that virtually all the soil contamination has been removed from the south lunch room area with no PCP or other semivolatile organic compound being detected in soil and with the maximum of any volatile organic compound detected of 0.151 mg/kg total xylenes (Table 3, Appendix C). A water sample collected from the pit (Pit Water, Table 3, Appendix C) contained detectable levels of PCP at 0.0022 mg/L as the only semivolatile organic compound detected and low levels of volatile organic compounds with total xylenes being the highest at 3.4 mg/L and toluene being the next highest at 0.47 mg/L (Table 3, Appendix C). The MCLs for PCP, benzene, cis-1,2-dichloroethene, ethylbenzene, toluene, total xylenes, and trichloroethene (Table 14, Appendix C) were exceeded in this sample. No MCLs have been established for several other analytes detected in the water sample; however, the results were below the PRG for tap water (Table 14, Appendix C). A copy of the analytical reports for these samples is enclosed in Volume 2 of Appendix D.

Approximately 20 cubic yards of the excavated soil containing obvious paint waste was added to cell C-2, Plate 11A, Appendix C and was subsequently disposed of at Forward Landfill. Approximately 1,880 cubic yards of excavated soil were transported into the main building and stockpiled for characterization in cells NEW COL-16, NEW COL-26, NEW COL-34, NEW COL-36, NEW COL-37, and NEW RR-11 (Plate 11B, Appendix A). The stockpiled soil was analyzed for hazardous substances. Based on the results shown in Table 2 (Appendix C), none of the analytical results exceeded the residential PRG (Table 14, Appendix C). There is therefore no basis for restricting the use of this soil.

Paint waste and associated soil was removed from the south lunch room area as proposed in the Final RAW. Verification soil sampling indicated that the residual soil was virtually free of contaminants. Residual contamination is largely confined to groundwater. The analytical results of a sample of water collected from the excavation in May of 1997 (see July 31, 1997 Report of Investigation, Table 19A, Appendix C) were compared to a water sample collected from the pit in November of 1997 (Table 3, Appendix C). The comparison showed that the sample collected in November, 1997 had much lower levels of contaminants than the May, 1997 sample. For example PCP was detected in May at a maximum level of 0.960 mg/L, while in November it was detected at 0.0022 mg/L; toluene was detected at 86 mg/L in May while it was detected at 0.47 mg/L in November; and ethylbenzene was detected at 19 mg/L in May and only 0.86 mg/L in November (see Table 19A, in July 31, 1997 Report of Investigation and Table 3, Appendix C). There was no highly contaminated soil. The results indicate that highly contaminated water had been removed from the south lunch room area. The pit water was subsequently pumped from the excavation prior to backfill and compaction. The pit water was processed through activated carbon and then disposed.

The analytical results further suggest that the residual contamination is in groundwater and not attached to soil. This is consistent with the subsurface lithology which consists primarily of rounded gravel with coarse sand in the zone of impact. It is also consistent with the analytical results from the newly excavated soil which was virtually free of contaminants.

MONITORING WELLS IN THE VICINITY OF THE SOUTH LUNCH ROOM

Groundwater Monitoring Well Borings

Groundwater monitoring wells MW-1 through MW-4 were installed on December 2 and 3, 1997 at the locations shown on Plate 8, Appendix A. The wells were installed in what was believed to be the down-gradient direction from the dip tank area and the south lunch room area based on surface topography and surface water flow. The wells were designed to provide long term monitoring points for evaluating potential groundwater impacts from past activities in these areas.

All of the wells were drilled using a truck-mounted drill equipped with 9-inch diameter hollow stem augers and were drilled to a depth of 25 feet below ground surface (bgs). Soil from the borings was examined while drilling the borings and no subjective evidence of soil contamination was observed during drilling so soil samples were not collected. In addition, the monitoring wells were installed in the vicinity of soil borings from which soil samples were already collected and analyzed.

Boring logs (lithologic descriptions) were made according to the Unified Soils Classification System. Plates A through D, Appendix B, present the boring logs for monitoring wells MW-1

through MW-4, respectively and continue to show the same lithology detected during the previously completed boring program. The lithology in general consists of a shallow surface layer of silty soil which is underlain by sand and gravel to approximately 20 to 25 feet bgs. The sand and gravel is underlain by a clayey silt to silty clay which apparently acts as an aquitard throughout the south lunch room area.

Groundwater Monitoring Well Construction

The groundwater monitoring wells were constructed using 2-inch diameter Schedule 40 PVC flush-threaded PVC well casings. The well screens were constructed with 0.020-inch diameter slotted screens extending from 5 feet bgs to 25 feet bgs. The filter packs were constructed of #2/12 sand and were placed to one foot above the well screens. Then well seals of bentonite pellets were placed on top of the filter packs and hydrated with clean water. The remainder of the borehole annulus was filled with lean bentonite cement. A locking water-tight plug was attached to the top of each well casing. Each well is protected by a traffic-rated water-tight circular vault set in concrete. The vault lids were installed approximately ½ inch above grade. Plates E through H, Appendix B, present the well construction diagrams for wells MW-1 through MW-4.

Groundwater Monitoring Well Development

The monitoring wells were developed on December 4, 1997, approximately 24 hours after their construction. The wells were surged with a surge block and then purged using a submersible groundwater sampling pump, followed by an additional surging and purging.

Groundwater Monitoring Well Sampling

The wells were allowed to stabilize for at least 24 hours following development before being sampled on December 5, 1997. The depth to groundwater in all of the wells was recorded, then the wells were purged between 5.5 to 6.2 well volumes, until pH, temperature and conductivity of the purged water had stabilized. The wells were allowed to recover to at least 80 percent of their original well volume, then groundwater samples were collected using a separate disposable bailer for each well. The samples were transferred into 40 milliliter VOA vials and one liter amber glass bottles. The sample containers were labeled and stored in a refrigerated cooler and transferred to Legend Analytical Services (Legend) in Santa Rosa, California. Chain-of-Custody documentation of the samples was maintained at all times. Copies of the Groundwater Field Sampling Forms are enclosed in Appendix E.

Water generated during well installation, development and sampling was disposed through the on-site groundwater treatment system. Soil cuttings from the four borings were stockpiled, sampled,

and analyzed for Volatile Organic Compounds and Semivolatile Organic Compounds. The soil sample, labeled "Drill Cuttings" was non-detect for Volatile Organic Compounds and Semivolatile Organic Compounds. Following receipt of non-detect results, the soil cuttings were added to an existing soil stockpile from the south lunch room area inside the Main Building. A copy of the analytical report which includes sample "Drill Cuttings" is enclosed in Volume 3 of Appendix D.

Groundwater Monitoring Well Surveying

The wells were surveyed on December 5, 1997, to determine their elevations within 0.01' relative to Mean Sea Level. Table 4, Appendix C, presents the well elevations along with the groundwater flow direction and gradient information.

Groundwater Flow Direction and Gradient Determination

The groundwater flow direction for December 5, 1997 was calculated as due east at a gradient of 0.017 (Table 4, Appendix C), different to the anticipated southerly groundwater flow direction. The gradient was also higher than anticipated. The groundwater flow direction and gradient will be recalculated during future monitoring events.

Groundwater Sample Analyses

The groundwater samples were analyzed by Legend, which is a California-certified laboratory for the analyses requested. The analytical methods used were Volatile Organic Compounds by EPA Method 8260 and Semivolatile Organic Compounds by EPA Method 8270 (acid fraction components).

Groundwater Sample Analytical Results

The analytical results indicate that no Semivolatile Organic Compounds were detected in the samples from all of the wells and no Volatile Organic Compounds were detected in the samples from wells MW-1 and MW-2. The only Volatile Organic Compounds were in the sample from well MW-3 which contained 0.0015 mg/L of benzene and 0.0079 mg/L of cis-1,2-dichloroethene and the sample from well MW-4 contained 0.004 mg/L of cis-1,2-dichloroethene. A copy of Legend's analytical report is enclosed in Volume 3 of Appendix D. The groundwater sample analytical results are presented on Table 5, Appendix C.

The initial groundwater analytical results from the monitoring wells are in general agreement with the results from the shallow and deep water samples collected during the previous boring program (see July 31, 1997 Report of Investigation). The highest level of PCP detected during the boring

program from any of the borings in the vicinity of the monitoring wells was 0.0014 mg/L, which is in general agreement with the non-detect results (at a detection limit of 0.005 mg/L) from all the monitoring well samples. MW-3 contained detectable benzene and cis-1,2-dichloroethene while the borings drilled in the vicinity of MW-3 all contained cis-1,2-dichloroethene at the same general level. One boring drilled near MW-3 (LRB-71) also contained detectable benzene. All the borings drilled near MW-4 contained cis-1,2-dichloroethene at levels ranging from 0.0027 to 0.0052 mg/L which is consistent with the 0.004 mg/L result obtained from the monitoring well. Finally, the results of the sample from MW-1 are similar to those seen in the samples from nearby borings where analyses were at or below the limits of detection.

Confirming the observations of the boring program, the groundwater in the vicinity of MW-3 and MW-4 contains benzene and cis-1,2-dichloroethene at levels which slightly exceed the maximum contaminant levels (MCLs) for these two chemicals (Table 14, Appendix C). Since the source of these chemicals has now been removed, these levels are anticipated to drop below the MCLs in the near future.

The recently installed monitoring wells will be sampled quarterly for one hydrologic cycle (one year). A quarterly groundwater monitoring report will be completed and submitted after each monitoring event, with this report serving as the first quarterly report. After the one year hydrologic cycle is complete, an annual summary report will be prepared to evaluate the groundwater monitoring program to determine if additional monitoring is required based on trends observed during the first year of quarterly sampling. If increasing or unstable trends are observed, or if high levels of groundwater contamination are detected, the monitoring program will be extended for at least another four quarters.

The groundwater flow direction, for December 5, 1997, was due east. The groundwater flow direction will be evaluated following each quarterly groundwater monitoring. If the groundwater flow direction continues to be toward the east or otherwise indicates that the down-gradient areas are not being monitored after the next quarterly monitoring event, additional monitoring wells will be proposed in the down-gradient direction from the south lunch room area and from the former dip tank area.

ADDITIONAL SOIL, WATER AND GROUNDWATER SAMPLING

Various soil, Hydropunch® groundwater and water samples were collected in order to complete the site characterization, as discussed in the final RAW.

Surface Soil sampling, Boring HP-1 and Collection of Hydropunch® Groundwater Sample in the Debris Disposal Area

After paint cans and dried paint waste were detected in the debris disposal area, surface soil samples were collected at the location of the paint waste and around the paint waste after the soil and debris was removed. Five samples (DP1-1', DP2-1', DP3-1', DP4-1', and SL-Surface) were collected in September of 1997 at the locations shown on Plate 6, Appendix A. The samples did not show semivolatile organics but all contained detectable methylene chloride which is a common component of spray paint. In addition, the sample from the location of the paint (SL-Surface) also contained acetone. Table 6A, Appendix C, summarizes the analytical results and a copy of the analytical report is also enclosed in Volume 2 of Appendix D.

Soil Boring HP-1 was drilled on December 2, 1997, at the location shown on Plate 6, Appendix A. The boring was drilled in the area previously identified as being in the debris disposal area where old paint cans were found. The boring was drilled using a truck-mounted drill equipped with nine-inch diameter hollow stem augers. The boring was drilled until groundwater was first encountered at a depth of 12 feet and then extended slightly. Soil samples were collected from depths of 4.4, 9.5 and 14.5 feet bgs. The boring log for HP-1 is enclosed as Plate I, Appendix B. The auger was removed from the original boring and a second boring was drilled approximately two feet from the original boring. The second boring was drilled to a depth of 12 feet bgs, then a Hydropunch® groundwater sampler was placed in the boring and driven to 16 feet bgs. The sampler's outer cover was retracted to expose a five-foot long temporary well screen, then groundwater sample (HP-1-W) was collected by lowering a stainless steel bailer lowered into the screen. This method of sampling was used to ensure that a water sample from the top of the groundwater was collected.

Soil samples HP-1-4.5 and HP-1-9.5 contained 0.015 milligrams per kilogram (mg/kg) and 0.014 mg/kg of acetone, respectively. The samples were non-detect for other Volatile Organic Compounds. Hydropunch® groundwater sample HP-1-W did not show the presence of Volatile Organic Compounds and Semivolatile Organic Compounds (Table 7, Appendix C). A copy of the analytical report is enclosed in Volume 3 of Appendix D.

Elevated levels of lead and zinc were previously detected in a soil sample from a small area of the debris disposal pile (sample EP 16, Plate 6, Appendix A, of the Final RAW). In this investigation five surface soil samples (sample numbers EP16SS-1 through EP16SS-5, Plate 6, Appendix A) were collected from the area around surface soil sample EP 16. The five samples were collected in stainless steel soil sample tubes and analyzed for lead and zinc. The analytical results (Table 6B, Appendix C) indicate that none of the five soil samples exceeded either 100 mg/kg of lead (25% of the residential PRG) or 250 mg/kg of zinc (approximately 1% of the

residential PRG). Samples EP16SS-1, EP16SS-2, EP16SS-4 and EP16SS-5 exceeded a lead concentration of 50 mg/kg and were analyzed for STLC (Soluble Threshold Limit Concentration) using on-site water collected from a groundwater monitoring well. No leachable lead was found in any of the samples using groundwater from monitoring well MW-1 for extraction (Table 6B, Appendix C). Copies of the analytical reports are enclosed in Volumes 3 and 4 of Appendix D.

Resampling of Soil and Water in the Steam Cleaning/Wash Rack Area

One soil sample (CON-4-R-Soil) was collected from the drainage ditch in the steam cleaning/wash rack area, at the approximate previous location of sample CON-4 (Plate 3, Appendix A) where PCB was previously detected at a level of 0.42 mg/kg. Two samples were also collected of the water in the drainage ditch; sample CON-4-Water-U was collected 20 feet to the east (upstream flow direction) of original sample CON-4's location and sample CON-4-Water-D was collected 20 feet to the west (downstream flow direction) of sample CON-4's location (Plate 3, Appendix A).

The soil and water samples were analyzed for polychlorinated biphenyls (PCB). No PCBs were detected in water samples CON-4-Water-U and CON-4-Water-D. Soil sample CON-4-R-Soil contained 0.043 mg/kg of the PCB Aroclor 1260. CON-4-R-Soil was analyzed for total organic carbon following the detection of Aroclor 1260 and found to contain 7,300 mg/kg of total organic carbon. Table 8, Appendix C presents the CON-4 Series soil and water sample analytical results. A copy of the analytical report is enclosed in Volume 4 of Appendix D.

The analytical results indicate that a trace of PCBs remain in the soil in the banks of the drainage ditch at the steam cleaning/wash rack area. Based on the level of organic carbon in the soil and absence of detectable amounts of PCBs in the water both upstream and downstream of the area of detection, the traces of PCBs remaining are bound up in the soil, probably by the organic carbon. The remaining PCBs are below levels posing a threat to human health or the environment (USEPA OSWER Directive No. 9355. 4-01).

Sampling of Evaporation Pond Sediment

One sample of the sediment in the evaporation pond (sample Evaporation Pond Sediment) was collected using a clean hand auger at the location shown on Plate 13, Appendix A. The sample was collected to document the level, if any, of contaminants which may have partitioned out of the pond water into the pond sediment in the past. The sample was analyzed for TPH-d, TPH-mo, Volatile Organic Compounds, Semivolatile Organic Compounds, CAM 5 metals, PCB, and formaldehyde.

Sample Evaporation Pond Sediment was ND for TPH-d, TPH-mo, Volatile Organic Compounds, Semivolatile Organic Compounds, PCB and formaldehyde, the CAM 5 metal concentrations ranged from non-detect for cadmium to 100 mg/kg of nickel. Table 9, Appendix C presents the Evaporation Pond Sediment Sample analytical results. A copy of the analytical report is enclosed in Volume 4 of Appendix D.

The results of the pond sediment sampling indicated that presence of no contaminants, with metals being the only analytes detected at levels which are considered to be background for those metals in soil. Based on the sample result, there has been no impact to the sediment in the bottom of the pond from any water discharged into the pond.

Resampling of Drop Inlet Soil Near the Southwest Corner of the Main Building

Soil sample locations GRO and DRO (Plate 11B, Appendix A) were resampled on December 5, 1997. These locations had been sampled previously, but the analytical data was incomplete. Sample GRO-1-1.5-R was collected from the bottom of the drainage at the outlet end of the culvert near south end of the Main Building and sample DRO2-2-1.5-R was collected from the drainage at the outlet end of the culvert to the west of the Main Building. These locations can be seen on Plate 2, Appendix A. A clean hand auger was used to auger into the sediment beneath the drainage outlet locations to the same depths as the original sediment samples. The sediment samples were analyzed for TPH-d, TPH-mo, Semivolatile Organic Compounds and Volatile Organic Compounds.

Samples GRO-1-1.5-R and DRO2-2-1.5-R did not indicate the presence of TPH-d, TPH-mo and Semivolatile Organic Compounds. Sample GRO-1-1.5-R contained 180 mg/kg of TPH-mo and 0.022 mg/kg acetone, sample DRO2-2-1.5-R contained 78 mg/kg of TPH-mo and 0.11 mg of acetone and 0.023 mg/kg of 2-butanone. Table 10, Appendix C, presents the Drainage Soil Sample analytical results. A copy of the analytical report is enclosed in Volume 3 of Appendix D.

The analytical results of the sediments from the two drain outlets indicate that low levels of contaminants, primarily in the form of motor oil, are present in the sediment at the culvert outlet points. The use of the site as a lumber mill included the constant use of heavy equipment and large trucks. Minor drips of motor oil from vehicles onto the asphalted surfaces at the site over time would be normal. The presence of traces of these compounds in the sediments where the drains discharge is also to be expected. The levels of motor oil and other contaminants detected do not pose a threat to surface or groundwater and do not pose a threat to human health or the environment at the levels detected. If this sediment is ever removed from the drain and drain outlet areas, it should be disposed of properly.

STOCKPILE DISPOSITION AND STATUS

Stockpiles in the Main Building

A summary of the analytical results provided to the Landfill for the disposal profile of the soil from the south lunch room area and from the debris disposal area is presented in Table 1, Appendix C. Analytical reports of the samples from stockpiles were either submitted in the July 31, 1997 Report of Investigation and the revised Report of Investigation dated September 12, 1997 or are included in this document for reference in Volumes 1 and 4 of Appendix D. The current and former stockpiles, and their approximate volumes and locations are summarized in Table 11, Appendix C.

One hundred and ten truckloads of soil originally stockpiled in the main building were transported to and disposed of as non-hazardous waste at Forward Landfill in Manteca between December 4 and December 9, 1997. Copies of the disposal manifests are enclosed in Appendix F. The weight of the disposed soil was 2,654 tons while its volume was originally estimated at approximately 2,750 cubic yards. Based on the original volume estimates, 800 cubic yards of soil from the debris disposal area (stockpiles C-3, COL-11, COL-25, and LANDFILL) and 1,950 cubic yards of soil and paint waste from the south lunch room area (stockpiles C-2, COL-2, COL-22, COL-29, COL-34, and COL-35) were hauled away.

Soil disposed of at Forward Landfill contained elevated levels of solvents and/or PCP (C-2, C-3, COL-2, COL-22, COL-34, COL-35) and/or visible pieces of paint waste material (COL-11, COL-25, COL-29). The stockpile designated LANDFILL on Plate 11A, Appendix A, was disposed of at Forward Landfill since it contained elevated levels of lead and motor oil (Volume 1 of Appendix D). All stockpiles containing visible paint waste were hauled off and disposed of at Forward Landfill. Before disposal, samples of the paint waste material were collected and analyzed and were shown to contain detectable levels of solvents and PCP (COL-34-6/13/97, Table 1, Appendix C).

Stockpiles on Asphalt Pad

Soil screened from the debris disposal area which was not in contact with paint cans or paint waste, and in which there was no subjective evidence of contamination was transported to the former asphalt wood drying pad immediately to the north where it currently resides in four stockpiles. Each stockpile is estimated to contain approximately 400 cubic yards of soil. Based on visual and odor evidence gathered during the removal of this soil, and based on prior analytical results from the debris disposal area, these four stockpiles were sampled and analyzed for CAM 5 metals, diesel and motor oil for profiling purposes (Table 12, Appendix C). The metals were all within acceptable ranges for residential use with all results being less than the PRG (Table 12, Appendix C). The stockpiles contain low levels of motor oil, not more than 290 mg/kg (Table 12, Appendix C) One

four point composite sample was analyzed for every 400 cubic yards of soil. Two of the composite samples were non-detect for motor oil. The analytical report is included in Volume 4 of Appendix D. Discrete soil samples will be collected for every 50 cubic yards of soil. Soil which is non-detect for motor oil will be left on-site. Soil with detectable motor oil will be moved into the main building for treatment.

All excavated soil which contained petroleum hydrocarbons that was initially placed inside the main building, is still present in the main building either in its original location or at new positions. In some instances former discrete stockpiles of like material were combined.

Soil excavated from the south lunch room area both prior to and in November of 1997 containing no discernable contamination is stockpiled in the main building. Approximately 60 cubic yards of soil from the debris disposal area which appeared to be free of contamination is also currently stockpiled in the main building (Table 11, Appendix C).

Table 11, Appendix C, presents a complete summary of all the stockpiles in the main building, their source, their approximate volume, and their current status, including those which have been transported to Forward Landfill in Manteca. The general locations of the current stockpiles are presented on Plate 11B, Appendix A.

All currently existing stockpiles from the south lunch room area and the debris disposal area have been sampled for hazardous substances, and none of the stockpiles contain significant levels of contaminants. Any soil with detectable but non-hazardous levels of contaminants will be aerated on-site. Soils previously identified as possibly being impacted only by petroleum hydrocarbons are being aerated to facilitate microbial destruction of the hydrocarbons. A complete summary of the analytical results from the stockpiles is included in Tables 1 and 2, Appendix C. Copies of the analytical reports not previously submitted are enclosed in Volumes 1 and 4 of Appendix D.

GROUNDWATER DISPOSAL

Groundwater was extracted from the south lunch room during excavation and for backfilling and compaction of the excavation. In addition, groundwater was extracted from the excavation prior to the final removal activity to prevent the excavation sidewalls from collapse. The extracted water was pumped into Baker tanks, processed through activated carbon as it was pumped into a clean Baker tank, sampled, and then subsequently loaded into tanker trucks and transported to the sewage treatment plant in Eureka for disposal. Since submittal of the Final RAW, approximately 720,000 gallons of water were removed from the excavation, processed, sampled, analyzed and disposed. A summary of the analytical results from the tank water prior to disposal is enclosed

in Table 13, Appendix C. Copies of the analytical reports are enclosed in Volumes 1, 2, 3, and 4 of Appendix D.

CONCLUSIONS AND RECOMMENDATIONS

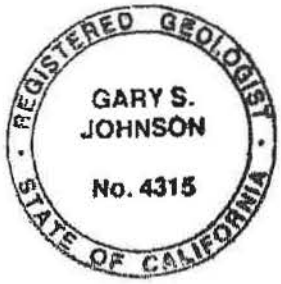
All investigative and remedial activities proposed in the RAW have been completed. All soil with significant levels of contaminants has been excavated. Soil with either no detectable or very low levels of contaminants remains stockpiled on-site in the main building. Soils impacted by petroleum hydrocarbons will continue to be aerated to further reduce concentrations until it is reused on site.

Groundwater in the south lunch room area is now being monitored through four monitoring wells which were located based on a presumed southerly groundwater flow direction. If the groundwater monitoring continues to indicate that down-gradient is to the east, additional monitoring wells may be necessary to collect down-gradient samples. Groundwater monitoring will continue until the data indicates that contaminant levels are declining and are below the MCL. All other areas have been investigated and no additional groundwater investigation in these areas appears warranted.

We trust this provides the information you require. If you have any questions, please call (707) 546-9461.

Sincerely
EnviroNet Consulting





Gary S. Johnson
Registered Geologist No. 4315

Expires February 29, 2000

Enclosures

Appendix A: Plates

Plate 1: Site Location Map
Plate 2: Site Plan
Plate 3: Wash Rack/Steam Cleaning Areas
Plate 4A: Partial Site Plan - Bunker "C" AGT Area
Plate 4B: Partial Site Plan - Diesel AGT Area
Plate 5: Partial Site Plan - Teepee Burner Area
Plate 6: Partial Site Plan - Debris Disposal Area
Plate 7: Partial Site Plan - Boring and Excavation Locations Dip Tank Area
Plate 8: Partial Site Plan - Groundwater Flow Direction and Gradient
Plate 9: Cross Section A-A'
Plate 10: Cross Section B-B'
Plate 10A: Unified Soil Classification System
Plate 11A: Partial Site Plan - Stockpile Locations - Main Building
Plate 11B: Partial Site Plan - Stockpile Locations - Main Building
Plate 12: Partial Site Plan- Paint Hole Area - Excavation and Fill Limits
Plate 13: Partial Site Plan - Evaporation Pond Sediment Sample Location

Appendix B: Boring Logs

Plate A: Soil Boring Log, Well MW-1
Plate B: Soil Boring Log, Well MW-2
Plate C: Soil Boring Log, Well MW-3
Plate D: Soil Boring Log, Well MW-4
Unified Soil Classification System
Plate E: Well Construction Diagram, Well MW-1
Plate F: Well Construction Diagram, Well MW-2
Plate G: Well Construction Diagram, Well MW-3
Plate H: Well Construction Diagram, Well MW-4
Plate I: Soil Boring Log - HP-1

Appendix C: Tables

Table 1: Disposed Stockpile Soil Analytical Results - EPA Methods 8260 and 8270
Table 2: Stockpile Soil Sample Results EPA Methods 8260 and 8270
Table 3: Soil and Water Sample Analytical Results from South Lunch Room Excavation
Table 4: Groundwater Flow Direction and Gradient
Table 5: Groundwater Sample Analytical Results
Table 6A: Surface Soil Analytical Results from Beneath Debris Disposal Pile
Table 6B: EP Series Soil Sample Analytical Results
Table 7: Boring HP-1 Soil and Water Sample Analytical Results
Table 8: CON-4 Series Soil and Water Sample Analytical Results
Table 9 Evaporation Pond Sediment Sample Analytical Results
Table 10: Drainage Outlet Soil Sample Analytical Results - Collected 12/05/97
Table 11: Stockpiled Soil Volume and Source - December, 1997
Table 12: Stockpile Soil Sample Results - TPH-d, TPH-mo, and CAM 5 Metals - Collected 01/15/98
Table 13: Baker Tank Treated Water Results
Table 14: MCLs and PRGs for Chemicals of Detection

Distribution List
Project Number 7102.1

Mr. Fred Jacobson
Simpson Timber Company
P.O. Box 68
Korbel, CA 95550-4586

Mr. Dave Kaney
Simpson Timber Company
5151 Highway 101 North
Eureka, CA 95501

Mr. Joseph Breed
Simpson Timber Company
Legal Department
1201 Third Avenue, Suite 4900
Seattle, Washington 98101-3045

Mr. Michael Steele
Pillsbury, Madison & Sutro
P.O. Box 7880
San Francisco, CA 94120-7880

Ms. Susan Warner
North Coast Regional Water Quality Control Board
5550 Skylane Blvd., Suite A
Santa Rosa, CA 95403

Mr. Brian Cox
Humboldt County Division of Environmental Health
100 H Street, Suite 100
Eureka, CA 95501

Mr. Lane DeVries
Sun Valley Floral Farms
3160 Upper Bay Rd.
Arcata, CA 95521

Mr. and Mrs. Avila
1717 Janes Road
Arcata, CA 95521

APPENDIX A

-PLATES-

REMOVAL ACTION WORK PLAN

IMPLEMENTATION REPORT

AND

RESULTS OF INITIAL GROUNDWATER MONITORING

DATED MARCH 20, 1998

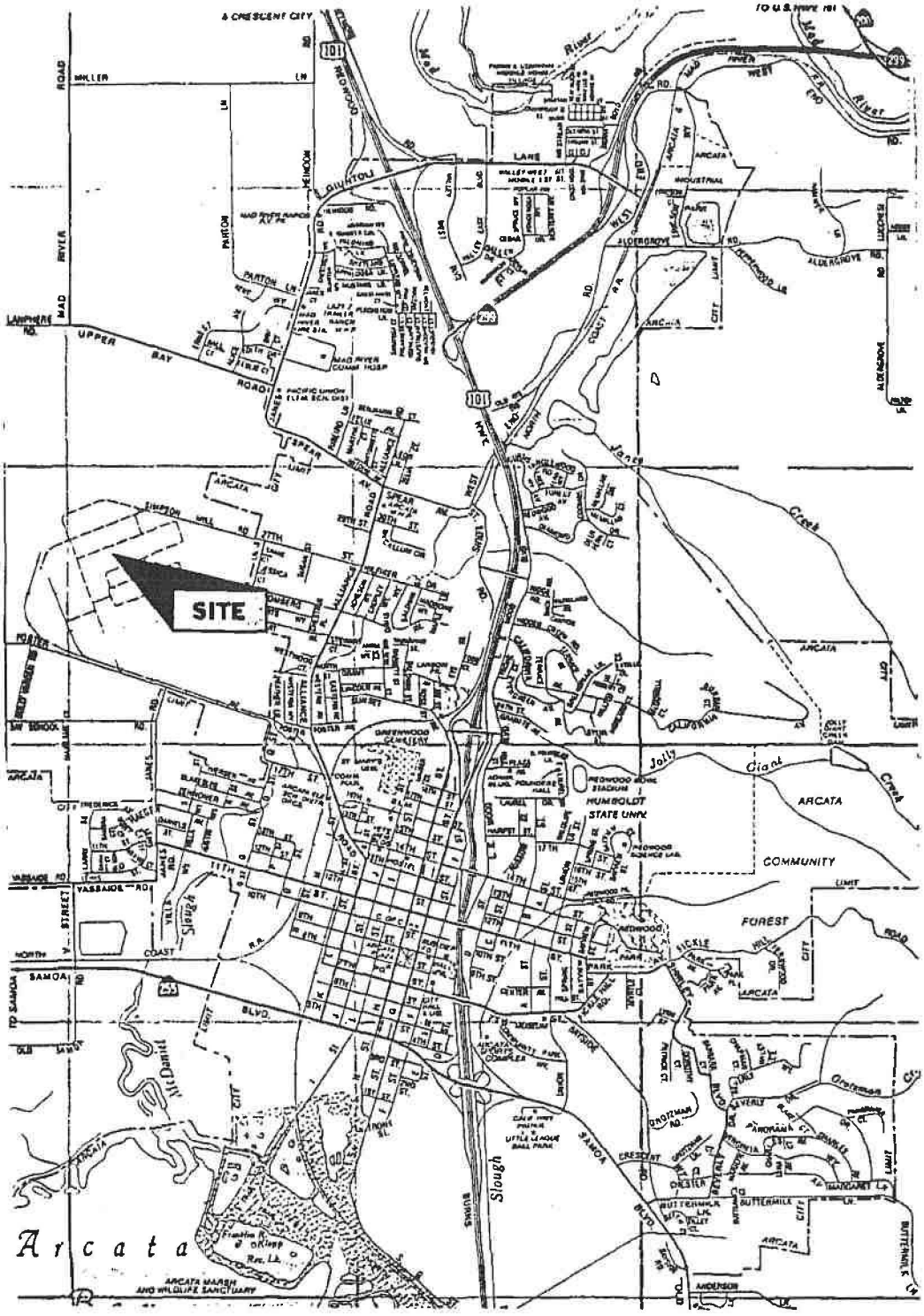
FOR THE

FORMER SIMPSON TIMBER COMPANY REMANUFACTURING

PLANT SITE LOCATED AT:

3315 FOSTER AVENUE

ARCATA, CALIFORNIA



EnviroNet CONSULTING

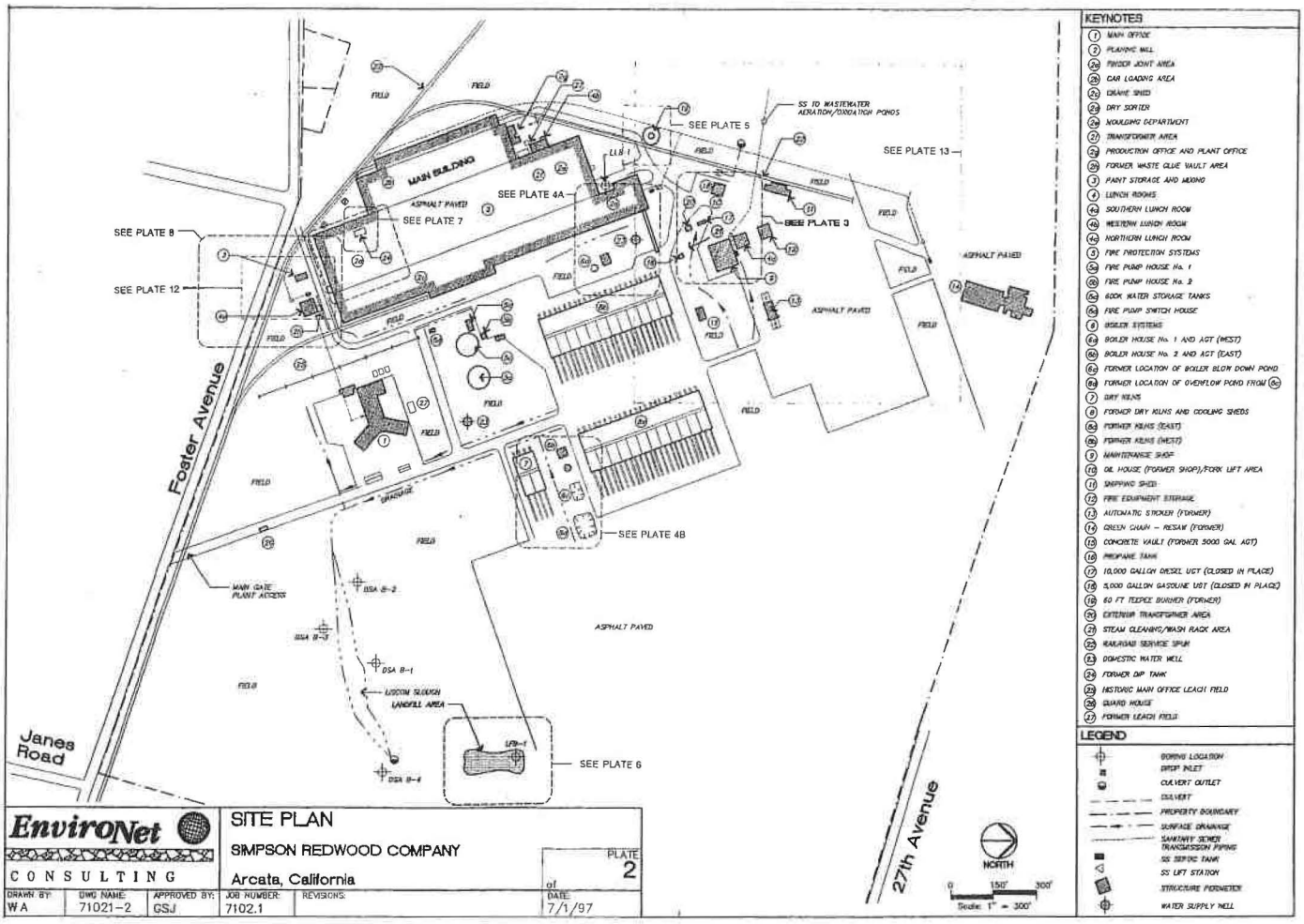
SITE LOCATION MAP

Simpson Redwood Company

Arcata, California

PLATE 1

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
WA	71021-1	GSJ	7102.1		8/7/97



KEYNOTES

1. MAIN OFFICE
2. PLANING MILL
2A. FINGER JOINT AREA
2B. CAR LOADING AREA
2C. CRANE SHED
2D. DRY SORTER
2E. MOULDING DEPARTMENT
2F. TRANSFORMER AREA
2G. PRODUCTION OFFICE AND PLANT OFFICE
2H. FORMER WASTE GLUE VAULT AREA
3. PAINT STORAGE AND MIXING
4. LUNCH ROOMS
4A. SOUTHERN LUNCH ROOM
4B. WESTERN LUNCH ROOM
4C. NORTHERN LUNCH ROOM
5. FIRE PROTECTION SYSTEMS
5A. FIRE PUMP HOUSE No. 1
5B. FIRE PUMP HOUSE No. 2
6A. 600K WATER STORAGE TANKS
6B. FIRE PUMP SWITCH HOUSE
8. BOILER SYSTEMS
8A. BOILER HOUSE No. 1 AND AGT (WEST)
8B. BOILER HOUSE No. 2 AND AGT (EAST)
8C. FORMER LOCATION OF BOILER BLOW DOWN POND
8D. FORMER LOCATION OF OVERFLOW POND FROM 8C
9. DRY KILNS
9A. FORMER DRY KILNS AND COOLING SHEDS
9B. FORMER KILNS (EAST)
9C. FORMER KILNS (WEST)
10. MAINTENANCE SHOP
11. OIL HOUSE (FORMER SHOP)/FORK LIFT AREA
11. SHIPPING SHED
12. FIRE EQUIPMENT STORAGE
13. AUTOMATIC STACKER (FORMER)
14. GREEN CHAIN – RESAW (FORMER)
15. CONCRETE VAULT (FORMER 5000 GAL AGT)
16. PROPANE TANK
17. 10,000 GALLON DIESEL UST (CLOSED IN PLACE)
18. 5,000 GALLON GASOLINE UST (CLOSED IN PLACE)
19. 60 FT TEEPEE BURNER (FORMER)
20. EXTENSION TRANSFORMER AREA
21. STEAM CLEANING/WASH RACK AREA
22. RAILROAD SERVICE SPUR
23. DOMESTIC WATER WELL
24. FORMER DIP TANK
25. HISTORIC MAIN OFFICE LEACH FIELD
26. GUARD HOUSE
27. FORMER LEACH FIELD

LEGEND

- BORING LOCATION
- DROP INLET
- CULVERT OUTLET
- CULVERT
- PROPERTY BOUNDARY
- SURFACE DRAINAGE
- SANITARY SEWER TRANSMISSION PIPING
- SS SEPTIC TANK
- SS LIFT STATION
- STRUCTURE PERIMETER
- WATER SUPPLY WELL

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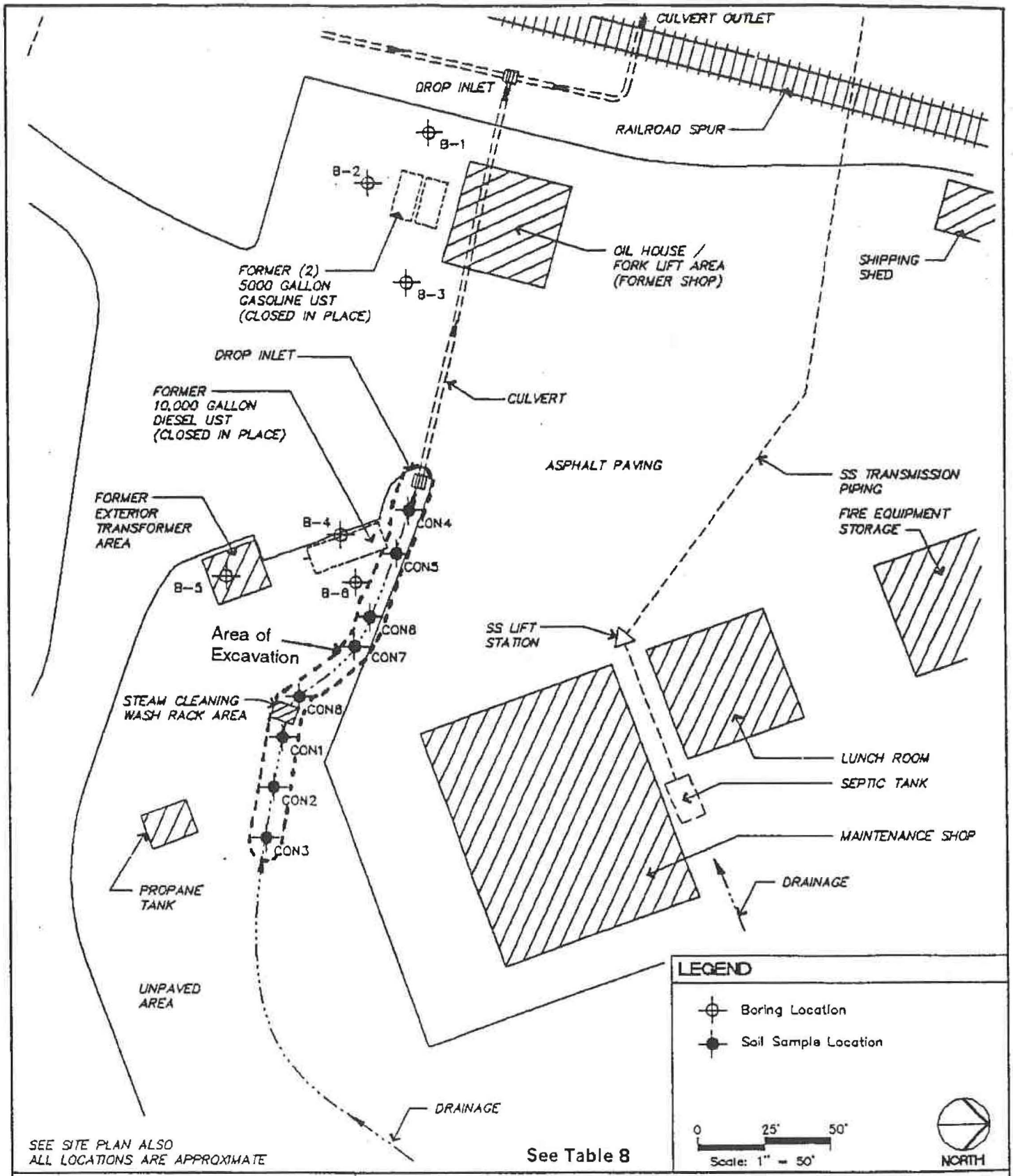
SITE PLAN

SIMPSON REDWOOD COMPANY

Arcata, California

PLATE 2 of

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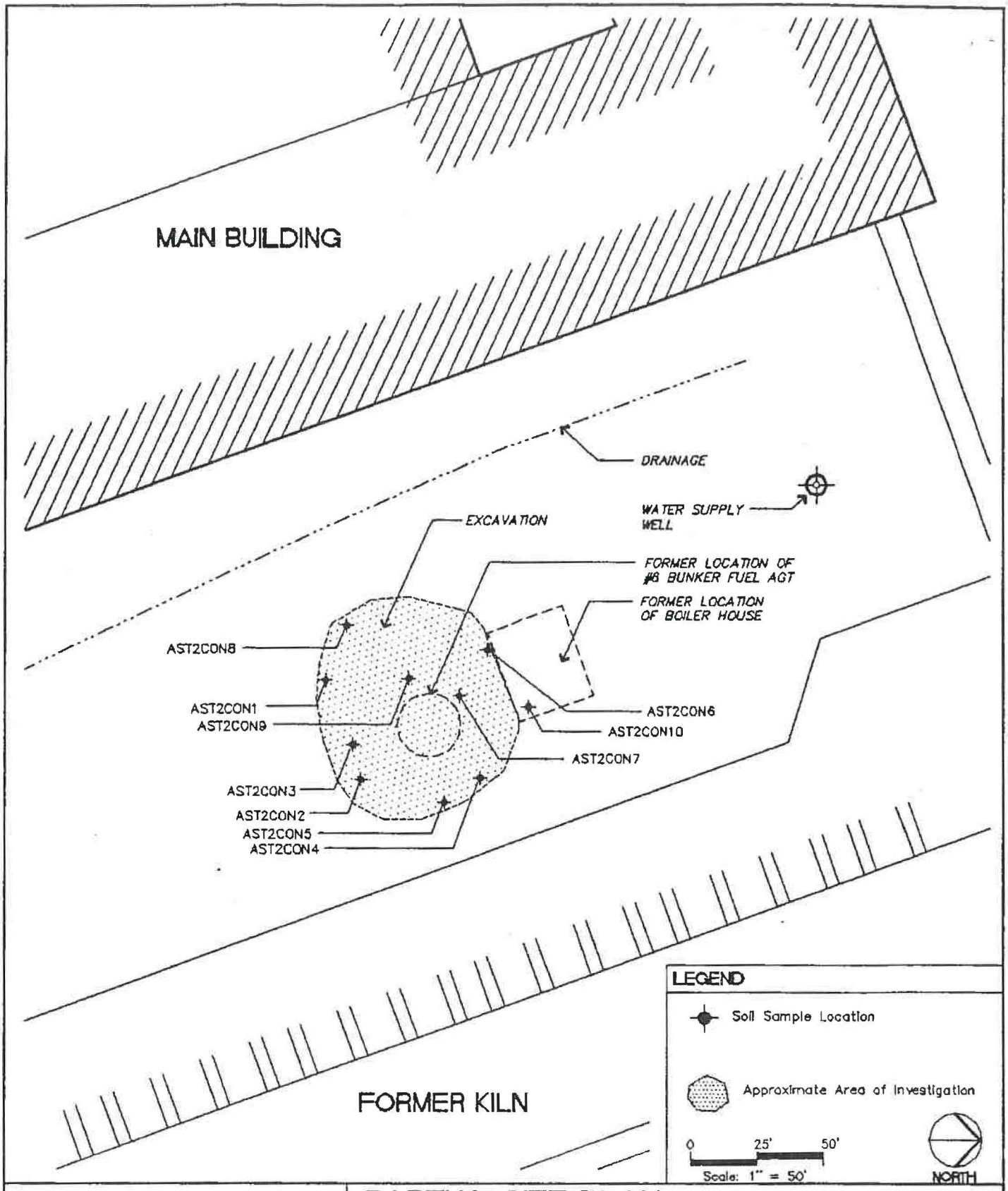


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Wash Rack/Steam Cleaning Areas
Boring and Soil Sample Locations
Simpson Redwood Company
Arcata, California

PLATE 3

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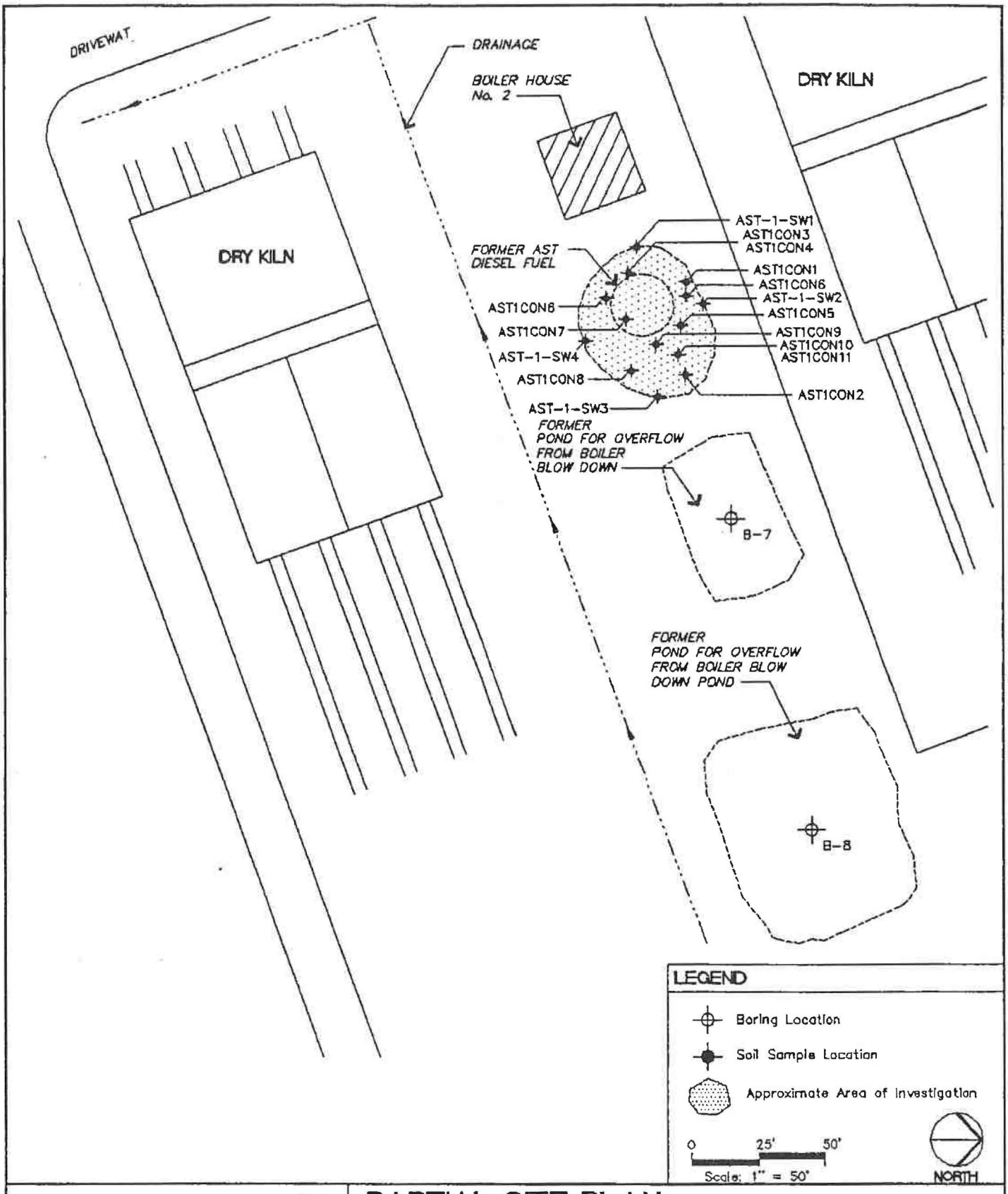


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PARTIAL SITE PLAN
Bunker "C" AGT Area
Simpson Redwood Company
Arcata, California

PLATE 4A

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
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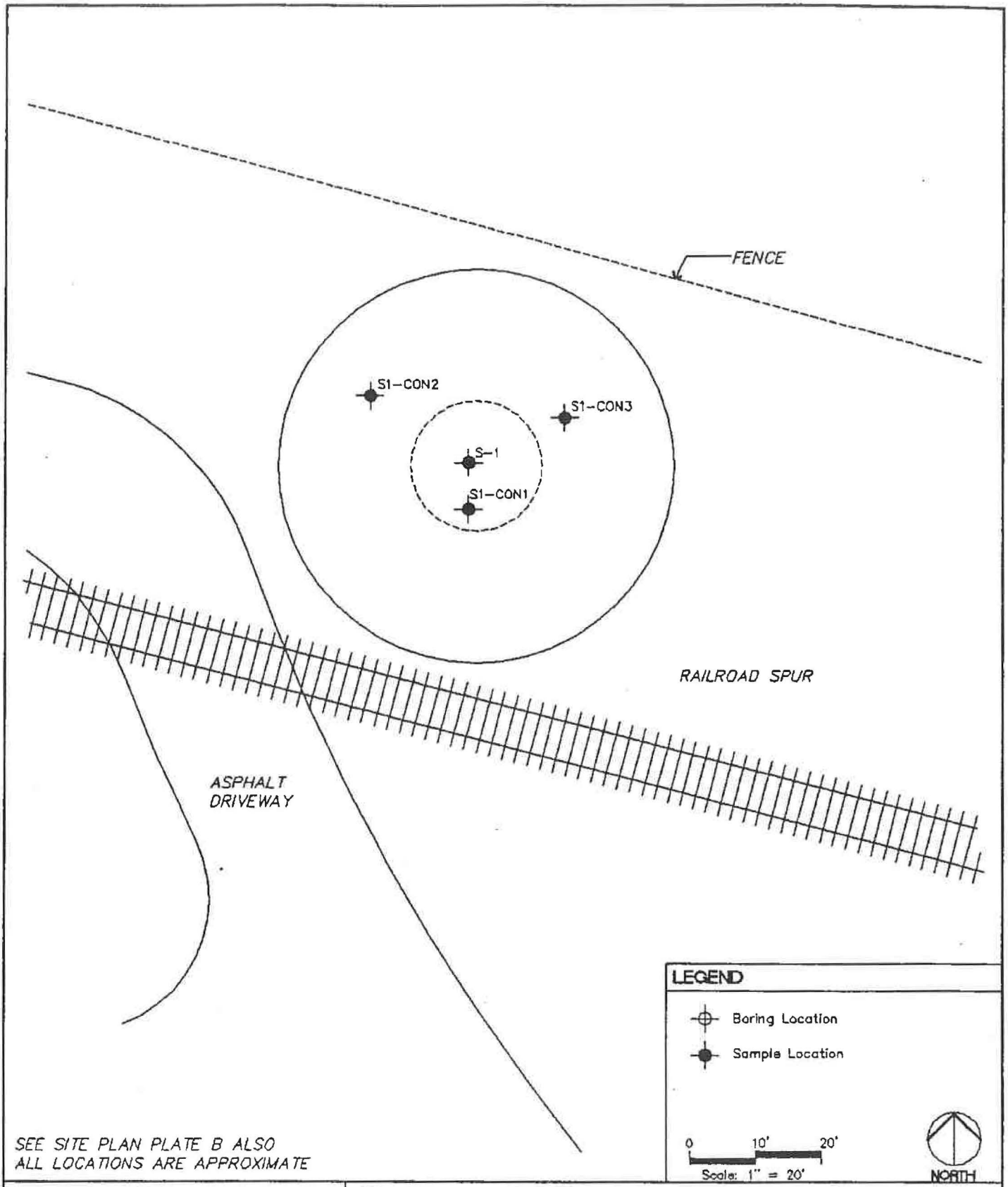


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PARTIAL SITE PLAN
Diesel AGT Area
Simpson Redwood Company
Arcata, California

PLATE 4B

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
WA	71021-5C	GSJ	7102.1		8/7/97



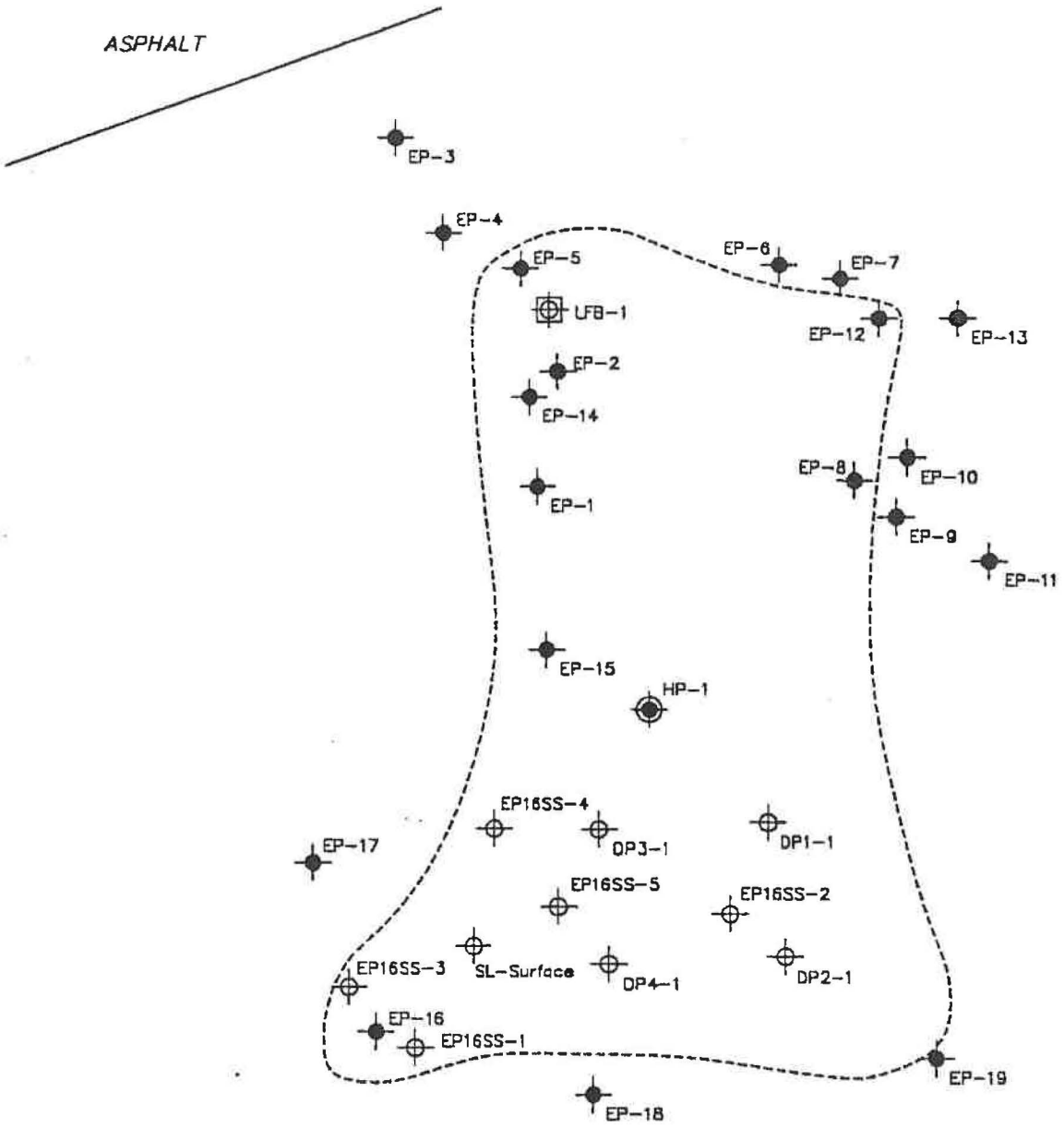
SEE SITE PLAN PLATE B ALSO
ALL LOCATIONS ARE APPROXIMATE

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PARTIAL SITE PLAN
Teepee Burner Area
Simpson Redwood Company
Arcata, California

PLATE 5

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
WA	71021-3C	GSJ	7102.1		8/7/97



LEGEND

- Surface Sample Locations
- Boring Location
- Trench Locations
- Debris Disposal Area

0 20' 40'
Scale: 1" = 40'

NORTH

See Tables 6A, 6B, and 7

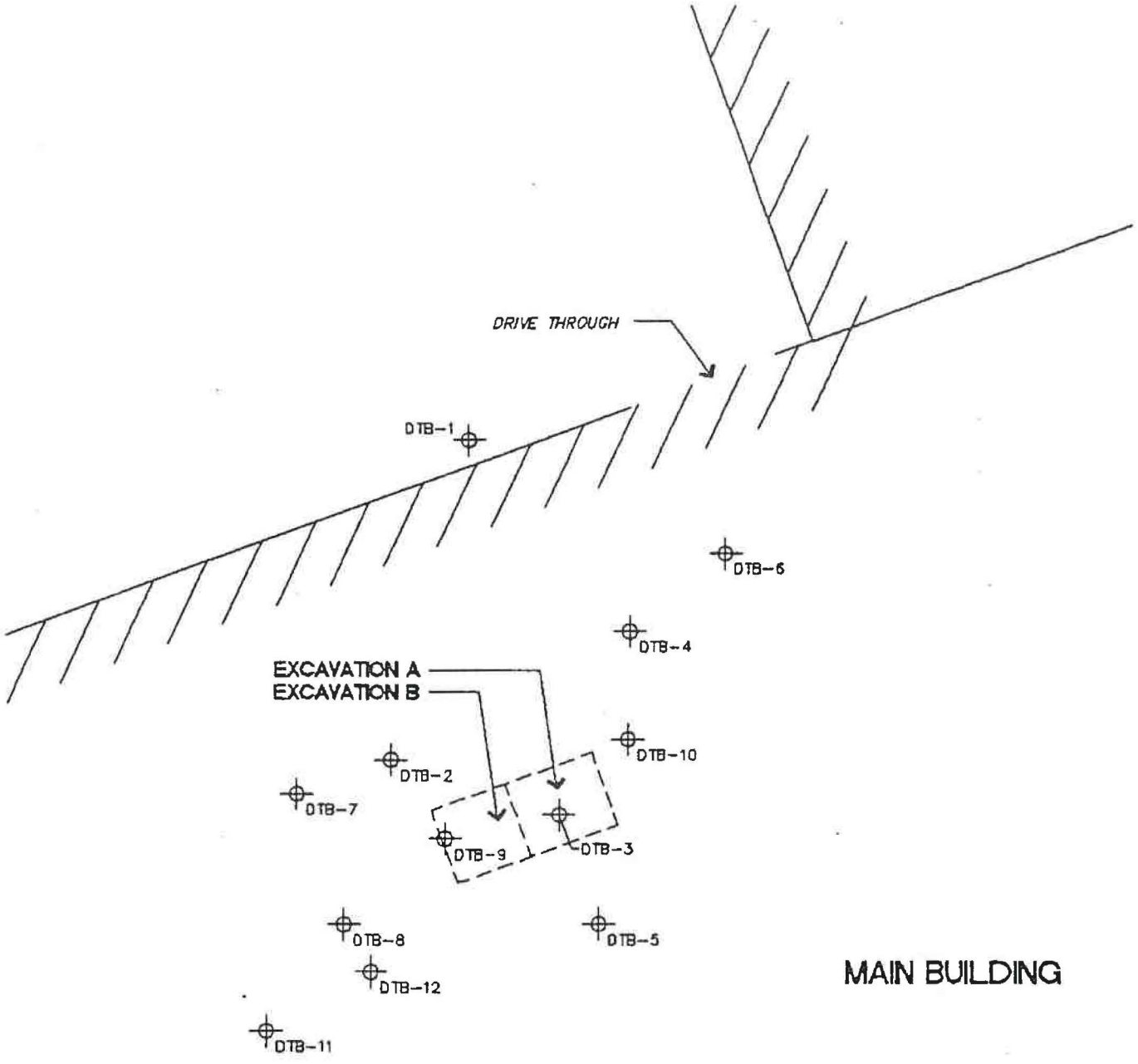
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PARTIAL SITE PLAN
Debris Disposal Area

Simpson Redwood Company
Arcata, California

PLATE 6

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
AJH	71021-4e	RLN	7102.1		1/15/97



LEGEND

Boring Location

10' 20'

Scale: 1" = 20'

NORTH

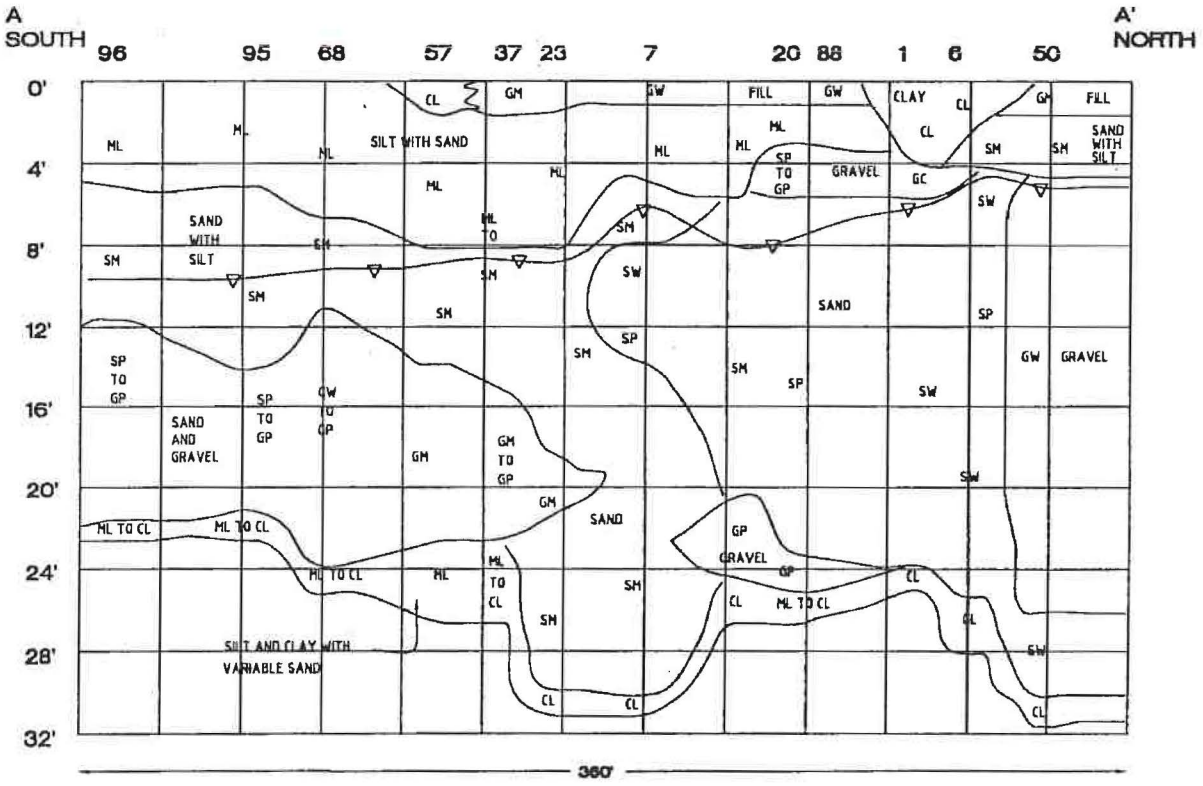
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PARTIAL SITE PLAN

Boring and Excavation Locations
Simpson Redwood Company
Arcata, California

PLATE 7

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
WA	71021-6A	GSJ	7102.1		8/7/97



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CROSS SECTION A-A'
Soil and Groundwater Investigation
Simpson Redwood Company
Arcata, California

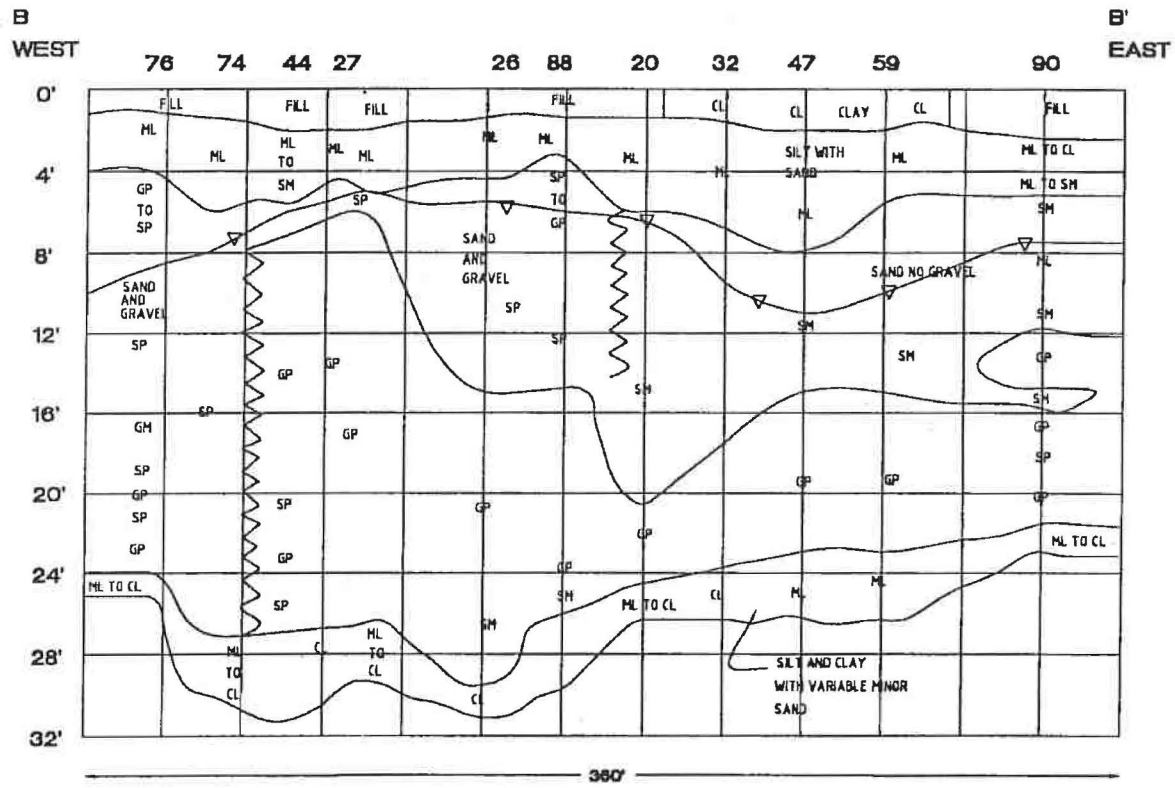
PLATE 9 of

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
RWC/AJH	sl9a-b_b	GSJ	7102.1	Was sl-secto; 8/16/97	10/15/97

Horizontal Scale 1" = 50' Vertical Scale 1" = Approximately 7'

Numbers Across Top = Boring Numbers. Example 96 = LRB-96.

SM, SP, GP, etc = USCS see Plate 10A



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CROSS SECTION B-B'
Soil and Groundwater Investigation
Simpson Redwood Company
Arcata, California

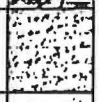
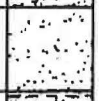
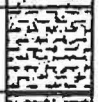
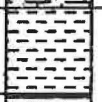
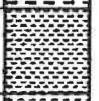
PLATE 10

DRAWN BY	DWG NAME	APPROVED BY	JOB NUMBER	REVISIONS	DATE
FWC/AJH	SI9A-B_B	GSJ	7102.1		8/16/97

Horizontal Scale 1" = 50' Vertical Scale 1" = Approximately 7'

Numbers Across Top = Boring Numbers. Example 96 = LRB-96.

SM, SP, GP, etc = USCS see Plate 10A

GENERAL SOIL CATEGORIES			SYMBOLS		TYPICAL SOIL TYPES
Coarse Grained Soils More than half is larger than No. 200 Sieve	**Gravel** More than half coarse fraction is larger than No. 4 sieve size.	Clean Gravel with little or no fines.	GW		Well Graded Gravels, Gravel – Sand Mixtures.
			GP		Poorly Graded Gravels, Gravel – Sand Mixtures.
		Gravel with more than 12% fines.	GM		Silty Gravels, Poorly Graded Gravel–Sand–Silt Mixtures.
			GC		Clayey Gravels, Poorly Graded Gravel–Sand–Clay Mixtures.
	Sand More than half coarse fraction is larger than No. 4 sieve size.	Clean Sand with little or no fines.	SW		Well Graded Sands, Gravelly Sands.
			SP		Poorly Graded Sands, Gravelly Sands.
		Sand with more than 12% fines.	SM		Silty Sands, Poorly Graded Sand–Silt Mixtures.
			SC		Clayey Sands, Poorly Graded Sand–Clay Mixtures
Fine Grained Soils More than half is smaller than No. 200 Sieve	**Silt and Clay** 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, Gravely Clays, Sandy Clays, Silty Clays, Lean Clays.
			OL		Organic Clays and Organic Silty Clays of Low Plasticity.
	Silt and Clay Liquid Limit Greater than 50%		MH		Inorganic Silts, Micaceous or Diatomaceous Fine Sandy or Silty Soils, Elastic Silts.
			CH		Inorganic Clays of High Plasticity, Fat Clays.
			OH		Organic Clays of Medium to High Plasticity.
Highly Organic Soils			PT		Peat and Other Highly Organic Soils.

BORING LOG LEGEND

- ■ Soil sample submitted for chemical analysis
- ⊠ Soil sample examined for soil classification.
- [N] Sample attempt with no recovery.
- ▽ First Identified free water.
- ▼ Initial Static Water Level

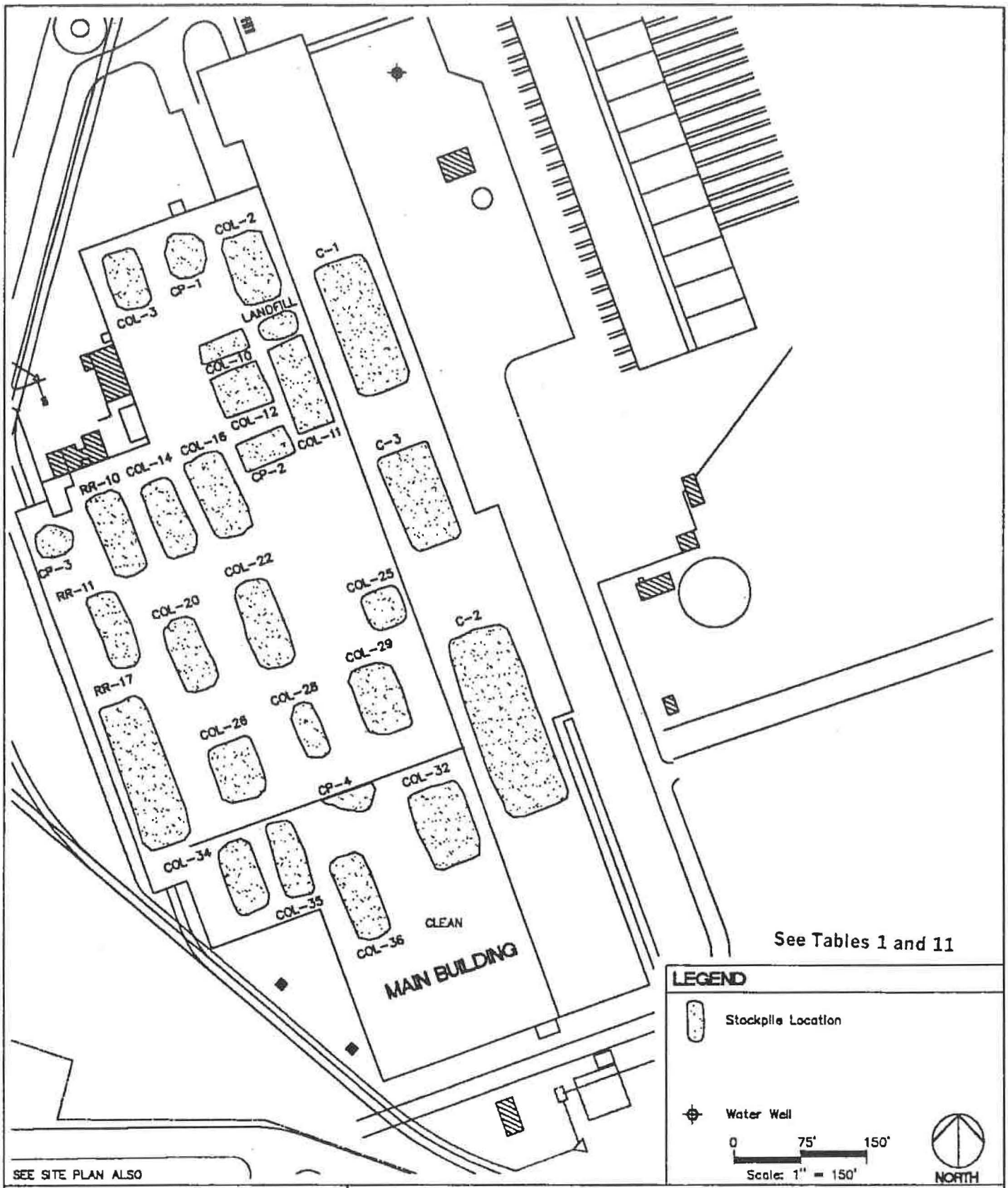
Sample Condition
G=Good, F=Fair, P=Poor, N=No Recovery

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UNIFIED SOIL CLASSIFICATION SYSTEM and BORING LOG LEGEND

PLATE 10A

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
WA	Soilclas	GSJ			



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PARTIAL SITE PLAN

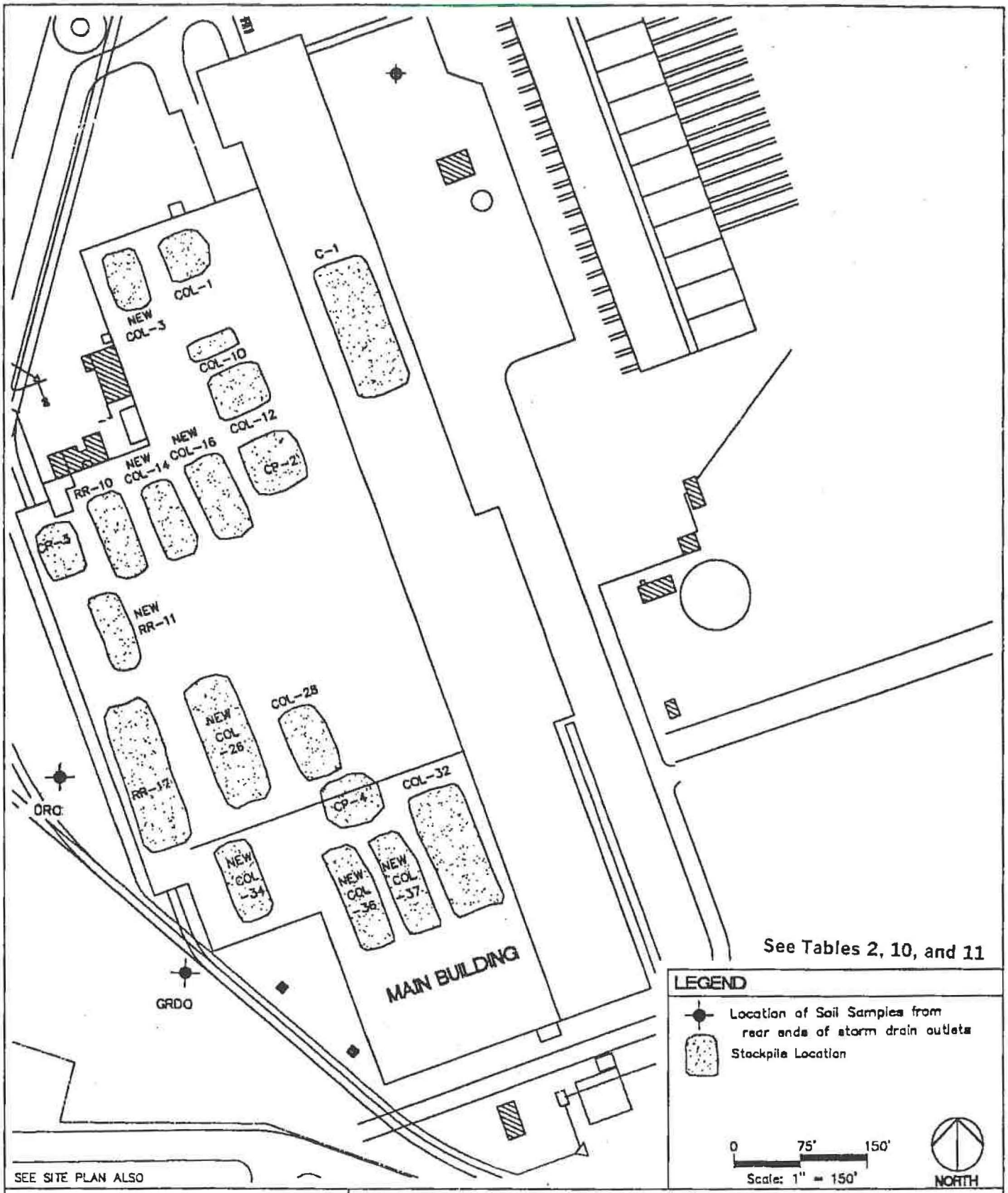
Stockpile Locations Pre-12/97 Landfill Disposal

Simpson Redwood Company

Arcata, California

PLATE 11A

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
WA/AJH	7102111B	GSJ	7102.1	Added 7 stockpile locations	10/20/97



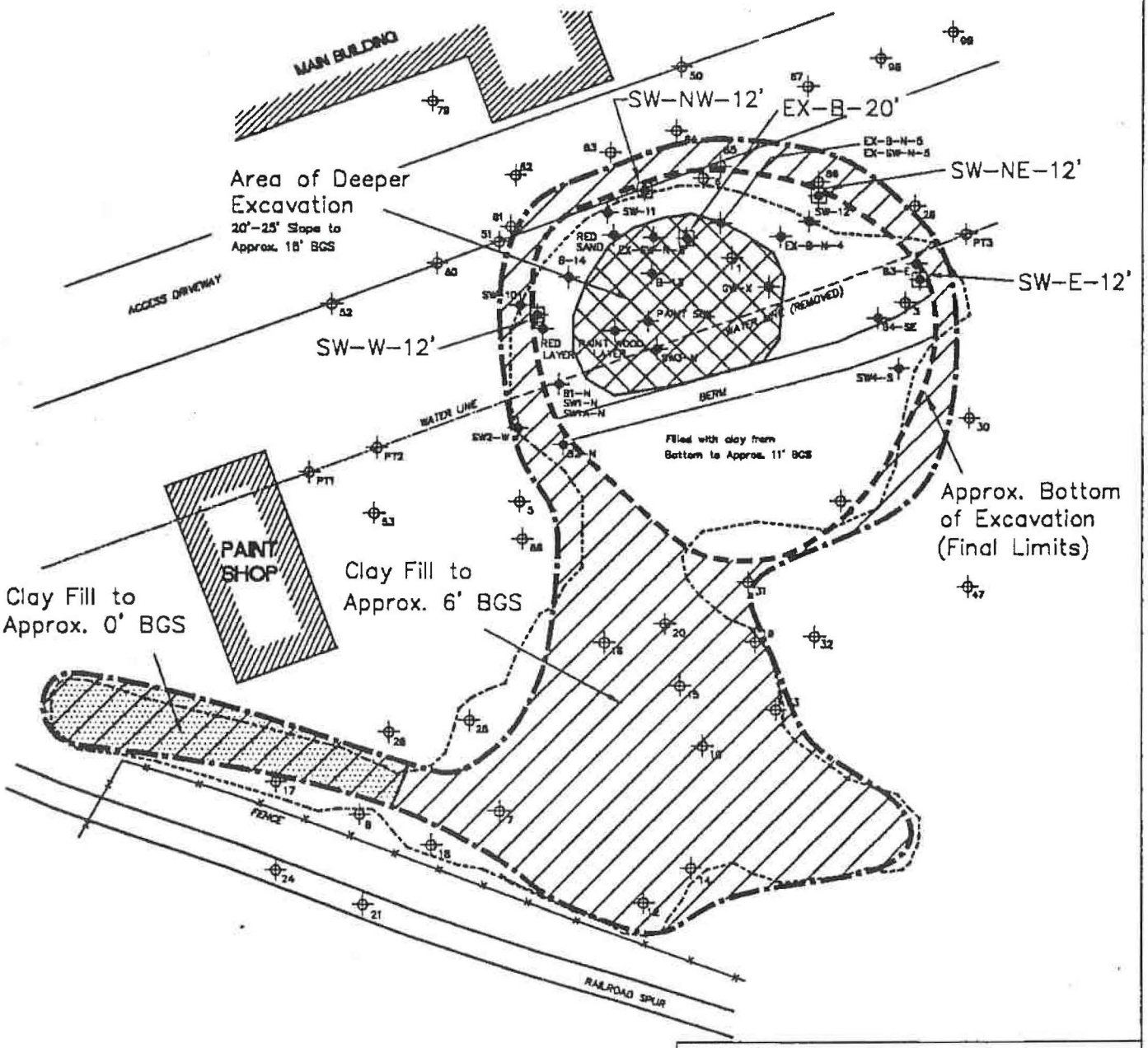
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PARTIAL SITE PLAN
Stockpile Locations Post-12/97 Landfill Disposal

Simpson Redwood Company
Arcata, California

PLATE 11B

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
AJH	7102111c	GSJ	7102.1		1/23/98



Note: Excavation was conducted until sand was below odor threshold and no visible sheen drained from saturated sand, or was visible in wet sand. Excavation packed stirred sand as final step.

See Table 3

LEGEND

- Fill Depth
- Boring Location
- Soil Sample Location
- Approximate Area of Original Excavation
- Approximate Area of Deepest Excavation
- Approximate Area of Bottom of Excavation
- Approximate Area of Excavation Fill

0 15' 30'

Scale: 1" = 30'

NORTH

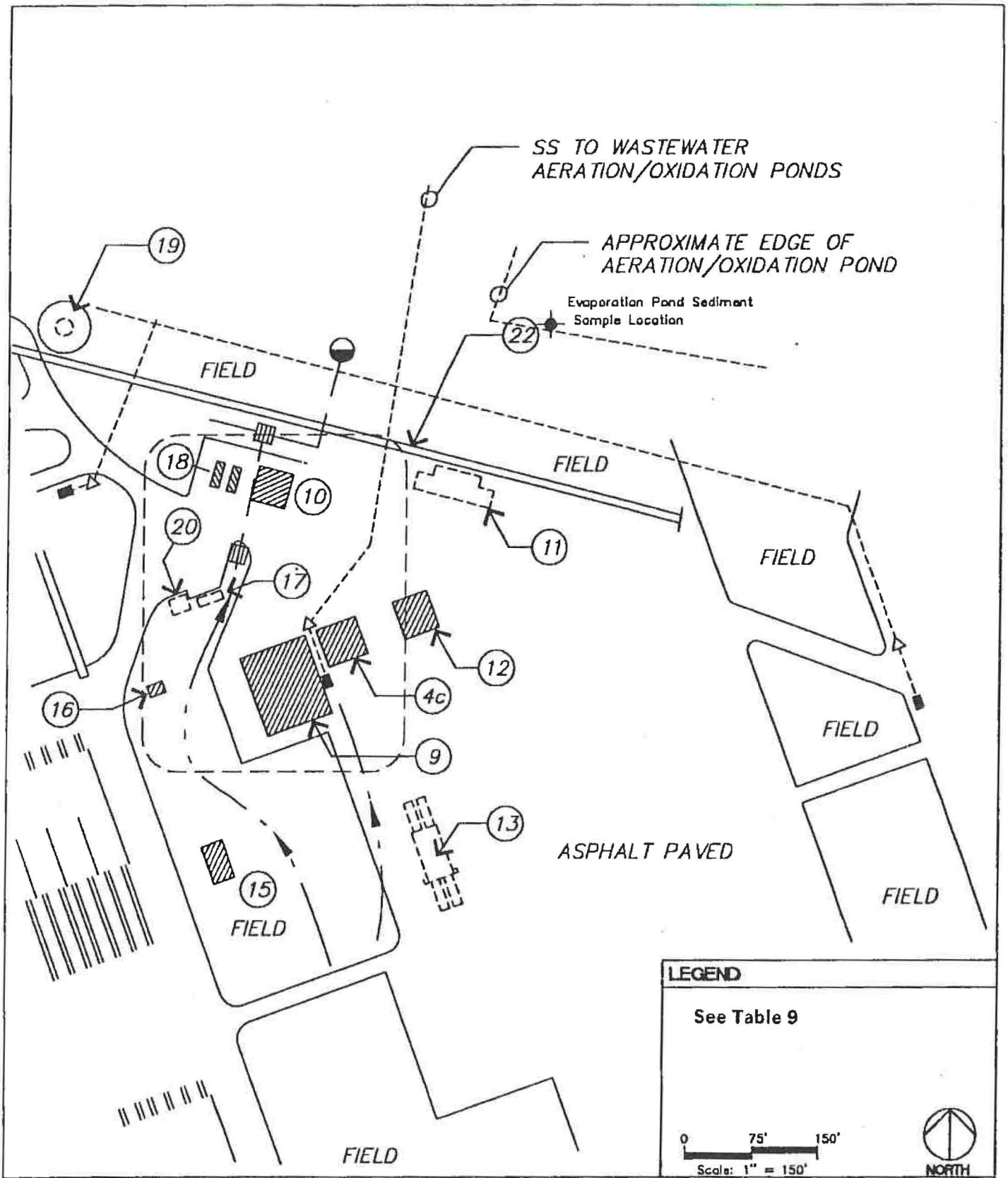
EnviroNet CONSULTING

Partial Site Plan
Paint Hole Area-Excavation and Fill Limits

Simpson Redwood Company
Arcata, California

PLATE 12

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
AJH	710218C2	GSJ	7102.1		1/28/98



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SITE PLAN
Evaporation Pond Sediment Sample Location

SIMPSON REDWOOD COMPANY
Arcata, California

PLATE 13

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
AJH	71021-2X	RLN	7102.1	Taken from 71021-2	1/2/98

APPENDIX B

-BORING LOGS AND WELL COMPLETION DIAGRAMS-

REMOVAL ACTION WORK PLAN

IMPLEMENTATION REPORT

AND

RESULTS OF INITIAL GROUNDWATER MONITORING

DATED MARCH 20, 1998

FOR THE

FORMER SIMPSON TIMBER COMPANY REMANUFACTURING

PLANT SITE LOCATED AT:

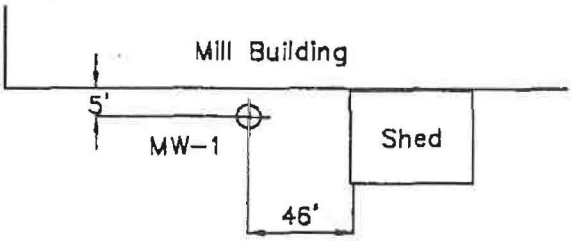
3315 FOSTER AVENUE

ARCATA, CALIFORNIA

Date: 12/2/97 Start Time:1255 BORING No. **MW-1**
Logged By: R.L. Nelson

Drilling Contractor: Weeks Drilling
Driller's Name: Gary Meyers/Tim Blankenship
Drilling Method: 9" Hollow Stem Auger
Sampling Method: Not sampled
Monitoring Well Installed: Yes [X] No [ ]
Total Depth (ft): 25 ft.
Auger Depth (ft): 25 ft.
Hydropunch Interval (ft): N/A
Notes:

LOCATION of BORING



Lunch Room Area
See site plan also No scale NORTH

See Unified Soil Classification System for Legend and Information not noted.

Sample	Sample Condition*	Inches Recovered	Drilling Rate	Blows / 6 in.	Initial Free Water	Static Water	PID (ppm)	Odor	Discolored	USCS Soil Class.	Depth in Feet	Graphic Log	
										ML	1		Dark brown Clayey Sandy Silt, soft, moist to wet, very fine sand
											2		
											3		
							0	No	No		4		
NO SAMPLES COLLECTED											5		
										GM	6		Dark brown Sandy Silty Gravel, dense, moist, 20% fine to medium sand, 60% fine gravel to cobbles, subrounded gravel
											7		
											8		
					▽		0	No	No		9		Sand layer at 9-10'
											10		
										GW	11		Dark brown Sandy Gravel, loose to medium dense, wet, approx. 40% fine to medium sand, 60% fine gravel to cobble to 3" diameter, gravels are subrounded, occasional sand layers less than 6" thick
											12		
							0	No	No		13		
											14		
											15		
											16		

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MONITORING WELL MW-1
Soil and Groundwater Investigation
Simpson Lumber Company
Arcata, California

PLATE A-1
1 OF 2

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
AJH	si-mw-1	RLN	7102.1		12/28/97

BORING No.
MW-1

Sample	Sample Condition*	Inches Recovered	Drilling Rate	Blows / 6 in.	Initial Free Water	Static Water	PID (ppm)	Odor	Discolored	USCS Soil Class.	Depth In Feet	Graphic Log	Notes:
											17		
							0	No	No	GW	18		
											19		
											20		
											21		Dark gray brown well graded Sand, loose, wet, fine to coarse sand, approx. 35% fine subrounded gravel
											22		
							0	No	No	SW	23		
											24		Brown lean Clay, medium stiff, wet
										CL	25		
											26		
											27		
											28		
											29		
											30		
											31		
											32		
											33		
											34		
											35		
											36		

EnviroNet CONSULTING

MONITORING WELL MW-1
Soil and Groundwater Investigation
Simpson Lumber Company
Arcata, California

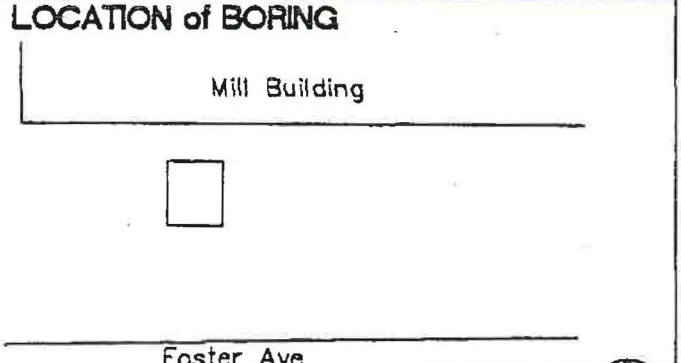
PLATE A-2
2 of 2

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
AJH	SI-MW-1	RLN	7102.1		12/28/97

Date: 12/3/97 Start Time: 715 BORING No.
Logged By: R.L. Nelson **MW-2**

Drilling Contractor: Weeks Drilling
Driller's Name: Gary Meyers/Tim Blankenship
Drilling Method: 9" Hollow Stem Auger
Sampling Method: Not sampled
Monitoring Well Installed: Yes [X] No [ ]
Total Depth (ft): 25 ft.
Auger Depth (ft): 25 ft.
Hydropunch Interval (ft): N/A
Notes:

LOCATION of BORING



Sample	Sample Condition*	Inches Recovered	Drilling Rate	Blows / 6 in.	Initial Free Water	Static Water	PID (ppm)	Odor	Discolored	USCS Soil Class.	Depth in Feet	Graphic Log	See Unified Soil Classification System for Legend and Information not noted.
										ML	1		Dark gray brown Clayey Silt with trace of gravel, soft, moist
											2		
											3		
							0	No	No		4		
NO SAMPLES COLLECTED											5		
											6		
											7		Brown Sandy lean Clay, soft, moist, very fine sand
											8		
					▽					CL	9		
							.0	No	No		10		
											11		Occasional Gravel layers
											12		
											13		
											14		
							0	No	No		15		
											16		

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MONITORING WELL MW-2
Soil and Groundwater Investigation
Simpson Lumber Company
Arcata, California

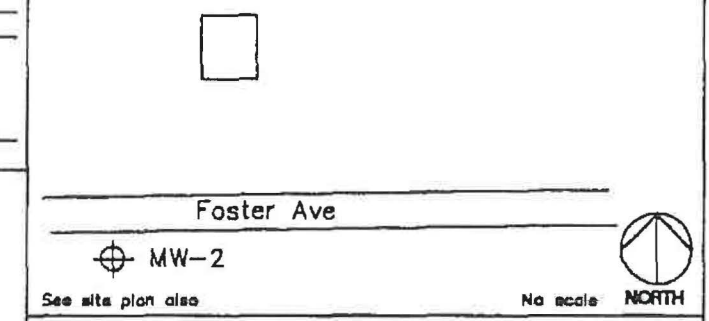
PLATE B-1
1 OF 2

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
AJH	si-mw-2	RLN	7102.1		12/29/97

Date: 12/3/97 Start Time: 715 BORING No. **MW-2**
Logged By: R.L. Nelson

Drilling Contractor: Weeks Drilling
Driller's Name: Gary Meyers/Tim Blankenship
Drilling Method: 9" Hollow Stem Auger
Sampling Method: Not sampled
Monitoring Well Installed: Yes [X] No [ ]
Total Depth (ft): 25 ft.
Auger Depth (ft): 25 ft.
Hydropunch Interval (ft): N/A
Notes:

LOCATION of BORING



Sample	Sample Condition*	Inches Recovered	Drilling Rate	Blows / 6 in.	Initial Free Water	Static Water	PID (ppm)	Odor	Discolored	USCS Soil Class.	Depth in Feet	Graphic Log	
NO SAMPLES COLLECTED										ML	1		Dark gray brown Clayey Silt with trace of gravel, soft, moist
											2		
											3		
							0	No	No		4		
											5		
											6		
										CL	7		Brown Sandy lean Clay, soft, moist, very fine sand
					▽						8		
											9		
							.0	No	No		10		
											11		Occasional Gravel layers
											12		
											13		
											14		
							0	No	No		15		
											16		

See Unified Soil Classification System for Legend and information not noted.

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MONITORING WELL MW-2
Soil and Groundwater Investigation
Simpson Lumber Company
Arcata, California

PLATE B-1
1 OF 2

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
AJH	si-mw-2	RLN	7102.1		12/29/97

BORING No.
MW-2

Sample	Sample Condition*	Inches Recovered	Drilling Rate	Blows / 6 in.	Initial Free Water	Static Water	PID (ppm)	Odor	Discolored	USCS Soil Class.	Depth in Feet	Graphic Log	Notes:
											17		
										CL	18		
											19		
							0	No	No		20		
											21		
											22		
											23		
											24		Dark gray Silty Clay, soft, wet, trace of very fine sand
							0	No	No	CL	25		
											26		
											27		
											28		
											29		
											30		
											31		
											32		
											33		
											34		
											35		
											36		

EnviroNet CONSULTING

MONITORING WELL MW-2
Soil and Groundwater Investigation
Simpson Lumber Company
Arcata, California

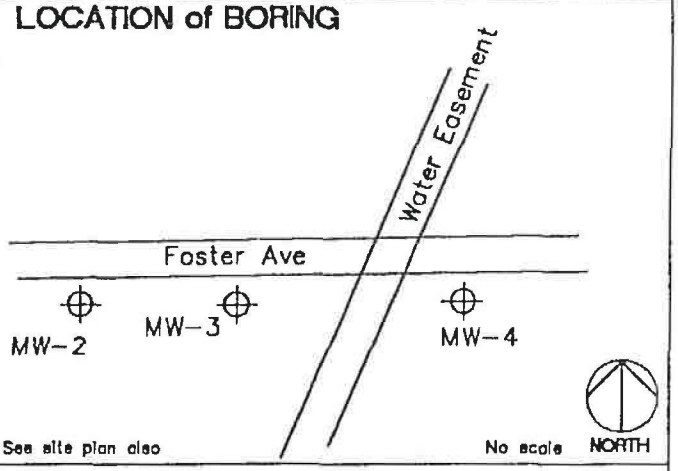
PLATE B-2
2 of 2

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
AJH	SI-MW-2	RLN	7102.1		12/29/97

Date: 12/3/97 Start Time:920 BORING No.
Logged By: R.L. Nelson **MW-3**

Drilling Contractor: Weeks Drilling
Driller's Name: Gary Meyers/Tim Blankenship
Drilling Method: 9" Hollow Stem Auger
Sampling Method: Not sampled
Monitoring Well Installed: Yes [X] No [ ]
Total Depth (ft): 25 ft.
Auger Depth (ft): 25 ft.
Hydropunch Interval (ft): N/A
Notes:

LOCATION of BORING



See Unified Soil Classification System for Legend and information not noted.

Sample	Sample Condition*	Inches Recovered	Drilling Rate	Blows / 6 in.	Initial Free Water	Static Water	PID (ppm)	Odor	Discolored	USCS Soil Class.	Depth in Feet	Graphic Log	
NO SAMPLES COLLECTED											1		Dark brown Clayey Silt, soft, moist (wet at surface)
							0	No	No	ML	2		
											3		
											4		Dark brown Silty Clay, soft, moist
							0	No	No	CL	5		
											6		
											7		
											8		Brown Sandy lean Clay, soft, moist, (wet below 9'), very fine sand
					▽		0	No	No	CL	9		
											10		
											11		
											12		
							0	No	No	SW	13		Dark gray well-graded Sand, loose, wet, fine to coarse, subangular sand, abundant chert
											14		
										CL	15		Dark brown Gravelly Clay, medium stiff, wet
											16		

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MONITORING WELL MW-3
Soil and Groundwater Investigation
Simpson Lumber Company
Arcata, California

PLATE C-1
1 OF 2

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
AJH	si-mw-3	RLN	7102.1		1/15/97

BORING No. **MW-3**

Notes:

Sample	Sample Condition*	Inches Recovered	Drilling Rate	Blows / 6 in.	Initial Free Water	Static Water	PID (ppm)	Odor	Discolored	USCS Soil Class.	Depth in Feet	Graphic Log	
											17		
										CL	18		
											19		
							0	No	No		20		
											21		
											22		
											23		
							0	No	No		24		
										CL	25		Dark brown lean Clay, medium stiff to stiff, wet
											26		
											27		
											28		
											29		
											30		
											31		
											32		
											33		
											34		
											35		
											36		

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MONITORING WELL MW-3
Soil and Groundwater Investigation
Simpson Lumber Company
Arcata, California

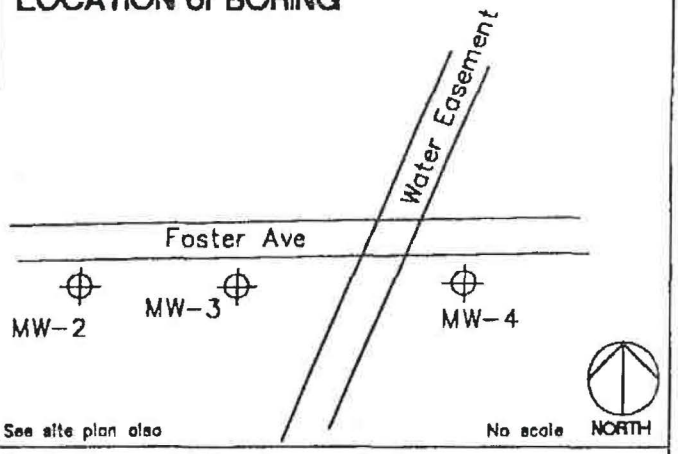
PLATE C-2
2 of 2

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
AJH	SI-MW-3	RLN	7102.1		12/29/97

Date: 12/3/97 Start Time:1220 BORING No.
Logged By: R.L. Nelson **MW-4**

Drilling Contractor: Weeks Drilling
Driller's Name: Gary Meyers/Tim Blankenship
Drilling Method: 9" Hollow Stem Auger
Sampling Method: Not sampled
Monitoring Well Installed: Yes [X] No [ ]
Total Depth (ft): 25 ft.
Auger Depth (ft): 25 ft.
Hydropunch Interval (ft): N/A
Notes:

LOCATION of BORING



Sample	Sample Condition*	Inches Recovered	Drilling Rate	Blows / 6 in.	Initial Free Water	Static Water	PID (ppm)	Odor	Discolored	USCS Soil Class.	Depth in Feet	Graphic Log
NO SAMPLES COLLECTED							0	No	No	ML	1	
											2	
							0	No	No	CL	3	
											4	
											5	
							0	No	No		6	
											7	
											8	
											9	
							0	No	No		10	
											11	
					▽						12	
											13	
											14	
							0	No	No		15	
											16	

See Unified Soil Classification System for Legend and information not noted.

Dark gray brown Clayey Silt, soft, moist, trace of fine sand

Brown Sandy lean Clay, soft, moist, approx. 35% fine sand

Sand content increases with depth

Occasional Gravel layers from 12'

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MONITORING WELL MW-4
Soil and Groundwater Investigation
Simpson Lumber Company
Arcata, California

PLATE D-1
1 OF 2

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
AJH	sl-mw-4	RLN	7102.1		1/15/97

BORING No.
MW-4

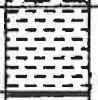
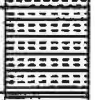
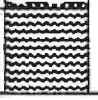
Sample	Sample Condition*	Inches Recovered	Drilling Rate	Blows / 6 in.	Initial Free Water	Static Water	PID (ppm)	Odor	Discolored	USCS Soil Class.	Depth in Feet	Graphic Log	Notes:
											17		
										CL	18		
											19		Brown Gravelly Sand, medium dense, wet, predominently coarse sand, approx. 20% fine subangular gravel, abundant chert
											20		
							0	No	No	SW	21		
											22		
											23		
											24		
							0	No	No	CL	25		Brown lean Clay, very stiff, wet
											26		
											27		
											28		
											29		
											30		
											31		
											32		
											33		
											34		
											35		
											36		

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MONITORING WELL MW-4
Soil and Groundwater Investigation
Simpson Lumber Company
Arcata, California

PLATE
D-2
2 of 2

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
AJH	SI-MW-4	RLN	7102.1		12/29/97

GENERAL SOIL CATEGORIES			SYMBOLS		TYPICAL SOIL TYPES
Coarse Grained Soils More than half is larger than No. 200 Sieve	**Gravel** More than half coarse fraction is larger than No. 4 sieve size.	Clean Gravel with little or no fines.	GW		Well Graded Gravels, Gravel – Sand Mixtures.
			GP		Poorly Graded Gravels, Gravel – Sand Mixtures.
		Gravel with more than 12% fines.	GM		Silty Gravels, Poorly Graded Gravel–Sand–Silt Mixtures.
			GC		Clayey Gravels, Poorly Graded Gravel–Sand–Clay Mixtures.
	Sand More than half coarse fraction is larger than No. 4 sieve size.	Clean Sand with little or no fines.	SW		Well Graded Sands, Gravelly Sands.
			SP		Poorly Graded Sands, Gravelly Sands.
		Sand with more than 12% fines.	SM		Silty Sands, Poorly Graded Sand–Silt Mixtures.
			SC		Clayey Sands, Poorly Graded Sand–Clay Mixtures
Fine Grained Soils More than half is smaller than No. 200 Sieve	**Silt and Clay** 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, Gravely Clays, Sandy Clays, Silty Clays, Lean Clays.
			OL		Organic Clays and Organic Silty Clays of Low Plasticity.
	Silt and Clay Liquid Limit Greater than 50%		MH		Inorganic Silts, Micaceous or Diatomaceous Fine Sandy or Silty Soils, Elastic Silts.
			CH		Inorganic Clays of High Plasticity, Fat Clays.
			OH		Organic Clays of Medium to High Plasticity.
Highly Organic Soils			PT		Peat and Other Highly Organic Soils.

BORING LOG LEGEND

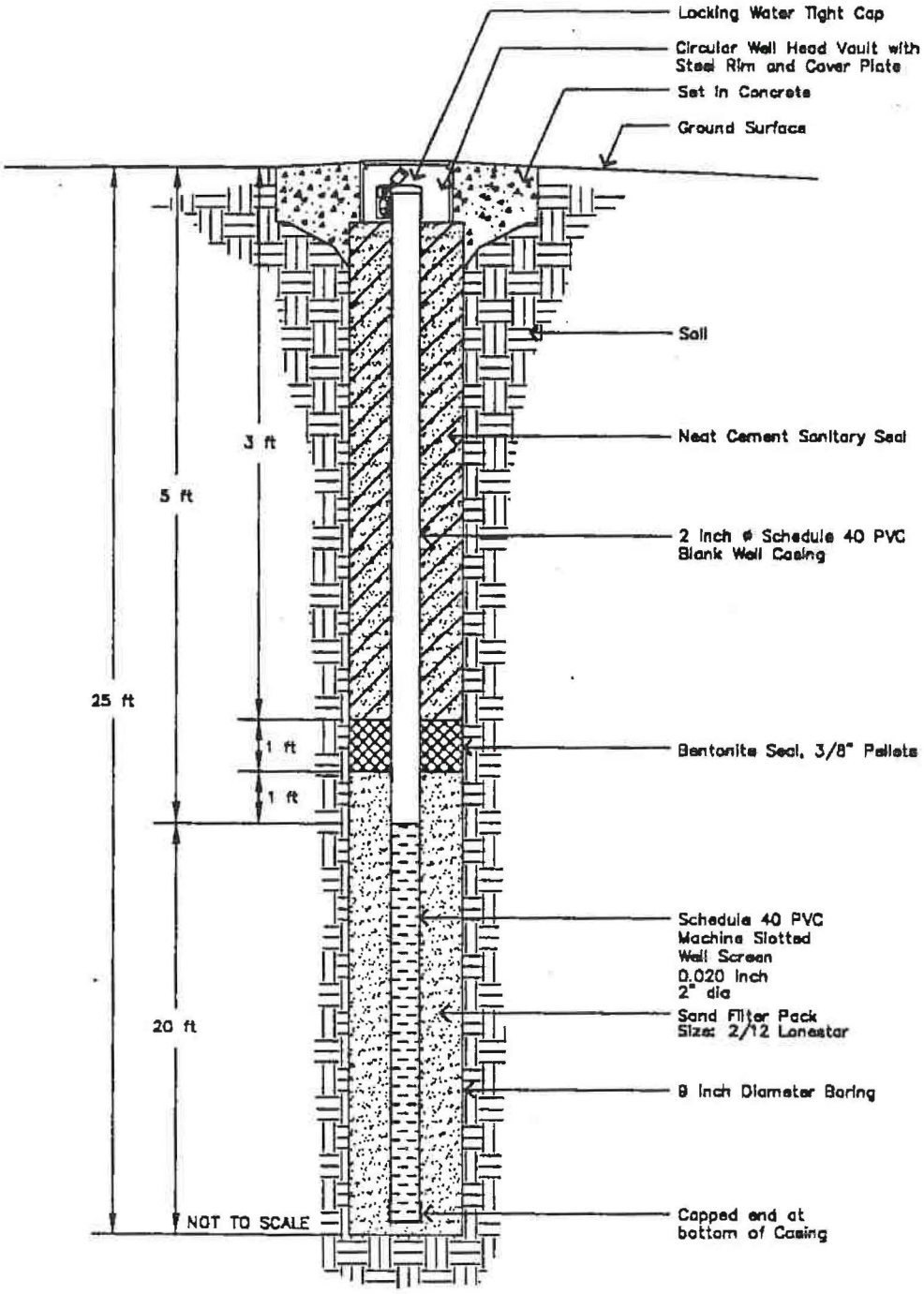
- ■ Soil sample submitted for chemical analysis
- ☒ Soil sample examined for soil classification.
- [N] Sample attempt with no recovery.
- ▽ First Identified free water.
- ▼ Initial Static Water Level

Sample Condition
G=Good, F=Fair, P=Poor, N=No Recovery

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UNIFIED SOIL CLASSIFICATION SYSTEM and BORING LOG LEGEND

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
W A	Soilclas	GSJ			



See text for information not noted

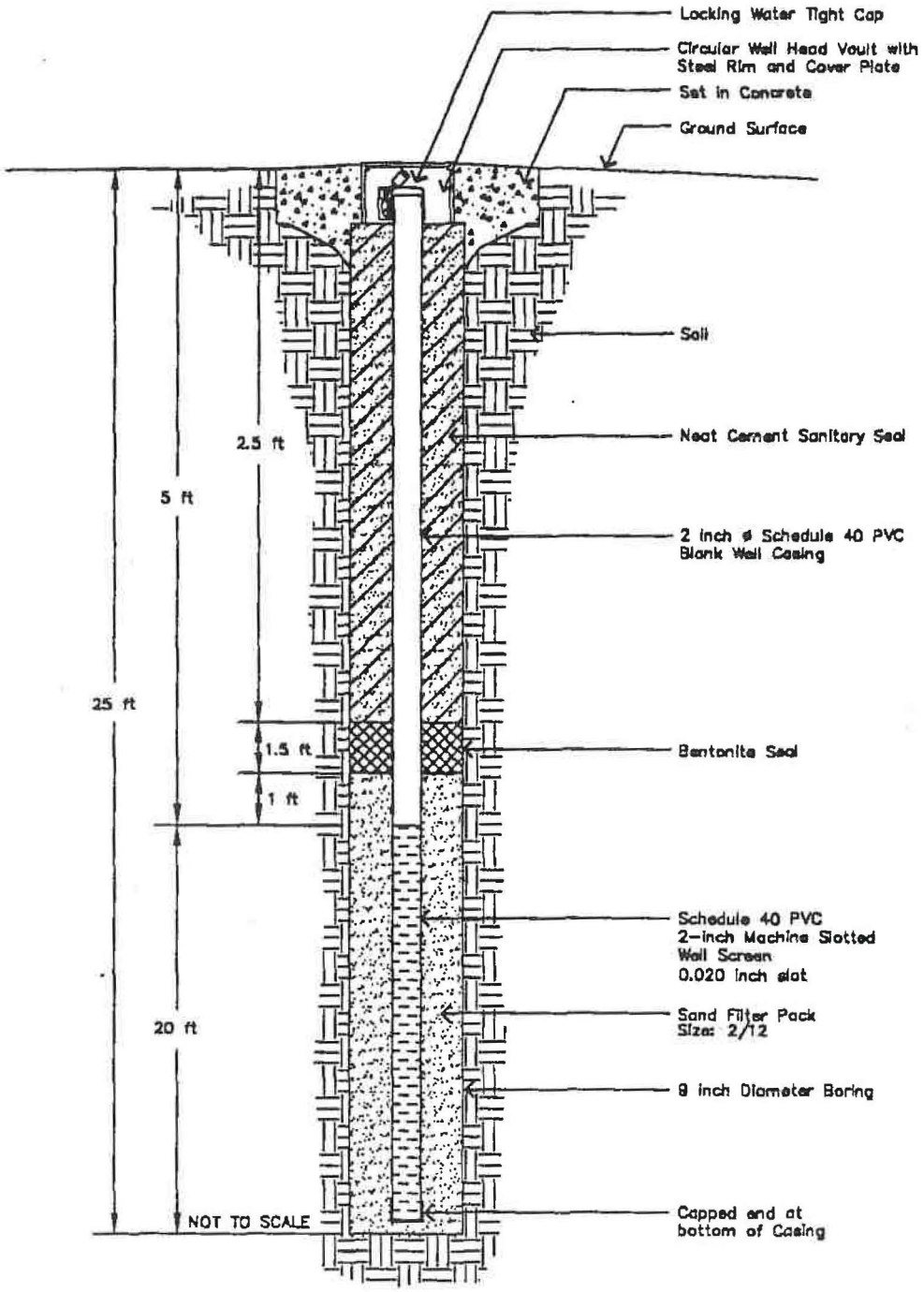
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WELL COMPLETION DIAGRAM MW-1

Soil and Groundwater Investigation
Monitoring Well
Simpson Redwood Company
Arcata, California

PLATE E

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
AJH	SI-WCMW1	RLN	7102.1		12/28/97



See text for information not noted

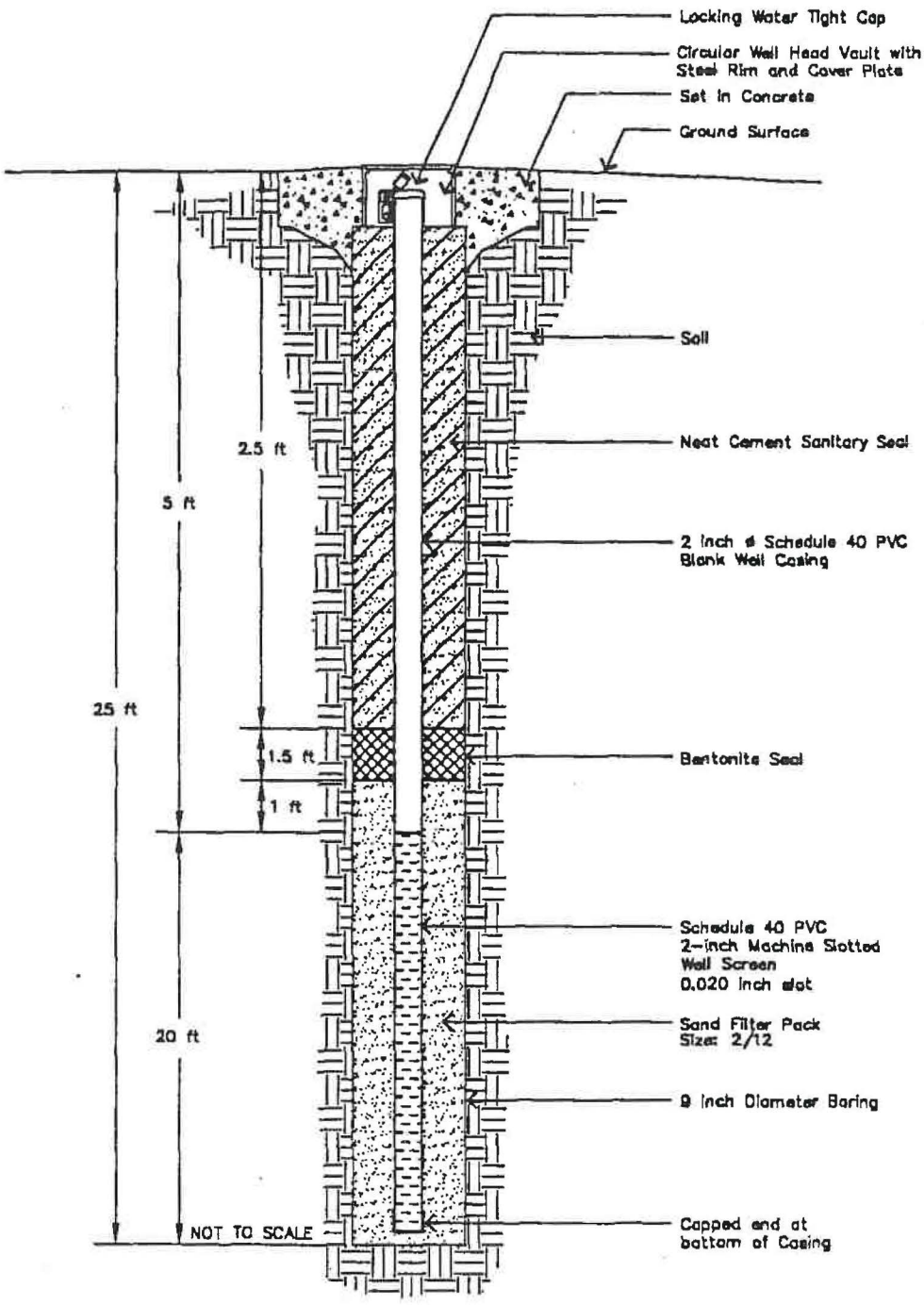
EnviroNet CONSULTING

WELL COMPLETION DIAGRAM MW-2

Soil and Groundwater Investigation
Monitoring Well
Simpson Redwood Company
Arcata, California

PLATE F

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
AJH	SI-WCMW2	RLN	7102.1		12/28/97



See text for information not noted

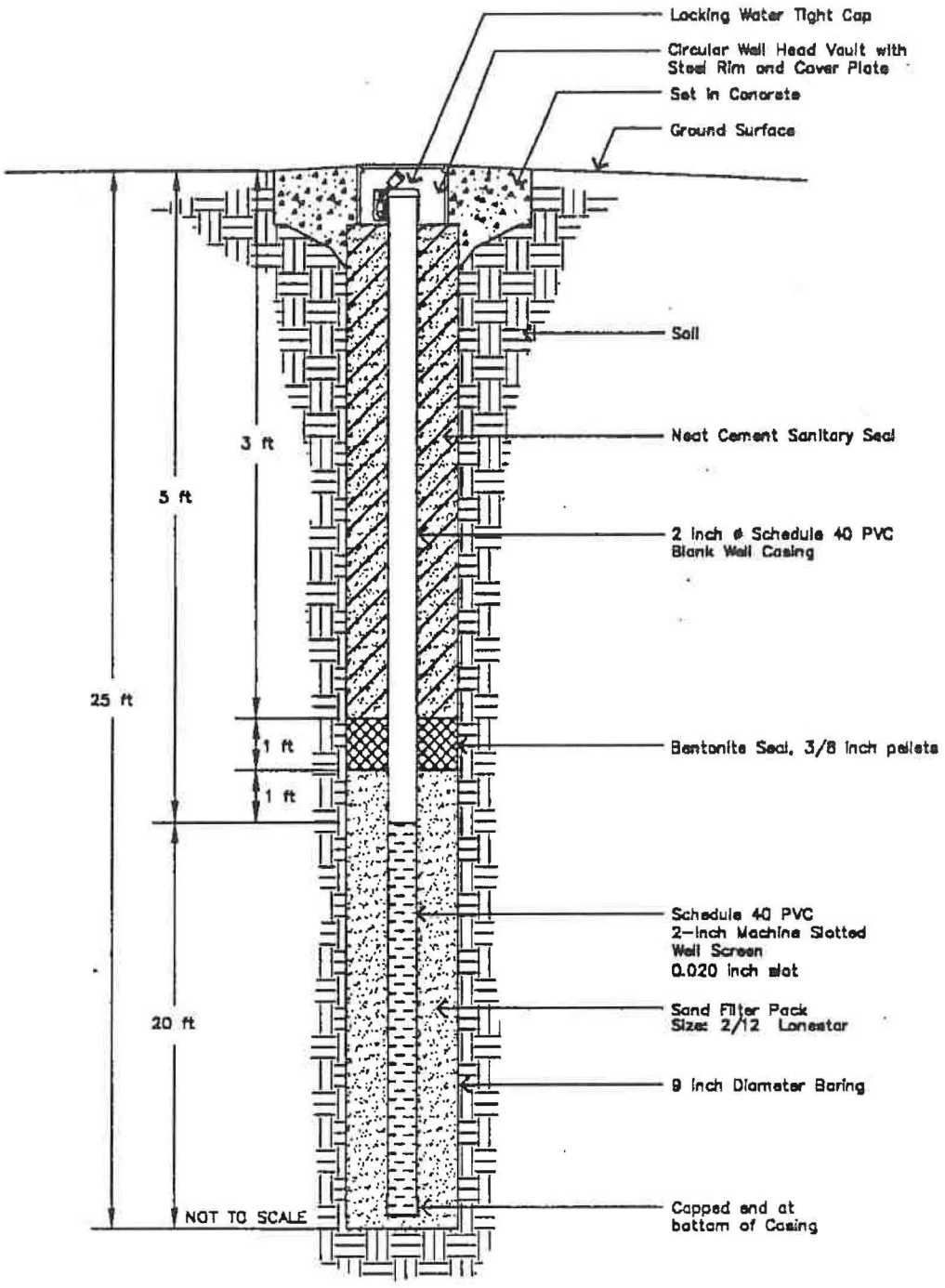
EnviroNet CONSULTING

WELL COMPLETION DIAGRAM MW-3

Soil and Groundwater Investigation
Monitoring Well
Simpson Redwood Company
Arcata, California

PLATE G

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
AJH	SI-WCMW3	RLN	7102.1		12/28/97



See text for information not noted

EnviroNet CONSULTING

WELL COMPLETION DIAGRAM MW-4

Soil and Groundwater Investigation
Monitoring Well
Simpson Redwood Company
Arcata, California

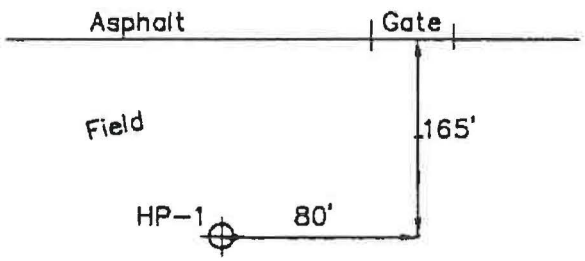
PLATE H

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
AJH	SI-WCMW4	RLN	7102.1		12/28/97

Date: 12/2/97 Start Time: BORING No. **HP-1**
Logged By: R.L. Nelson

Drilling Contractor: Weeks Drilling
Driller's Name: Gary Meyers
Drilling Method: 9" Hollow Stem Auger
Sampling Method: CMSSS
Monitoring Well Installed: Yes ☐ No ☒
Total Depth (ft): 15 ft.
Auger Depth (ft): 13.5 ft.
Hydropunch Interval (ft): 11' to 16' (2nd boring)
Notes:

LOCATION of BORING



See site plan also — No scale — NORTH

See Unified Soil Classification System for Legend and information not noted.

Sample	Sample Condition*	Inches Recovered	Drilling Rate	Blows / 6 in.	Initial Free Water	Static Water	PID (ppm)	Odor	Discolored	USCS Soil Class.	Depth in Feet	Graphic Log	
										GM	1		Dark gray Sandy Silty Gravel, medium dense,
											2		moist, very fine sand, fine subrounded gravel
											3		
☒	G	5		9			0	No	No	SP	4		Gray brown Gravelly Sand, medium dense, moist,
☒		6		14									40% fine to coarse gravel, 60% fine to coarse
■	G	6		13							5		sand, little fines, abundant chert gravel
											6		
											7		
											8		
											9		
											10		
☒		6		11									
☒		6		16			0	No	No		11		
■	G	6		16	▽						12		Dark gray well graded Sand, medium dense, wet,
											13		fine to coarse sand, little fines
				3						SW	14		
				23									
				30							15		
											16		

EnviroNet CONSULTING

BORING LOG HP-1
Soil and Groundwater Investigation
Simpson Lumber Company
Arcata, California

PLATE 1

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
AJH	si-hp-1	RLN	7102.1		12/28/97

APPENDIX C

-TABLES-

REMOVAL ACTION WORK PLAN

IMPLEMENTATION REPORT

AND

RESULTS OF INITIAL GROUNDWATER MONITORING

DATED MARCH 20, 1998

FOR THE

FORMER SIMPSON TIMBER COMPANY REMANUFACTURING

PLANT SITE LOCATED AT:

3315 FOSTER AVENUE

ARCATA, CALIFORNIA

Table 1: Disposed Stockpile Soil Sample Results EPA Methods 8260 and 8270

Sample ID	Date	8260	8270
		——————mg/kg——————	
C-2-6/13/97	06/13/97	ND	3.2 (PCP)
C-2-10/97(5:34)	10/01/97	0.026 acetone 0.009 bromobenzene	6.9 (PCP)
C-2-10/97(5:35)	10/01/97	0.15 acetone	2.1 (PCP)
C-2-10/97(5:36)	10/01/97	0.16 acetone	4.7 (PCP)
C-2-10/97(5:37)	10/01/97	ND	4.8 (PCP)
C-3-10/97(5:20)	10/01/97	ND	1.2 (PCP)
C-3-10/97(5:21)	10/01/97	0.0054 tichlorofluoromethane	5.5 (PCP)
C-3-10/97(5:22)	10/01/97	ND	0.19 (PCP)
COL-2-6/13/97	06/13/97	ND	2.6 (PCP)
COL-22-6/13/97	06/13/97	0.9 tichloroethene 59 toluene 41 ethylbenzene 106 total xylenes 38 1,3,5-trimethylbenzene 1 1,1,2,2-tetrachloroethane 5 isopropylbenzene 8.7 n-propylbenzene 4.8 tert-butylbenzene 1.7 sec-butylbenzene 5.4 p-isopropyltoluene 23 n-butylbenzene 30 naphthalene	5.1 (PCP)
COL-22-10/97	10/01/97	0.0078 toluene 0.0073 total xylenes	1.1 (PCP)

ND = Not Detected; Stockpile Locations Shown on Plate 11A.

Table 1 continued: Disposed Stockpile Soil Sample Results EPA Methods 8260 and 8270

Sample ID	Date	8260	8270
		mg/kg	
COL-34-6/13/97	06/13/97	23 toluene 9.9 ethylbenzene 114 total xylenes 0.96 1,1,2,2-tetrachloroethane 2.2 isopropylbenzene 3.2 n-propylbenzene 35 1,3,5-trimethylbenzene 4.4 tert-butylbenzene 1.1 sec-butylbenzene 4.5 p-isopropyltoluene 16 n-butylbenzene 24 naphthalene	6.9 (PCP)
COL-35-6/13/97	06/13/97	2.1 toluene 0.9 ethylbenzene 19.5 total xylenes 4.2 1,3,5-trimethylbenzene 1.3 1,2,4-trimethylbenzene 1.3 n-butylbenzene 3.8 naphthalene	1.8 (PCP)
COL-35-10/97	10/01/97	0.028 acetone	5.6 (PCP)

ND = Not Detected; Stockpile Locations shown on Plate 11A.

Table 2: Stockpile Soil Sample Results EPA Methods 8260 and 8270

Sample ID	Date	8260	8270
		mg/kg	
C-1	06/13/97	ND	ND
C-1-10/97(4:59)	10/01/97	ND	ND
C-1-10/97(5:00)	10/01/97	ND	ND
C-1-10/97(5:01)	10/01/97	ND	0.72 (PCP)
CP-4-10/97 (3:10)*	10/01/97	---	---
CP-4b**	12/06/97	---	ND
CP-4c***	12/06/97	---	ND
COL-1	12/06/97	ND	ND
(New) COL-3	06/13/97	ND	ND
New COL-3a	12/06/97	0.016 acetone	ND
New COL-3b	12/06/97	0.014 acetone 0.005 1,3,5-trimethylbenzene	ND
COL-10-10/97	10/01/97	ND	ND
COL-12	06/13/97	ND	0.558 (PCP)
(New) COL-14	06/13/97	ND	ND
(New) COL-14-S	06/13/97	ND	0.35 (PCP)
New COL-14	12/06/97	ND	ND
(New) COL-16	06/13/97	ND	ND
COL-20 added to COL-16	06/13/97	ND	ND

ND = Not Detected; --- = Not Analyzed
*** Sample ND for PCBs. ** and *** Cd ND, Cr ≤ 80, Pb ≤ 34, Ni ≤ 100, Zn ≤ 180.**
Stockpile Locations shown on Plate 11B.

Table 2 Continued: Stockpile Soil Sample Results EPA Methods 8260 and 8270

Sample ID	Date	8260	8270
		mg/kg	
COL-26-N	06/13/97	0.0059 1,3-dichlorobenzene 0.023 1,2-dichlorobenzene 0.0096 1,2,3-trichlorobenzene	ND
COL-26-S	06/13/97	0.006 1,2-dichlorobenzene 0.0058 1,2,3-trichlorobenzene	ND
COL-26-C	06/13/97	0.019 1,3-dichlorobenzene 0.013 1,4-dichlorobenzene 0.032 1,2-dichlorobenzene 0.011 1,2,4-trichlorobenzene 0.02 1,2,3-trichlorobenzene	ND
COL26a	12/06/97	0.15 acetone 0.025 naphthalene 0.036 1,3,5-trimethylbenzene 0. 094 total xylenes	1.1 (PCP)
COL26b	12/06/97	0.0089 total xylenes	ND
COL26c	12/06/97	0.01 1,2,4-trimethylbenzene 0.042 1,3,5-trimethylbenzene 0.059 total xylenes	ND
COL26d	12/06/97	0.0056 total xylenes	ND
COL26e	12/06/97	0.12 p-isopropyltoluene 0.13 naphthalene 0.043 1,2,4-trimethylbenzene 0.1 1,3,5-trimethylbenzene 0.96 total xylenes	0.84 (PCP)
COL26f	12/06/97	0.017 acetone 0.0053 toluene 0.0291 total xylenes	ND
COL26g	12/06/97	0.011 total xylenes	ND

ND = Not Detected; Stockpile locations shown on Plate 11B.

Table 2 continued: Stockpile Soil Sample Results EPA Methods 8260 and 8270

Sample ID	Date	8260	8270
		mg/kg	
New COL 34a	12/06/97	0.1 acetone 0.048 naphthalene 0.027 1,2,4-trimethylbenzene 0.085 1,3,5-trimethylbenzene 0.58 total xylenes	ND
New COL-34b	12/06/97	ND	ND
New COL-34c	12/06/97	15 n-butylbenzene 2.5 ethylbenzene 1 isopropylbenzene 4.1 p-isopropyltoluene 18 naphthalene 3.3 n-propylbenzene 0.8 sec-butylbenzene 31 1,2,4-trimethylbenzene 13 1,3,5-trimethylbenzene 0.94 toluene 82 total xylenes	ND
(New) COL-36-N	06/13/97	ND	ND
(New) COL-36-S	06/13/97	ND	ND
New COL-36-a	12/06/97	0.011 acetone 0.016 ethylbenzene 0.012 p-isopropyltoluene 0.041 1,3,5-trimethylbenzene 0.015 toluene 0.26 total xylenes	ND
New COL-36b	12/06/97	0.0099 toluene	ND
New COL-37a	12/06/97	0.19 acetone 0.13 p-isopropyltoluene 0.43 naphthalene 0.15 1,2,4-trimethylbenzene 0.46 1,3,5-trimethylbenzene 0.67 total xylenes	1.8 (PCP)

ND = Not Detected; Stockpile locations shown on Plate 11B.

Table 2 continued: Stockpile Soil Sample Results EPA Methods 8260 and 8270

Sample ID	Date	8260	8270
		mg/kg	
New COL-37b	12/06/97	0.005 total xylenes	ND
New COL-37c	12/06/97	ND	ND
RR-11	06/13/97	2.7 toluene 1.8 ethylbenzene 23.3 total xylenes 11 1,3,5-trimethylbenzene 3.3 1,2,4-trimethylbenzene 1 p-isopropyltoluene 5.6 n-butylbenzene 11 naphthalene	ND
Mid RR-11	12/06/97	0.013 acetone	ND
New RR-11a	12/06/97	1.4 n-butylbenzene 4.4 naphthalene 2.2 1,2,4-trimethylbenzene 0.9 1,3,5-trimethylbenzene 5.14 total xylenes	ND
New RR-11b	12/06/97	8.1 n-butylbenzene 2.3 p-isopropyltoluene 9.1 naphthalene 8.4 1,2,4-trimethylbenzene 4.0 1,3,5-trimethylbenzene 7.7 total xylenes	0.97 (PCP)
New RR-11c	12/06/97	0.076 acetone 0.22 p-isopropyltoluene 0.081 1,2,4-trimethylbenzene 0.21 1,3,5-trimethylbenzene 0.34 total xylenes	ND
RR-17	06/13/97	ND	ND
RR-17-10/97	10/01/97	ND	ND
RR-17- 10/97	10/01/97	ND	ND
RR-17- 10/97	10/01/97	ND	ND

ND = Not Detected; Stockpile locations shown on Plate 11B.

Table 3: Soil and Water Sample Analytical Results from South Lunch Room Excavation

Sample Number	Date	Units	Semivolatile Organics (EPA Method 8270 acid fraction components)	Volatile Organic Compounds (EPA Method 8260)
SW-W-12'	11/09/97	mg/kg	ND	0.013 acetone
SW-E-12'	11/09/97	mg/kg	ND	0.023 acetone 0.0071 ethylbenzene 0.011 total xylenes
SW-NW-12'	11/09/97	mg/kg	ND	ND
SW-NE-12'	11/09/97	mg/kg	ND	0.0091 n-butylbenzene
EX-B-20'	11/09/97	mg/kg	ND	0.049 n-butylbenzene 0.045 ethylbenzene 0.0083 p-isopropyltoluene 0.0092 naphthalene 0.0092 n-propylbenzene 0.023 1,2,4-trimethylbenzene 0.0095 1,3,5-trimethylbenzene 0.0097 toluene 0.151 total xylenes
Pit Water	11/08/97	mg/L	0.0022 (PCP)	0.0018 benzene 0.140 n-butylbenzene 0.023 cis-1,2-dichloroethene 0.860 ethylbenzene 0.018 isopropylbenzene 0.038 p-isopropyltoluene 0.170 naphthalene 0.062 n-propylbenzene 0.006 trichloroethene 0.310 1,2,4-trimethylbenzene 0.470 toluene 3.40 total xylenes 0.0064 sec-butylbenzene 0.120 1,3,5-trimethylbenzene

ND = Not Detected; Sample points on Plate 12.

Table 4: Groundwater Flow Direction and Gradient

Well Number	Date	Elevation Top of Well Casing	Depth to Groundwater in Feet	Groundwater Elevation	Groundwater Flow Direction and Gradient
MW-1	12/05/97	14.37	7.04	7.73	Due East i = 0.017
MW-2		16.88	8.17	8.17	
MW-3		15.93	11.03	4.90	
MW-4		16.15	11.06	5.09	

See Plate 8 for Monitoring Well Locations.

Table 5: Groundwater Sample Analytical Results

Well Number	Date	Volatile Organic Compounds EPA Method 8260	Semi-Volatile Organic Compounds EPA Method 8270
		mg/L	
MW-1	12/05/97	ND	ND
MW-2		ND	ND
MW-3		0.0015 benzene 0.0079 cis-1,2-dichloroethene	ND
MW-4		0.004 cis-1,2-dichloroethene	ND

ND = No test method compounds detected. Sample Points on Plate 8.

Table 6A: Surface Soil Sample Analytical Results from Beneath Debris Disposal Pile

Sample Number	Date	Units	Semivolatile Organics (EPA Method 8270 acid fraction components)	Volatile Organic Compounds (EPA Method 8260)
DP1-1'	09/25/97	mg/kg	ND	0.033 methylene chloride
DP2-1'	09/25/97	mg/kg	ND	0.320 methylene chloride
DP3-1'	09/25/97	mg/kg		0.250 methylene chloride
DP4-1'	09/25/97	mg/kg	ND	0.200 methylene chloride
SL-Surface	09/25/97	mg/kg	ND	1.1 acetone 3.3 methylene chloride

ND = Not Detected; Sample points on Plate 6.

Table 6B: EP Series Soil Sample Analytical Results

Sample Number	Date	lead	STLC-lead	zinc
		mg/kg	mg/L	mg/kg
EP16SS-1	12/02/97	50	ND	130
EP16SS-2	12/02/97	52	ND	250
EP16SS-3	12/02/97	31	----	180
EP16SS-4	12/02/97	83	ND	170
EP16SS-5	12/02/97	73	ND	170

ND = Not Detected; Sample Points on Plate 6.
---- = Not Analyzed

Table 7: Boring HP-1 Soil and Water Sample Analytical Results

Sample Number	Date	Units	Semivolatile Organics (EPA Method 8270 acid fraction components)	Volatile Organic Compounds (EPA Method 8260)
HP-1-4.5	12/02/97	mg/kg	ND	0.015 acetone
HP-1-9.5	12/02/97	mg/kg	ND	0.014 acetone
HP-1-14.5	12/02/97	mg/kg	ND	ND
HP-1-W	12/02/97	mg/L	ND	ND

ND = Not Detected; Sample point on Plate 6.

Table 8: CON-4 Series Soil and Water Sample Analytical Results

Sample Number	Date	Units	Sample Location	PCBs	Total Organic Carbon
CON-4-Water-D	12/05/97	mg/L	30' downstream of CON-4	ND	----
CON-4-Water-U	12/05/97	mg/L	30' upstream of CON-4	ND	----
CON-4-R-Soil	12/05/97	mg/kg	Retest of soil at CON-4	0.043 (PCBs)* Aroclor 1260	7,300

ND = Not Detected; * Sample Run for STLC PCBs which were ND.
---- = Not Analyzed; Sample points on Plate 3.

Table 9: Evaporation Pond Sediment Sample Analytical Results - Collected 12/03/97

Sample Number	TPH-d	TPH-mo	Volatile Organic Compounds	Semi-Volatile Organic Compounds (Acid Fraction Components)	CAM 5 Metals	PCB	Formalde-hyde
	mg/kg						
Evaporation Pond Sediment	ND	ND	ND	ND	Cd ND Cr 76 Pb 7.6 Zn 97 Ni 100	ND	ND

ND = Not Detected; Sample point on Plate 13.

Table 10: Drainage Outlet Soil Sample Analytical Results - Collected 12/05/97

Sample Number	TPH-d	TPH-mo	Semivolatile Organics (EPA Method 8270 acid fraction components)	Volatile Organic Compounds (EPA Method 8260)
	mg/kg			
GRO-1-1.5-R	ND	180	ND	0.022 acetone
DRO2-2-1.5-R	ND	78	ND	0.11 acetone 0.023 2-butanone

ND = Not Detected; Sample points on Plate 11B.

Table 11: Stockpile Soil Volume and Source - December, 1997

Stockpile ID	Volume cubic yards	Source	Status
C-1	400	south lunch room area	Same Location
C-2	1400	south lunch room area	Forward Landfill
C-3	300	debris disposal area - paint cans	Forward Landfill
CP-1	~~180~~	clean overburden - inc former COL -14 from bunker C AGT	Moved to COL-16 and then Combined with CP-2
CP-2	190+180	diesel AGT-1 -inc former COL-16 & COL-20	CP-1 was Added - Bunker C AGT
CP-3	280+60	diesel AGT-1 - inc former COL-22 & RR-11	COL-3 was Added
CP-4	100	ditch near wash rack, was Old Trench Soil	Same Location
COL-1	50	overburden - south lunch room	Clean Overburden
COL-2	90	south lunch room area	Forward Landfill
COL-3	~~60~~	diesel AGT-1	~~Combined with CP-3~~
NEW COL-3	300	south lunch room area	Clean Overburden
COL-10	60	debris disposal area - paint cans	Same Location
COL-11	400	debris disposal area - paint cans	Forward Landfill
COL-12	80	south lunch room area	Same Location
COL-14	~~60~~	diesel AGT-1 (mis-identified as south lunch room in previous report)	Moved to CP-1, Then to CP-2
NEW COL-14	60	south lunch room area	New Stockpile

Stockpile locations shown on Plates 11A and 11B.

Table 11 continued: Stockpile Soil Volume and Source - December, 1997

Stockpile ID	Volume cubic yards	Source	Status
COL-16	~~50+80~~	diesel AGT-1 (mis-identified in prior report)	COL-20 was Added Then Moved to CP-2
NEW COL-16	130	south lunch room area	New Stockpile
COL-20	~~80~~	diesel AGT-1 (mis identified in prior report)	Combined with COL-16
COL-22	~~140~~	south lunch room area	~~Forward Landfill~~
COL-25	60	debris disposal area - paint cans	Forward Landfill
COL- 26	~~100~~	diesel AGT-1	~~Combined with COL-28~~
NEW COL-26	650	south lunch room area	New Stockpile
COL-28	120+100	diesel AGT-1	COL-26 was Added
COL-29	140	south lunch room - paint	Forward Landfill
COL-32	80+120	diesel AGT-1	Col-36 was Added
COL-34	90	south lunch room area	Forward Landfill
NEW COL-34	260	south lunch room area	New Stockpile
COL-35	90	south lunch room area	Forward Landfill
COL-36	~~120~~	bunker "C" AGT-2	~~Combined with Col-32~~
NEW COL-36	300	south lunch room area	New Stockpile
NEW COL-37	300	south lunch room area	New Stockpile
RR-10	80	bunker "C" AGT-2	Same Location
RR-11	~~80~~	south lunch room area	~~Combined with RR-17~~
NEW RR-11	240	south lunch room area	New Stockpile
RR-17	380+80	south lunch room area	RR-11 was Added
LANDFILL	40	debris disposal area (O&G and metals)	Forward Landfill

Stockpile locations shown on Plates 11A and 11B.

Table 12: Stockpile Soil Sample Results, TPH-d, TPH-mo, and CAM 5 Metals - Collected 01/15/98

Sample Number	TPH-d	TPH-mo	Cd	Cr	Pb	Ni	Zn
	mg/kg						
SP1(A-D)2 Composite	---	---	0.89	60	115	76	167
SP1-(A-D) Composite	ND	ND	---	---	---	---	---
SP2(A-D)2 Composite	---	---	0.70	55	58	66	123
SP2-(A-D) Composite	ND	290	---	---	---	---	---
SP3(A-D)2 Composite	---	---	1.2	60	54	74	146
SP3-(A-D) Composite	ND	110	---	---	---	---	---
SP4(A-D)2 Composite	---	---	0.58	63	13	82	58
SP4-(A-D) Composite	ND	ND	---	---	---	---	---

ND = Not Detected; --- = Not Analyzed. Note that same sample was given two different numbers, with one sample set being analyzed for CAM 5 Metals and the other sample set being analyzed for diesel and motor oil.

Table 13-1: Baker Tank Treated Water Results

Sample	Date	benzene	toluene	ethylbenzene	xylenes (total)	naphthalene	n-butylbenzene
		mg\L					
768	11/24/97	ND	ND	ND	ND	ND	ND
882-11-10	11/10/97	ND	ND	ND	ND	ND	ND
882-12-3	12/03/97	ND	ND	ND	0.002	ND	ND
1159-11-10	11/10/97	ND	ND	ND	ND	ND	ND
1159-12-3	12/03/97	ND	ND	ND	ND	ND	ND
1187	11/24/97	ND	ND	ND	ND	ND	ND
1217-11-6	11/06/97	ND	0.130	0.130	0.586	0.0015	0.015
1217	11/24/97	ND	ND	ND	ND	ND	ND
1363-11-10	11/10/97	ND	ND	ND	ND	ND	ND
1363	11/24/97	ND	ND	ND	ND	ND	ND
1363	12/15/97	ND	ND	ND	ND	ND	ND
1744-11-10	11/10/97	ND	ND	ND	ND	ND	ND
1744	11/24/97	ND	ND	ND	ND	ND	ND

ND = Not Detected

Table 13-1 continued : Baker Tank Treated Water Results

Sample	Date	benzene	toluene	ethylbenzene	xylenes (total)	naphthalene	n-butylbenzene
		mg/L					
1744	12/15/97	ND	ND	ND	ND	ND	ND
1835-11-6	11/06/97	ND	0.0014	ND	0.0029	ND	ND
1835-11-10	11/10/97	ND	ND	ND	ND	ND	ND
1835-12-3	12/03/97	ND	ND	ND	ND	ND	ND
1835	12/15/97	ND	ND	ND	ND	ND	ND
1933-11-10	11/10/97	ND	ND	ND	ND	ND	ND
1933	11/24/97	ND	ND	ND	ND	ND	ND
1933	12/15/97	ND	ND	ND	ND	ND	ND
1933-12-18	12/18/97	ND	ND	ND	ND	ND	ND
1961-11-6	11/06/97	ND	0.0013	ND	0.0024	ND	ND
1961	11/24/97	ND	ND	ND	ND	ND	ND
1961	12/08/97	ND	ND	ND	ND	ND	ND
Baker 1961-12-23	12/23/97	ND	0.048	0.0042	0.55	0.015	ND

ND = Not Detected

Table 13-1 continued: Baker Tank Treated Water Results

Sample	Date	benzene	toluene	ethylbenzene	xylenes (total)	naphthalene	n-butylbenzene
		mg\L					
1962	11/24/97	ND	ND	ND	ND	ND	ND
1986-11-6	11/06/97	ND	0.0024	0.0012	0.0044	ND	ND
1986	11/24/97	ND	ND	ND	ND	ND	ND
1986	12/08/97	ND	ND	ND	ND	ND	ND
2125 11/10/97	11/10/97	ND	ND	ND	ND	ND	ND
2506-12-3	12/03/97	ND	ND	ND	ND	ND	ND
2521	11/24/97	ND	ND	ND	ND	ND	ND
2521	12/08/97	ND	ND	ND	ND	ND	ND
2521-12-19	12/19/97	ND	0.640	1.3	6.5	0.0078	ND
2565-12-3	12/03/97	ND	ND	ND	ND	ND	ND

ND = Not Detected

Table 13-2: Baker Tank Treated Water Results

Sample	Date	1,2,4 - trimethylbenzene	n - propylbenzene	1,3,5 - trimethylbenzene	trichloroethene	Isopropyl benzene	sec - butylbenzene	p- Isopropyltoluene
		mg/L						
768	11/24/97	ND	ND	ND	ND	ND	ND	ND
882-11-10	11/10/97	ND	ND	ND	ND	ND	ND	ND
882-12-3	12/03/97	0.0035	ND	ND	ND	ND	ND	0.0028
1159-11-10	11/10/97	ND	ND	ND	ND	ND	ND	ND
1159-12-3	12/03/97	ND	ND	ND	ND	ND	ND	ND
1187	11/24/97	ND	ND	ND	ND	ND	ND	ND
1217-11-6	11/06/97	0.059	0.0097	0.025	ND	0.0042	ND	0.0052
1217	11/24/97	ND	ND	ND	ND	ND	ND	ND
1363-11-10	11/10/97	ND	ND	ND	ND	ND	ND	ND
1363	11/24/97	ND	ND	ND	ND	ND	ND	ND
1363	12/15/97	ND	ND	ND	ND	ND	ND	ND
1744-11-10	11/10/97	ND	ND	ND	ND	ND	ND	ND
1744	11/24/97	ND	ND	ND	ND	ND	ND	ND

ND = Not Detected

Table 13-2 continued: Baker Tank Treated Water Results

Sample	Date	1,2,4 trimethylbenzene	n - propylbenzene	1,3,5 - trimethylbenzene	trichloroethene	isopropyl benzene	sec - butylbenzene	p- isopropyltoluene
		mg/L						
1744	12/15/97	ND	ND	ND	ND	ND	ND	ND
1835-11-6	11/06/97	ND	ND	ND	ND	ND	ND	ND
1835-11-10	11/10/97	ND	ND	ND	ND	ND	ND	ND
1835-12-3	12/03/97	ND	ND	ND	ND	ND	ND	ND
1835	12/15/97	ND	ND	ND	ND	ND	ND	ND
1933-11-10	11/10/97	ND	ND	0.0016	ND	ND	ND	0.0014
1933	11/24/97	ND	ND	ND	ND	ND	ND	ND
1933	12/15/97	ND	ND	ND	ND	ND	ND	ND
1933-12-18	12/18/97	ND	ND	ND	ND	ND	ND	ND
1961-11-6	11/06/97	ND	ND	ND	ND	ND	ND	ND
1961	11/24/97	ND	ND	ND	ND	ND	ND	ND
1961	12/08/97	ND	ND	ND	ND	ND	ND	ND
Baker 1961-12-23	12/23/97	0.063	ND	0.024	ND	0.0014	ND	0.007

ND = Not Detected

Table 13-2 continued: Baker Tank Treated Water Results

Sample	Date	1,2,4 - trimethylbenzene	n - propylbenzene	1,3,5 - trimethylbenzene	trichloroethene	isopropyl benzene	sec - butylbenzene	p- isopropyltoluene
		mg/L						
1962	11/24/97	ND	ND	ND	ND	ND	ND	ND
1986-11-6	11/06/97	ND	ND	ND	ND	ND	ND	ND
1986	11/24/97	ND	ND	ND	ND	ND	ND	ND
1986	12/08/97	ND	ND	ND	ND	ND	ND	ND
2125-11/10/97	11/10/97	ND	ND	ND	ND	ND	ND	ND
2506-12-3	12/03/97	ND	ND	ND	ND	ND	ND	ND
2521	11/24/97	ND	ND	ND	ND	ND	ND	ND
2521	12/08/97	ND	ND	ND	ND	ND	ND	ND
2521-12-19	12/19/97	0.67	0.12	0.26	0.0023	0.04	0.014	0.077
2565-12-3	12/03/97	ND	ND	ND	ND	ND	ND	ND

ND = Not Detected

Table 14: MCLs and PRGs for Selected Chemicals of Detection

Contaminant	PRG res soil mg/kg	PRG tap water ug/L	MCL, drinking water standards ug/L
pentachlorophenol	2.5	0.56	1.0
Ethylbenzene	230	1,300	700
toluene	790	720	150
xylenes (total)	320	1,400	1,750
cis-1,2-dichloroethene	31	61	6.0
naphthalene	240	240	NE
Total Petroleum Hydrocarbons Gasoline, Diesel, Motor Oil	NE	NE	NE
acetone	2,100	610	NE
phenanthrene	NE	NE	NE
methylene chloride	7.8	4.3	NE
polychlorinated biphenyls	0.066	0.0087	0.5
benzo(a)pyrene	0.061	0.0092	0.2
bis (2-ethylhexyl)phthalate	32	4.8	NE
p-isopropyltoluene	NE	NE	NE
benzene	0.63	0.39	1.0
2-butanone (MEK)	7,100	1,900	NE
trans-1,2-dichloroethene	78	120	10
isopropylbenzene	NE	NE	NE

NE = None Established

Table 14 Continued: MCLs and PRGs for Selected Chemicals of Detection

Contaminant	PRG res soil mg/kg	PRG tap water ug/L	MCL_s drinking water standards ug/L
n-propylbenzene	NE	NE	NE
1,3,5-trimethylbenzene	NE	NE	NE
4-isopropyltoluene	NE	NE	NE
n-butylbenzene	NE	NE	NE
2,4,5-trichlorophenol	6,500	3,700	NE
tert-butylbenzene	NE	NE	NE
kerosene or mineral spirits	NE	NE	NE
sec-butylbenzene	NE	NE	NE
2-methylnaphthalene	NE	NE	NE
2-methylphenol	3,300	1,800	NE
butyl benzyl phthalate	930	7,300	NE
n-butylbenzene	NE	NE	NE
p-isopropylbenzene	NE	NE	NE
n-propylbenzene	NE	NE	NE
1,2,4-trimethylbenzene	NE	NE	NE
carbon tetrachloride	0.23	0.17	0.5
lead	400	4.0	15
zinc	23,000	11,000	NE

NE = None Established

Table 14 Continued: MCLs and PRGs for Selected Chemicals of Detection

Contaminant	PRG res soil mg/kg	PRG tap water ug/L	MCL, drinking water standards ug/L
tetrachlorophenol	NE	NE	NE
chlorobenzene	65	39	NE
2-chlorotoluene	NE	NE	NE
4-methylphenol	330	180	NE
1,1-dichloroethene	0.037	0.046	6.0
trichloroethene	3.2	1.6	5.0
1,2,4-trichlorobenzene	570	190	70
1,2,3-trichlorobenzene	NE	NE	NE
1,1,2,2-tetrachloroethane	0.45	0.055	1.0
bromobenzene	NE	NE	NE
trichlorofluoromethane	380	1,300	150
benzoic acid	100,000	150,000	NE
1,3-dichlorobenzene	500	180	NE
1,4-dichlorobenzene	3.6	0.47	5.0
1,2-dichlorobenzene	700	370	600

NE = None Established

Department of Toxic Substances Control

Jesse R. Huff, Director
700 Heinz Avenue, Bldg. F, Suite 200
Berkeley, California 94710-2721

Gray Davis
Governor

Winston H. Hickox
Secretary for
Environmental
Protection

February 18, 1999

COPY

Mr. Jim Brown
Simpson Timber Co
P.O. Box 1089
Arcata, California 95518-1089

Dear Mr. Brown:

CERTIFICATION OF FINAL REMOVAL ACTION, FORMER SIMPSON REMANUFACTURING PLANT, 3315 FOSTER AVENUE, CALIFORNIA

We are pleased to inform you that on February 18, 1999 the Department of Toxic Substances Control (Department) certified that the final removal action has been completed at the former Simpson Remanufacturing Plant on Foster Avenue, Arcata. A copy of the Removal Action Certification Form is enclosed for your records. The Department has determined that all appropriate removal/remedial actions have been completed. Please note, however, Simpson Timber Company must still comply with the terms of the Operation and Maintenance Agreement, signed on January 28, 1999.

We wish to thank you for your cooperation with the Department. If there are any questions please contact Derek Whitworth at (510) 540-3838 or by email dwhitwor@dtsc.ca.gov

Sincerely,

Barbara J. Cook

Barbara J. Cook, P.E., Chief
Northern California -
Coastal Cleanup Operations Branch

Enclosure: Removal Action Certification Form
Operation & Maintenance Agreement

cc: (with enclosures)
Mr. Joseph Breed
Simpson Timber Company
Legal Department
1201 Third Avenue, Suite 4900
Seattle, Washington, 98101-3045

Mr. Fred Jacobson
Simpson Timber Company
P.O. Box 68
Korbel, California 95550-4586

Ms. Linda Mackey
EnviroNet Consulting
3601 Regional Parkway, Suite A
Santa Rosa, California 95403

Mr. Dean Pratt
North Coast Regional Water /Quality Control Board
5550 Skylane Boulevard, Suite A
Santa Rosa, California 95403

Mr. Brian Cox
Humboldt County Division of Environmental Health
100 H Street Suite 100,
Eureka, California 95521

REMOVAL ACTION CERTIFICATION FORM

1. **Certification of Remedial or Removal Action:**

I hereby certify that the following information is true and correct to the best of my knowledge.

1. D A Whitworth — February 8, 1999
Project Manager — Date

2. [signature] — February 16, 1999
Unit Chief — Date

3. Barbara J Cox — February 18, 1999
Branch Chief — Date

2. **Certification Statement: Based upon the information which is currently and actually known to the Department,**

— The Department has determined that all appropriate response actions have been completed, that all acceptable engineering practices were implemented and that no further removal/remedial action is necessary.

— The Department has determined, based upon a remedial investigation or site characterization that the site poses no significant threat to public health, welfare or the environment and therefore implementation of removal/remedial measures is not necessary.

X The Department has determined that all appropriate removal/remedial actions have been completed and that all acceptable engineering practices were implemented; however, the site requires ongoing operation and maintenance (O&M) monitoring efforts. The site will be deleted from the "active" site list following (1) a trial operation and maintenance period and (2) execution of a formal written settlement between the Department and the responsible parties, if appropriate. However, the site will be placed on the Department's list of sites undergoing O&M to ensure proper monitoring of long-term clean-up efforts.

3. **Site Name and Location: (street address, city, zip code, and county)**

Simpson Remanufacturing Plant
3315 Foster Avenue
Arcata, California
Humboldt County

A. List any other names that have been used to identify this site:
Simpson Redwood Plant

B. Address of site if different from above: N/A

C. Assessor's Parcel Numbers:
Simpson Timber Company
506-231-05, 506-231-02, 506-231-01, 505-151-04, 505-151-03, 505-181-07
Simpson Common Paymaster Company
505-151-05, 506-131-11, 506-231-04, 506-241-16, 505-161-09, 505-161-10, 505-161-29

4. **Project Proponent:**

Simpson Timber Company
P. O. Box 1089,
Arcata, California 95518-1089

5. **Brief Description and History of the Site:**
The Site was operated as a plant to manufacture finished products from redwood lumber. It operated from the early 1950s until the late 1980s. At various times during the operation of the plant, surface coatings and fungal stain inhibitors were used. Wastes from these operations were released into the environment. During investigations conducted during 1987, the point source of release was identified. Contaminated soils were excavated and ultimately disposed off site at Forward landfill in Stockton, California. The groundwater was pumped out and treated through a transportable treatment unit before being discharged to the Greater Eureka Area (Elk River) Waste Water Treatment Plant. Approximately 1.2 million gallons of water were sent to the treatment plant.

6. **Type of Site:**

Bond-funded _ RP-funded X

Included in the Annual Work Plan?

Yes X No _

7. **Size of Site: (Based on Expenditure Plan definition of size)**

Small _ Medium X Large _ Extra Large _

8. **Dates of Remedial Action**

a. Initiated: November 17, 1997
b. Completed: December 5, 1997

9. **Response Action Taken on Site: (check appropriate action)**

X Removal Action (satisfactory abatement of site)
_ Final Remedial Action
_ RCRA enforcement/closure action
_ No action, further investigation verified that no cleanup action at site was needed.

A. Type of Remedial Action (e.g. Excavation and re-disposal on-site treatment): Excavation and off-site disposal at a landfill. Groundwater extraction and treatment with discharge to a municipal wastewater treatment plant.

B. Estimated quantity of waste associated with the site (i.e., ton/gallons/cubic yards) which was:

1. X treated — Amount: 1.2 million gallons g/water
2. _ untreated (capped sites) — Amount: _____
3. X removed — Amount: 2,654 tons soil

10. **Cleanup Levels/Standards**

A. What were the cleanup standards established by DTSC pursuant to the final Removal Action Workplan (RAW)?

The cleanup levels specified by the Final Removal Action Workplan for all the contaminants of concern were U.S. EPA Region 9 Preliminary Remedial Goals for contaminants of concern in the, soil and California Code of Regulations, Title 22, Division 4, Title 22, Article 5.5, Section 64444 Maximum Contaminant Levels (MCLs) - Organic Chemicals..

B. Were the specified cleanup standards met?

Yes__ No X

C. If "no", why not: N/A

The cleanup goals were met in all respects except for the presence of one contaminant, cis-1,2-dichloroethylene, found in groundwater at levels, 10 to 15 ug per liter, higher than the MCL of 6 ug per liter. Groundwater monitoring of six wells surrounding the contaminated zone has continued for this chemical, and other contaminants of concern, since the excavation and extraction were completed. Monitoring of groundwater for the contaminants found at the site will continue, at least annually, until four consecutive quarters do not show their presence at concentrations greater than MCLs.

11. DTSC Involvement in the Remedial Action:

A. Did the Department order the Remedial Action?
Yes __ No X

Date of Voluntary Cleanup Agreement April 21, 1997

B. Did the Department review and approve the following plans/procedures?:

Sampling Analysis Procedures	Date May 27, 1997
Health & Safety Protections	Date April 16, 1997
Removal/Disposal Procedures	Date N/A
Removal Action Plan	Date November 7, 1997
Remedial Action Plan	Date N/A
Remedial Design Specifications	Date November 7, 1997
Completion Report	Date February 13, 1998

C. If site was abated by a responsible party, did the Department receive a signed statement from a licensed professional on all phases of the Remedial Actions?

Date of statement February 13, 1998

D. Did a registered engineer or geologist verify that acceptable engineering practices were implemented

Yes X No _ Dates February 13, 1998

E. Did the Department confirm completion of all Remedial Actions?

Yes X No _ Date of verification December 22, 1998
(i.e. manifest, sampling, demonstrated installation and operation of treatment)

F. Did the Department (directly or through a contractor) actually perform the Remedial Action?

Yes _ No X Name of Contractor: _____

G. Was there a public participation plan in place?

Yes X No _

H. Was a Removal Action Workplan developed for this site?

Yes X No _

I. Did DTSC hold a public comment period regarding the draft RAW?

Yes X No _

J. Were public comments addressed?

Yes X No _ Date of DTSC analysis and response: November 7, 1997

K. Are all of the facts cited above adequately documented in the DTSC files? Yes X No. _

12. Was the U.S. EPA involved in the site cleanup?

Yes _ No X

13. Other Regulatory Agency Involvement in the Cleanup Action:

Agency:		**Activity:**
X	RWQCB	Provided comments on the RAW
_	ARB	_____
_	CHP	_____
_	CalTrans	_____
_	Other	_____

Name of contact persons and agency: Dean Prat, North Coast Regional Water Quality Control Board

14. Post-Closure Activities:

A. Will there be post-closure activities at this site? (e.g. Operation and Maintenance) Yes X No __

If yes, describe:

Initial quarterly groundwater monitoring for contaminants of concern in the six groundwater monitoring wells for four consecutive quarters. Thereafter, at least annual monitoring of all wells unless or until four consecutive quarters have shown that the contaminants of concern do not exceed MCL drinking water standards. The groundwater monitoring program is described in an Operation & Maintenance Agreement, signed January 28, 1999.

B. Have post-closure plans been prepared and approved by the Department? Yes X No __

C. Are deed restrictions proposed or in place? Yes _ No X

If "yes", have deed restrictions been recorded with the County recorder? Yes_ No_ Date_____

If "no", who is responsible for assuring that the deed restrictions are recorded?_____

D. Has cost recovery been initiated? Yes_ No X

E. Were local planning agencies notified of the cleanup action? Yes _ No x If yes, the name and address of agency:

15. Funding source and amount expended:

_ HWCA $_____ _ HSA $_____

16. Problems Encountered Which Caused Major Delays: N/A

17. Accomplishments Unique to this Project:

The remedial action was completed in less than 9 months after discovery of the contamination.

SITE CERTIFICATION SYNOPSIS

NAME OF SITE: Simpson Remanufacturing Plant

ADDRESS OF SITE: 3315 Foster Avenue, Arcata, California

DATE PROJECT BEGAN: January 1997

DATE PROJECT CERTIFIED: February 2, 1999

DESCRIPTION OF SITE AND CONTAMINANTS: The 209 acre site was operated as redwood remanufacturing plant from the early 1950s until the late 1980s. During that time, surface coatings and preservatives were used. Chemicals used as solvents (including benzene, toluene, xylenes) for surface coatings and in preservatives (pentachlorophenol) were found in the soil and groundwater in a small defined area close to where they were used.

DESCRIPTION OF REMOVALS AND REMEDIAL ACTIONS: Approximately 2,654 tons of soil containing solvents, paint residues, and pentachlorophenol were excavated. Excavated soil was transported by truck for disposal at the Forward landfill in Stockton, California. During excavation the pit had to be routinely pumped to remove groundwater. Approximately 1.2 million gallons of groundwater were pumped out, treated with activated carbon, and transported to the Greater Eureka Area Wastewater Treatment Plant.

DESCRIPTION OF PROBLEMS ENCOUNTERED WHICH CAUSED MAJOR DELAYS: N/A

DESCRIPTION OF ACCOMPLISHMENTS UNIQUE TO THIS PROJECT:
The site remediation work was completed within 9 months of discovery of contamination.

FINAL USE OF SITE: The remediated site covered less than 1 acre of a 209 acre property. Ownership of the whole property is being transferred by Simpson Timber Company to Sun Valley Floral Farms, a Dutch owned company, which occupies an adjacent property. Sun Valley Floral Farms which produces flowers for the national and international cut flower market will use the property to expand its operations..

JAN 28, 1999

In the matter of:	)	Docket No. HSA 98/99 - 016
	)	
Former Simpson Remanufacturing Plant	)	**ENFORCEABLE AGREEMENT**
3315 Foster Avenue	)	
Arcata, California	)	
	)	Health and Safety Code
A Hazardous Waste Site	)	Section 25187
	)	

AGREEMENT
OPERATION AND MAINTENANCE
FORMER SIMPSON REMANUFACTURING PLANT
ARCATA, HUMBOLDT COUNTY

This Agreement is made and entered into, by and between the State Department of Toxic Substances Control ("Department") and Simpson Timber Company, 5151 Highway 101 North, Eureka, ("Respondent"), the site owner.

WHEREAS:

1.0. Certain operations and maintenance of the groundwater monitoring system remain to be performed on the former Simpson Remanufacturing Plant, Arcata, for the remediation of groundwater. The Site is currently owned by Simpson Timber. The former Simpson Remanufacturing Plant is located at 3315 Foster Avenue, Arcata, Humboldt County. A Site location map showing the location of the site is attached as Exhibit "A". A map showing the location of the monitoring wells at the south west corner of the property is attached as Exhibit B.

AGREEMENT

2.0 The parties hereto, based upon the foregoing and in exchange for the mutual performances and forbearances described below, agree as follows:

2.1 Implementation of Operation and Maintenance Plan. Respondent shall implement the Department-approved Operation and Maintenance Plan attached hereto as Exhibit "C" for the monitoring of groundwater contamination. The plan requires sampling and analysis for hazardous waste constituents previously found in the groundwater at the site, initially for four quarters for each monitoring well and thereafter not less than three down gradient wells will be monitored annually until four successive quarters indicate that no contaminants are present at concentrations greater than the Maximum Contaminants Levels identified in the California Code of Regulations, Title 22, Division 4, Article 5.5, Part 64444. The Operation and Maintenance System shall be left in place and maintained by Respondent until and except to the extent that the Department authorizes Respondent in writing to discontinue, move or modify some or all of the Operation and Maintenance System because Respondent has met the cleanup goals for the site, or because the modifications would better achieve the cleanup goals, or because the Operation and Maintenance System could not achieve the cleanup goals and other cleanup methods will be implemented or it has been demonstrated that the maximum achievable cleanup has occurred. A table of cleanup levels for the groundwater is attached as Exhibit D.

2.2 Modifications. Respondent shall give the Department at least sixty (60) days advance written notice prior to any proposed modifications, discontinuation or other disruption of the Operation and Maintenance System. The written notice shall be sent by certified mail to the Department at the address set out in Paragraph 7.0 of this Agreement. The written notice to the Department shall include a detailed description of the work to be done or modifications to be made and a map showing the exact location of the proposed work and the reasons for modification, disruption or discontinuation.

2.3 Environmental Monitoring. Respondent shall implement the Operation and Maintenance Plan and reporting requirements approved by the Department. Respondent shall also comply with the inspection, maintenance, and other applicable requirements of other agencies.

2.4 Annual Summary Reports. Respondent shall submit, on an annual basis, a Summary Report of its activities under the provisions of this Agreement. The first year starting July 1, 1998 and ending June 30, 1999. The report shall be received by the Department by the thirtieth (30th) day of the first month after each year ends and shall describe:

a) Specific actions taken by or on behalf of Respondent during the previous year;

b) Actions expected to be undertaken during the current year;

c) All planned activities for the next year;

d) Any requirements under this Agreement that were not completed;

e) Any problems or anticipated problems in complying with this Agreement; and

f) Any data generated under this Agreement, and any significant findings from these data.

2.5 Five Year Review Respondent shall review and reevaluate the remedial action after a period of five (5) years from the completion of the first year of groundwater sampling (July 1, 1998 to June 30, 1999) and every 5 years thereafter. The review and reevaluation shall be conducted pursuant to Section 121 of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 42 U.S.C. 9601 et seq., as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, Pub. L. 99-499. Within thirty (30) calendar days before the end of the five-year period, Respondent shall submit a remedial action review work plan to the Department for review and approval. Within sixty (60) days of the Department's approval of the work plan, Respondent shall implement the work plan and shall submit a comprehensive report of the results of the remedial action review. The report shall provide the results of all sample analyses, tests and other data generated or received by the Respondent and evaluate the adequacy of the implemented remedy in protecting public health, safety and the environment.

2.6 Emergency Response Action/Notification. In the event of any action or occurrence (such as a fire, earthquake, explosion, or human exposure to hazardous substances caused by the release or threatened release of a hazardous substance) during the course of this

Agreement, Respondent shall immediately take all appropriate action to prevent, abate, or minimize such emergency, release, or immediate threat of release and shall immediately notify the Project Manager. Respondent shall take such action in consultation with the Project Manager and in accordance with all applicable provisions of this Agreement. Within seven (7) days of the onset of such an event, Respondent shall furnish a report to the Department, signed by Respondent' Project Coordinator, setting forth the events which occurred and the measures taken in the response thereto. In the event that Respondent fail to take appropriate response and the Department takes the action instead, Respondent shall be liable to the Department for all costs of the response action. Nothing in this section shall be deemed to limit any other notification requirement to which the Respondent may be subject.

3.0 Obligations of the Department. The Department agrees to review and oversee the measures to be performed by Respondent pursuant to this Agreement.

4.0 Project Coordinator. The responsibilities of the Respondent' Project Coordinator will be to receive and submit all notices, comments, approvals, and other communications from and to the Department. Respondent shall promptly notify the Department of any change in the identity of the Project Coordinator.

5.0 Project Engineer/Geologist. The work performed pursuant to this Agreement shall be under the direction and supervision of a qualified professional engineer or a registered

geologist in the State of California with expertise in hazardous substance site cleanup. Respondent shall promptly notify the Department of any change in the identity of the Project Engineer/Geologist; and must submit: a) The name and address of the project engineer or geologist chosen by the Respondent; and b) in order to demonstrate expertise in hazardous substance cleanup, the resume of the engineer or geologist, and the statement of qualifications of the consulting firm responsible for the work..

6.0 Quality Control/Quality Assurance (QC/QA). All sampling and analysis conducted by Respondent under this Agreement shall be performed in accordance with QC/QA procedures submitted by Respondent and approved by the Department pursuant to this Agreement.

7.0 Submittals. All submittals and notifications from Respondent that are required by this Agreement, shall be sent to:

Barbara J. Cook, P.E., Branch Chief
Attn: Derek Whitworth
Northern California Coastal Cleanup Operations Branch
Department of Toxic Substances Control
700 Heinz Avenue Suite 200
Berkeley, California 94710

Lee A. Michlin, Executive Officer
Attn Dean Pratt
Regional Water Quality Control Board
5550 Skylane Blvd., Suite A
Santa Rosa, CA 95403

8.0. Communications. All approvals and decisions of the Department made regarding submittals and notifications will be communicated to Respondent in writing by the Northern California Coastal Cleanup Operations Branch Chief, Department of Toxic Substances Control, or his/her designee. Confirmation of a designation shall be provided in writing by the Department in order to validate any approvals or decisions made by a Branch Chief's designee. No informal advice, guidance, suggestions or comments by the Department regarding reports, plans, specifications, schedules or any other writings by Respondent shall be construed to relieve Respondent of the obligations to obtain such formal approvals as may be required.

9.0 Department Review and Approval. (a) If the Department determines that any report, plan, schedule or other document submitted to the Department for approval pursuant to this Agreement fails to comply with this Agreement or fails to protect public health or safety or the environment, the Department may: (1) modify the document as deemed necessary and approve the document as modified; or (2) return comments to Respondent with recommended changes and a date by which Respondent must submit to the Department a revised document incorporating the recommended changes. (b) Any modifications, comments or other directive issued pursuant to (a) above, are incorporated into this Agreement. Any noncompliance with these modifications or directives shall be deemed a failure or refusal to comply with this Agreement.

10.0 Stop Work Order. In the event that the Department determines that any activity

(whether or not pursued in compliance with this Agreement) may pose an imminent or substantial endangerment to the health or safety of people on the Site or in the surrounding area or to the environment, the Department may order Respondent to stop further implementation of this Agreement for such period of time needed to abate the endangerment. In the event that the Department determines that any activities (whether or not pursued in compliance with this Agreement) are proceeding without Department authorization, the Department may order Respondent to stop further implementation of this Agreement or activities for such period of time needed to obtain Department authorization, if such authorization is appropriate. Any deadline in this Agreement directly affected by a Stop Work Order, under this section, shall be extended for the term of the Stop Work Order.

11.0 Department Required Modifications. The Department may require modification, replacement, or additions to remediation facilities if those facilities are not achieving remediation objectives or protecting public health, safety or the environment, including those identified in the Removal Action Workplan. The Department may require additional evaluations, designs and the construction and operation of facilities to achieve these objectives.

12.0 Compliance with Applicable Laws. Respondent shall carry out this Agreement in compliance with all applicable local, state, and federal requirements, including, but not limited to, requirements to obtain permits and to assure worker safety.

13.0 Respondent Liabilities. Nothing in this Agreement shall constitute or be construed as a satisfaction or release from liability for any conditions or claims arising as a result of past, current or future operations of Respondent. Nothing in this Agreement is intended or shall be construe to limit the rights of any of the parties with respect to claims arising out of or relating to the deposit or disposal at any other location of substances removed from the Site. Nothing in this Agreement is intended or shall be construed to limit or preclude the Department from taking any action authorized by law to protect public health or safety or the environment and recovering the cost thereof. Notwithstanding compliance with the terms of this Agreement, Respondent may be required to take further actions as are necessary to protect public health and the environment.

14.0 Site Access. Access to the Site shall be provided at all reasonable times to employees, contractors and consultants of the Department. Nothing in this paragraph is intended or shall be construed to limit in any way the right of entry or inspection that the Department or any other agency may otherwise have by operation of any law. The Department and its authorized representatives shall have the authority to enter and move freely at the Site at all reasonable times for purposes including, but not limited to: inspecting records, operating logs, sampling and analytical data, and contracts relating to the Site; reviewing the progress of Respondent in carrying out the terms of this Agreement; conducting such tests as the Department may deem necessary; and verifying the data to the Department by Respondent. Respondent shall ensure that no conveyance of title, easement or other interest in the property shall be executed or consummated without incorporating the continued right of entry by the Department.

15.0 Sampling, Data and Document Availability. Respondent shall permit the Department and its authorized representatives to inspect and copy all sampling, testing, monitoring or other data generated by Respondent or on Respondent's behalf in any way pertaining to work undertaken pursuant to this Agreement. Respondent shall submit all such data upon request of the Department. Respondent shall inform the Department at least seven (7) days in advance of all field sampling under this Agreement, and shall allow the Department and its authorized representatives to take duplicates of any samples collected by Respondent pursuant to this Agreement. Respondent shall maintain a central repository of the data, reports, and other documents prepared pursuant to this Agreement.

16.0 Record Retention. All such data, reports and other documents shall be preserved by Respondent for a minimum of ten (10) years after the conclusion of all activities under this Agreement. If the Department requests that some or all of these documents be preserved for a longer period of time, Respondent shall either comply with that request or deliver the documents to the Department, or permit the Department to copy the documents prior to destruction. Respondent shall notify the Department in writing at least six (6) months prior to destroying any documents prepared pursuant to this Agreement.

17.0 Government Liabilities. The State of California shall not be liable for any injuries or damages to persons or property resulting from acts or omissions by Respondent, or related parties specified in paragraph 27.0, Parties Bound, in carrying out activities pursuant to this

Agreement, nor shall the State of California be held as a party to any contract entered into by Respondent or its agents in carrying out activities pursuant to this Agreement.

18.0 Additional Actions. By entering into this Agreement, the Department does not waive the right to take any further actions authorized by law.

19.0 Extension Requests. If Respondent is unable to perform any activity or submit any document within the time required under this Agreement, Respondent may, prior to expiration of the time, request an extension of the time in writing. The extension request shall include a justification for the delay. All such requests shall be in advance of the date on which the activity or document is due.

20.0 Extension Approvals. If the Department determines that good cause exists for an extension, it will grant the request and specify a new schedule in writing. Respondent shall comply with the new schedule, which is incorporated in this Agreement.

21.0 Financial Assurance. Within 30 days of the effective date of this Agreement, respondent shall obtain a surety bond in the amount of $36,000 to guarantee implementation of the Operation and Maintenance Plan, conduct of the five-year review as outlined in paragraph 3.5 hereof and pay cost as outlined in paragraph 24.0 hereof. The surety bond shall meet the

requirements set forth in Title 22 of the California Code of Regulation Section 66264.140, 35 seq. Proof that said surety bond has been obtained shall be provided to the Department within forty five (45) days of the effective date of this Agreement.

22.0 Cost Recovery. Respondent is liable for all of the Department's past and future costs incurred in responding to the contamination at the Site, including costs of overseeing response work performed by Respondent. Cost recovery may also be pursued by the Department under CERCLA, Health and Safety Code Section 25360, or any other applicable state or federal statute or common law. The Department will invoice Respondent for the Department's costs on a quarterly basis.

23.0 Severability. The requirements of this Agreement are severable, and Respondent shall comply with each and every provision hereof notwithstanding the effectiveness of any other provisions.

24.0 Incorporation of Plans, Schedules and Reports. All plans, schedules, reports, specifications and other documents that are submitted by Respondent pursuant to this Agreement are incorporated in this Agreement upon the Department's approval or as modified pursuant to Paragraph 11.0, Department Review and Approval, and shall be implemented by Respondent. Any noncompliance with the documents incorporated in this Agreement shall be deemed a

failure or refusal to comply with this Agreement.

25.0 Modification and Termination. Respondent may, upon written request, seek modification or termination of this Agreement at any time. This Agreement may be modified or terminated by mutual written agreement of the parties at any time.

26.0 Time Periods. Unless otherwise specified, time periods begin from the effective date of this Agreement and "days" means calendar days.

27.0 Parties Bound. This Agreement applies to and is binding upon Respondent and its officers, directors, agents, employees, contractors, consultants, receivers, trustees, successors and assignees, including but not limited to individuals, partners, and subsidiary and parent corporations, and upon the Department and any successor agency of the State of California that may have responsibility for and jurisdiction over the subject matter of this Agreement.

28.0 Effective Date: The effective date of this Agreement is the date of signature by the Department's authorized representative.

29.0 Representative Authority. Each undersigned representative of the parties to this Agreement certifies that she or he is fully authorized to enter into the terms and conditions of this

Agreement and to execute and legally bind the parties to this Agreement.

Barbara J. Cook, P.E., Chief
Northern California -Coastal Cleanup Operations Branch
Department of Toxic Substances Control

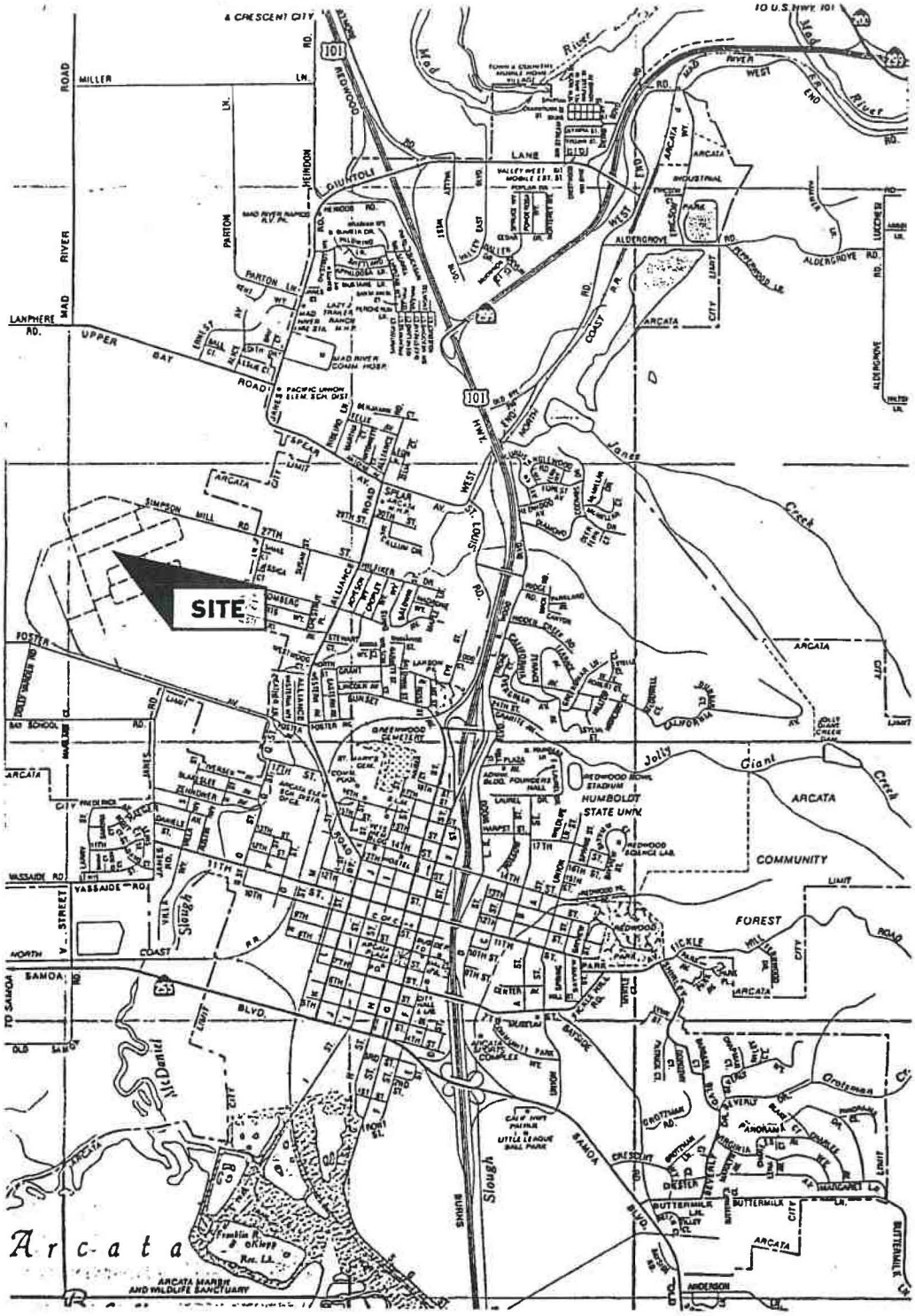
1/28/99
Date

Jim Brown, Vice President
General Manager
Simpson Timber Company

1/18/99
Date

EXHIBIT A

SITE MAP SHOWING SITE LOCATION



EnviroNet CONSULTING

SITE LOCATION MAP

Simpson Redwood Company

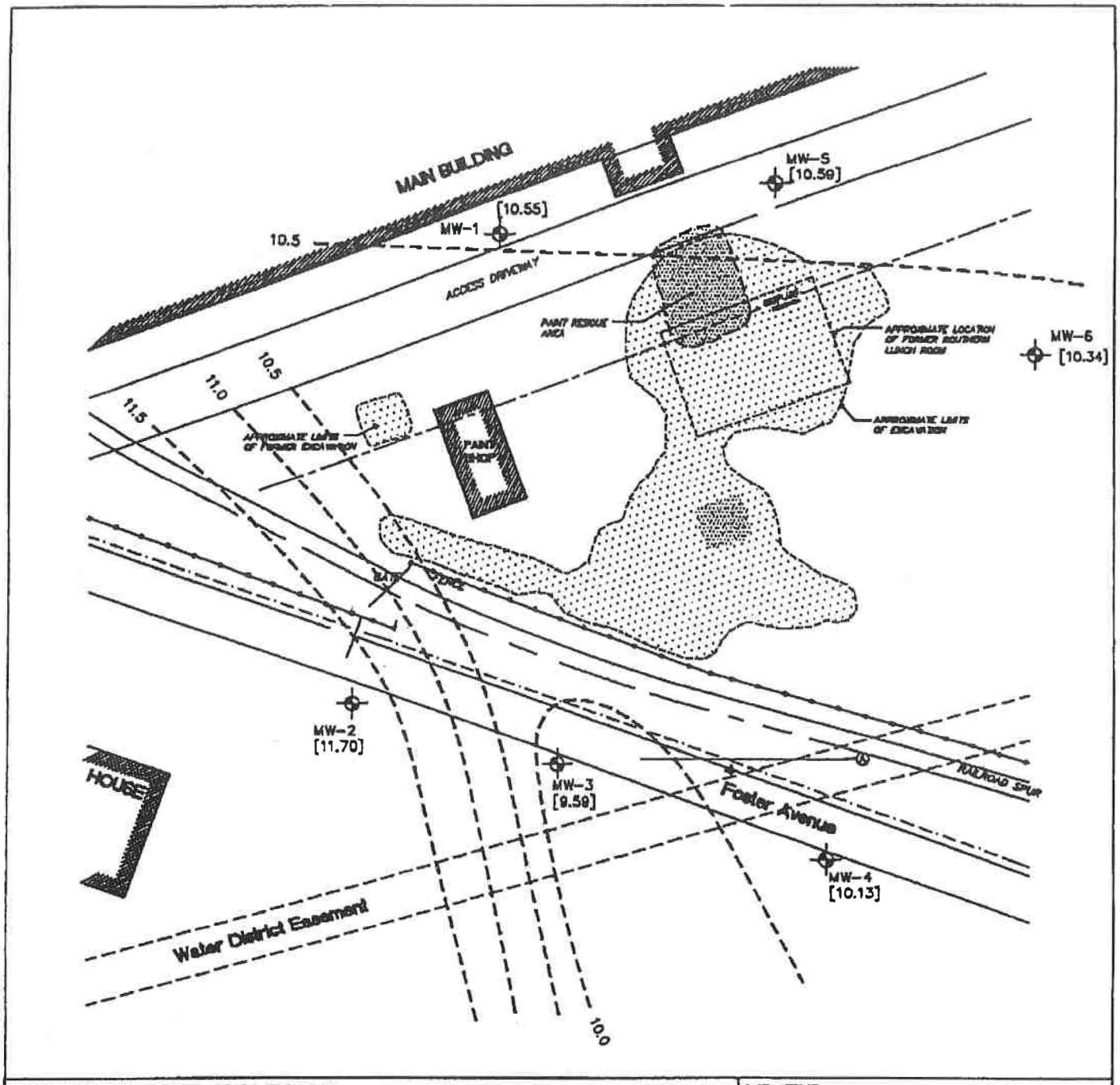
Arcata, California

PLATE 1

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
WA	71021-1	GSJ	7102.1		8/7/97

EXHIBIT B

SITE MAP SHOWING LOCATION OF GROUNDWATER MONITORING WELLS



GROUNDWATER FLOW LEGEND

Estimated Groundwater Gradient Direction → (A)

Gradient Contour (Interval = 1 ft) — — — — —

Identifier Tag	Date	Est Flow Direction	Gradient Slope
(A)	12/5/97	Due East	1 = 0.017
(B)	3/10/98	------	------
(C)	6/7/98	------	------

Identifier Tag	Date	Est Flow Direction	Gradient Slope

LEGEND

MW-1 [XX.XX] Monitoring Well Location Groundwater Elevation (in feet)

Ground water elevations are in feet above mean sea level (National Geodetic Vertical Datum, 1929).

Approximate Area of Excavation

0 30' 60'

NORTH

EnviroNet CONSULTING

PARTIAL SITE PLAN
Groundwater Flow Direction and Gradient - 6/7/98

SIMPSON REDWOOD COMPANY
Arcata, California

PLATE 2

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
	71021SP6	OSL	7102.1		9/7/98

EXHIBIT C

OPERATION AND MAINTENANCE PLAN

EnviroNet
CONSULTING

Operation and Maintenance Plan - Groundwater Monitoring Program
Former Simpson Remanufacturing Plant, Foster Avenue, Arcata, California

The site is located at 3315 Foster Avenue in Arcata, California (Plate 1, attached). During the summer and fall of 1997 investigation and remedial work was performed at the site. In an area south of the main building, extensive excavation and de-watering was conducted to remove soil which had been contaminated by disposal of paint, solvents, and the wood preservative, pentachlorophenol.

All contaminated soils from this area were disposed at a permitted landfill. On December 2 and 3, 1997, after completion of the excavation work, four monitoring wells, MW-1, MW-2, MW-3, and MW-4, were installed around the excavated area. The wells were monitored and sampled on December 5, 1997 and March 10, 1998. Groundwater gradients and direction of groundwater flow could not be determined from the data gathered during these sampling events. On May 26, 1998, two more monitoring wells, MW-5 and MW-6, were installed so that the groundwater on all sides of the excavated area could be monitored. Well locations are shown on Plate 2, attached.

Depths to groundwater are being measured and samples of groundwater are being collected from all these wells on a quarterly cycle (June, September, December, and March), following EnviroNet's Standard Soil and Water Sampling Procedures and QA/QC Protocol, attached. The first sampling event was conducted on December 5, 1997. The groundwater is being analyzed by EPA Methods 8260 and 8270 to detect the contaminants which were found at the site before excavation. Method 8270 Acid Fraction Components tests for phenol derivatives including pentachlorophenol, the preservative used at the site and found in the soil and groundwater before the remedial work was performed. Method 8260 tests for volatile hydrocarbons including cis-1,2,-dichloroethene, xylenes, and benzene, which were also found in the soil and groundwater before the remedial work was conducted..

Monitoring and sampling of all six wells is being conducted on a quarterly basis. If the analyses of groundwater samples taken over four consecutive quarters indicate the absence of either 8270 or 8260 analytes at concentrations above Maximum Contaminant Levels (MCLs) (Table, Cleanup Levels for Contaminants, attached) then this shall be considered as evidence that there is no impact on, nor threat to, groundwater from the remediation zone and the monitoring for these contaminants will be terminated.

If the groundwater samples show the presence of either 8270 or 8260 analytes at concentrations above MCLs (Table, attached) then monitoring and sampling will be continued on an annual basis as follows.

PACIFIC NORTHWEST ENVIRONET GROUP, INC.
3601 REGIONAL PARKWAY, STE. A • SANTA ROSA, CA 95403
FAX 707/544-5769 TEL 707/546-9461

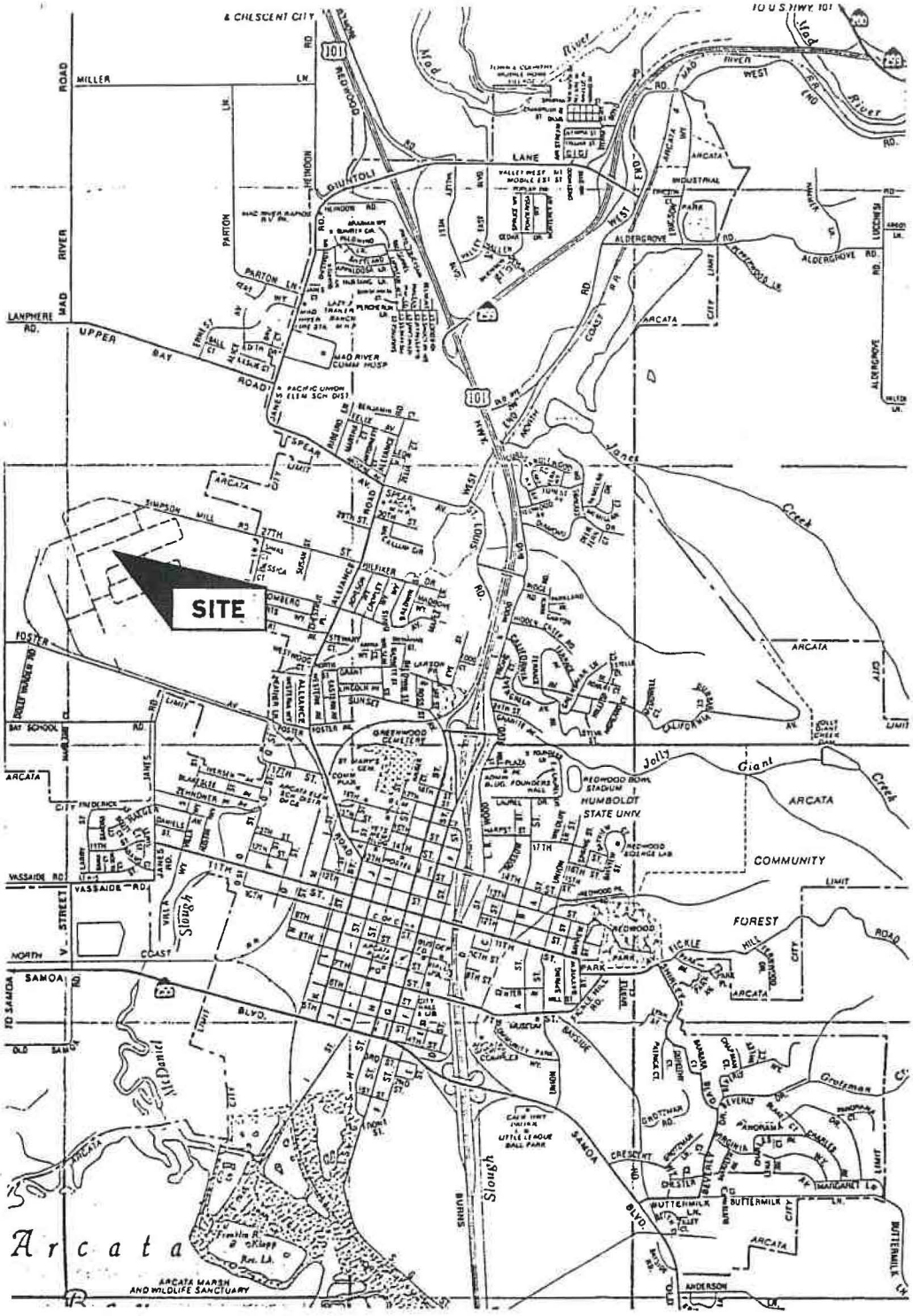
The first annual cycle of quarterly monitoring will be completed in March, 1999. Thereafter annual samples will be collected in June in the year 1999 and in June in subsequent years thereafter.

If the annual monitoring indicates no 8260 or 8270 analytes in the groundwater at concentrations above MCLs (Table, attached) and this finding is confirmed by a total of four consecutive quarters of sampling and analysis, then groundwater monitoring will be terminated.

Within 12 months of termination of the groundwater monitoring program, with the consent of the Department of Toxic Substances Control and the North Coast Regional Water Quality Control Board, all six monitoring wells shall be properly abandoned.

Attachments:

Plate 1: Site Location Map
Plate 2: Partial Site Plan with Monitoring Well Locations
Table: Cleanup Levels for Contaminants
Standard Soil and Water Sampling Procedures and QA/QC Protocol



EnviroNet CONSULTING

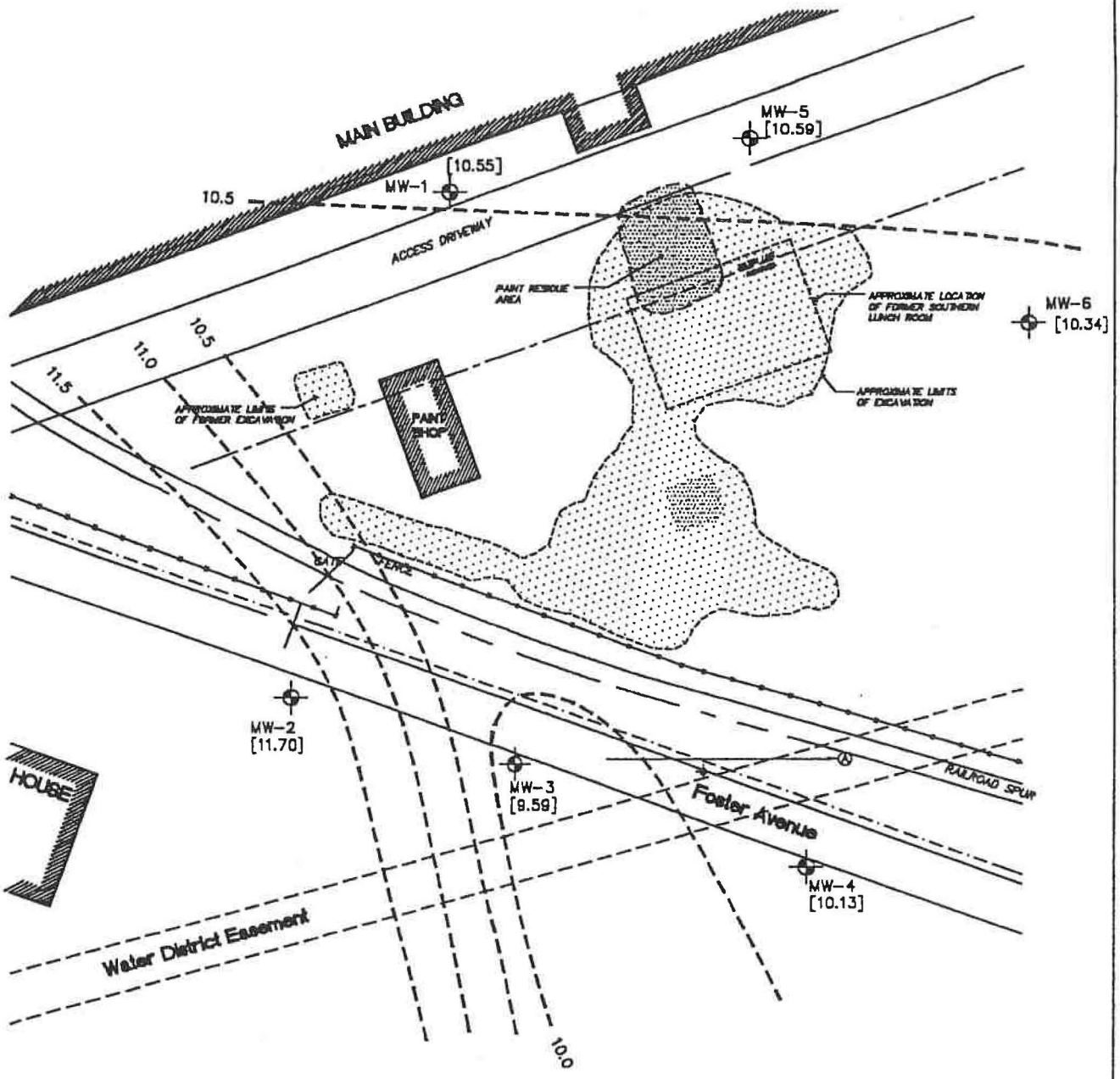
SITE LOCATION MAP

Simpson Redwood Company

Arcata, California

PLATE 1

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
WA	71021-1	GSJ	7102.1		8/7/97



GROUNDWATER FLOW LEGEND

Estimated Groundwater Gradient Direction → (A)

Gradient Contour (Interval = 1 ft) – – – – –

Identifier Tag	Date	Est Flow Direction	Gradient Slope
(A)	12/5/97	Due East	I = 0.017
(B)	3/10/98	-----	-----
(C)	6/7/98	-----	-----

Identifier Tag	Date	Est Flow Direction	Gradient Slope

LEGEND

MW-1 [XX.XX] Monitoring Well Location Groundwater Elevation (in feet)

Ground water elevations are in feet above mean sea level (National Geodetic Vertical Datum, 1929).

Approximate Area of Excavation

0 30' 60'

NORTH

EnviroNet CONSULTING

PARTIAL SITE PLAN
Groundwater Flow Direction and Gradient - 6/7/98

SIMPSON REDWOOD COMPANY
Arcata, California

PLATE 2

DRAWN BY:	DWG NAME:	APPROVED BY:	JOB NUMBER:	REVISIONS:	DATE:
AJH	710216B6	GSJ	7102.1		9/7/98

Table: Cleanup Levels for Contaminants

Contaminant	MCL ug/L public drinking water standard	PRG ug/L risk based screening level for tap water
pentachlorophenol	1	0.6
benzene	1	0.4
xylenes	1750	1400
cis-1,2-dichloroethene	6	61

MCL

California Code of Regulations, Title 22, Division 4, Chapter 15 Domestic Water Quality and Monitoring, Article 5.5 Primary Standards Organic Chemicals, Section 64444 Maximum Contaminant Levels (MCLs) - Organic Chemicals, Table 64444-A.

PRGs

U.S. EPA Region 9 Preliminary Remediation Goals, Published July 1998
found at http://www.epa.gov/region09/., scroll to, and click on, "Solid and Hazardous Waste Programs" followed by Preliminary Remediation Goals.
PRGs are risk-based values for evaluating and cleaning up contaminated sites using "standard" exposure factors yielding a one in a million cancer risk (for carcinogens).

STANDARD
SOIL AND WATER SAMPLING PROCEDURES
AND QA/QC PROTOCOL

ENVIRONET CONSULTING

STANDARD SOIL SAMPLING PROCEDURES

The following outline describes the standard equipment and procedures used by EnviroNet personnel for the collection of soil samples for laboratory analysis.

Equipment

Modified California split-spoon drive sampler (Drill rig sampling);
Drive sampler (hand auger samples);
2.0-Inch brass or stainless steel liners and sealing materials (plastic end-caps, foil)
PID organic vapor analyzer (OVA) or equivalent Field Detector;

Sampler and Sample Container Cleaning Equipment:

- Stiff-bristle brushes
- Buckets
- Trisodium phosphate (soap) (TSP)
- Deionized/potable water

Insulated sample storage and shipping containers (ice chests) and blue ice;
Personal protective equipment (generally level D protection).

General Sampling Procedures

Soil samples are collected in accordance with regulatory guidance. Soil sampling procedures are updated as new guidance is provided by the regulatory agencies.

Soil samples are collected in such a manner as to minimize the volatilization or oxidation of the samples, if necessary, due to agitation/mixing upon handling.

Sampling equipment (i.e., metal tubes, auger bits, sampling devices) are pre-washed as necessary with a brush in a dilute solution of Tri-Sodium Phosphate, followed by rinsing with distilled water prior to each sampling event. Samples are collected in such a manner as to minimize the volatilization or oxidation of the samples due to agitation and/or mixing upon handling.

Soil samples collected by hand auguring for lithologic logging, and chemical and physical analyses are typically obtained by pounding the sample tube into the soil being tested. If an auger hole is drilled, samples are either collected of the auger cuttings or a drive sampler is driven approximately eight inches below the depth of the auger bit. The sampling methodology is determined on a case-by-case basis depending on the suspected contaminant(s).

Soil samples collected from a backhoe bucket or ramped, or otherwise accessible, pit or excavation are collected by removing excess material to expose as fresh as possible soil. The two inch sampling tube is then pushed into the soil until the tube is full.

When utilizing the split spoon sampler with a drill rig, the portions of the soil sample recovered in additional tubes are also examined and noted for any contamination and/or changes in lithology.

The soils, when required, are classified in accordance with the Unified Soil Classification System (USCS). Sample tube ends are wrapped with aluminum foil and capped with plastic end caps, stored in a cooler (4° C), and transported to a State Certified Analytical Laboratory. If overnight storage is required prior to transportation to the laboratory, the samples are stored in a secure refrigerator prior to transport to the laboratory.

All sample containers are labeled in the field. The sample labels and/or the Chain-of-Custody document will contain the following information.

Sample identification number
Project number
Project name
Name and affiliation of sampler
Date and time of collection
Depth of soil samples - Stratigraphic position of soil samples (where applicable)
Required analyses

Chain-of-Custody documents are completed in the field and accompany the samples to the laboratory.

Stockpile Sampling

Discreet samples from thin stockpiles are collected in brass or stainless steel tubes, by removing six inches to one foot of soil and driving the brass or stainless steel tube into the stockpile. Soil samples are collected from thick stockpiles containing volatile contaminants by either augering or otherwise excavating approximately one third to one half way into the pile and then driving the sampling tube into the soil in the hole or collecting a sample from the backhoe bucket. Surface or near surface samples will be collected from homogenized stockpiles containing non-volatile contaminants such as metals, motor oil, oil and grease.

For final verification characterization, discreet soil samples will be collected at intervals required by regulation, or the lead regulator for the disposal or treatment option selected.

STANDARD GROUNDWATER SAMPLING PROCEDURES

The following outline describes the standard equipment and procedures which are used by EnviroNet personnel for the collection of groundwater samples for laboratory analysis.

Monitoring Well Sampling

Groundwater sampling and evaluation of monitored wells begins by removal of the caps and measuring water levels with a water indicator. The fluid in the well then be examined for the presence of free product. If free product is present in a well, its thickness will be measured using paste tape or an interface probe. A program of free product removal may be initiated. A groundwater sample will not be collected from any well with free floating product unless directed to do so by the regulatory agency. All monitoring wells will be checked for free product until authorization has been received from the lead regulatory agency that checking for free product is no longer necessary.

If free product is not present in the well being monitored, the well will be purged, with pH, conductivity, and temperature measurements being made after every wellbore volume or one to two gallons of water extracted from the well, whichever volume is smaller. This process will continue until the parameters being measured (pH, conductivity, and temperature) have stabilized, thus indicating that fresh formation water is entering the wellbore for sampling.

Once a well has been adequately purged, a groundwater sample will be collected using a disposable or pre-cleaned bailer. The groundwater sample will be collected from the well in containers appropriate to the analyses being conducted. As examples, one liter amber bottles will be used for diesel/motor oil/kerosene and oil and grease analyses, and VOA vials will be used for gasoline BTEX, 8010, 8240, and 8260 analyses.

All collected groundwater samples will be stored in an ice chest on blue ice and transported under Chain-of-Custody documentation. The samples will either be transported directly to the analytical laboratory on the day of collection, delivered to the laboratory courier on the day of collection, or will be returned to EnviroNet's office where they will be stored in a secure refrigerator and then delivered to a State certified laboratory or a laboratory courier. Sample storage will not exceed 72 hours before delivery of the samples to either the laboratory or the laboratory courier. Soil samples with a longer holding time such as metals may be stored for a longer period of time before delivery to the laboratory.

All purged fluid will be stored on-site in DOT 55 gallon drums pending analysis. The drums and the fluid in the drums will be exclusive property and responsibility of the responsible party. EnviroNet will typically sample the drums and arrange for disposal at the appropriate time.

Grab Water Samples

Grab water samples may be collected from the pits, borings, Hydropunch® holes, creeks, ponds, and any other bodies or containers of water. If the water sample can be safely collected by hand, it will be, otherwise, a disposable bailer will be used to collect the sample.

All collected grab water samples will be stored on ice and transported under Chain-of-Custody documentation. The samples will either be delivered directly to the analytical laboratory or the analytical laboratory courier on the day of the collection, or will be returned to EnviroNet's office where they will stored in a secure refrigerator of a maximum of 72 hours, and then delivered to a State Certified Laboratory or the laboratory courier.

Typically, no purge water will be generated during grab water sampling. Should purging occur, the purge water will be stored on-site in either a DOT 55 gallon drum, or other appropriate tank pending analysis. Industry standards are that drums and all produced water are the exclusive property and responsibility of the responsible party. EnviroNet will typically sample such containers and arrange for disposal at the appropriate time.

Sample Handling-QA/QC Elements

Sample Handling

The elapsed time between sample collection and delivery to the laboratory or the laboratory courier will not exceed 72 hours. Under no circumstances will sealed sample containers be opened by anyone other than laboratory personnel who will perform the requested analyses.

Chain-of-Custody

In order to document and trace sample possession from time of collection, a Chain-of-Custody record will be filled out by the sampler for each sample collected. The Chain-of-Custody document will accompany the sample(s) through laboratory analysis. The completed Chain-of-Custody record for each sample will be included in the analytical report from the laboratory.

Blanks

Blanks will be used or collected as part of the sampling program at the discretion of the project manager. Trip and/or field blanks will be supplied and analyzed along with the samples, at the discretion of the project manager.

Any deviation from standard sampling procedures and QA/QC protocol for either soil or water samples will be noted and fully explained in the sampling report.

EXHIBIT D

CONTAMINANT CLEANUP LEVELS

Exhibit D: Cleanup levels for contaminants

Contaminant	MCL ug/l, public drinking water standard	PRG ug/l, risk based screening level for tap water
Pentachlorophenol	1	0.6
benzene	1	0.4
xylenes	1750	1400
cis-1,2-dichloroethene	6	61

MCL
California Code of Regulations, Title 22, Division 4, Chapter 15 Domestic Water Quality and Monitoring, Article 5.5 Primary Standards Organic Chemicals, Section 64444 Maximum Contaminant Levels (MCLs) - Organic Chemicals, Table 64444-A.

PRGs:
U.S. EPA Region 9 Preliminary Remediation Goals, Published July 1998
found at http://www.epa.gov/region09/., scroll to, and click on, "Solid and Hazardous Waste Programs" followed by Preliminary Remediation Goals.
PRGs are risk-based values for evaluating and cleaning up contaminated sites using "standard" exposure factors yielding a one in a million cancer risk (for carcinogens).

2013 Annual
Groundwater Monitoring Report

Former Simpson Remanufacturing Facility
Arcata, California

Prepared for:

Simpson Timber Company

SHN Consulting Engineers & Geologists, Inc.

812 W. Wabash Ave.
Eureka, CA 95501-2138
707-441-8855

June 2013
003154

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash • Eureka, CA 95501-2138 • 707-441-8855 • FAX: 707-441-8877 •shninfo@shn-engr.com

Reference: 003154

June 10, 2013

Mr. Charles Gribble
Department of Toxic Substances Control
Brownfield and Environmental Restoration Program
700 Heinz Ave.
Berkeley, CA 94710-2721

Subject: 2013 Annual Groundwater Monitoring Report, Former Simpson Remanufacturing Facility, Arcata, California

Dear Mr. Gribble:

SHN Consulting Engineers & Geologists, Inc. (SHN) is providing you with this 2013 annual groundwater monitoring report for the former Simpson Remanufacturing facility. SHN performed groundwater monitoring on October 18, 2012 and April 11, 2013, on behalf of Simpson Timber Company.

If you have any questions please call me at 707-441-8855.

Sincerely,

SHN Consulting Engineers & Geologists, Inc.

Roland Rueber, PG
Project Manager

RMR:

Enclosure: Report
c. w/encl.: Robert Dickerson, RWQCB
Betsy Stauffer, Simpson Timber Company (email)
Lane Devries, Sun Valley Floral Farms

Reference: 003154

2013 Annual Groundwater Monitoring Report

Former Simpson Remanufacturing Facility Arcata, California

Prepared for:

Simpson Timber Company



Prepared by:

Consulting Engineers & Geologists, Inc.
812 W. Wabash Ave.
Eureka, CA 95501-2138
707-441-8855

June 2013

QA/QC: MEL___

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- 2.1 Monitoring Well Sampling 1
- 2.2 Laboratory Analysis 1
- 2.3 Equipment Decontamination Procedures 1
- 2.4 Investigation-Derived Waste Management 1

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- 3.1 Hydrology 2
- 3.2 Groundwater Analytical Results 3
- 3.3 Field-Measured Parameters 4
- 3.4 Concentration through Time 5
- 3.5 Quality Assurance 6

4.0 Discussion 6

5.0 References 7

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- B. Historical Monitoring Data
- C. Laboratory Analytical Reports

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7. VOC Concentrations in Groundwater, April 11, 2013 4
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2. Organic Compound Groundwater Analytical Results, October 2012 and April 2013 3
3. DO, DCO_2, and ORP Measurement Results, October 2012 and April 2013 4

Abbreviations and Acronyms

<	"less than" the stated method reporting limit
mg/L	milligrams per Liter
mV	millivolts
ug/L	micrograms per Liter
DCE	dichloroethene
DCO_2	dissolved carbon dioxide
DO	dissolved oxygen
DTSC	California Department of Toxic Substances Control
Dup	duplicate sample
EC	electrical conductivity
EPA	U.S. Environmental Protection Agency
MRP	Monitoring and Reporting Program
MW-#	monitoring well-#
ND	not detected
NGVD29	National Geodetic Vertical Datum 1929
NS	not sampled
ORP	oxidation-reduction potential
RWQCB	North Coast Regional Water Quality Control Board
SHN	SHN Consulting Engineers & Geologists, Inc.
USGS	United States Geological Survey
WQO	water quality objective
VOCs	volatile organic compounds

1.0 Introduction

This report presents the results of groundwater monitoring activities conducted at the former Simpson Remanufacturing facility in October 2012 and April 2013. The site is located at 3315 Foster Avenue in Arcata, California (Figure 1). SHN Consulting Engineers & Geologists, Inc. (SHN) performed this work on behalf of Simpson Timber Company. This work was requested by the California Department of Toxic Substances Control (DTSC) and the North Coast Regional Water Quality Control Board (RWQCB). The groundwater monitoring was performed in accordance with RWQCB Monitoring and Reporting Program (MRP) No. R1-2011-0074 (included in Appendix A), which replaced MRP No. R1-2008-0034. A site plan is included as Figure 2.

2.0 Field Activities

2.1 Monitoring Well Sampling

SHN conducted groundwater monitoring on October 18, 2012 and April 11, 2013. As part of the monitoring program, monitoring wells MW-2, MW-3, MW-4, and MW-7 were purged and sampled. Prior to purging, all site-monitoring wells were measured for depth-to-water and checked for the presence of floating product (none was observed).

Electrical conductivity (EC), pH, and temperature were monitored periodically during purging activities using portable instrumentation. Wells MW-2, MW-3, MW-4, and MW-7 were also measured for dissolved oxygen (DO), oxidation-reduction potential (ORP), and dissolved carbon dioxide (DCO_2).

A groundwater sample was collected from each purged well using a disposable polyethylene bailer. The water samples were put into laboratory-supplied containers, immediately placed in an ice-filled cooler, and submitted to the laboratory for analysis under appropriate chain-of-custody documentation. Groundwater monitoring data sheets are included in Appendix A.

2.2 Laboratory Analysis

Each groundwater sample was analyzed for volatile organic compounds (VOCs) in general accordance with U.S. Environmental Protection Agency (EPA) Method No. 8260B.

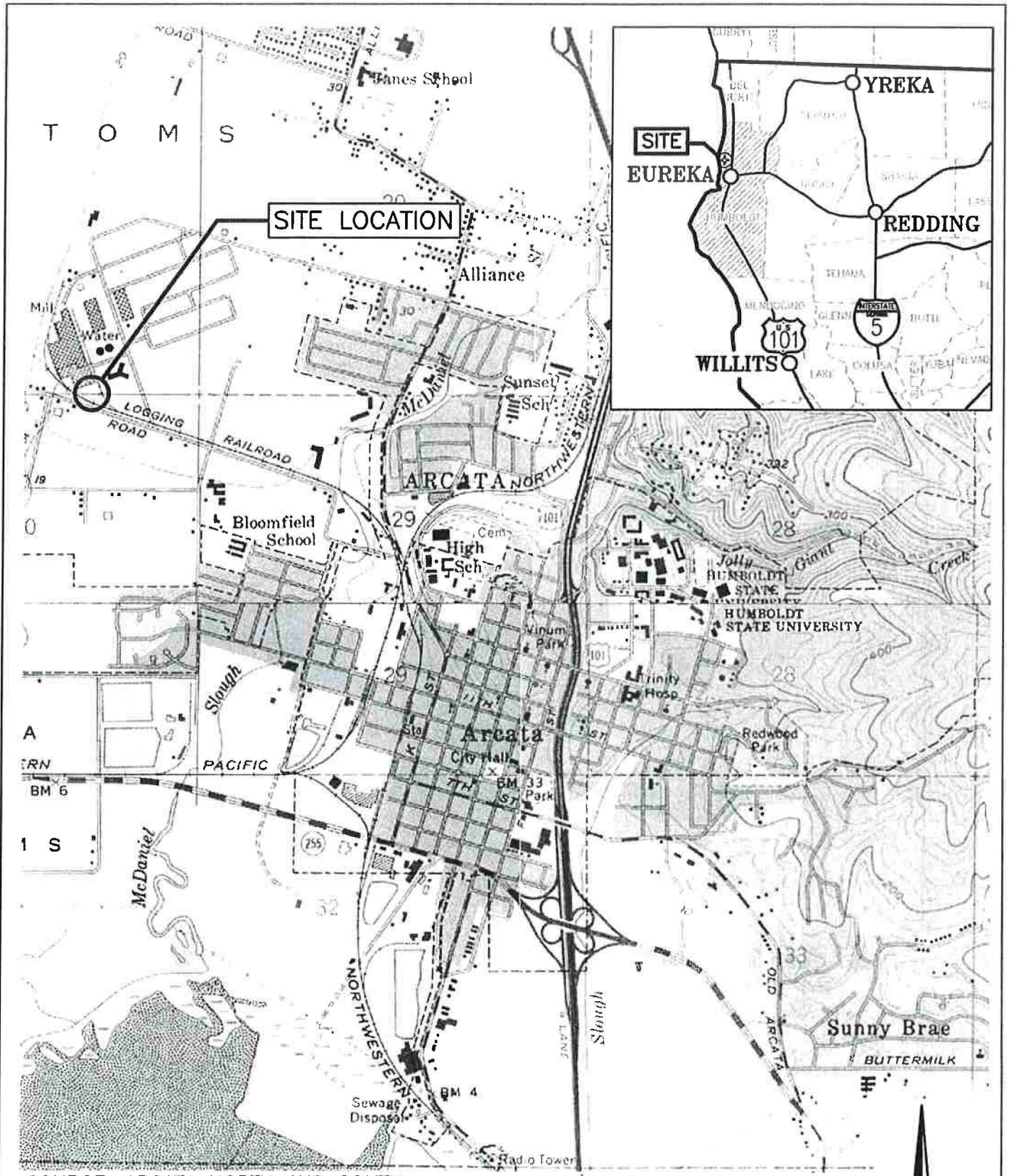
The groundwater samples were submitted to North Coast Laboratories, Ltd., a state-certified analytical laboratory located in Arcata, California, for analysis.

2.3 Equipment Decontamination Procedures

All monitoring and sampling equipment was cleaned prior to being transported to the site. All smaller equipment was cleaned using the triple wash system. The equipment was initially washed in a water solution containing Liquinox® cleaner, followed by two distilled water rinses.

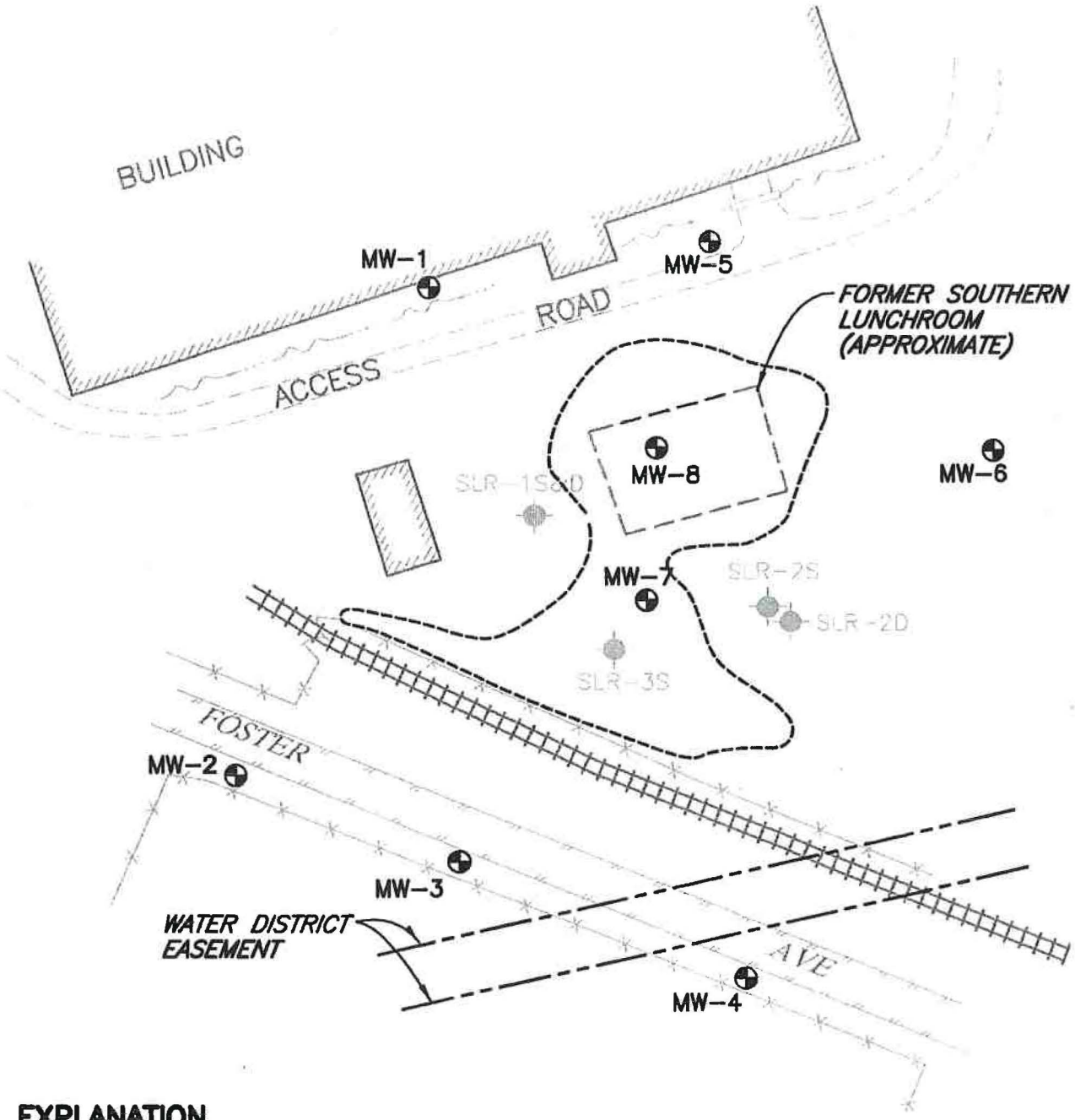
2.4 Investigation-Derived Waste Management

All wastewater generated during decontamination of field-sampling equipment and the well purge water was temporarily stored onsite in 5-gallon buckets. The water was then transported to SHN's 350-gallon purge water storage tank, located at 812 West Wabash Avenue in Eureka, California.



SHN Consulting Engineers & Geologists, Inc.	Simpson Timber Company Former Remanufacturing Facility Arcata, California		Site Location Map SHN 003154
	November 2009	003154-AF-1	Figure 1

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EXPLANATION

- MW-2 — MONITORING WELL LOCATION AND DESIGNATION
- SLR-1 — SOIL BORING/WELL POINT LOCATION AND DESIGNATION (SHN, JANUARY 2004 SITE INVESTIGATION)
- EXISTING STRUCTURE
- APPROXIMATE EXCAVATION EXTENTS
- EXISTING FENCE
- EXISTING RAILROAD TRACKS
- EXISTING SURFACE DRAINAGE
- SHALLOW BORING
- DEEP BORING

NOTE: ALL LOCATIONS APPROXIMATE

N

0 60

1"=60'

SHN Consulting Engineers & Geologists, Inc.	Simpson Timber Company Former Remanufacturing Facility Arcata, California		Site Plan - Southern Lunchroom Area SHN 003154
	November 2009	003154-SLR-Plan	Figure 2

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Approximately 29 gallons of decontamination and purge water from the October 18, 2012, and 39 gallons from the April 11, 2013, sampling events were tested and discharged, under permit, to the City of Eureka municipal sewer system. Discharge receipts are included in Appendix A.

3.0 Groundwater Monitoring Results

3.1 Hydrology

SHN measured depth-to-groundwater in the existing monitoring wells during the second half 2012 and first half 2013 monitoring events (Table 1). Appendix B, Table B-1 summarizes well construction details.

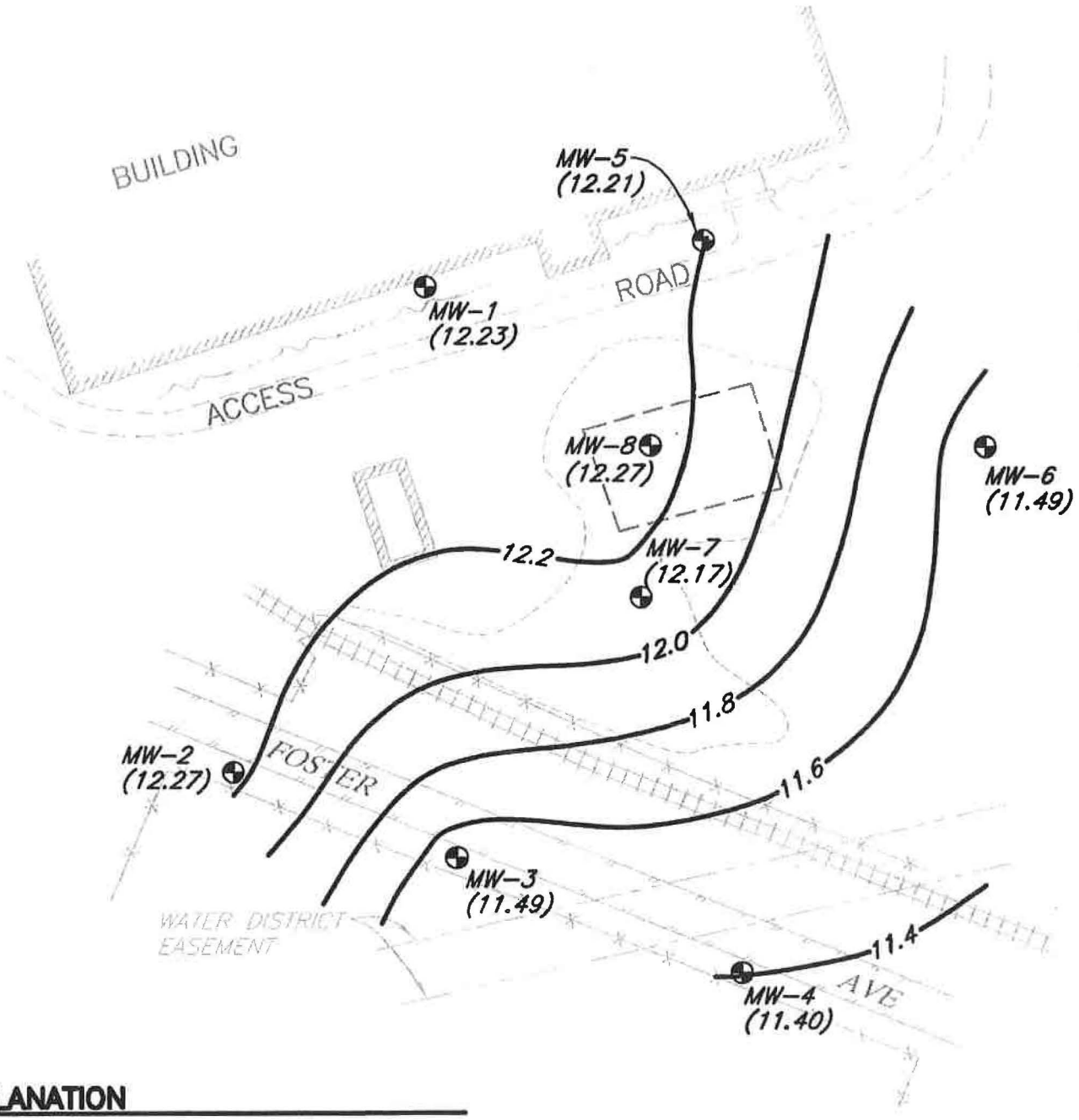
Table 1
Water Level Data, October 2012 and April 2013
Former Simpson Remanufacturing Facility, Arcata, California

Sample Location	Top of Casing Elevation[1] (feet)	Date	Depth-to-Groundwater[2] (feet)	Groundwater Elevation[1] (feet)
MW-1	20.69	October 18, 2012	8.46	12.23
		April 11, 2013	3.72	16.97
MW-2	22.10	October 18, 2012	9.83	12.27
		April 11, 2013	5.12	16.98
MW-3	22.85	October 18, 2012	11.36	11.49
		April 11, 2013	6.25	16.60
MW-4	22.48	October 18, 2012	11.08	11.40
		April 11, 2013	6.02	16.46
MW-5	21.82	October 18, 2012	9.61	12.21
		April 11, 2013	4.83	16.99
MW-6	23.03	October 18, 2012	11.54	11.49
		April 11, 2013	6.48	16.55
MW-7	21.48	October 18, 2012	9.31	12.17
		April 11, 2013	4.44	17.04
MW-8	21.56	October 18, 2012	9.29	12.27
		April 11, 2013	4.58	16.98

1. Relative to National Geodetic Vertical Datum 1929 (NGVD29)
2. Below top of casing

On October 18, 2012, the groundwater flow beneath the site was to the southeast, with an approximate gradient of 0.004 feet per foot. On April 11, 2013, the groundwater flow beneath the site was to the southeast, with an approximate gradient of 0.003 feet per foot. The groundwater flow direction and gradient were calculated using data from wells MW-2, MW-4, and MW-5.

Groundwater contour maps for the October 18, 2012 and April 11, 2013, monitoring events are presented on the following pages as Figures 3 and 4, respectively. Appendix B, Table B-2 presents historical water level data. Historical groundwater flow direction and gradient data are summarized in Appendix B, Table B-3.



EXPLANATION

MW-2 ⊕	MONITORING WELL LOCATION AND DESIGNATION
(13.55)	GROUNDWATER ELEVATION (IN FEET NGVD29)
—12.40—	GROUNDWATER CONTOUR (IN FEET NGVD29)
	APPROXIMATE EXCAVATION EXTENTS

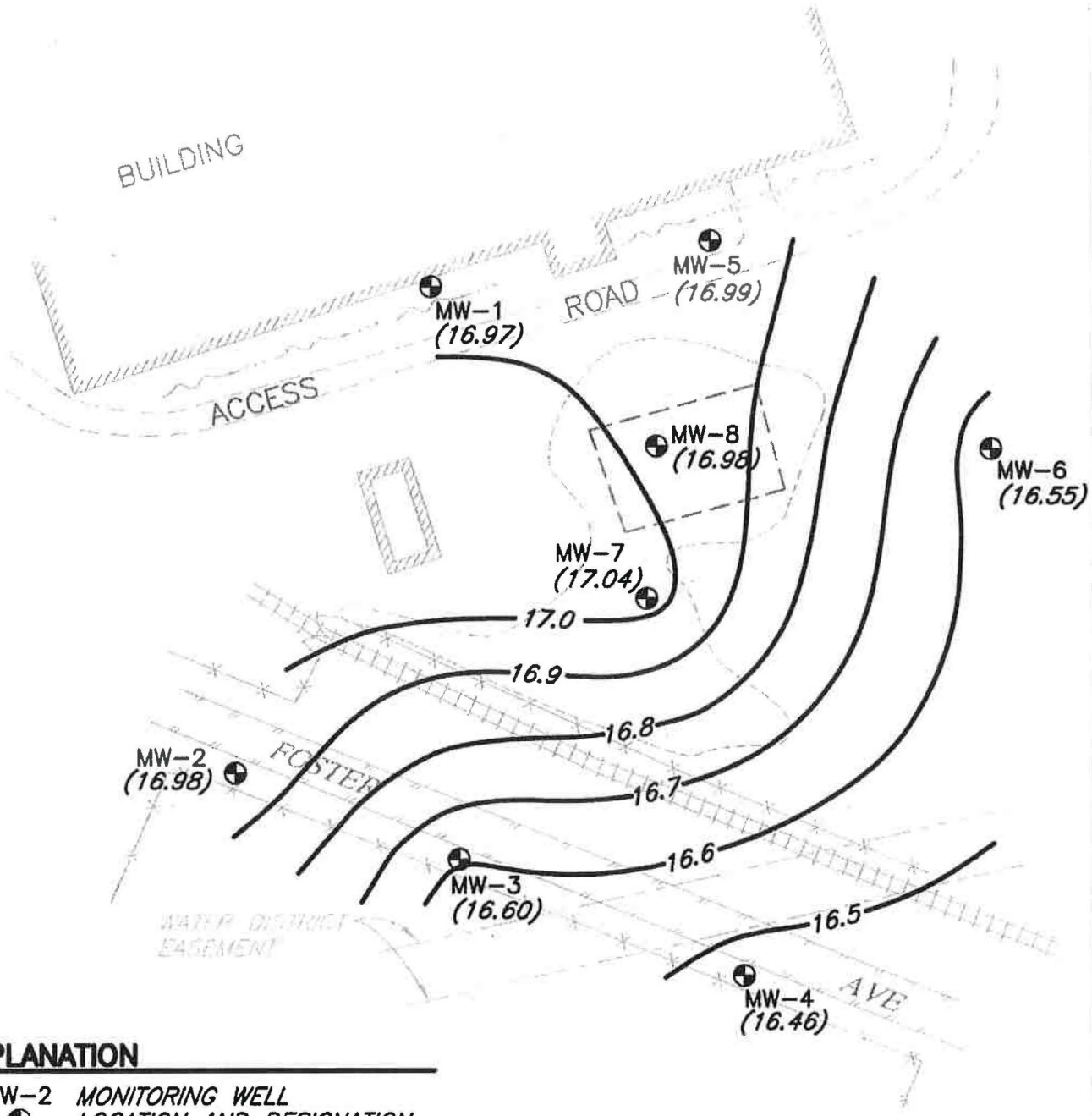
N

0 60

1"=60'

SHN Consulting Engineers & Geologists, Inc.	Simpson Timber Company Former Remanufacturing Facility Arcata, California	Groundwater Contours October 18, 2012 SHN 003154	
	November 2012	003154-GWC-OCT-12	Figure 3

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EXPLANATION

MW-2 — MONITORING WELL LOCATION AND DESIGNATION

(17.95) — GROUNDWATER ELEVATION (IN FEET NGVD29)

18.3 — GROUNDWATER CONTOUR (IN FEET NGVD29)

APPROXIMATE EXCAVATION EXTENTS

N

0 60

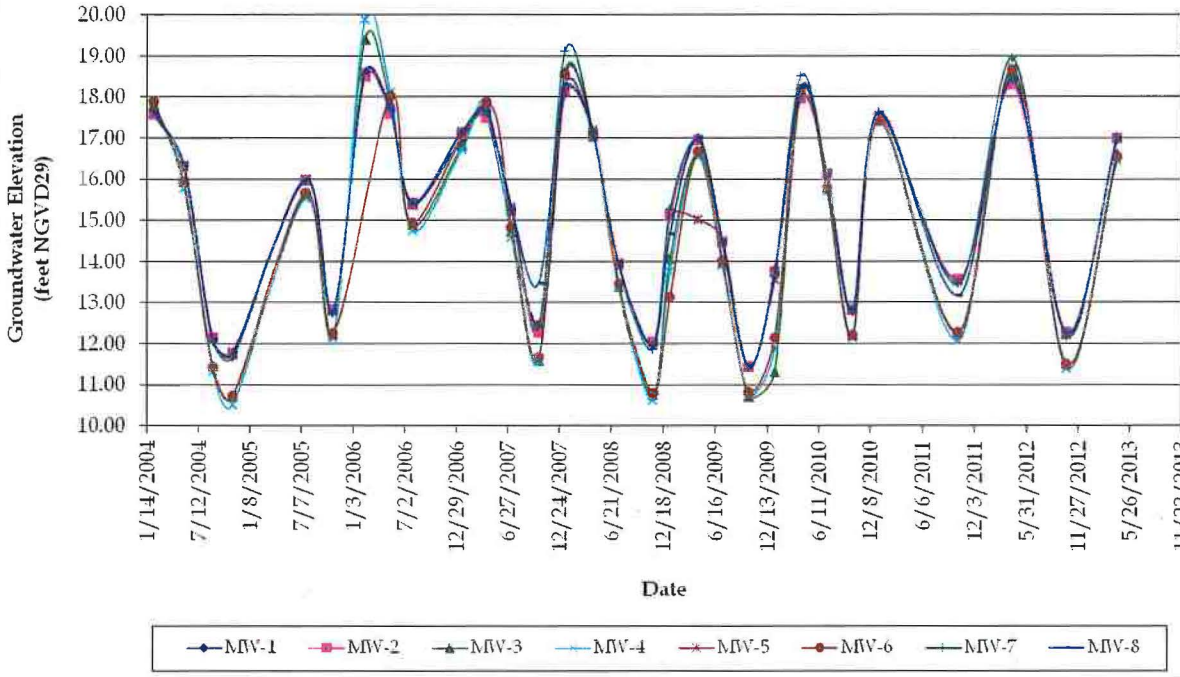
1"=60'

SHN Consulting Engineers & Geologists, Inc.	Simpson Timber Company Former Remanufacturing Facility Arcata, California		Groundwater Contours April 11, 2013 SHN 003154
	May 2013	003154-GWC-APRIL-13	Figure 4

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Figure 5 presents groundwater elevation hydrographs for existing site monitoring wells. The water table fluctuates seasonally, with the highest groundwater elevations measured in the spring and the lowest groundwater elevations measured in the fall. All the wells respond in a similar manner to seasonal groundwater fluctuations, indicating that the wells are screened in the same water-bearing zone.

Figure 5
Groundwater Elevation Hydrographs
Former Simpson Remanufacturing Facility, Arcata, California



3.2 Groundwater Analytical Results

Table 2 summarizes selected laboratory analytical results for the groundwater samples collected during the second half 2012 and first half 2013 monitoring events.

Table 2
Organic Compound Groundwater Analytical Results, October 2012 and April 2013
Former Simpson Remanufacturing Facility, Arcata, California
(in ug/L)[1]

Sample Location	Sample Date	trans-1,2-DCE[2]	cis-1,2-DCE[2]	Vinyl Chloride[2]	Benzene[2]	Other VOCs[2]
MW-2	October 18, 2012	<0.50[3]	<0.50	<0.50	<0.50	ND[4]
	April 11, 2013	<0.50	<0.50	<0.50	<0.50	ND
MW-3	October 18, 2012	<0.50	**20**	**4.6**	**0.89**	ND
	April 11, 2013	<0.50	**3.5**	**0.53**	<0.50	ND
Dup[5]	October 18, 2012	<0.50	**22**	**4.8**	**0.95**	ND
	April 11, 2013	<0.50	**3.4**	**0.52**	<0.50	ND

Table 2
Organic Compound Groundwater Analytical Results, October 2012 and April 2013
Former Simpson Remanufacturing Facility, Arcata, California
(in ug/L)[1]

Sample Location	Sample Date	trans-1,2-DCE[2]	cis-1,2-DCE[2]	Vinyl Chloride[2]	Benzene[2]	Other VOCs[2]
MW-4	October 18, 2012	<0.50	**2.5**	**0.57**	<0.50	ND
	April 11, 2013	<0.50	**1.3**	<0.50	<0.50	ND
MW-7	October 18, 2012	<0.50	<0.50	<0.50	<0.50	**All ND, except Toluene = 0.51**
	April 11, 2013	<0.50	<0.50	<0.50	<0.50	ND

1. ug/L: micrograms per liter
2. Dichloroethene (DCE), vinyl chloride, benzene, and other volatile organic compounds (VOCs) analyzed in general accordance with EPA Method No. 8260B
3. <: "less than" the stated method reporting limit
4. ND: not detected
5. Dup: duplicate groundwater sample collected from monitoring well MW-3

Figures 6 and 7 show concentrations of cis-1,2 dichloroethene (DCE) and vinyl chloride in existing groundwater monitoring wells for the October 2012 and April 2013 monitoring events, respectively. Historical groundwater analytical data is included in Appendix B, Table B-4. Appendix C presents the complete analytical test results, chain-of-custody documentation, and laboratory quality control data.

3.3 Field-Measured Parameters

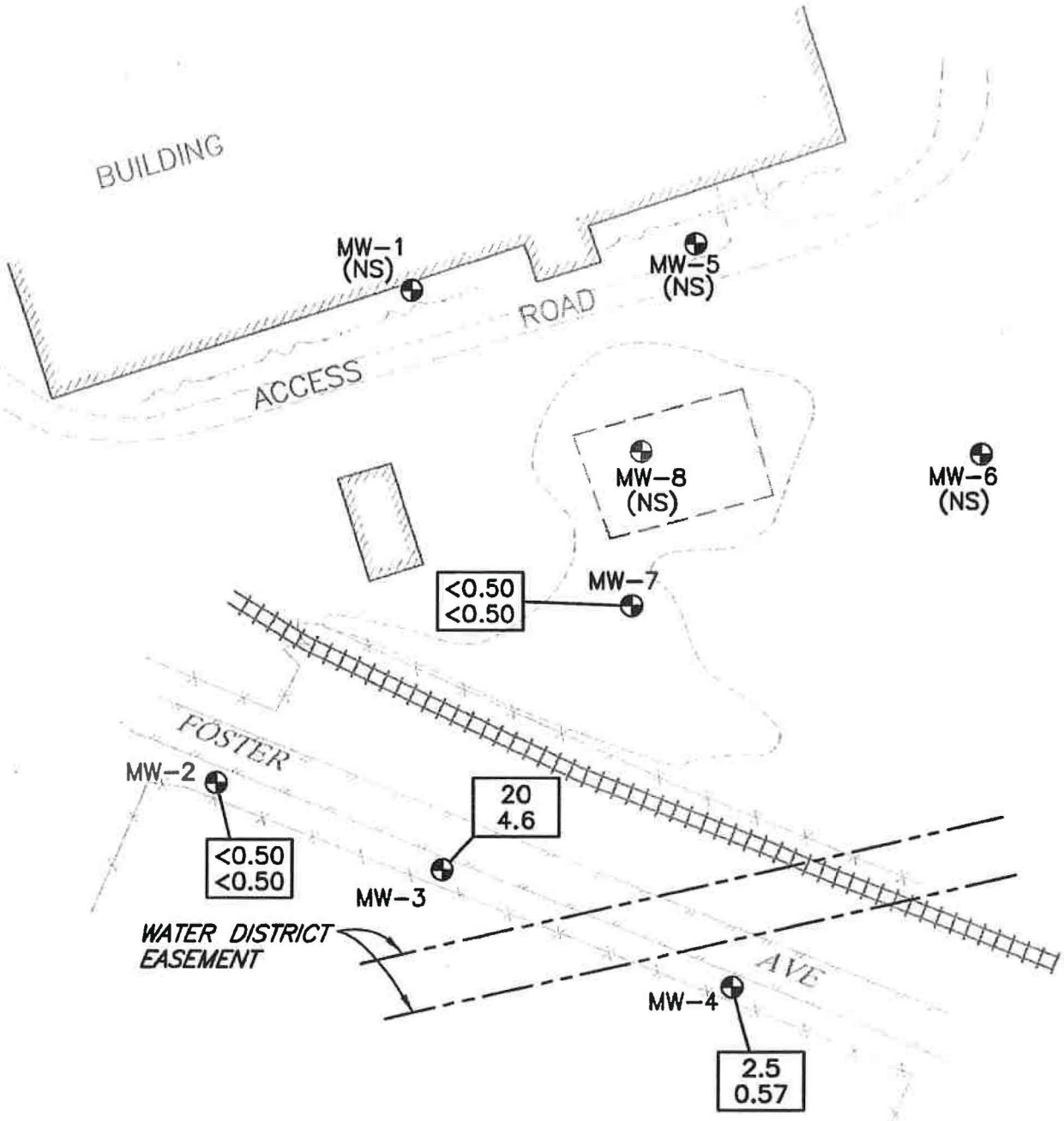
DO, DCO_2, and ORP were measured in monitoring wells prior to sampling and are summarized in Table 3.

Table 3
DO, DCO_2, and ORP Measurement Results, October 2012 and April 2013
Former Simpson Remanufacturing Facility, Arcata, California

Sample Location	Date	DO[1] (mg/L)[2]	DCO_2[3] (mg/L)	ORP[4] (mV)[5]
MW-2	October 18, 2012	0.35	100	73
	April 11, 2013	7.50	40	203
MW-3	October 18, 2012	0.31	300	-80
	April 11, 2013	1.38	90	184
MW-4	October 18, 2012	0.32	100	11
	April 11, 2013	1.50	60	90
MW-7	October 18, 2012	0.35	500	-32
	April 11, 2013	0.87	200	143

1. DO: dissolved oxygen; field measured using portable instrumentation
2. mg/L: milligrams per liter
3. DCO_2: dissolved carbon dioxide; measured using a field test kit
4. ORP: oxidation-reduction potential measured using portable instrumentation
5. mV: millivolts

Historical DO, DCO_2, and ORP measurement results are included in Appendix B, Table B-5.



EXPLANATION

MW-2 — MONITORING WELL LOCATION AND DESIGNATION

<1.0 / <1.0 — CIS-1,2-DICHLOROETHENE / VINYL CHLORIDE — RESULTS IN ug/L

(NS) — NOT SAMPLED

APPROXIMATE EXCAVATION EXTENTS

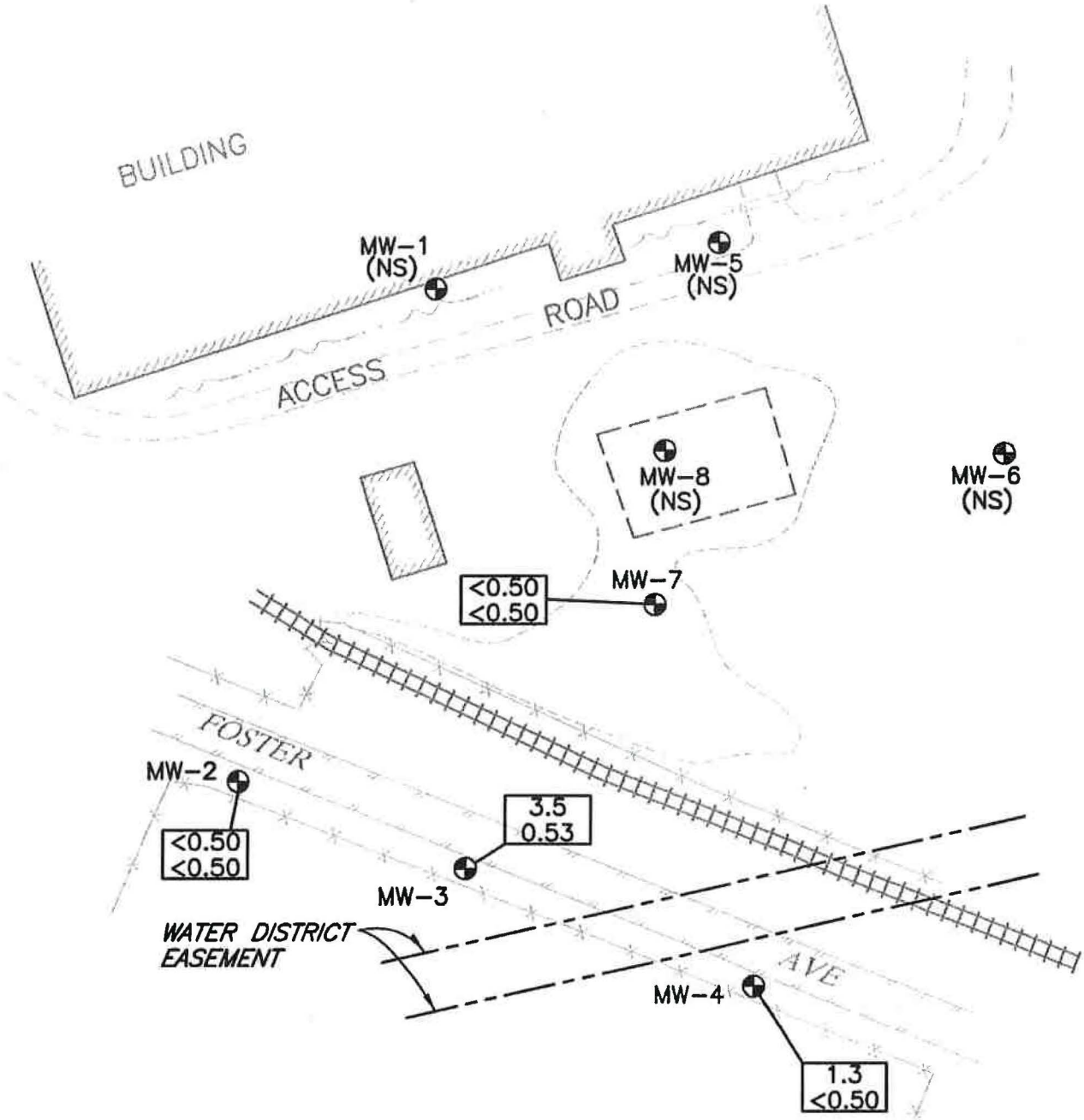
N

0 60

1"=60'

SHN Consulting Engineers & Geologists, Inc.	Simpson Timber Company Former Remanufacturing Facility Arcata, California	VOC Concentrations in Groundwater October 18, 2012 SHN 003154	
	May 2013	003154-VOC-CONC-OCT-12	Figure 6

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EXPLANATION

MW-2 ⊕ *MONITORING WELL LOCATION AND DESIGNATION*

<1.0 / <1.0 *CIS-1,2-DICHLOROETHENE / VINYL CHLORIDE* } *RESULTS IN ug/L*

(NS) *NOT SAMPLED*

APPROXIMATE EXCAVATION EXTENTS

N

0 60

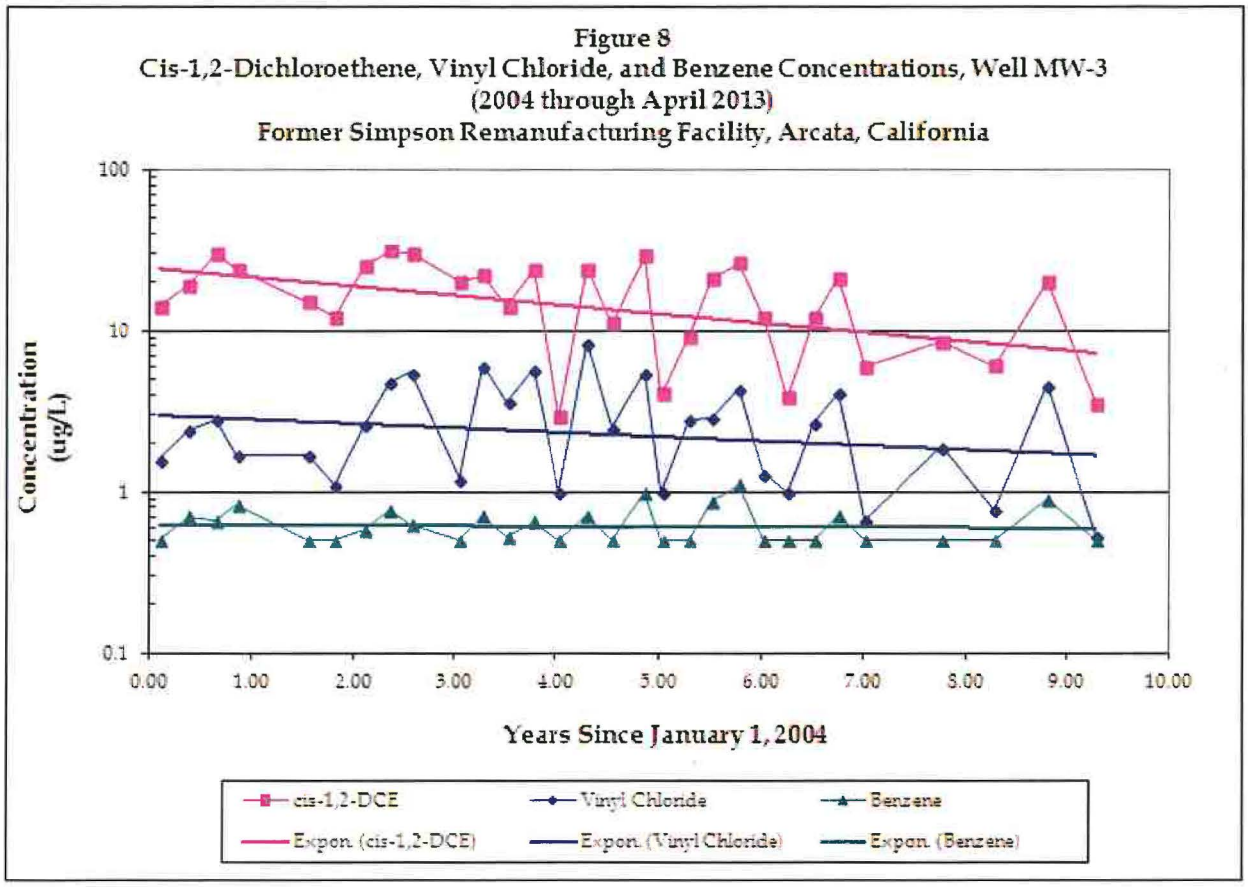
1"=60'

Consulting Engineers & Geologists, Inc.	Simpson Timber Company Former Remanufacturing Facility Arcata, California	VOC Concentrations in Groundwater April 11, 2013 SHN 003154	
	May 2013	003154-VOC-CONC-APRIL-13	Figure 7

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3.4 Concentration through Time

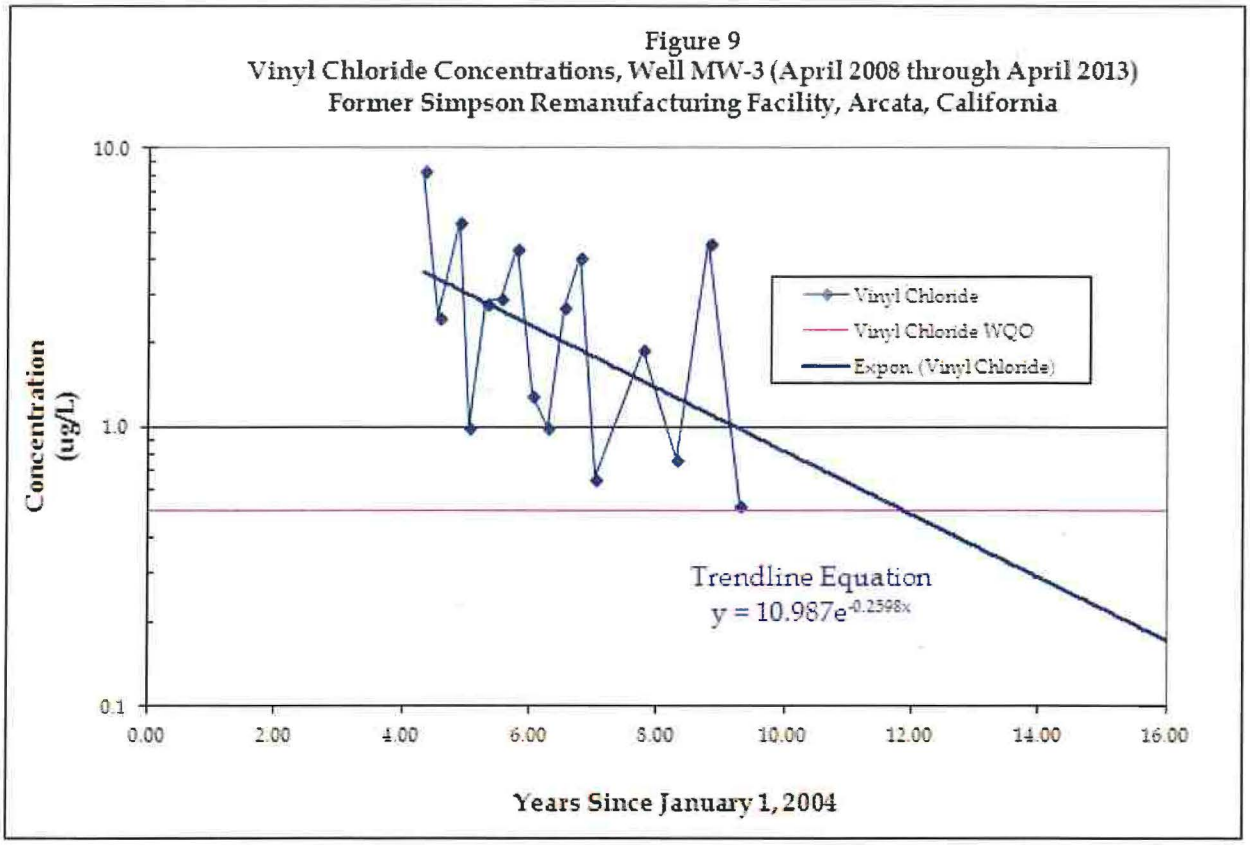
Figure 8 shows contaminant concentrations through time for well MW-3 from 2004 to April 2013. The graph was generated as outlined in the EPA Document number 540/S-02/500 titled "Calculation and Use of First-Order Rate Constants for Monitored Natural Attenuation Studies" (Newell, et al., 2002). Trendlines were generated using Microsoft Excel™ regression analyses for the concentrations of contaminants of concern in well MW-3. For non-detect results, the detection limit was used in the data set.



Cis-1,2-DCE and vinyl chloride concentrations show decreasing trends through time. Vinyl chloride concentrations appear to have peaked with the highest concentration reported in April 2008. Since then, concentrations have a definite decreasing trend (Figure 9). The slope of the trendline in Figure 9 indicates that the water quality objective (WQO) of 0.5 ug/L for vinyl chloride will be reached by 2016.

The benzene trendline is relatively flat, and 7 of the last 9 groundwater samples have had no detections above the laboratory reporting limit (0.5 ug/L).

Figure 9
Vinyl Chloride Concentrations, Well MW-3 (April 2008 through April 2013)
Former Simpson Remanufacturing Facility, Arcata, California



3.5 Quality Assurance

Precision goals outlined in the quality assurance project plan appended to the site investigation work plan (SHN, 2003) were reviewed with respect to the duplicate sample collected from monitoring well MW-3 (See Table 2). The SHN field technician alternated between filling sample containers for monitoring well MW-3 and sample containers for duplicate samples. The relative percent differences for cis-1,2-DCE and vinyl chloride in the duplicate sample from well MW-3 were within the precision goal of ±20% during the October 2012 and April 2013 monitoring events. No other VOC constituents could be compared because all were below their respective laboratory method reporting limits.

The laboratory noted cooler temperatures of 1.4 and 2.0 degrees Celsius on October 18, 2012 and April 11, 2013, respectively. Both values are within the suggested range of 4 ± 2 degrees Celsius. All samples were analyzed within the 14-day holding time. A few laboratory control samples were outside of the acceptable ranges. In general, these constituents were not detected in the groundwater samples analyzed; therefore, the data were accepted. Laboratory quality assurance data and a detailed discussion are included in the laboratory analytical reports in Appendix C.

4.0 Discussion

DCE (cis and trans) can be degraded through reductive dechlorination or by direct aerobic biological oxidation (Wiedemeier et al., 1998). When chlorinated organic compounds are being degraded, alkalinity, chloride, dissolved iron, and dissolved manganese concentrations typically increase within the source area, and sulfate and nitrate concentrations typically decrease.

Historical analysis for the aforementioned constituents has demonstrated that the trends indicating degradation of DCE have generally been followed for all the constituents (SHN, 2010). Additionally, the presence of vinyl chloride and chloride indicates that natural degradation of VOCs is occurring.

Prior to the October 2011 monitoring event, well MW-4 had not been sampled since 2004. Cis-1,2-DCE was the only contaminant detected in the groundwater samples from well MW-4 during this reporting period, at concentrations below the water quality objective of 6 ug/L.

No contaminants were detected above the laboratory reporting limits in the groundwater samples from well MW-2 in October 2012 or April 2013. The only contaminant detected above laboratory reporting limits in groundwater samples from well MW-7 during this reporting period was toluene, detected at 0.51 ug/L in October 2012.

Trendlines for cis-1,2-DCE and vinyl chloride concentrations through time in groundwater samples from well MW-3 continue to exhibit a downward trend. Benzene was only detected in the groundwater sample from well MW-3 during the October 2012 monitoring event.

Groundwater monitoring will continue to be performed in accordance with MRP No. R1-2011-0074. The next monitoring event will occur in October 2013.

5.0 References

Newell, C.J., H.S. Rifai, J.T. Wilson, J.A. Conner, J.A. Aziz, and M.P. Suarez. (November 2002). Groundwater Issue, Calculation and Use of First-Order Rate Constants for Monitored Natural Attenuation Studies. EPA/540/S-02/500. NR: EPA.

SHN Consulting Engineers & Geologists, Inc. (2011). *Fourth Quarter 2010 Groundwater Monitoring Report, Former Simpson Remanufacturing Plant, Arcata, California.* Eureka, CA: SHN.

---. (2010). *Second Five-Year Review Report, Former Simpson Remanufacturing Plant, Arcata, California.* Eureka, CA: SHN.

---. (2003). *Amended Subsurface Investigation, Monitoring Well Installation, and Groundwater Monitoring Work Plan, Former Simpson Remanufacturing Plant, Arcata, California.* Eureka, CA: SHN.

---. United States Geological Survey. (1959, photo revised 1972). "Arcata North and South Quadrangles, California-Humboldt Co. 7.5-minute series (topographic)." Scale 1:24,000. Reston,VA: USGS.

Wiedemeier, T.H., M.A. Swanson, D.E. Moutoux, E.K. Gordon, J.T. Wilson, B.H. Wilson, D.H. Kampbell, P.E. Haas, R.N. Miller, J.E. Hansen, and F.H. Chapelle. (1998). "Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Groundwater." EPA/600/R-98/128. Cincinnati, OH: National Risk Management Research Laboratory.

Appendix A

Monitoring Program and Field Notes

California Regional Water Quality Control Board
North Coast Region

Monitoring and Reporting Program No. R1-2011-0074
(Replaces Monitoring and Reporting Program No. R1-2008-0034)

FOR

Simpson Timber Company

and

Arcata Land Company
3315 Foster Avenue
Arcata, California

Humboldt County

This Monitoring and Reporting Program (MRP) is issued pursuant to California Water Code Section (CWC) 13267(b) and requires monitoring of groundwater and submission of technical reports. Reports are required on a semiannual basis. The objective of monitoring conducted under this monitoring program is to provide the Discharger and the Regional Water Board with information concerning groundwater quality and contaminant trends at the site.

Under the authority of CWC section 13267, the Discharger named above is required to comply with the following:

MONITORING

1. The depth to groundwater in each monitoring well (MW) shall be determined to at least 0.01 foot increments semiannually. The results of each semiannual depth measurement shall be reported in tabular form indicating the surveyed elevations of each well reference point, depth to groundwater from reference point, and the actual groundwater elevation. The data generated from the elevation readings must be referenced to mean sea level.

2. MW-2, MW-3, MW-4, and MW-7 shall be sampled in April and October. All groundwater samples shall be analyzed for Volatile Organic Compounds by EPA Method 8260B. The analyses shall be performed at a California certified laboratory.

REPORTING

A groundwater elevation contour map shall be submitted for each semiannual set of measurements and include the facility, groundwater flow pattern including the direction of the groundwater gradient, and the location of the wells measured.

Monitoring reports, including gradient data and sampling data, shall be submitted to this office in accordance with the following schedule:

Report	Due Date
Annual Report (October and April Monitoring Events)	July 30
Draft Data Tables (October Monitoring Event)	December 31

All data and reports shall be electronically submitted in the proper format to the State Water Resources Control Board's GeoTracker database.

Ordered by Original signed by Luis Rivera for
Catherine Kuhlman
Executive Officer

July 18, 2011

11_0074_MRP_SimpsonTimberRemanufacturingPlant_Arcata

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash • Eureka, CA 95501-2138 • 707/441-8855 • FAX: 707/441-8877 •shninfo@shn-engr.com

Daily Field Report

Job No. 003154

Page 1 of 1

Project Name	Client/Owner	Weather	
Former Simpson Reman Facility	Simpson Timber Company	SUN	
General Location of Work	Project Manager	Date	Day of Week
Arcata, CA	Roland Rueber	10/18/12	THUR
Type of Work	Supervisor	Technician	
Ground Water Sampling		E. WARD	

915	ON SITE. OPEN ALL WELLS. MEASURE DTW IN ALL
	WELLS AND LOCK WELLS NOT TO BE SAMPLED. REPLACED THE
	WELL CAP ON MW-5.
1130	CALIBRATE DO AND PH METER.
1150	MEASURE DO IN MW-2.
1205	PURGING MW-2 W/ A DISPOSABLE BAILER. ALL PURGE WATER
	CAUGHT IN 5 GAL. BUCKETS.
1245	SAMPLE MW-2 WITH IT'S BAILER. LOCK WELL.
1300	MEASURE DO IN MW-4.
1310	PURGING MW-4 WITH A DISPOSABLE BAILER. ALL PURGE WATER CAUGHT
	IN 5 GAL. BUCKETS.
1335	SAMPLE MW-4 WITH IT'S BAILER. LOCK WELL.
1345	MEASURE DO IN MW-7.
1355	PURGING MW-7 WITH A DISPOSABLE BAILER. ALL PURGE WATER CAUGHT
	IN 5 GAL. BUCKETS.
1425	SAMPLE MW-7 WITH IT'S BAILER. LOCK WELL.
1443	MEASURE DO IN MW-3.
1455	PURGING MW-3 W/ A DISPOSABLE BAILER. ALL PURGE WATER CAUGHT
	IN 5 GAL. BUCKETS.
1520	SAMPLE MW-3 WITH IT'S BAILER. TOOK DUPLICATE (DUP) SAMPLE.
	LOCK WELL.
1600	CLEAN UP FILL UP, COC, OFF SITE
	TAKE SAMPLES TO NCL

Well	Purged	Sampled
MW-1	NO	NO
MW-2	YES	YES
MW-3		
MW-4		
MW-5	NO	NO
MW-6		
MW-7	YES	YES
MW-8	NO	NO

Note: All purge and decon water was transported to SHN's P.W.S.T. located at 812 W. Wabash Ave. Eureka, Ca. 29 gallons total.

Copy given to:

Reported By:

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Equipment Calibration Sheet

Name: ERIC WARD

Project Name: Former Simpson Reman Facility

Reference No.: 003154

Date: 10/18/12

Equipment: [X] pH & EC [ ] PID [ ] $GTCO_2$ [ ] GTLEL
[ ] Turbidity [X] Other Dissolved Oxygen Meter

Description of Calibration Procedure and Results:

pH & EC meter calibrated using a 2 buffer method with a pH 7.00 and 4.01. Meter was set exactly to 7.00 and 4.01. 10.00 ~~10.00~~

Dissolved Oxygen Meter is self calibrating with the Altimeter set at 0

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Groundwater Elevations

Job No.: 003154 Name: E. WARD

Client: Former Simpson Remanufacturing Facility Date: 10/18/12

Location: Arcata, CA Weather: SUN

Sample Location	Time of Reading	Top of Casing Elevation (feet NGVD 29)	Depth To Water (feet)	Water Surface Elevation (feet)
MW-1	1043	20.69	8.46	12.23
MW-2	1121	22.10	9.83	12.27
MW-3	1127	22.85	11.36	11.49
MW-4	1125	22.48	11.08	11.40
MW-5	1048	21.82	9.61	12.21
MW-6	1054	23.03	11.54	11.49
MW-7	1106	21.48	9.31	12.17
MW-8	1059	21.56	9.29	12.27

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Water Sampling Data Sheet

Project Name:	Former Simpson Reman Facility	Date/Time:	10/18/12
Project No.:	003154	Sampler Name:	E. WARD
Location:	Arcata, CA	Sample Type:	Ground Water
Well #:	MW-2	Weather	Sun
Hydrocarbon Thickness/Depth (feet):		Key Needed:	Dolphin

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
25.10	-	9.83	=	15.27	x	0.163	=	2.49 x 3 = 7.47

Time	DO (mg/L)	CO_2 (mg/L)	ORP (mV)	EC (uS/cm)	Temp (°F) °C	pH	Water Removed (gal)	Comments
1154	0.35	---	---	---	---	---	0.0 gal.	
1210	---	100	73	---	---	---	0.25 gal.	
1220	---	---	---	252.3	18.5°C	6.16	2.5 gal.	
1226	No Flow	---	---	274.5	17.7°C	6.23	5 gal.	
1232	Thru Cell	---	---	273.1	17.6°C	6.26	7.5 gal.	

Purge Method: Hand Bail Total Volume Removed: 7.5 (gal)

Laboratory Information				
Sample ID	**# & Type of Containers**	**Preservative / Type**	**Laboratory**	**Analyses**
MW-2	3- 40 ml VOAs	HCL	NCL	VOCs (8260 List 9)

Well Condition:

Remarks:

Well recharged to: 9.83 feet BTOC at sampling time: 1245

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Water Sampling Data Sheet

Project Name:	Former Simpson Reman Facility	Date/Time:	10/18/12
Project No.:	003154	Sampler Name:	E. WARD
Location:	Arcata, CA	Sample Type:	Ground Water
Well #:	MW-3	Weather	SUN
Hydrocarbon Thickness/Depth (feet):		Key Needed:	Dolphin

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
25.25	-	11.36	=	13.89	x	0.163	=	2.26 x 3 = 6.79

Time	DO (mg/L)	1.5 CO_2 (mg/L)	ORP (mV)	EC (uS/cm)	Temp (°F)°C	pH	Water Removed (gal)	Comments
1452	0.31	--	--	--	--	--	0.0 gal.	
1458	--	300	-80	--	--	--	0.25 gal.	
1502	--	--	--	323.3	19.7°C	10.60	2.5 gal.	
1508	No Flow	--	--	330.7	18.1°C	6.68	4.75 gal.	
1512	Thru Cell	--	--	330.7	17.5°C	6.69	7.0 gal.	

Purge Method: Hand Bail Total Volume Removed: 7 (gal)

Laboratory Information				
Sample ID	**# & Type of Containers**	**Preservative / Type**	**Laboratory**	**Analyses**
MW-3	3- 40 ml VOAs	HCL	NCL	VOCs (8260 list 9)
Dup	3-40 ml VOAs	HCL	NCL	VOCs (8260 list 9)

Well Condition:

Remarks: Duplicate sample ID: Dup

Well recharged to: 11.57 feet BTOC at sampling time: 1520

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Water Sampling Data Sheet

Project Name:	Former Simpson Reman Facility	Date/Time:	10/18/12
Project No.:	003154	Sampler Name:	E. GARD
Location:	Arcata, CA	Sample Type:	Ground Water
Well #:	MW-4	Weather	SUN
Hydrocarbon Thickness/Depth (feet):		Key Needed:	Dolphin

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
25.28	-	11.08	=	14.20	x	0.163	=	2.31 x 3 = 6.94

Time	DO (mg/L)	CO_2 (mg/L)	ORP (mV)	EC (uS/cm)	Temp (°C)	pH	Water Removed (gal)	Comments
1305	0.32	--	--	--	--	--	0.0 gal.	
1311	--	100	11	--	--	--	0.25 gal.	
1315	--	--	--	212.1	19.0°C	6.70	2.5 gal.	
1319	No Flow	--	--	222.3	17.9°C	6.72	4.75 gal.	
1324	Thru Cell	--	--	226.2	17.1	6.80	7.0 gal.	

Purge Method: Hand Bail Total Volume Removed: 7 (gal)

Laboratory Information				
Sample ID	**# & Type of Containers**	**Preservative / Type**	**Laboratory**	**Analyses**
MW-4	3- 40 ml VOAs	HCL	NCL	VOCs (8260 List 9)

Well Condition:

Remarks:

Well recharged to: 11.80 feet BTOC at sampling time: 1335

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Water Sampling Data Sheet

Project Name:	Former Simpson Reman Facility	Date/Time:	10/18/12
Project No.:	003154	Sampler Name:	E. LIARD
Location:	Arcata, CA	Sample Type:	Ground Water
Well #:	MW-7	Weather	SUN
Hydrocarbon Thickness/Depth (feet):		Key Needed:	Dolphin

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
24.05	-	9.31	=	14.74	x	0.163	=	2.40 x 3 = 7.21

Time	DO (mg/L)	1:5 CO_2 (mg/L)	ORP (mV)	EC (uS/cm)	Temp (°F) °C	pH	Water Removed (gal)	Comments
1350	0.35	---	---	---	---	---	0.0 gal.	
1357	---	500	-32	---	---	---	0.25 gal.	
1402	---	---	---	347.7	18.4°C	6.39	2.5 gal.	
1408	No Flow	---	---	368.3	16.9°C	6.48	5 gal.	
1412	Thru Cell	---	---	366.1	16.2°C	6.52	7.25 gal.	

Purge Method: Hand Bail

Total Volume Removed: 7.25 (gal)

Laboratory Information

Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
MW-7	3- 40 ml VOAs	HCL	NCL	VOCs (8260 List 9)

Well Condition:

Remarks:

Well recharged to: 11.53 feet BTOC at sampling time: 1425

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Daily Field Report

Job No. 003154

Page 1 of 1

Project Name	Client/Owner	Weather	
Former Simpson Reman Facility	Simpson Timber Company	OVERCAST	
General Location of Work	Project Manager	Date	Day of Week
Arcata, CA	Roland Rueber	4/11/13	THUR
Type of Work	Supervisor	Technician	
Ground Water Sampling		E. CHARD	

0915	ON SITE. OPEN ALL WELLS. MEASURE DTW IN ALL WELLS
	AND DECON WATER LEVEL METER BETWEEN WELLS.
	LOCK WELLS NOT SAMPLED. CALIBRATE PH AND DO METERS
1215	MEASURE DO IN MW-2
1225	PURGING MW-2 WITH A DISPOSABLE BAILER. ALL PURGE WATER CAUGHT
	IN 5 GAL. BUCKETS.
1305	SAMPLE MW-2 WITH IT'S BAILER, LOCKED WELL
1320	MEASURE DO IN MW-4
1330	PURGING MW-4 WITH A DISPOSABLE BAILER, ALL PURGE WATER CAUGHT
	IN 5 GAL. BUCKETS.
1355	SAMPLE MW-4 WITH IT'S BAILER, LOCKED WELL.
1415	MEASURE DO IN MW-7
1425	PURGING MW-7 WITH A DISPOSABLE BAILER. ALL PURGE WATER CAUGHT
	IN 5 GAL. BUCKETS.
1505	SAMPLE MW-7 WITH IT'S BAILER, LOCK WELL
1570	MEASURE DO IN MW-3
	PURGING MW-3 WITH A DISPOSABLE BAILER. ALL PURGE WATER CAUGHT
	IN 5 GAL. BUCKETS.
1610	SAMPLE MW-3 WITH IT'S BAILER. TOOK DUP SAMPLE, LOCKED WELL
1630	CLEAN UP AND OFF SITE.
	TOOK SAMPLES TO NCL.

Well	Purged	Sampled
MW-1	NO	NO
MW-2	YES	YES
MW-3	1	1
MW-4	1	1
MW-5	NO	NO
MW-6	NO	NO
MW-7	YES	YES
MW-8	NO	NO

Note: All purge and decon water was transported to SHN's P.W.S.T. located at 812 W. Wabash Ave. Eureka, Ca. 40 gallons total.

Copy given to:

Reported By: E. Wyatt

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Equipment Calibration Sheet

Name: ERIC WARD

Project Name: Former Simpson Reman Facility

Reference No.: 003154

Date: 4/11/13

Equipment: [X] pH & EC [ ] PID [ ] $GTCO_2$ [ ] GTLEL
[ ] Turbidity [X] Other Dissolved Oxygen Meter

Description of Calibration Procedure and Results:

pH & EC meter calibrated using a ~~2~~ 3 buffer method with a pH 7.00 and 10.00 4.01. Meter was set exactly to 7.00 and 4.01. 10.00

Dissolved Oxygen Meter is self calibrating with the Altimeter set at 0

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Groundwater Elevations

Job No.: 003154 Name: E. WARD

Client: Former Simpson Remanufacturing Facility Date: 4/11/15

Location: Arcata, CA Weather: OVERCAST

Sample Location	Time of Reading	Top of Casing Elevation (feet NGVD 29)	Depth To Water (feet)	Water Surface Elevation (feet)
MW-1	1019	20.69	3 72	16.97
MW-2	1137	22.10	5 12	16.98
MW-3	1141	22.85	6 25	16.60
MW-4	1139	22.48	6 02	16.46
MW-5	1024	21.82	4 83	16.99
MW-6	1036	23.03	6 48	16.55
MW-7	1129	21.48	4 44	17.04
MW-8	1124	21.56	4 58	16.98

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Water Sampling Data Sheet

Project Name:	Former Simpson Reman Facility	Date/Time:	4/11/15
Project No.:	003154	Sampler Name:	E. LIARD
Location:	Arcata, CA	Sample Type:	Ground Water
Well #:	MW-2	Weather	OVERCAST / WINDY
Hydrocarbon Thickness/Depth (feet):		Key Needed:	Dolphin

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
25.10	-	5.12	=	19.98	x	0.163	=	3.26 x 3 = 9.77

Time	DO (mg/L)	CO_2 (mg/L)	ORP (mV)	EC (uS/cm)	Temp (°C)	pH	Water Removed (gal)	Comments
1222	7.50	--	--	--	--	--	0.0 gal.	
1235	--	40	203	--	--	--	0.25 gal.	
1246	--	--	--	185.7	14.9°C	4.82	3.5 gal.	
1251	No Flow	--	--	143.0	14.2°C	5.07	6.75 gal.	
1256	Thru Cell	--	--	134.4	13.7°C	5.03	10.0 gal.	

Purge Method: Hand Bail Total Volume Removed: _____ (gal)

Laboratory Information				
Sample ID	**# & Type of Containers**	**Preservative / Type**	**Laboratory**	**Analyses**
MW-2	3- 40 ml VOAs	HCL	NCL	VOCs (8260 List 9)

Well Condition:

Remarks:

Well recharged to: 5.12 feet BTOC at sampling time: 1305

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Water Sampling Data Sheet

Project Name:	Former Simpson Reman Facility	Date/Time:	4/11/13
Project No.:	003154	Sampler Name:	E. WARD
Location:	Arcata, CA	Sample Type:	Ground Water
Well #:	MW-3	Weather	OVERCAST/WINDY
Hydrocarbon Thickness/Depth (feet):		Key Needed:	Dolphin

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
25.25	-	6.25	=	19.00	x	0.163	=	3.10 x 3 = 9.29

Time	DO (mg/L)	CO_2 (mg/L)	ORP (mV)	EC (uS/cm)	Temp (°F)	pH	Water Removed (gal)	Comments
1535	1.38	---	---	---	---	---	0.0 gal.	
1543	---	90	184	---	---	---	0.25 gal.	
1550	---	---	---	195.8	14.1°C	5.31	3.25 gal.	
1555	No Flow	---	---	187.6	13.6°C	5.24	6.5 gal.	
1601	Thru Cell	---	---	192.8	13.4°C	5.18	9.5 gal.	

Purge Method: Hand Bail Total Volume Removed: _____ (gal)

Laboratory Information				
Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
MW-3	3- 40 ml VOAs	HCL	NCL	VOCs (8260 list 9)
Dup	3-40 ml VOAs	HCL	NCL	VOCs (8260 list 9)

Well Condition:

Remarks: Duplicate sample ID: Dup

Well recharged to: 6.26 feet BTOC at sampling time: 1610

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Water Sampling Data Sheet

Project Name:	Former Simpson Reman Facility	Date/Time:	4/11/13
Project No.:	003154	Sampler Name:	E. WARD
Location:	Arcata, CA	Sample Type:	Ground Water
Well #:	MW-4	Weather	OVERCAST/WINDY
Hydrocarbon Thickness/Depth (feet):		Key Needed:	Dolphin

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
25.28	-	6.02	=	19.26	x	0.163	=	3.14 x 3 = 9.42

Time	DO (mg/L)	CO_2 (mg/L)	ORP (mV)	EC (uS/cm)	Temp (°F/°C)	pH	Water Removed (gal)	Comments
1325	1.50	---	---	---	---	---	0.0 gal.	
1332	---	60	90	---	---	---	0.25 gal.	
1336	---	---	---	152.0	14.7°C	5.43	3.25 gal.	
1341	No Flow	---	---	154.5	14.2°C	5.43	6.5 gal.	
1346	Thru Cell	---	---	164.3	14.0°C	5.46	9.5 gal.	

Purge Method: Hand Bail Total Volume Removed: _____ (gal)

Laboratory Information				
Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
MW-4	3- 40 ml VOAs	HCL	NCL	VOCs (8260 List 9)

Well Condition: _____

Remarks: _____

Well recharged to: 6.02 feet BTOC at sampling time: 1355

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Water Sampling Data Sheet

Project Name:	Former Simpson Reman Facility	Date/Time:	4/11/13
Project No.:	003154	Sampler Name:	E. WARD
Location:	Arcata, CA	Sample Type:	Ground Water
Well #:	MW-7	Weather	OVERCAST / WINDY
Hydrocarbon Thickness/Depth (feet):		Key Needed:	Dolphin

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
24.05	-	4.44	=	19.61	x	0.163	=	3.20 x 3 = 9.59

Time	DO (mg/L)	1.5 CO_2 (mg/L)	ORP (mV)	EC (uS/cm)	Temp (°F) °C	pH	Water Removed (gal)	Comments
1420	0.87	--	--	--	--	--	0.0 gal.	
1430	--	200	143	--	--	--	0.25 gal.	
1475	--	--	--	306.9	14.1°C	5.28	3.25 gal.	
1439	No Flow	--	--	298.7	15.3°C	5.27	6.5 gal.	
1445	Thru Cell	--	--	291.8	12.9°C	5.25	9.75 gal.	

Purge Method: Hand Bail Total Volume Removed: _____ (gal)

Laboratory Information				
Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
MW-7	3- 40 ml VOAs	HCL	NCL	VOCs (8260 List 9)

Well Condition: SLOW RECHARGE

Remarks:

Well recharged to: 6.25 feet BTOC at sampling time: 1505

Client Name: **SIMPSON ARCATA REMAN FACILITY**

The water from your site: **3315 FOSTER AVENUE, ARCATA, CA**

SHN ref # **003154** Collected On: **10/18/2012**

Has been tested and certified as acceptable to be discharged into the City of Eureka municipal sewer system.

Amount Discharged: **29 GALLONS**

Date Discharged: **1/15/2013**

Certified by: **NATHAN SANGER**

SHN CONSULTING ENGINEERS & GEOLOGISTS, INC.
City of Eureka Wastewater Discharge Permit #65

Client Name: **SIMPSON ARCATA REMAN FACILITY**

The water from your site: **3315 FOSTER AVENUE, ARCATA, CA**

SHN ref # **003154** Collected On: **4/11/2013**

Has been tested and certified as acceptable to be discharged into the City of Eureka municipal sewer system.

Amount Discharged: **39 GALLONS**

Date Discharged: **5/22/2013**

Certified by: **NATHAN SANGER**

SHN CONSULTING ENGINEERS & GEOLOGISTS, INC.
City of Eureka Wastewater Discharge Permit #65

Appendix B

Historical Monitoring Data

Table B-1
Well Construction Details
Former Simpson Remanufacturing Facility, Arcata, California

Sample Location	Date Installed	Casing Material	Screen Slot Size	Screened Interval (feet BGS)[1]	Sand Interval (feet BGS)	Sanitary Seal (feet BGS)
MW-1	12/2/1997	2-inch Schedule 40 PVC[2] Blank	0.020	5-25	4-25	0.5-4
MW-2	12/3/1997		0.020	5-25	4-25	0.5-4
MW-3	12/3/1997		0.020	5-25	4-25	0.5-4
MW-4	12/3/1997		0.020	5-25	4-25	0.5-4
MW-5	5/22/1998		0.020	5-25	4-25	0.5-4
MW-6	5/22/1998		0.020	5-25	4-25	0.5-4
MW-7	1/22/2004		0.010	5-25	4-25	0.5-4
MW-8	1/22/2004		0.010	5-25	4-25	0.5-4

1. BGS: Below Ground Surface
2. PVC: Polyvinyl Chloride

Table B-2 Historical Groundwater Elevations Former Simpson Remanufacturing Facility, Arcata, California				
Location	Date	Top of Casing Elevation (feet)[1]	Depth-to-Water (feet)[2]	Groundwater Elevation (feet)[1]
MW-1	2/5/04	20.69	3.13	17.56
	5/19/04		4.37	16.32
	8/30/04		8.59	12.10
	11/9/04		8.93	11.76
	7/20/05		4.73	15.96
	10/24/05		7.90	12.79
	2/9/06		2.19	18.50
	5/10/06		3.05	17.64
	7/27/06		5.27	15.42
	1/16/07		3.71	16.98
	4/10/07		3.14	17.55
	7/9/07		NM[3]	NM
	10/9/07		8.24	12.45
	1/10/08		2.60	18.09
	4/14/08		3.57	17.12
	7/16/08		6.75	13.94
	11/10/08		8.70	11.99
	1/8/09		5.55	15.14
	4/14/09		3.71	16.98
	7/9/09		6.22	14.47
	10/8/09		9.25	11.44
	1/7/10		7.05	13.64
	4/7/10		2.73	17.96
	7/9/10		4.56	16.13
	10/5/10		7.89	12.80
	1/6/11		3.21	17.48
	10/6/11		7.15	13.54
	4/11/12		2.38	18.31
	10/18/12		8.46	12.23
	4/11/13		3.72	16.97
MW-2	2/5/04	22.10	4.53	17.57
	5/19/04		5.80	16.30
	8/30/04		9.96	12.14
	11/9/04		10.36	11.74
	7/20/05		6.15	15.95
	10/24/05		9.28	12.82
	2/9/06		3.60	18.50
	5/10/06		4.50	17.60
	7/27/06		6.71	15.39
	1/16/07		5.01	17.09
	4/10/07		4.61	17.49

Table B-2 Historical Groundwater Elevations Former Simpson Remanufacturing Facility, Arcata, California				
Location	Date	Top of Casing Elevation (feet)[1]	Depth-to-Water (feet)[2]	Groundwater Elevation (feet)[1]
MW-2 cont'd	7/9/07	22.10	6.86	15.24
	10/9/07		9.84	12.26
	1/10/08		3.96	18.14
	4/14/08		5.01	17.09
	7/16/08		8.18	13.92
	11/10/08		10.06	12.04
	1/8/09		6.98	15.12
	4/14/09		5.15	16.95
	7/9/09		7.65	14.45
	10/8/09		10.67	11.43
	1/7/10		8.35	13.75
	4/7/10		4.15	17.95
	7/9/10		5.99	16.11
	10/5/10		9.27	12.83
	1/6/11		4.61	17.49
	10/6/11		8.55	13.55
	4/11/12		3.81	18.29
	10/18/12		9.83	12.27
	4/11/13		5.12	16.98
MW-3	2/5/04	22.85	5.04	17.81
	5/19/04		6.94	15.91
	8/30/04		11.40	11.45
	11/9/04		12.14	10.71
	7/20/05		7.23	15.62
	10/24/05		10.62	12.23
	2/9/06		3.45	19.40
	5/10/06		5.00	17.85
	7/27/06		7.97	14.88
	1/16/07		6.04	16.81
	4/10/07		5.16	17.69
	7/9/07		8.14	14.71
	10/9/07		11.26	11.59
	1/10/08		4.26	18.59
	4/14/08		5.81	17.04
	7/16/08		9.46	13.39
	11/10/08		12.11	10.74
	1/8/09		8.78	14.07
	4/14/09		6.22	16.63
	7/9/09		8.89	13.96
	10/8/09		12.14	10.71
	1/7/10		11.55	11.30

Table B-2 Historical Groundwater Elevations Former Simpson Remanufacturing Facility, Arcata, California				
Location	Date	Top of Casing Elevation (feet)[1]	Depth-to-Water (feet)[2]	Groundwater Elevation (feet)[1]
MW-3 cont'd	4/7/10	22.85	4.65	18.20
	7/9/10		7.07	15.78
	10/5/10		10.65	12.20
	1/6/11		5.42	17.43
	10/6/11		10.60	12.25
	4/11/12		4.24	18.61
	10/18/12		11.36	11.49
	4/11/13		6.25	16.60
MW-4	2/5/04	22.48	4.57	17.91
	5/19/04		6.71	15.77
	8/30/04		11.16	11.32
	11/9/04		11.96	10.52
	7/20/05		6.95	15.53
	10/24/05		10.33	12.15
	2/9/06		2.60	19.88
	5/10/06		4.37	18.11
	7/27/06		7.72	14.76
	1/16/07		5.74	16.74
	4/10/07		4.60	17.88
	7/9/07		7.90	14.58
	10/9/07		10.89	11.59
	1/10/08		3.85	18.63
	4/14/08		5.42	17.06
	7/16/08		9.12	13.36
	11/10/08		11.87	10.61
	1/8/09		8.72	13.76
	4/14/09		5.94	16.54
	7/9/09		8.59	13.89
	10/8/09		11.74	10.74
	1/7/10		10.61	11.87
	4/7/10		4.27	18.21
	7/9/10		6.78	15.70
	10/5/10		10.34	12.14
	1/6/11		5.07	17.41
	10/6/11		10.40	12.08
	4/11/12		3.77	18.71
	10/18/12		11.08	11.40
	4/11/13		6.02	16.46
MW-5	2/5/04	21.82	4.20	17.62
	5/19/04		5.47	16.35
	8/30/04		9.73	12.09

Table B-2 Historical Groundwater Elevations Former Simpson Remanufacturing Facility, Arcata, California				
Location	**Date**	**Top of Casing Elevation (feet)[1]**	**Depth-to-Water (feet)[2]**	**Groundwater Elevation (feet)[1]**
MW-5 cont'd	11/9/04	21.82	10.02	11.80
	7/20/05		5.81	16.01
	10/24/05		9.03	12.79
	2/9/06		3.22	18.60
	5/10/06		4.10	17.72
	7/27/06		6.38	15.44
	1/16/07		4.66	17.16
	4/10/07		4.19	17.63
	7/9/07		6.50	15.32
	10/9/07		9.35	12.47
	1/10/08		3.71	18.11
	4/14/08		4.64	17.18
	7/16/08		7.85	13.97
	11/10/08		9.85	11.97
	1/8/09		6.75	15.07
	4/14/09		6.81	15.01
	7/9/09		7.31	14.51
	10/8/09		10.37	11.45
	1/7/10		8.26	13.56
	4/7/10		3.82	18.00
	7/9/10		5.66	16.16
	10/5/10		9.02	12.80
	1/6/11		4.29	17.53
	10/6/11		8.31	13.51
	4/11/12		3.44	18.38
	10/18/12		9.61	12.21
	4/11/13		4.83	16.99
MW-6	2/5/04	23.03	5.13	17.90
	5/19/04		7.09	15.94
	8/30/04		11.59	11.44
	11/9/04		12.31	10.72
	7/20/05		7.37	15.66
	10/24/05		10.78	12.25
	2/9/06		Not able to locate well	
	5/10/06		5.00	18.03
	7/27/06		8.10	14.93
	1/16/07		Not able to locate well	
	4/10/07		5.17	17.86
	7/9/07		8.21	14.82
	10/9/07		11.36	11.67
	1/10/08		4.48	18.55

Table B-2 Historical Groundwater Elevations Former Simpson Remanufacturing Facility, Arcata, California				
Location	Date	Top of Casing Elevation (feet)[1]	Depth-to-Water (feet)[2]	Groundwater Elevation (feet)[1]
MW-6 cont'd	4/14/08	23.03	5.93	17.10
	7/16/08		9.57	13.46
	11/10/08		12.24	10.79
	1/8/09		9.90	13.13
	4/14/09		6.36	16.67
	7/9/09		9.01	14.02
	10/8/09		12.23	10.80
	1/7/10		10.89	12.14
	4/7/10		4.83	18.20
	7/9/10		7.23	15.80
	10/5/10		10.82	12.21
	1/6/11		5.60	17.43
	10/6/11		10.75	12.28
	4/11/12		4.37	18.66
	10/18/12		11.54	11.49
	4/11/13		6.48	16.55
MW-7	2/5/04	21.48	3.84	17.64
	5/19/04		5.19	16.29
	8/30/04		9.42	12.06
	11/9/04		9.81	11.67
	7/20/05		5.52	15.96
	10/24/05		8.73	12.75
	2/9/06		2.90	18.58
	5/10/06		3.76	17.72
	7/27/06		6.10	15.38
	1/16/07		4.34	17.14
	4/10/07		3.87	17.61
	7/9/07		6.23	15.25
	10/9/07		9.06	12.42
	1/10/08		2.37	19.11
	4/14/08		4.34	17.14
	7/16/08		7.56	13.92
	11/10/08		9.61	11.87
	1/8/09		6.20	15.28
	4/14/09		4.51	16.97
	7/9/09		7.03	14.45
	10/8/09		10.07	11.41
	1/7/10		7.64	13.84
	4/7/10		2.96	18.52
	7/9/10		5.36	16.12
	10/5/10		8.71	12.77

Table B-2 Historical Groundwater Elevations Former Simpson Remanufacturing Facility, Arcata, California				
Location	**Date**	**Top of Casing Elevation (feet)[1]**	**Depth-to-Water (feet)[2]**	**Groundwater Elevation (feet)[1]**
MW-7 cont'd	1/6/11	21.48	3.84	17.64
	10/6/11		8.04	13.44
	4/11/12		2.54	18.94
	10/18/12		9.31	12.17
	4/11/13		4.44	17.04
MW-8	2/5/04	21.56	3.94	17.62
	5/19/04		5.24	16.32
	8/30/04		9.47	12.09
	11/9/04		9.79	11.77
	7/20/05		5.58	15.98
	10/24/05		8.78	12.78
	2/9/06		2.96	18.60
	5/10/06		3.87	17.69
	7/27/06		6.15	15.41
	1/16/07		4.38	17.18
	4/10/07		3.91	17.65
	7/9/07		6.29	15.27
	10/9/07		8.08	13.48
	1/10/08		3.26	18.30
	4/14/08		4.55	17.01
	7/16/08		7.60	13.96
	11/10/08		9.58	11.98
	1/8/09		6.88	14.68
	4/14/09		4.55	17.01
	7/9/09		7.06	14.50
	10/8/09		10.10	11.46
	1/7/10		7.85	13.71
	4/7/10		3.32	18.24
	7/9/10		5.39	16.17
	10/5/10		8.73	12.83
	1/6/11		3.95	17.61
	10/6/11		8.39	13.17
	4/11/12		3.13	18.43
	10/18/12		9.29	12.27
	4/11/13		4.58	16.98

1. Relative to National Geodetic Vertical Datum 1929 (NGVD29)
2. Below top of casing
3. NM: not measured

Table B-3 Historical Groundwater Flow Direction and Gradient Former Simpson Remanufacturing Facility, Arcata, California		
Date	**Groundwater Flow Direction**	**Gradient (ft/ft)[1]**
2/5/04	Northwest	0.0015
5/19/04	Southeast	0.003
8/30/04	South-Southeast	0.005
11/9/04	South-Southeast	0.008
7/20/05	Southeast	0.001
10/24/05	Southeast	0.0025
2/9/06	Northwest	0.0091
5/10/06	Northwest	0.002
7/27/06	Southeast	0.004
1/16/07	South-Southeast	0.003
4/10/07	West-Northwest	0.002
7/9/07	Southeast	0.003
10/9/07	Southeast	0.005
1/10/08	Flow direction varied, generally to the north, west, and southwest	0.005 average
4/14/08	South	0.001
7/16/08	Southeast	0.004
11/10/08	Southeast	0.009
1/8/09	Southeast	0.007
4/14/09	Southeast	0.002
7/9/09	Southeast	0.003
10/8/09	Southeast	0.004
1/7/10	Southeast	0.009
4/7/10	Northwest	0.001
7/9/10	Southeast	0.002
10/5/10	Southeast	0.003
1/6/11	South-Southeast	0.0005
10/6/11	Southeast	0.007
4/11/12	West - Northwest	0.0006
10/18/12	Southeast	0.004
4/11/13	Southeast	0.003
1. ft/ft: feet per foot		

Table B-4
Historical Groundwater Analytical Results
Former Simpson Remanufacturing Facility, Arcata, California
(in ug/L)[1]

Sample Location	Sample Date	Phenols[2]	PCP[3]	TCP[3]	trans-1,2-DCE[4]	cis-1,2-DCE	Vinyl Chloride	Benzene	Total Xylenes
MW-1	2/5/04	ND[5]	<0.30[6]	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50
MW-2	2/5/04	ND	<0.30	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50
	5/19/04	NS[7]	NS	NS	NS	NS	NS	NS	NS
	8/30/04	ND	**0.58**	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50
	11/9/04	ND	<0.30	<1.0	<1.0	<1.0	<1.0	<0.50	<1.0
	7/20/05	N/A[8]	<0.30	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50
	8/1/05	ND	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/24/05	ND	<0.30	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50
	2/9/06	ND	<0.30	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50
	5/10/06	ND	<0.30	<1.0	<1.0	<1.0	<1.0	<0.50	<1.0
	7/27/06	ND	<0.30	<1.0	<1.0	<1.0	<1.0	<0.50	<1.0
	1/16/07	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	4/10/07	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	7/9/07	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	10/9/07	N/A	N/A	N/A	<1.0	**1.4**	<1.0	<0.50	<1.0
	1/10/08	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	4/14/08	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	7/16/08	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	11/10/08	N/A	N/A	N/A	<1.0	**1.1**	<1.0	<0.50	<1.0
	1/8/09	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	4/14/09	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	7/9/09	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	10/8/09	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	1/7/10	N/A	N/A	N/A	<1.0	**1.1**	<1.0	<0.50	<1.0
	4/7/10	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	7/9/10	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	10/5/10	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	1/6/11	N/A	N/A	N/A	<1.0	<1.0	<0.50	<0.50	<1.0
	10/6/11	N/A	N/A	N/A	<1.0	<1.0	<0.50	<0.50	<1.0
	4/11/12	N/A	N/A	N/A	<0.50	<0.50	<0.50	<0.50	<1.0
	10/18/12	N/A	N/A	N/A	<0.50	<0.50	<0.50	<0.50	<1.0
	4/11/13	N/A	N/A	N/A	<0.50	<0.50	<0.50	<0.50	<1.0
MW-3	2/5/04	ND	<0.30	<1.0	<1.0	**14**	**1.6**	<0.50	<0.50
	5/19/04	ND	<0.30	<1.0	<1.0	**19**	**2.4**	**0.70**	<0.50
	8/30/04	ND	<0.30	<1.0	<1.0	**30**	**2.8**	**0.66**	<0.50
	11/9/04	ND	<0.30	<1.0	**2.0**	**24**	**1.7**	**0.82**	<1.0
	7/20/05	N/A	<0.30	<1.0	<1.0	**15**	**1.7**	<0.50	<0.50
	8/1/05	ND	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/24/05	ND	<0.30	<1.0	<1.0	**12**	**1.1**	<0.50	<0.50
	2/9/06	ND	<0.30	<1.0	<1.0	**25**	**2.6**	**0.58**	<0.50
	5/10/06	ND	<0.30	<1.0	**1.0**	**31**	**4.8**	**0.76**	<1.0
	7/27/06	ND	<0.30	<1.0	<1.0	**30**	**5.5**	**0.62**	<1.0
	1/16/07	N/A	N/A	N/A	<1.0	**20**	**1.2**	<0.50	<1.0
	4/10/07	N/A	N/A	N/A	<1.0	**22**	**6.1**	**0.71**	<1.0
	7/9/07	N/A	N/A	N/A	<1.0	**14**	**3.6**	**0.52**	<1.0
	10/9/07	N/A	N/A	N/A	**1.1**	**24**	**5.8**	**0.65**	<1.0

Table B-4
Historical Groundwater Analytical Results
Former Simpson Remanufacturing Facility, Arcata, California
(in ug/L)[1]

Sample Location	Sample Date	Phenols[2]	PCP[3]	TCP[3]	trans-1,2-DCE[4]	cis-1,2-DCE	Vinyl Chloride	Benzene	Total Xylenes
MW-3 cont'd	1/10/08	N/A	N/A	N/A	<1.0	**2.9**	<1.0	<0.50	<1.0
	4/14/08	N/A	N/A	N/A	<1.0	**24**	**8.3**	**0.71**	<1.0
	7/16/08	N/A	N/A	N/A	<1.0	**11**	**2.5**	<0.50	<1.0
	11/10/08	N/A	N/A	N/A	<1.0	**29**	**5.5**	**0.99**	<1.0
	1/8/09	N/A	N/A	N/A	<1.0	**4.0**	<1.0	<0.50	<1.0
	4/14/09	N/A	N/A	N/A	<1.0	**9.1**	**2.8**	<0.50	<1.0
	7/9/09	N/A	N/A	N/A	**1.1**	**21**	**2.9**	**0.87**	<1.0
	10/8/09	N/A	N/A	N/A	<1.0	**26**	**4.4**	**1.1**	<1.0
	1/7/10	N/A	N/A	N/A	<1.0	**12**	**1.3**	<0.50	<1.0
	4/7/10	N/A	N/A	N/A	<1.0	**3.8**	<1.0	<0.50	<1.0
	7/9/10	N/A	N/A	N/A	<1.0	**12**	**2.7**	**0.50**	<1.0
	10/5/10	N/A	N/A	N/A	<1.0	**21**	**4.1**	**0.71**	<1.0
	1/6/11	N/A	N/A	N/A	<1.0	**5.9**	**0.66**	<0.50	<1.0
	10/6/11	N/A	N/A	N/A	<1.0	**8.5**	**1.9**	<0.50	<1.0
	4/11/12	N/A	N/A	N/A	<0.50	**6.0**	**0.77**	<0.50	<1.0
	10/18/12	N/A	N/A	N/A	<0.50	**20**	**4.6**	**0.89**	<1.0
	4/11/13	N/A	N/A	N/A	<0.50	**3.5**	**0.53**	<0.50	<1.0
MW-4	2/5/04	ND	<0.30	<1.0	<1.0	**1.5**	<1.0	<0.50	<0.50
	10/6/11	N/A	N/A	N/A	<1.0	**2.5**	<0.50	<0.50	<1.0
	4/11/12	N/A	N/A	N/A	<0.50	**0.5**	<0.50	<0.50	<1.0
	10/18/12	N/A	N/A	N/A	<0.50	**2.5**	**0.57**	<0.50	<1.0
	4/11/13	N/A	N/A	N/A	<0.50	**1.3**	<0.50	<0.50	<1.0
MW-5	2/5/04	ND	<0.30	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50
MW-6	2/5/04	ND	<0.30	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50
MW-7	2/5/04	ND	<0.30	<1.0	<1.0	**4.2**	**77**	**2.6**	<0.50
	5/19/04	ND	<0.30	<1.0	<1.0	**3.8**	**64**	**2.8**	<0.50
	8/30/04	ND	<0.30	<1.0	<1.0	**1.7**	**29**	**2.5**	<0.50
	11/9/04	ND	<0.30	<1.0	<1.0	**1.2**	**8.9**	**2.5**	<1.0
	7/20/05	N/A	<0.30	<1.0	<1.0	<1.0	**6.6**	**2.0**	<0.50
	8/1/05	ND	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/24/05	ND	<0.30	<1.0	<1.0	<1.0	**3.9**	**1.8**	<0.50
	2/9/06	ND	<0.30	<1.0	<1.0	<1.0	<1.0	**0.66**	<0.50
	5/10/06	ND	<0.30	<1.0	<1.0	<1.0	**1.7**	**0.60**	<1.0
	7/27/06	ND	<0.30	<1.0	<1.0	<1.0	**3.2**	**0.89**	<1.0
	1/16/07	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	4/10/07	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	7/9/07	N/A	N/A	N/A	<1.0	<1.0	<1.0	**0.59**	<1.0
	10/9/07	N/A	N/A	N/A	<1.0	<1.0	<1.0	**0.84**	<1.0
	1/10/08	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	4/14/08	N/A	N/A	N/A	<1.0	<1.0	<1.0	**0.71**	<1.0
	7/16/08	N/A	N/A	N/A	<1.0	<1.0	<1.0	**0.71**	<1.0
	11/10/08	N/A	N/A	N/A	<1.0	<1.0	<1.0	**0.66**	<1.0
	1/8/09	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	4/14/09	N/A	N/A	N/A	<1.0	<1.0	<1.0	**0.57**	<1.0
	7/9/09	N/A	N/A	N/A	<1.0	<1.0	<1.0	**0.93**	<1.0
	10/8/09	N/A	N/A	N/A	<1.0	<1.0	<1.0	**0.77**	<1.0
	1/7/10	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0

Table B-4
Historical Groundwater Analytical Results
Former Simpson Remanufacturing Facility, Arcata, California
(in ug/L)[1]

Sample Location	Sample Date	Phenols[2]	PCP[3]	TCP[3]	trans-1,2-DCE[4]	cis-1,2-DCE	Vinyl Chloride	Benzene	Total Xylenes
MW-7 cont'd	4/7/10	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	7/9/10	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	10/5/10	N/A	N/A	N/A	<1.0	<1.0	<1.0	**0.55**	<1.0
	1/6/11	N/A	N/A	N/A	<1.0	<1.0	<0.50	<0.50	<1.0
	10/6/11[9]	N/A	N/A	N/A	<1.0	<1.0	<0.50	<0.50	<1.0
	4/11/12	N/A	N/A	N/A	<0.50	<0.50	<0.50	<0.50	<1.0
	10/18/12	N/A	N/A	N/A	<0.50	<0.50	<0.50	<0.50	<1.0
	4/11/13	N/A	N/A	N/A	<0.50	<0.50	<0.50	<0.50	<1.0
MW-8	2/5/04	ND	<0.30	<1.0	<1.0	<1.0	**6.6**	<0.50	**0.70**
	5/19/04	ND	<0.30	<1.0	<1.0	<1.0	**3.4**	<0.50	**0.99**
	8/30/04	ND	**0.52**	<1.0	<1.0	<1.0	**2.4**	<0.50	<0.50
	11/9/04	ND	<0.30	<1.0	<1.0	<1.0	**2.6**	<0.50	<1.0
	7/20/05	N/A	<0.30	<1.0	<1.0	<1.0	**4.1**	<0.50	<0.50
	8/1/05	ND	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/24/05	ND	<0.30	<1.0	<1.0	<1.0	**5.4**	<0.50	<0.50
	2/9/06	ND	<0.30	<1.0	<1.0	<1.0	**2.0**	<0.50	**0.72**
	5/10/06	ND	<0.30	<1.0	<1.0	<1.0	**2.1**	<0.50	<1.0
	7/27/06	ND	<0.30	<1.0	<1.0	<1.0	**2.8**	<0.50	<1.0
	1/16/07	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	4/10/07	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	7/9/07	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	10/9/07	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	1/10/08	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	4/14/08	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	7/16/08	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	11/10/08	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	1/8/09	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	4/14/09	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	7/9/09	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	10/8/09	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	1/7/10	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	4/7/10	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	7/9/10	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	10/5/10	N/A	N/A	N/A	<1.0	<1.0	<1.0	<0.50	<1.0
	1/6/11	N/A	N/A	N/A	<1.0	<1.0	<0.50	<0.50	<1.0

1. ug/L: micrograms per liter
2. Phenols analyzed in general accordance with U.S. Environmental Protection Agency (EPA) Method No. 8270
3. Pentachlorophenol (PCP) and tetrachlorophenol (TCP) analyzed in general accordance with the Canadian Pulp Report Method
4. DCE: dichloroethene
5. ND: not detected
6. <: "less than" the stated method reporting limit
7. NS: not sampled
8. N/A: not analyzed
9. Toluene was detected in MW-7 at a concentration of 0.86 ug/L.

Table B-5 Historical Biodegradation Indicator Measurement Results Former Simpson Remanufacturing Facility, Arcata, California				
Sample Location	Sample Date	DO[1] (mg/L)[2]	DCO_2[3] (mg/L)	ORP[4] (mV)[5]
MW-1	2/5/04	1.34	100	301
MW-2	2/5/04	9.89	25	296
	5/19/04	NM[6]	NM	NM
	8/30/04	0.48	40	2
	11/9/04	0.82	30	105
	7/20/05	0.46	30	184
	10/24/05	1.07	30	88
	2/9/06	7.99	40	110
	5/10/06	8.09	45	268
	7/27/06	3.93	40	247
	1/16/07	6.70	10	49
	4/10/07	8.20	35	142
	7/9/07	7.44	65	224
	10/9/07	0.28	55	164
	1/10/08	8.00	15	198
	4/14/08	8.20	45	215
	7/16/08	0.72	40	174
	11/10/08	1.96	50	-5
	1/8/09	1.85	35	278
	4/14/09	7.51	20	258
	7/9/09	8.00	45	95
	10/8/09	0.22	55	33
	1/7/10	1.15	70	75
	4/7/10	7.01	60	30
	7/9/10	2.20	65	125
	10/5/10	2.43	100	104
	1/6/11	4.09	50	68
	10/6/11	0.84	50	62
	4/11/12	6.82	30	7
	10/18/12	0.35	100	73
	4/11/13	7.50	40	203
MW-3	2/5/04	5.98	30	-116
	5/19/04	0.74	35	130
	8/30/04	0.43	60	-32
	11/9/04	0.69	35	66
	7/20/05	0.48	30	186
	10/24/05	1.02	30	-60
	2/9/06	2.63	45	-13
	5/10/06	2.19	70	158
	7/27/06	3.03	75	244
	1/16/07	2.20	15	83
	4/10/07	1.32	30	142
	7/9/07	0.26	50	225

Table B-5 Historical Biodegradation Indicator Measurement Results Former Simpson Remanufacturing Facility, Arcata, California				
Sample Location	Sample Date	DO[1] (mg/L)[2]	DCO_2[3] (mg/L)	ORP[4] (mV)[5]
MW-3 cont'd	10/9/07	0.33	70	152
	1/10/08	7.12	20	200
	4/14/08	0.35	40	213
	7/16/08	0.70	45	123
	11/10/08	2.27	70	-200
	1/8/09	5.18	25	285
	4/14/09	1.80	20	269
	7/9/09	0.60	65	248
	10/8/09	0.34	55	5
	1/7/10	2.62	50	92
	4/7/10	3.76	140	66
	7/9/10	0.27	75	-24
	10/5/10	1.52	200	0
	1/6/11	2.20	100	7
	10/6/11	0.87	75	41
	4/11/12	0.40	55	-2
	10/18/12	0.31	300	-80
	4/11/13	1.38	90	184
MW-4	2/5/04	5.63	50	298
	10/6/11	1.71	60	55
	4/11/12	2.65	35	-21
	10/18/12	0.32	100	11
	4/11/13	1.50	60	90
MW-5	2/5/04	1.37	80	323
MW-6	2/5/04	3.36	70	332
MW-7	2/5/04	1.29	120	245
	5/19/04	0.51	90	34
	8/30/04	0.45	100	49
	11/9/04	0.70	110	94
	7/20/05	0.44	150	33
	10/24/05	1.05	50	54
	2/9/06	2.69	175	-42
	5/10/06	1.30	95	62
	7/27/06	2.39	180	214
	1/16/07	0.30	115	29
	4/10/07	0.47	200	-15
	7/9/07	0.12	250	43
	10/9/07	0.15	190	103
	1/10/08	0.52	170	224
	4/14/08	0.37	250	109
	7/16/08	0.18	200	48
	11/10/08	0.21	300	-46
	1/8/09	0.24	125	245

Table B-5
Historical Biodegradation Indicator Measurement Results
Former Simpson Remanufacturing Facility, Arcata, California

Sample Location	Sample Date	DO[1] (mg/L)[2]	DCO_2[3] (mg/L)	ORP[4] (mV)[5]
MW-7 cont'd	4/14/09	0.21	200	42
	7/9/09	0.30	OR[7]	119
	10/8/09	0.31	180	36
	1/7/10	1.50	135	123
	4/7/10	0.48	400	80
	7/9/10	0.18	200	-56
	10/5/10	0.73	275	-45
	1/6/11	1.19	200	7
	10/6/11	0.99	250	-38
	4/11/12	0.28	300	37
	10/18/12	0.35	500	-32
	4/11/13	0.87	200	143
MW-8	2/5/04	1.33	120	219
	5/19/04	0.78	600	-31
	8/30/04	0.52	400	43
	11/9/04	0.72	350	30
	7/20/05	0.49	500	-18
	10/24/05	1.02	250	-51
	2/9/06	2.58	400	-61
	5/10/06	1.27	300	-31
	7/27/06	2.62	500	76
	1/16/07	0.30	140	26
	4/10/07	1.02	350	2
	7/9/07	0.14	600	20
	10/9/07	8.49	570	78
	1/10/08	0.38	185	88
	4/14/08	1.64	700	65
	7/16/08	7.84	500	-10
	11/10/08	0.21	350	-94
	1/8/09	0.23	150	132
	4/14/09	0.26	325	102
	7/9/09	0.6	OR	42
	10/8/09	0.21	225	-137
	1/7/10	0.40	225	-4
	4/7/10	0.45	375	-10
	7/9/10	0.61	450	-120
	10/5/10	0.92	400	-77
	1/6/11	1.41	475	-77

1. DO: dissolved oxygen; field measured using portable instrumentation
2. mg/L: miligrams per liter
3. DCO_2: dissolved carbon dioxide; field measured using portable instrumentation
4. ORP: oxidation-reduction potential
5. mV: millivolts
6. NM: not measured
7. OR: out of range

Table B-6
Historical Natural Attenuation Indicator Results
Former Simpson Remanufacturing Facility, Arcata, California

Sample Location	Sample Date	Alkalinity[1] (mg/L $CaCO_3$)[2]	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (mg/L)	Dissolved Iron (ug/L)[3]	Dissolved Manganese (ug/L)	Ethene (ug/L)	Ethane (ug/L)
MW-2	7/20/05	45	8.9	5.0	1.2	<100[4]	2.8	N/A[5]	N/A
	10/24/05	97	10	2.8	0.6	<100	35	N/A	N/A
	2/9/06	62	4.6	7.8	4.7	<100	<2.0	N/A	N/A
	5/10/06	36	5.1	5.6	5.5	<100	2.3	N/A	N/A
	7/27/06	52	6.6	3.7	2.0	<100	3.6	N/A	N/A
	1/16/07	34	5.2	5.1	2.8	<100	<5.0	<2.38	<1.63
	4/10/07	40	6.0	3.7	2.0	<100	2.2	<2.38	<1.63
	7/9/07	60	10	3.6	0.89	<100	<10	<1.00	<1.00
	10/9/07	100	11	4.9	<0.10	<100	97	<1.00	<1.00
	1/10/08	33	11	3.5	7.1	<100	2.5	<1.00	<1.00
	4/14/08	50	8.2	3.0	1.4	<100	<2.0	N/A	N/A
	7/16/08	84	13	3.4	0.73	<100	6.5	N/A	N/A
	11/10/08	130	13	1.8	<0.10	<100	120	N/A	N/A
	1/8/09	95	13	2.6	1.4	<100	45	N/A	N/A
	4/14/09	42	8.2	3.9	2.4	<100	4.9	N/A	N/A
	7/9/09	44	34	5.6	1.2	<100	12	N/A	N/A
	10/8/09	99	16	3.6	0.12	<100	86	N/A	N/A
	1/7/10	120	15	1.6	0.78	<100	100	N/A	N/A
	4/7/10	36	6.8	3.5	6.1	100	6.1	N/A	N/A
	7/9/10	51	10	6.0	2.7	<100	8.4	N/A	N/A
	10/5/10	100	14	3.3	1.6	390	58	N/A	N/A
	1/6/11	44	9.1	5.1	3.1	N/A	N/A	N/A	N/A
	1/11/11	N/A	N/A	N/A	N/A	<100	4.2	N/A	N/A
MW-3	7/20/05	85	6.5	2.5	0.24	490	290	N/A	N/A
	10/24/05	130	9.3	0.55	0.10	1,800	480	N/A	N/A
	2/9/06	130	10	0.57	<0.10	470	580	N/A	N/A
	5/10/06	150	9.8	1.1	<0.10	2,400	890	N/A	N/A
	7/27/06	200	11	0.71	<0.10	1,600	770	N/A	N/A
	1/16/07	74	0.21	2.6	0.99	<100	54	<2.38	<1.63
	4/10/07	130	10	1.5	<0.10	810	640	<2.38	<1.63
	7/9/07	120	8.7	1.7	0.19	800	410	<1.00	<1.00
	10/9/07	120	12	1.1	<0.10	3,000	750	<1.00	<1.00
	1/10/08	29	17	5.5	4.9	<100	11	<1.00	<1.00
	4/14/08	110	9.7	1.3	0.24	220	470	N/A	N/A
	7/16/08	100	8.8	1.8	0.62	460	300	N/A	N/A
	11/10/08	130	12	<0.50	<0.10	3,000	800	N/A	N/A
	1/8/09	59	8.3	2.7	1.7	<100	53	N/A	N/A
	4/14/09	72	11	2.0	1.7	<100	130	N/A	N/A
	7/9/09	93	10	1.8	0.82	360	240	N/A	N/A
	10/8/09	140	14	0.89	<0.10	4,000	990	N/A	N/A
	1/7/10	70	7.9	2.6	1.1	370	160	N/A	N/A
	4/7/10	39	8.9	6.9	4.4	<100	15	N/A	N/A
	7/9/10	95	11	3.0	1.0	310	220	N/A	N/A
	10/5/10	120	11	1.4	0.36	1,600	480	N/A	N/A
	1/6/11	55	38	19	0.16	<100	24	N/A	N/A
MW-7	7/20/05	190	11	7.1	<0.10	7,500	740	N/A	N/A
	10/24/05	150	10	12	<0.10	6,300	570	N/A	N/A
	2/9/06	160	8.7	7.0	<0.10	2,500	730	N/A	N/A
	5/10/06	210	8.3	5.2	<0.10	4,000	1,100	N/A	N/A
	7/27/06	150	9.6	1.9	<0.10	5,700	740	N/A	N/A

Table B-6
Historical Natural Attenuation Indicator Results
Former Simpson Remanufacturing Facility, Arcata, California

Sample Location	Sample Date	Alkalinity[1] (mg/L $CaCO_3$)[2]	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (mg/L)	Dissolved Iron (ug/L)[3]	Dissolved Manganese (ug/L)	Ethene (ug/L)	Ethane (ug/L)
MW-7 cont'd	1/16/07	150	13	6.8	<0.10	1,500	940	<2.38	<1.63
	4/10/07	170	8.9	2.7	<0.10	4,000	1,100	<2.38	<1.63
	7/9/07	170	10	<0.50	<0.10	6,800	940	<1.00	<1.00
	10/9/07	140	12	2.8	<0.10	8,100	790	<1.00	<1.00
	1/10/08	100	6.6	16	<0.10	200	630	<1.00	<1.00
	4/14/08	170	8.3	0.67	<0.10	3,100	880	N/A	N/A
	7/16/08	160	10	<0.50	<0.10	4,800	930	N/A	N/A
	11/10/08	120	19	8.1	<0.10	4,000	420	N/A	N/A
	1/8/09	120	12	36	<0.10	1,500	260	N/A	N/A
	4/14/09	160	6.0	2.0	<0.10	2,500	790	N/A	N/A
	7/9/09	180	12	<0.50	<0.10	4,200	740	N/A	N/A
	10/8/09	170	14	0.97	0.68	6,100	790	N/A	N/A
	1/7/10	110	14	63	0.14	440	78	N/A	N/A
	4/7/10	150	4.6	6.4	<0.10	810	970	N/A	N/A
	7/9/10	170	6.5	<0.50	<0.10	3,000	730	N/A	N/A
	10/5/10	170	11	<0.50	<0.10	4,300	760	N/A	N/A
	1/6/11	120	8.9	4.2	0.16	1,200	350	N/A	N/A
MW-8	7/20/05	190	17	<0.50	<0.10	15,000	1,900	N/A	N/A
	10/24/05	220	19	<0.50	<0.10	19,000	2,200	N/A	N/A
	2/9/06	210	16	<0.50	<0.10	14,000	1,800	N/A	N/A
	5/10/06	190	17	<0.50	<0.10	13,000	1,600	N/A	N/A
	7/27/06	270	1.8	22	<0.10	20,000	2,600	N/A	N/A
	1/16/07	160	11	13	<0.10	7,400	1,900	<2.38	<1.63
	4/10/07	180	12	1.3	<0.10	11,000	2,000	<2.38	<1.63
	7/9/07	230	16	<0.50	<0.10	17,000	2,500	<1.00	<1.00
	10/9/07	290	27	<0.50	<0.10	23,000	3,200	<1.00	<1.00
	1/10/08	160	10	10	<0.10	13,000	1,600	<1.00	<1.00
	4/14/08	180	9.1	<0.50	<0.10	14,000	2,000	N/A	N/A
	7/16/08	260	17	<0.50	<0.10	21,000	2,800	N/A	N/A
	11/10/08	160	31	13	<0.10	18,000	2,200	N/A	N/A
	1/8/09	120	17	30	<0.10	9,400	1,100	N/A	N/A
	4/14/09	170	8.6	0.75	<0.10	9,700	1,500	N/A	N/A
	7/9/09	210	13	<0.50	<0.10	15,000	2,000	N/A	N/A
	10/8/09	130	44	<0.50	0.66	22,000	3,000	N/A	N/A
	1/7/10	120	17	33	<0.10	10,000	1,200	N/A	N/A
	4/7/10	180	12	1.7	<0.10	13,000	1,900	N/A	N/A
	7/9/10	220	7.9	<0.50	<0.10	14,000	2,900	N/A	N/A
	10/5/10	280	18	<0.50	<0.10	18,000	3,300	N/A	N/A
	1/6/11	180	16	2.0	0.19	14,000	2,200	N/A	N/A

1. Alkalinity analyzed in general accordance with Standard Method 19th or 20th Editions 2320B
2. mg/L $CaCO_3$: milligrams per liter as calcium carbonate
3. ug/L: micrograms per liter
4. <: "less than" the stated method reporting limit
5. N/A: not analyzed

Table B-7
Groundwater Analytical Data, Southern Lunchroom Area, January 21, 2004
Former Simpson Remanufacturing Facility
Arcata, California
(in ug/L)[1]

Sample Location	Phenols[2]	PCP[3]	TCP[3]	trans-1,2-DCE [4,5]	cis-1,2-DCE [5,6]	Vinyl Chloride	Benzene[5]	Ethyl-benzene[5]	Total Xylenes[5]
SLR-1S	ND[7]	<0.30[8]	<1.0	**2.6**	**16**	<1.0	<0.50	<0.50	**0.55**
SLR-2S	ND	<0.30	<1.0	<1.0	**2.8**	<1.0	<0.50	<0.50	<0.50
SLR-3S	ND	<0.30	<1.0	**4.1**	**200**	**3.7**	**3.8**	**0.61**	**0.55**

1. ug/L: micrograms per liter
2. Phenols analyzed in general accordance with EPA Method No. 8270
3. Pentachlorophenol (PCP) and tetrachlorophenol (TCP) analyzed in general accordance with the Canadian Pulp Report Method
4. trans-1,2-DCE: trans-1,2-dichloroethene analyzed in accordance with EPA Method No. 8260B
5. Only volatile organic compounds (VOCs) with detectible concentrations are listed
6. cis-1,2-DCE: cis-1,2-dichloroethene analyzed in accordance with EPA Method No. 8260B
7. ND: not detected
8. <: " less than" the stated method reporting limit

Appendix C

Laboratory Analytical Reports

NORTH COAST LABORATORIES LTD.

October 24, 2012

SHN Consulting Engineers and Geologists
812 West Wabash Avenue
Eureka, CA 95501

Attn: Diana Ward

RE: 003154 STC Arcata Reman Facility

Order No.: 1210345
Invoice No.: 105843
PO No.:
ELAP No.1247-Expires July 2014

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	MW-2
02A	MW-4
03A	MW-7
04A	MW-3
05A	DUP

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

Flag = Explanation in Case Narrative

All solid results are expressed on a wet-weight basis unless otherwise noted.

REPORT CERTIFIED BY

Laboratory Supervisor(s) | QA Unit | Jesse G. Chaney, Jr. Laboratory Director

North Coast Laboratories, Ltd. Date: 02-Nov-2012

CLIENT: SHN Consulting Engineers and Geologists
Project: 003154 STC Arcata Reman Facility
Lab Order: 1210345

CASE NARRATIVE

EPA 8260B:
The laboratory control sample (LCS) recoveries were above the upper acceptance limits for carbon tetrachloride and trans-1,3-dichloropropene. The elevated recoveries equate to a high bias. There were no detectable levels of these analytes in the sample; therefore, the data were accepted.

The surrogate recovery of dibromofluoromethane in Sample MW-7 was above the upper acceptance limit. The elevated recovery equates to a high bias. No compounds associated with this surrogate were reported above their method reporting limit, therefore the data were approved.

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Date: 24-Oct-2012
WorkOrder: 1210345

ANALYTICAL REPORT

Client Sample ID: MW-2
Lab ID: 1210345-01A

Received: 10/18/2012
Collected: 10/18/2012 12:45

Test Name: EPA 8260B

Reference: EPA 8260B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Chloromethane	ND		0.50	µg/L	1.0		10/20/2012
Vinyl chloride	ND		0.50	µg/L	1.0		10/20/2012
Bromomethane	ND		0.50	µg/L	1.0		10/20/2012
Chloroethane	ND		0.50	µg/L	1.0		10/20/2012
Trichlorofluoromethane	ND		0.50	µg/L	1.0		10/20/2012
1,1-Dichloroethene	ND		0.50	µg/L	1.0		10/20/2012
Methylene chloride	ND		0.50	µg/L	1.0		10/20/2012
trans-1,2-Dichloroethene	ND		0.50	µg/L	1.0		10/20/2012
1,1-Dichloroethane	ND		0.50	µg/L	1.0		10/20/2012
cis-1,2-Dichloroethene	ND		0.50	µg/L	1.0		10/20/2012
Chloroform	ND		0.50	µg/L	1.0		10/20/2012
Carbon Tetrachloride	ND		0.50	µg/L	1.0		10/20/2012
1,1,1-Trichloroethane	ND		0.50	µg/L	1.0		10/20/2012
Benzene	ND		0.50	µg/L	1.0		10/20/2012
1,2-Dichloroethane	ND		0.50	µg/L	1.0		10/20/2012
Trichloroethene	ND		0.50	µg/L	1.0		10/20/2012
1,2-Dichloropropane	ND		1.0	µg/L	1.0		10/20/2012
Bromodichloromethane	ND		0.50	µg/L	1.0		10/20/2012
cis-1,3-Dichloropropene	ND		1.0	µg/L	1.0		10/20/2012
Toluene	ND		0.50	µg/L	1.0		10/20/2012
Tetrachloroethene	ND		0.50	µg/L	1.0		10/20/2012
trans-1,3-Dichloropropene	ND		1.0	µg/L	1.0		10/20/2012
1,1,2-Trichloroethane	ND		0.50	µg/L	1.0		10/20/2012
Dibromochloromethane	ND		0.50	µg/L	1.0		10/20/2012
Chlorobenzene	ND		0.50	µg/L	1.0		10/20/2012
Ethylbenzene	ND		0.50	µg/L	1.0		10/20/2012
m,p-Xylene	ND		0.50	µg/L	1.0		10/20/2012
o-Xylene	ND		0.50	µg/L	1.0		10/20/2012
Bromoform	ND		0.50	µg/L	1.0		10/20/2012
1,1,2,2-Tetrachloroethane	ND		0.50	µg/L	1.0		10/20/2012
1,3-Dichlorobenzene	ND		0.50	µg/L	1.0		10/20/2012
1,4-Dichlorobenzene	ND		0.50	µg/L	1.0		10/20/2012
1,2-Dichlorobenzene	ND		0.50	µg/L	1.0		10/20/2012
Surrogate: 1,2-Dichloroethane-d4	95.9		70-130	% Rec	1.0		10/20/2012
Surrogate: Dibromofluoromethane	96.7		70.9-120	% Rec	1.0		10/20/2012
Surrogate: Toluene-d8	96.3		70-130	% Rec	1.0		10/20/2012

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Date: 24-Oct-2012
WorkOrder: 1210345

ANALYTICAL REPORT

Client Sample ID: MW-4
Lab ID: 1210345-02A

Received: 10/18/2012
Collected: 10/18/2012 13:35

Test Name: EPA 8260B

Reference: EPA 8260B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Chloromethane	ND		0.50	µg/L	1.0		10/20/2012
Vinyl chloride	***0.57***		0.50	µg/L	1.0		10/20/2012
Bromomethane	ND		0.50	µg/L	1.0		10/20/2012
Chloroethane	ND		0.50	µg/L	1.0		10/20/2012
Trichlorofluoromethane	ND		0.50	µg/L	1.0		10/20/2012
1,1-Dichloroethene	ND		0.50	µg/L	1.0		10/20/2012
Methylene chloride	ND		0.50	µg/L	1.0		10/20/2012
trans-1,2-Dichloroethene	ND		0.50	µg/L	1.0		10/20/2012
1,1-Dichloroethane	ND		0.50	µg/L	1.0		10/20/2012
cis-1,2-Dichloroethene	***2.5***		0.50	µg/L	1.0		10/20/2012
Chloroform	ND		0.50	µg/L	1.0		10/20/2012
Carbon Tetrachloride	ND		0.50	µg/L	1.0		10/20/2012
1,1,1-Trichloroethane	ND		0.50	µg/L	1.0		10/20/2012
Benzene	ND		0.50	µg/L	1.0		10/20/2012
1,2-Dichloroethane	ND		0.50	µg/L	1.0		10/20/2012
Trichloroethene	ND		0.50	µg/L	1.0		10/20/2012
1,2-Dichloropropane	ND		1.0	µg/L	1.0		10/20/2012
Bromodichloromethane	ND		0.50	µg/L	1.0		10/20/2012
cis-1,3-Dichloropropene	ND		1.0	µg/L	1.0		10/20/2012
Toluene	ND		0.50	µg/L	1.0		10/20/2012
Tetrachloroethene	ND		0.50	µg/L	1.0		10/20/2012
trans-1,3-Dichloropropene	ND		1.0	µg/L	1.0		10/20/2012
1,1,2-Trichloroethane	ND		0.50	µg/L	1.0		10/20/2012
Dibromochloromethane	ND		0.50	µg/L	1.0		10/20/2012
Chlorobenzene	ND		0.50	µg/L	1.0		10/20/2012
Ethylbenzene	ND		0.50	µg/L	1.0		10/20/2012
m,p-Xylene	ND		0.50	µg/L	1.0		10/20/2012
o-Xylene	ND		0.50	µg/L	1.0		10/20/2012
Bromoform	ND		0.50	µg/L	1.0		10/20/2012
1,1,2,2-Tetrachloroethane	ND		0.50	µg/L	1.0		10/20/2012
1,3-Dichlorobenzene	ND		0.50	µg/L	1.0		10/20/2012
1,4-Dichlorobenzene	ND		0.50	µg/L	1.0		10/20/2012
1,2-Dichlorobenzene	ND		0.50	µg/L	1.0		10/20/2012
Surrogate: 1,2-Dichloroethane-d4	98.4		70-130	% Rec	1.0		10/20/2012
Surrogate: Dibromofluoromethane	97.2		70.9-120	% Rec	1.0		10/20/2012
Surrogate: Toluene-d8	96.6		70-130	% Rec	1.0		10/20/2012

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Date: 24-Oct-2012
WorkOrder: 1210345

ANALYTICAL REPORT

Client Sample ID: MW-7
Lab ID: 1210345-03A

Received: 10/18/2012
Collected: 10/18/2012 14:25

Test Name: EPA 8260B

Reference: EPA 8260B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Chloromethane	ND		0.50	µg/L	1.0		10/20/2012
Vinyl chloride	ND		0.50	µg/L	1.0		10/20/2012
Bromomethane	ND		0.50	µg/L	1.0		10/20/2012
Chloroethane	ND		0.50	µg/L	1.0		10/20/2012
Trichlorofluoromethane	ND		0.50	µg/L	1.0		10/20/2012
1,1-Dichloroethene	ND		0.50	µg/L	1.0		10/20/2012
Methylene chloride	ND		0.50	µg/L	1.0		10/20/2012
trans-1,2-Dichloroethene	ND		0.50	µg/L	1.0		10/20/2012
1,1-Dichloroethane	ND		0.50	µg/L	1.0		10/20/2012
cis-1,2-Dichloroethene	ND		0.50	µg/L	1.0		10/20/2012
Chloroform	ND		0.50	µg/L	1.0		10/20/2012
Carbon Tetrachloride	ND		0.50	µg/L	1.0		10/20/2012
1,1,1-Trichloroethane	ND		0.50	µg/L	1.0		10/20/2012
Benzene	ND		0.50	µg/L	1.0		10/20/2012
1,2-Dichloroethane	ND		0.50	µg/L	1.0		10/20/2012
Trichloroethene	ND		0.50	µg/L	1.0		10/20/2012
1,2-Dichloropropane	ND		1.0	µg/L	1.0		10/20/2012
Bromodichloromethane	ND		0.50	µg/L	1.0		10/20/2012
cis-1,3-Dichloropropene	ND		1.0	µg/L	1.0		10/20/2012
Toluene	***0.51***		0.50	µg/L	1.0		10/20/2012
Tetrachloroethene	ND		0.50	µg/L	1.0		10/20/2012
trans-1,3-Dichloropropene	ND		1.0	µg/L	1.0		10/20/2012
1,1,2-Trichloroethane	ND		0.50	µg/L	1.0		10/20/2012
Dibromochloromethane	ND		0.50	µg/L	1.0		10/20/2012
Chlorobenzene	ND		0.50	µg/L	1.0		10/20/2012
Ethylbenzene	ND		0.50	µg/L	1.0		10/20/2012
m,p-Xylene	ND		0.50	µg/L	1.0		10/20/2012
o-Xylene	ND		0.50	µg/L	1.0		10/20/2012
Bromoform	ND		0.50	µg/L	1.0		10/20/2012
1,1,2,2-Tetrachloroethane	ND		0.50	µg/L	1.0		10/20/2012
1,3-Dichlorobenzene	ND		0.50	µg/L	1.0		10/20/2012
1,4-Dichlorobenzene	ND		0.50	µg/L	1.0		10/20/2012
1,2-Dichlorobenzene	ND		0.50	µg/L	1.0		10/20/2012
Surrogate: 1,2-Dichloroethane-d4	96.6		70-130	% Rec	1.0		10/20/2012
Surrogate: Dibromofluoromethane	153		70.9-120	% Rec	1.0		10/20/2012
Surrogate: Toluene-d8	96.8		70-130	% Rec	1.0		10/20/2012

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Date: 24-Oct-2012
WorkOrder: 1210345

ANALYTICAL REPORT

Client Sample ID: MW-3
Lab ID: 1210345-04A

Received: 10/18/2012
Collected: 10/18/2012 15:20

Test Name: EPA 8260B

Reference: EPA 8260B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Chloromethane	ND		0.50	µg/L	1.0		10/20/2012
Vinyl chloride	***4.6***		0.50	µg/L	1.0		10/20/2012
Bromomethane	ND		0.50	µg/L	1.0		10/20/2012
Chloroethane	ND		0.50	µg/L	1.0		10/20/2012
Trichlorofluoromethane	ND		0.50	µg/L	1.0		10/20/2012
1,1-Dichloroethene	ND		0.50	µg/L	1.0		10/20/2012
Methylene chloride	ND		0.50	µg/L	1.0		10/20/2012
trans-1,2-Dichloroethene	ND		0.50	µg/L	1.0		10/20/2012
1,1-Dichloroethane	ND		0.50	µg/L	1.0		10/20/2012
cis-1,2-Dichloroethene	***20***		0.50	µg/L	1.0		10/20/2012
Chloroform	ND		0.50	µg/L	1.0		10/20/2012
Carbon Tetrachloride	ND		0.50	µg/L	1.0		10/20/2012
1,1,1-Trichloroethane	ND		0.50	µg/L	1.0		10/20/2012
Benzene	***0.89***		0.50	µg/L	1.0		10/20/2012
1,2-Dichloroethane	ND		0.50	µg/L	1.0		10/20/2012
Trichloroethene	ND		0.50	µg/L	1.0		10/20/2012
1,2-Dichloropropane	ND		1.0	µg/L	1.0		10/20/2012
Bromodichloromethane	ND		0.50	µg/L	1.0		10/20/2012
cis-1,3-Dichloropropene	ND		1.0	µg/L	1.0		10/20/2012
Toluene	ND		0.50	µg/L	1.0		10/20/2012
Tetrachloroethene	ND		0.50	µg/L	1.0		10/20/2012
trans-1,3-Dichloropropene	ND		1.0	µg/L	1.0		10/20/2012
1,1,2-Trichloroethane	ND		0.50	µg/L	1.0		10/20/2012
Dibromochloromethane	ND		0.50	µg/L	1.0		10/20/2012
Chlorobenzene	ND		0.50	µg/L	1.0		10/20/2012
Ethylbenzene	ND		0.50	µg/L	1.0		10/20/2012
m,p-Xylene	ND		0.50	µg/L	1.0		10/20/2012
o-Xylene	ND		0.50	µg/L	1.0		10/20/2012
Bromoform	ND		0.50	µg/L	1.0		10/20/2012
1,1,2,2-Tetrachloroethane	ND		0.50	µg/L	1.0		10/20/2012
1,3-Dichlorobenzene	ND		0.50	µg/L	1.0		10/20/2012
1,4-Dichlorobenzene	ND		0.50	µg/L	1.0		10/20/2012
1,2-Dichlorobenzene	ND		0.50	µg/L	1.0		10/20/2012
Surrogate: 1,2-Dichloroethane-d4	98.7		70-130	% Rec	1.0		10/20/2012
Surrogate: Dibromofluoromethane	95.4		70.9-120	% Rec	1.0		10/20/2012
Surrogate: Toluene-d8	98.1		70-130	% Rec	1.0		10/20/2012

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Date: 24-Oct-2012
WorkOrder: 1210345

ANALYTICAL REPORT

Client Sample ID: DUP
Lab ID: 1210345-05A

Received: 10/18/2012
Collected: 10/18/2012 00:00

Test Name: EPA 8260B

Reference: EPA 8260B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Chloromethane	ND		0.50	µg/L	1.0		10/20/2012
Vinyl chloride	***4.8***		0.50	µg/L	1.0		10/20/2012
Bromomethane	ND		0.50	µg/L	1.0		10/20/2012
Chloroethane	ND		0.50	µg/L	1.0		10/20/2012
Trichlorofluoromethane	ND		0.50	µg/L	1.0		10/20/2012
1,1-Dichloroethene	ND		0.50	µg/L	1.0		10/20/2012
Methylene chloride	ND		0.50	µg/L	1.0		10/20/2012
trans-1,2-Dichloroethene	ND		0.50	µg/L	1.0		10/20/2012
1,1-Dichloroethane	ND		0.50	µg/L	1.0		10/20/2012
cis-1,2-Dichloroethene	***22***		0.50	µg/L	1.0		10/20/2012
Chloroform	ND		0.50	µg/L	1.0		10/20/2012
Carbon Tetrachloride	ND		0.50	µg/L	1.0		10/20/2012
1,1,1-Trichloroethane	ND		0.50	µg/L	1.0		10/20/2012
Benzene	***0.95***		0.50	µg/L	1.0		10/20/2012
1,2-Dichloroethane	ND		0.50	µg/L	1.0		10/20/2012
Trichloroethene	ND		0.50	µg/L	1.0		10/20/2012
1,2-Dichloropropane	ND		1.0	µg/L	1.0		10/20/2012
Bromodichloromethane	ND		0.50	µg/L	1.0		10/20/2012
cis-1,3-Dichloropropene	ND		1.0	µg/L	1.0		10/20/2012
Toluene	ND		0.50	µg/L	1.0		10/20/2012
Tetrachloroethene	ND		0.50	µg/L	1.0		10/20/2012
trans-1,3-Dichloropropene	ND		1.0	µg/L	1.0		10/20/2012
1,1,2-Trichloroethane	ND		0.50	µg/L	1.0		10/20/2012
Dibromochloromethane	ND		0.50	µg/L	1.0		10/20/2012
Chlorobenzene	ND		0.50	µg/L	1.0		10/20/2012
Ethylbenzene	ND		0.50	µg/L	1.0		10/20/2012
m,p-Xylene	ND		0.50	µg/L	1.0		10/20/2012
o-Xylene	ND		0.50	µg/L	1.0		10/20/2012
Bromoform	ND		0.50	µg/L	1.0		10/20/2012
1,1,2,2-Tetrachloroethane	ND		0.50	µg/L	1.0		10/20/2012
1,3-Dichlorobenzene	ND		0.50	µg/L	1.0		10/20/2012
1,4-Dichlorobenzene	ND		0.50	µg/L	1.0		10/20/2012
1,2-Dichlorobenzene	ND		0.50	µg/L	1.0		10/20/2012
Surrogate: 1,2-Dichloroethane-d4	96.4		70-130	% Rec	1.0		10/20/2012
Surrogate: Dibromofluoromethane	93.2		70.9-120	% Rec	1.0		10/20/2012
Surrogate: Toluene-d8	99.1		70-130	% Rec	1.0		10/20/2012

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CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1210345
Project: 003154 STC Arcata Reman Facility

QC SUMMARY REPORT
Method Blank

Sample ID: **MB 102012** Batch ID: **R72363** Test Code: **8260EW** Units: **µg/L** Analysis Date **10/20/2012 11:05:00** Prep Date:
Client ID: Run ID: **ORGCMS2_121020A** SeqNo: **1051499**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloromethane	ND	0.50									
Vinyl chloride	ND	0.50									
Bromomethane	ND	0.50									
Chloroethane	ND	0.50									
Trichlorofluoromethane	ND	0.50									
1,1-Dichloroethene	ND	0.50									
Methylene chloride	ND	0.50									
trans-1,2-Dichloroethene	ND	0.50									
1,1-Dichloroethane	ND	0.50									
cis-1,2-Dichloroethene	ND	0.50									
Chloroform	ND	0.50									
Carbon Tetrachloride	ND	0.50									
1,1,1-Trichloroethane	ND	0.50									
Benzene	ND	0.50									
1,2-Dichloroethane	ND	0.50									
Trichloroethene	ND	0.50									
1,2-Dichloropropane	ND	1.0									
Bromodichloromethane	ND	0.50									
cis-1,3-Dichloropropene	ND	1.0									
Toluene	ND	0.50									
Tetrachloroethene	ND	0.50									
trans-1,3-Dichloropropene	ND	1.0									
1,1,2-Trichloroethane	ND	0.50									
Dibromochloromethane	ND	0.50									
Chlorobenzene	ND	0.50									
Ethylbenzene	ND	0.50									
m,p-Xylene	ND	0.50									
o-Xylene	ND	0.50									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1210345
Project: 003154 STC Arcata Reman Facility

QC SUMMARY REPORT
Method Blank

Bromoform	ND	0.50						
1,1,2,2-Tetrachloroethane	ND	0.50						
1,3-Dichlorobenzene	ND	0.50						
1,4-Dichlorobenzene	ND	0.50						
1,2-Dichlorobenzene	ND	0.50						
Surrogate: Dibromofluoromethane	0.916	0.10	1.00	0	91.6%	77	125	0
Surrogate: 1,2-Dichloroethane-d4	0.928	0.10	1.00	0	92.7%	73	132	0
Surrogate: Toluene-d8	0.962	0.10	1.00	0	96.2%	81	124	0

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1210345
Project: 003154 STC Arcata Reman Facility

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID: **LCS-12363** Batch ID: **R72363** Test Code: **8260EW** Units: **µg/L** Analysis Date **10/20/2012 09:39:00** Prep Date:
Client ID: Run ID: **ORGCMS2_121020A** SeqNo: **1051496**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloromethane	13.80	0.50	20.0	0	69.0%	44	131	0			
Vinyl chloride	15.77	0.50	20.0	0	78.9%	51	133	0			
Bromomethane	14.29	0.50	20.0	0	71.5%	42	142	0			
Chloroethane	17.46	0.50	20.0	0	87.3%	55	132	0			
Trichlorofluoromethane	19.33	0.50	20.0	0	96.7%	47	138	0			
1,1-Dichloroethene	17.72	0.50	20.0	0	88.6%	55	126	0			
Methylene chloride	14.51	0.50	20.0	0	72.5%	53	128	0			
trans-1,2-Dichloroethene	23.53	0.50	20.0	0	118%	53	135	0			
1,1-Dichloroethane	18.45	0.50	20.0	0	92.2%	62	118	0			
cis-1,2-Dichloroethene	21.92	0.50	20.0	0	110%	72	119	0			
Chloroform	20.03	0.50	20.0	0	100%	65	126	0			
Carbon Tetrachloride	28.59	0.50	20.0	0	143%	58	140	0			S
1,1,1-Trichloroethane	23.81	0.50	20.0	0	119%	61	132	0			
Benzene	20.33	0.50	20.0	0	102%	74	118	0			
1,2-Dichloroethane	19.76	0.50	20.0	0	98.8%	68	128	0			
Trichloroethene	18.39	0.50	20.0	0	92.0%	75	113	0			
1,2-Dichloropropane	16.59	1.0	20.0	0	82.9%	63	126	0			
Bromodichloromethane	16.28	0.50	20.0	0	81.4%	69	124	0			
cis-1,3-Dichloropropene	19.59	1.0	20.0	0	98.0%	63	133	0			
Toluene	19.80	0.50	20.0	0	99.0%	76	133	0			
Tetrachloroethene	13.72	0.50	20.0	0	68.6%	60	129	0			
trans-1,3-Dichloropropene	27.99	1.0	20.0	0	140%	66	139	0			S
1,1,2-Trichloroethane	20.62	0.50	20.0	0	103%	64	132	0			
Dibromochloromethane	20.94	0.50	20.0	0	105%	72	135	0			
Chlorobenzene	19.53	0.50	20.0	0	97.7%	79	119	0			
Ethylbenzene	22.86	0.50	20.0	0	114%	77	129	0			
m,p-Xylene	43.32	0.50	40.0	0	108%	82	129	0			
o-Xylene	19.44	0.50	20.0	0	97.2%	84	126	0			

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1210345
Project: 003154 STC Arcata Reman Facility

QC SUMMARY REPORT
Laboratory Control Spike

Bromoform	20.60	0.50	20.0	0	103%	71	129	0
1,1,2,2-Tetrachloroethane	22.08	0.50	20.0	0	110%	62	138	0
1,3-Dichlorobenzene	19.10	0.50	20.0	0	95.5%	73	128	0
1,4-Dichlorobenzene	19.61	0.50	20.0	0	98.0%	79	121	0
1,2-Dichlorobenzene	19.17	0.50	20.0	0	95.8%	73	122	0
Surrogate: Dibromofluoromethane	1.14	0.10	1.00	0	114%	71	120	0
Surrogate: 1,2-Dichloroethane-d4	1.05	0.10	1.00	0	105%	70	130	0
Surrogate: Toluene-d8	0.948	0.10	1.00	0	94.8%	70	130	0

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1210345
Project: 003154 STC Arcata Reman Facility

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID: **LCSD-12363** Batch ID: **R72363** Test Code: **8260EW** Units: **µg/L** Analysis Date **10/20/2012 10:08:00** Prep Date:
Client ID: Run ID: **ORGCMS2_121020A** SeqNo: **1051497**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloromethane	17.23	0.50	20.0	0	86.2%	44	131	13.8	22.1%	30	
Vinyl chloride	18.90	0.50	20.0	0	94.5%	51	133	15.8	18.1%	30	
Bromomethane	16.06	0.50	20.0	0	80.3%	42	142	14.3	11.7%	30	
Chloroethane	19.93	0.50	20.0	0	99.6%	55	132	17.5	13.2%	30	
Trichlorofluoromethane	24.21	0.50	20.0	0	121%	47	138	19.3	22.4%	30	
1,1-Dichloroethene	21.92	0.50	20.0	0	110%	55	126	17.7	21.2%	30	
Methylene chloride	14.49	0.50	20.0	0	72.5%	53	128	14.5	0.0935%	30	
trans-1,2-Dichloroethene	19.55	0.50	20.0	0	97.7%	53	135	23.5	18.5%	30	
1,1-Dichloroethane	18.73	0.50	20.0	0	93.6%	62	118	18.4	1.51%	30	
cis-1,2-Dichloroethene	19.28	0.50	20.0	0	96.4%	72	119	21.9	12.8%	30	
Chloroform	18.27	0.50	20.0	0	91.3%	65	126	20.0	9.23%	30	
Carbon Tetrachloride	21.68	0.50	20.0	0	108%	58	140	28.6	27.5%	30	
1,1,1-Trichloroethane	18.96	0.50	20.0	0	94.8%	61	132	23.8	22.7%	30	
Benzene	20.11	0.50	20.0	0	101%	74	118	20.3	1.10%	30	
1,2-Dichloroethane	18.45	0.50	20.0	0	92.3%	68	128	19.8	6.87%	30	
Trichloroethene	19.56	0.50	20.0	0	97.8%	75	113	18.4	6.15%	30	
1,2-Dichloropropane	20.98	1.0	20.0	0	105%	63	126	16.6	23.4%	30	
Bromodichloromethane	21.08	0.50	20.0	0	105%	69	124	16.3	25.7%	30	
cis-1,3-Dichloropropene	26.16	1.0	20.0	0	131%	63	133	19.6	28.7%	30	
Toluene	18.74	0.50	20.0	0	93.7%	76	133	19.8	5.54%	30	
Tetrachloroethene	13.88	0.50	20.0	0	69.4%	60	129	13.7	1.16%	30	
trans-1,3-Dichloropropene	27.61	1.0	20.0	0	138%	66	139	28.0	1.35%	30	
1,1,2-Trichloroethane	20.22	0.50	20.0	0	101%	64	132	20.6	1.95%	30	
Dibromochloromethane	22.74	0.50	20.0	0	114%	72	135	20.9	8.24%	30	
Chlorobenzene	19.80	0.50	20.0	0	99.0%	79	119	19.5	1.35%	30	
Ethylbenzene	22.66	0.50	20.0	0	113%	77	129	22.9	0.913%	30	
m,p-Xylene	43.15	0.50	40.0	0	108%	82	129	43.3	0.391%	30	
o-Xylene	19.60	0.50	20.0	0	98.0%	84	126	19.4	0.844%	30	
Bromoform	21.39	0.50	20.0	0	107%	71	129	20.6	3.78%	30	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1210345
Project: 003154 STC Arcata Reman Facility

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

1,1,2,2-Tetrachloroethane	22.39	0.50	20.0	0	112%	62	138	22.1	1.40%	30
1,3-Dichlorobenzene	18.87	0.50	20.0	0	94.4%	73	128	19.1	1.21%	30
1,4-Dichlorobenzene	19.52	0.50	20.0	0	97.6%	79	121	19.6	0.437%	30
1,2-Dichlorobenzene	19.19	0.50	20.0	0	96.0%	73	122	19.2	0.130%	30
Surrogate: Dibromofluoromethane	0.935	0.10	1.00	0	93.5%	71	120	1.14	19.7%	30
Surrogate: 1,2-Dichloroethane-d4	0.975	0.10	1.00	0	97.5%	70	130	1.05	7.56%	30
Surrogate: Toluene-d8	0.945	0.10	1.00	0	94.5%	70	130	0.948	0.359%	30

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

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707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: 1216345

Attention: DIANA WARD
Results & Invoice to: SHN
Address: 812 W. WABASH AVE.
EUREKA, CA 95501
Phone: 707-441-8855
Copies of Report to:
Sampler (Sign & Print):

PROJECT INFORMATION
Project Number: 003154
Project Name: STC ARCATA REMAN FACILITY
Purchase Order Number:

TAT: ☒ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH SAMPLES.

REPORTING REQUIREMENTS:
☐ State Forms
☐ Geotracker ☐ SWAMP ☐ Other EDD:
☐ Final Report PDF ☐ FAX By:

CONTAINER CODES: 1–½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—40 ml VOA; 9—60 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other
PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: VOCs 8260 LIST 9
	MW-2	10/18/12	1245	GW	b	8	X
	MW-4		1335				X
	MW-7		1425				X
	MW-3		1520				X
	DUP		—				X

SPECIAL INSTRUCTIONS	SAMPLE CONDITION
EDF	Temperature 1.4 °C
	Received On Ice? Y / N
	Samples Intact? Y / N
	Preserved? Y / N
	Preserved @ NCL? Y / N / NA

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
ERIC WARD 10/18/12	1613	10/18/12	1613

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; WW=Waste Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.

April 24, 2013

SHN Consulting Engineers and Geologists
812 West Wabash Avenue
Eureka, CA 95501

Attn: Diana Ward

Order No.: 1304230
Invoice No.: 108978
PO No.:
ELAP No.1247-Expires July 2014

RE: 003154 Former Simpson Reman Facility

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	MW-2
02A	MW-3
03A	MW-4
04A	MW-7
05A	DUP

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

Flag = Explanation in Case Narrative

All solid results are expressed on a wet-weight basis unless otherwise noted.

REPORT CERTIFIED BY

Laboratory Supervisor(s) | QA Unit | Jesse G. Chaney, Jr. Laboratory Director

Date: 24-Apr-2013
WorkOrder: 1304230

ANALYTICAL REPORT

Client Sample ID: MW-2
Lab ID: 1304230-01A

Received: 4/11/2013
Collected: 4/11/2013 13:05

Test Name: EPA 8260B

Reference: EPA 8260B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Chloromethane	ND		0.50	µg/L	1.0		4/19/2013
Vinyl chloride	ND		0.50	µg/L	1.0		4/19/2013
Bromomethane	ND		0.50	µg/L	1.0		4/19/2013
Chloroethane	ND		0.50	µg/L	1.0		4/19/2013
Trichlorofluoromethane	ND		0.50	µg/L	1.0		4/19/2013
1,1-Dichloroethene	ND		0.50	µg/L	1.0		4/19/2013
Methylene chloride	ND		0.50	µg/L	1.0		4/19/2013
trans-1,2-Dichloroethene	ND		0.50	µg/L	1.0		4/19/2013
1,1-Dichloroethane	ND		0.50	µg/L	1.0		4/19/2013
cis-1,2-Dichloroethene	ND		0.50	µg/L	1.0		4/19/2013
Chloroform	ND		0.50	µg/L	1.0		4/19/2013
Carbon Tetrachloride	ND		0.50	µg/L	1.0		4/19/2013
1,1,1-Trichloroethane	ND		0.50	µg/L	1.0		4/19/2013
Benzene	ND		0.50	µg/L	1.0		4/19/2013
1,2-Dichloroethane	ND		0.50	µg/L	1.0		4/19/2013
Trichloroethene	ND		0.50	µg/L	1.0		4/19/2013
1,2-Dichloropropane	ND		1.0	µg/L	1.0		4/19/2013
Bromodichloromethane	ND		0.50	µg/L	1.0		4/19/2013
cis-1,3-Dichloropropene	ND		1.0	µg/L	1.0		4/19/2013
Toluene	ND		0.50	µg/L	1.0		4/19/2013
Tetrachloroethene	ND		0.50	µg/L	1.0		4/19/2013
trans-1,3-Dichloropropene	ND		1.0	µg/L	1.0		4/19/2013
1,1,2-Trichloroethane	ND		0.50	µg/L	1.0		4/19/2013
Dibromochloromethane	ND		0.50	µg/L	1.0		4/19/2013
Chlorobenzene	ND		0.50	µg/L	1.0		4/19/2013
Ethylbenzene	ND		0.50	µg/L	1.0		4/19/2013
m,p-Xylene	ND		0.50	µg/L	1.0		4/19/2013
o-Xylene	ND		0.50	µg/L	1.0		4/19/2013
Bromoform	ND		0.50	µg/L	1.0		4/19/2013
1,1,2,2-Tetrachloroethane	ND		0.50	µg/L	1.0		4/19/2013
1,3-Dichlorobenzene	ND		0.50	µg/L	1.0		4/19/2013
1,4-Dichlorobenzene	ND		0.50	µg/L	1.0		4/19/2013
1,2-Dichlorobenzene	ND		0.50	µg/L	1.0		4/19/2013
Surrogate: 1,2-Dichloroethane-d4	105		68.8-126	% Rec	1.0		4/19/2013
Surrogate: Dibromofluoromethane	103		72.3-120	% Rec	1.0		4/19/2013
Surrogate: Toluene-d8	101		77.6-137	% Rec	1.0		4/19/2013

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Date: 24-Apr-2013
WorkOrder: 1304230

ANALYTICAL REPORT

Client Sample ID: MW-3
Lab ID: 1304230-02A

Received: 4/11/2013
Collected: 4/11/2013 16:10

Test Name: EPA 8260B

Reference: EPA 8260B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Chloromethane	ND		0.50	µg/L	1.0		4/19/2013
Vinyl chloride	***0.53***		0.50	µg/L	1.0		4/19/2013
Bromomethane	ND		0.50	µg/L	1.0		4/19/2013
Chloroethane	ND		0.50	µg/L	1.0		4/19/2013
Trichlorofluoromethane	ND		0.50	µg/L	1.0		4/19/2013
1,1-Dichloroethene	ND		0.50	µg/L	1.0		4/19/2013
Methylene chloride	ND		0.50	µg/L	1.0		4/19/2013
trans-1,2-Dichloroethene	ND		0.50	µg/L	1.0		4/19/2013
1,1-Dichloroethane	ND		0.50	µg/L	1.0		4/19/2013
cis-1,2-Dichloroethene	***3.5***		0.50	µg/L	1.0		4/19/2013
Chloroform	ND		0.50	µg/L	1.0		4/19/2013
Carbon Tetrachloride	ND		0.50	µg/L	1.0		4/19/2013
1,1,1-Trichloroethane	ND		0.50	µg/L	1.0		4/19/2013
Benzene	ND		0.50	µg/L	1.0		4/19/2013
1,2-Dichloroethane	ND		0.50	µg/L	1.0		4/19/2013
Trichloroethene	ND		0.50	µg/L	1.0		4/19/2013
1,2-Dichloropropane	ND		1.0	µg/L	1.0		4/19/2013
Bromodichloromethane	ND		0.50	µg/L	1.0		4/19/2013
cis-1,3-Dichloropropene	ND		1.0	µg/L	1.0		4/19/2013
Toluene	ND		0.50	µg/L	1.0		4/19/2013
Tetrachloroethene	ND		0.50	µg/L	1.0		4/19/2013
trans-1,3-Dichloropropene	ND		1.0	µg/L	1.0		4/19/2013
1,1,2-Trichloroethane	ND		0.50	µg/L	1.0		4/19/2013
Dibromochloromethane	ND		0.50	µg/L	1.0		4/19/2013
Chlorobenzene	ND		0.50	µg/L	1.0		4/19/2013
Ethylbenzene	ND		0.50	µg/L	1.0		4/19/2013
m,p-Xylene	ND		0.50	µg/L	1.0		4/19/2013
o-Xylene	ND		0.50	µg/L	1.0		4/19/2013
Bromoform	ND		0.50	µg/L	1.0		4/19/2013
1,1,2,2-Tetrachloroethane	ND		0.50	µg/L	1.0		4/19/2013
1,3-Dichlorobenzene	ND		0.50	µg/L	1.0		4/19/2013
1,4-Dichlorobenzene	ND		0.50	µg/L	1.0		4/19/2013
1,2-Dichlorobenzene	ND		0.50	µg/L	1.0		4/19/2013
Surrogate: 1,2-Dichloroethane-d4	106		68.8-126	% Rec	1.0		4/19/2013
Surrogate: Dibromofluoromethane	103		72.3-120	% Rec	1.0		4/19/2013
Surrogate: Toluene-d8	99.4		77.6-137	% Rec	1.0		4/19/2013

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Date: 24-Apr-2013
WorkOrder: 1304230

ANALYTICAL REPORT

Client Sample ID: MW-4
Lab ID: 1304230-03A

Received: 4/11/2013
Collected: 4/11/2013 13:55

Test Name: EPA 8260B

Reference: EPA 8260B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Chloromethane	ND		0.50	µg/L	1.0		4/19/2013
Vinyl chloride	ND		0.50	µg/L	1.0		4/19/2013
Bromomethane	ND		0.50	µg/L	1.0		4/19/2013
Chloroethane	ND		0.50	µg/L	1.0		4/19/2013
Trichlorofluoromethane	ND		0.50	µg/L	1.0		4/19/2013
1,1-Dichloroethene	ND		0.50	µg/L	1.0		4/19/2013
Methylene chloride	ND		0.50	µg/L	1.0		4/19/2013
trans-1,2-Dichloroethene	ND		0.50	µg/L	1.0		4/19/2013
1,1-Dichloroethane	ND		0.50	µg/L	1.0		4/19/2013
cis-1,2-Dichloroethene	***1.3***		0.50	µg/L	1.0		4/19/2013
Chloroform	ND		0.50	µg/L	1.0		4/19/2013
Carbon Tetrachloride	ND		0.50	µg/L	1.0		4/19/2013
1,1,1-Trichloroethane	ND		0.50	µg/L	1.0		4/19/2013
Benzene	ND		0.50	µg/L	1.0		4/19/2013
1,2-Dichloroethane	ND		0.50	µg/L	1.0		4/19/2013
Trichloroethene	ND		0.50	µg/L	1.0		4/19/2013
1,2-Dichloropropane	ND		1.0	µg/L	1.0		4/19/2013
Bromodichloromethane	ND		0.50	µg/L	1.0		4/19/2013
cis-1,3-Dichloropropene	ND		1.0	µg/L	1.0		4/19/2013
Toluene	ND		0.50	µg/L	1.0		4/19/2013
Tetrachloroethene	ND		0.50	µg/L	1.0		4/19/2013
trans-1,3-Dichloropropene	ND		1.0	µg/L	1.0		4/19/2013
1,1,2-Trichloroethane	ND		0.50	µg/L	1.0		4/19/2013
Dibromochloromethane	ND		0.50	µg/L	1.0		4/19/2013
Chlorobenzene	ND		0.50	µg/L	1.0		4/19/2013
Ethylbenzene	ND		0.50	µg/L	1.0		4/19/2013
m,p-Xylene	ND		0.50	µg/L	1.0		4/19/2013
o-Xylene	ND		0.50	µg/L	1.0		4/19/2013
Bromoform	ND		0.50	µg/L	1.0		4/19/2013
1,1,2,2-Tetrachloroethane	ND		0.50	µg/L	1.0		4/19/2013
1,3-Dichlorobenzene	ND		0.50	µg/L	1.0		4/19/2013
1,4-Dichlorobenzene	ND		0.50	µg/L	1.0		4/19/2013
1,2-Dichlorobenzene	ND		0.50	µg/L	1.0		4/19/2013
Surrogate: 1,2-Dichloroethane-d4	105		68.8-126	% Rec	1.0		4/19/2013
Surrogate: Dibromofluoromethane	104		72.3-120	% Rec	1.0		4/19/2013
Surrogate: Toluene-d8	101		77.6-137	% Rec	1.0		4/19/2013

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Date: 24-Apr-2013
WorkOrder: 1304230

ANALYTICAL REPORT

Client Sample ID: MW-7
Lab ID: 1304230-04A

Received: 4/11/2013
Collected: 4/11/2013 15:05

Test Name: EPA 8260B

Reference: EPA 8260B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Chloromethane	ND		0.50	µg/L	1.0		4/19/2013
Vinyl chloride	ND		0.50	µg/L	1.0		4/19/2013
Bromomethane	ND		0.50	µg/L	1.0		4/19/2013
Chloroethane	ND		0.50	µg/L	1.0		4/19/2013
Trichlorofluoromethane	ND		0.50	µg/L	1.0		4/19/2013
1,1-Dichloroethene	ND		0.50	µg/L	1.0		4/19/2013
Methylene chloride	ND		0.50	µg/L	1.0		4/19/2013
trans-1,2-Dichloroethene	ND		0.50	µg/L	1.0		4/19/2013
1,1-Dichloroethane	ND		0.50	µg/L	1.0		4/19/2013
cis-1,2-Dichloroethene	ND		0.50	µg/L	1.0		4/19/2013
Chloroform	ND		0.50	µg/L	1.0		4/19/2013
Carbon Tetrachloride	ND		0.50	µg/L	1.0		4/19/2013
1,1,1-Trichloroethane	ND		0.50	µg/L	1.0		4/19/2013
Benzene	ND		0.50	µg/L	1.0		4/19/2013
1,2-Dichloroethane	ND		0.50	µg/L	1.0		4/19/2013
Trichloroethene	ND		0.50	µg/L	1.0		4/19/2013
1,2-Dichloropropane	ND		1.0	µg/L	1.0		4/19/2013
Bromodichloromethane	ND		0.50	µg/L	1.0		4/19/2013
cis-1,3-Dichloropropene	ND		1.0	µg/L	1.0		4/19/2013
Toluene	ND		0.50	µg/L	1.0		4/19/2013
Tetrachloroethene	ND		0.50	µg/L	1.0		4/19/2013
trans-1,3-Dichloropropene	ND		1.0	µg/L	1.0		4/19/2013
1,1,2-Trichloroethane	ND		0.50	µg/L	1.0		4/19/2013
Dibromochloromethane	ND		0.50	µg/L	1.0		4/19/2013
Chlorobenzene	ND		0.50	µg/L	1.0		4/19/2013
Ethylbenzene	ND		0.50	µg/L	1.0		4/19/2013
m,p-Xylene	ND		0.50	µg/L	1.0		4/19/2013
o-Xylene	ND		0.50	µg/L	1.0		4/19/2013
Bromoform	ND		0.50	µg/L	1.0		4/19/2013
1,1,2,2-Tetrachloroethane	ND		0.50	µg/L	1.0		4/19/2013
1,3-Dichlorobenzene	ND		0.50	µg/L	1.0		4/19/2013
1,4-Dichlorobenzene	ND		0.50	µg/L	1.0		4/19/2013
1,2-Dichlorobenzene	ND		0.50	µg/L	1.0		4/19/2013
Surrogate: 1,2-Dichloroethane-d4	107		68.8-126	% Rec	1.0		4/19/2013
Surrogate: Dibromofluoromethane	106		72.3-120	% Rec	1.0		4/19/2013
Surrogate: Toluene-d8	101		77.6-137	% Rec	1.0		4/19/2013

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Date: 24-Apr-2013
WorkOrder: 1304230

ANALYTICAL REPORT

Client Sample ID: DUP
Lab ID: 1304230-05A

Received: 4/11/2013
Collected: 4/11/2013 00:00

Test Name: EPA 8260B

Reference: EPA 8260B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Chloromethane	ND		0.50	µg/L	1.0		4/19/2013
Vinyl chloride	***0.52***		0.50	µg/L	1.0		4/19/2013
Bromomethane	ND		0.50	µg/L	1.0		4/19/2013
Chloroethane	ND		0.50	µg/L	1.0		4/19/2013
Trichlorofluoromethane	ND		0.50	µg/L	1.0		4/19/2013
1,1-Dichloroethene	ND		0.50	µg/L	1.0		4/19/2013
Methylene chloride	ND		0.50	µg/L	1.0		4/19/2013
trans-1,2-Dichloroethene	ND		0.50	µg/L	1.0		4/19/2013
1,1-Dichloroethane	ND		0.50	µg/L	1.0		4/19/2013
cis-1,2-Dichloroethene	***3.4***		0.50	µg/L	1.0		4/19/2013
Chloroform	ND		0.50	µg/L	1.0		4/19/2013
Carbon Tetrachloride	ND		0.50	µg/L	1.0		4/19/2013
1,1,1-Trichloroethane	ND		0.50	µg/L	1.0		4/19/2013
Benzene	ND		0.50	µg/L	1.0		4/19/2013
1,2-Dichloroethane	ND		0.50	µg/L	1.0		4/19/2013
Trichloroethene	ND		0.50	µg/L	1.0		4/19/2013
1,2-Dichloropropane	ND		1.0	µg/L	1.0		4/19/2013
Bromodichloromethane	ND		0.50	µg/L	1.0		4/19/2013
cis-1,3-Dichloropropene	ND		1.0	µg/L	1.0		4/19/2013
Toluene	ND		0.50	µg/L	1.0		4/19/2013
Tetrachloroethene	ND		0.50	µg/L	1.0		4/19/2013
trans-1,3-Dichloropropene	ND		1.0	µg/L	1.0		4/19/2013
1,1,2-Trichloroethane	ND		0.50	µg/L	1.0		4/19/2013
Dibromochloromethane	ND		0.50	µg/L	1.0		4/19/2013
Chlorobenzene	ND		0.50	µg/L	1.0		4/19/2013
Ethylbenzene	ND		0.50	µg/L	1.0		4/19/2013
m,p-Xylene	ND		0.50	µg/L	1.0		4/19/2013
o-Xylene	ND		0.50	µg/L	1.0		4/19/2013
Bromoform	ND		0.50	µg/L	1.0		4/19/2013
1,1,2,2-Tetrachloroethane	ND		0.50	µg/L	1.0		4/19/2013
1,3-Dichlorobenzene	ND		0.50	µg/L	1.0		4/19/2013
1,4-Dichlorobenzene	ND		0.50	µg/L	1.0		4/19/2013
1,2-Dichlorobenzene	ND		0.50	µg/L	1.0		4/19/2013
Surrogate: 1,2-Dichloroethane-d4	107		68.8-126	% Rec	1.0		4/19/2013
Surrogate: Dibromofluoromethane	105		72.3-120	% Rec	1.0		4/19/2013
Surrogate: Toluene-d8	101		77.6-137	% Rec	1.0		4/19/2013

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CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1304230
Project: 003154 Former Simpson Reman Facility

QC SUMMARY REPORT
Method Blank

Sample ID: **MB 041913** Batch ID: **R74240** Test Code: **8260EW** Units: **µg/L** Analysis Date **4/19/2013 13:36:00** Prep Date:
Client ID: Run ID: **ORGCMS2_130419B** SeqNo: **1078432**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloromethane	ND	0.50									
Vinyl chloride	ND	0.50									
Bromomethane	ND	0.50									
Chloroethane	ND	0.50									
Trichlorofluoromethane	ND	0.50									
1,1-Dichloroethene	ND	0.50									
Methylene chloride	ND	0.50									
trans-1,2-Dichloroethene	ND	0.50									
1,1-Dichloroethane	ND	0.50									
cis-1,2-Dichloroethene	ND	0.50									
Chloroform	ND	0.50									
Carbon Tetrachloride	ND	0.50									
1,1,1-Trichloroethane	ND	0.50									
Benzene	ND	0.50									
1,2-Dichloroethane	ND	0.50									
Trichloroethene	ND	0.50									
1,2-Dichloropropane	ND	1.0									
Bromodichloromethane	ND	0.50									
cis-1,3-Dichloropropene	ND	1.0									
Toluene	ND	0.50									
Tetrachloroethene	ND	0.50									
trans-1,3-Dichloropropene	ND	1.0									
1,1,2-Trichloroethane	ND	0.50									
Dibromochloromethane	ND	0.50									
Chlorobenzene	ND	0.50									
Ethylbenzene	ND	0.50									
m,p-Xylene	ND	0.50									
o-Xylene	ND	0.50									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1304230
Project: 003154 Former Simpson Reman Facility

QC SUMMARY REPORT
Method Blank

Bromoform	ND	0.50						
1,1,2,2-Tetrachloroethane	ND	0.50						
1,3-Dichlorobenzene	ND	0.50						
1,4-Dichlorobenzene	ND	0.50						
1,2-Dichlorobenzene	ND	0.50						
Surrogate: Dibromofluoromethane	1.00	0.10	1.00	0	100%	72	120	0
Surrogate: 1,2-Dichloroethane-d4	0.986	0.10	1.00	0	98.6%	69	126	0
Surrogate: Toluene-d8	1.02	0.10	1.00	0	102%	78	137	0

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
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CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1304230
Project: 003154 Former Simpson Reman Facility

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: **1304230-01AMS** Batch ID: **R74240** Test Code: **8260EW** Units: **µg/L** Analysis Date **4/19/2013 17:50:00** Prep Date:

Client ID: **MW-2** Run ID: **ORGCMS2_130419B** SeqNo: **1078441**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloromethane	19.65	0.50	20.0	0	98.2%	44	131	0			
Vinyl chloride	23.09	0.50	20.0	0	115%	51	133	0			
Bromomethane	10.47	0.50	20.0	0	52.4%	42	142	0			
Chloroethane	19.07	0.50	20.0	0	95.3%	55	132	0			
Trichlorofluoromethane	25.20	0.50	20.0	0	126%	47	138	0			
1,1-Dichloroethene	19.55	0.50	20.0	0	97.7%	55	126	0			
Methylene chloride	20.11	0.50	20.0	0	101%	53	128	0			
trans-1,2-Dichloroethene	21.58	0.50	20.0	0	108%	53	135	0			
1,1-Dichloroethane	19.13	0.50	20.0	0	95.7%	62	118	0			
cis-1,2-Dichloroethene	20.11	0.50	20.0	0	101%	72	119	0			
Chloroform	18.73	0.50	20.0	0	93.7%	65	126	0			
Carbon Tetrachloride	21.63	0.50	20.0	0	108%	58	140	0			
1,1,1-Trichloroethane	20.44	0.50	20.0	0	102%	61	132	0			
Benzene	19.42	0.50	20.0	0	97.1%	74	118	0			
1,2-Dichloroethane	20.26	0.50	20.0	0	101%	68	128	0			
Trichloroethene	20.79	0.50	20.0	0	104%	75	113	0			
1,2-Dichloropropane	19.25	1.0	20.0	0	96.2%	63	126	0			
Bromodichloromethane	18.83	0.50	20.0	0	94.2%	69	124	0			
cis-1,3-Dichloropropene	18.91	1.0	20.0	0	94.6%	63	133	0			
Toluene	18.58	0.50	20.0	0	92.9%	76	133	0			
Tetrachloroethene	18.11	0.50	20.0	0	90.6%	60	129	0			
trans-1,3-Dichloropropene	18.25	1.0	20.0	0	91.3%	66	139	0			
1,1,2-Trichloroethane	20.70	0.50	20.0	0	103%	64	132	0			
Dibromochloromethane	18.09	0.50	20.0	0	90.4%	72	135	0			
Chlorobenzene	17.87	0.50	20.0	0	89.3%	79	119	0			
Ethylbenzene	20.22	0.50	20.0	0	101%	77	129	0			
m,p-Xylene	41.49	0.50	40.0	0	104%	82	129	0			
o-Xylene	19.28	0.50	20.0	0	96.4%	84	126	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
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B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1304230
Project: 003154 Former Simpson Reman Facility

QC SUMMARY REPORT
Sample Matrix Spike

Bromoform	17.51	0.50	20.0	0	87.5%	71	129	0
1,1,2,2-Tetrachloroethane	20.22	0.50	20.0	0	101%	62	138	0
1,3-Dichlorobenzene	19.15	0.50	20.0	0	95.7%	73	128	0
1,4-Dichlorobenzene	19.23	0.50	20.0	0	96.2%	79	121	0
1,2-Dichlorobenzene	18.67	0.50	20.0	0	93.4%	73	122	0
Surrogate: Dibromofluoromethane	1.05	0.10	1.00	0	105%	72	120	0
Surrogate: 1,2-Dichloroethane-d4	1.11	0.10	1.00	0	111%	69	126	0
Surrogate: Toluene-d8	0.972	0.10	1.00	0	97.2%	78	137	0

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1304230
Project: 003154 Former Simpson Reman Facility

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: **LCS-13115** Batch ID: **R74240** Test Code: **8260EW** Units: **µg/L** Analysis Date **4/19/2013 11:43:00** Prep Date:

Client ID: Run ID: **ORGCMS2_130419B** SeqNo: **1078430**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloromethane	20.76	0.50	20.0	0	104%	44	131	0			
Vinyl chloride	22.23	0.50	20.0	0	111%	51	133	0			
Bromomethane	15.78	0.50	20.0	0	78.9%	42	142	0			
Chloroethane	20.36	0.50	20.0	0	102%	55	132	0			
Trichlorofluoromethane	23.66	0.50	20.0	0	118%	47	138	0			
1,1-Dichloroethene	19.15	0.50	20.0	0	95.8%	55	126	0			
Methylene chloride	20.97	0.50	20.0	0	105%	53	128	0			
trans-1,2-Dichloroethene	21.59	0.50	20.0	0	108%	53	135	0			
1,1-Dichloroethane	20.51	0.50	20.0	0	103%	62	118	0			
cis-1,2-Dichloroethene	20.54	0.50	20.0	0	103%	72	119	0			
Chloroform	19.69	0.50	20.0	0	98.4%	65	126	0			
Carbon Tetrachloride	21.59	0.50	20.0	0	108%	58	140	0			
1,1,1-Trichloroethane	21.26	0.50	20.0	0	106%	61	132	0			
Benzene	20.12	0.50	20.0	0	101%	74	118	0			
1,2-Dichloroethane	19.58	0.50	20.0	0	97.9%	68	128	0			
Trichloroethene	21.05	0.50	20.0	0	105%	75	113	0			
1,2-Dichloropropane	20.22	1.0	20.0	0	101%	63	126	0			
Bromodichloromethane	19.64	0.50	20.0	0	98.2%	69	124	0			
cis-1,3-Dichloropropene	21.16	1.0	20.0	0	106%	63	133	0			
Toluene	19.63	0.50	20.0	0	98.1%	76	133	0			
Tetrachloroethene	19.88	0.50	20.0	0	99.4%	60	129	0			
trans-1,3-Dichloropropene	18.88	1.0	20.0	0	94.4%	66	139	0			
1,1,2-Trichloroethane	19.07	0.50	20.0	0	95.4%	64	132	0			
Dibromochloromethane	19.71	0.50	20.0	0	98.6%	72	135	0			
Chlorobenzene	19.45	0.50	20.0	0	97.2%	79	119	0			
Ethylbenzene	21.45	0.50	20.0	0	107%	77	129	0			
m,p-Xylene	43.88	0.50	40.0	0	110%	82	129	0			
o-Xylene	20.62	0.50	20.0	0	103%	84	126	0			

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank; J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1304230
Project: 003154 Former Simpson Reman Facility

QC SUMMARY REPORT
Laboratory Control Spike

Bromoform	17.84	0.50	20.0	0	89.2%	71	129	0
1,1,2,2-Tetrachloroethane	18.45	0.50	20.0	0	92.3%	62	138	0
1,3-Dichlorobenzene	20.17	0.50	20.0	0	101%	73	128	0
1,4-Dichlorobenzene	20.25	0.50	20.0	0	101%	79	121	0
1,2-Dichlorobenzene	19.77	0.50	20.0	0	98.9%	73	122	0
Surrogate: Dibromofluoromethane	0.997	0.10	1.00	0	99.7%	72	120	0
Surrogate: 1,2-Dichloroethane-d4	1.02	0.10	1.00	0	102%	69	126	0
Surrogate: Toluene-d8	1.01	0.10	1.00	0	101%	78	137	0

Qualifiers:
ND - Not Detected at the Reporting Limit
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R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1304230
Project: 003154 Former Simpson Reman Facility

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID: **LCSD-13115** Batch ID: **R74240** Test Code: **8260EW** Units: **µg/L** Analysis Date **4/19/2013 12:11:00** Prep Date:
Client ID: Run ID: **ORGCMS2_130419B** SeqNo: **1078431**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloromethane	18.55	0.50	20.0	0	92.7%	44	131	20.8	11.3%	30	
Vinyl chloride	21.89	0.50	20.0	0	109%	51	133	22.2	1.53%	30	
Bromomethane	16.45	0.50	20.0	0	82.3%	42	142	15.8	4.16%	30	
Chloroethane	19.55	0.50	20.0	0	97.7%	55	132	20.4	4.10%	30	
Trichlorofluoromethane	22.68	0.50	20.0	0	113%	47	138	23.7	4.25%	30	
1,1-Dichloroethene	18.51	0.50	20.0	0	92.5%	55	126	19.2	3.44%	30	
Methylene chloride	20.44	0.50	20.0	0	102%	53	128	21.0	2.60%	30	
trans-1,2-Dichloroethene	20.69	0.50	20.0	0	103%	53	135	21.6	4.25%	30	
1,1-Dichloroethane	19.97	0.50	20.0	0	99.8%	62	118	20.5	2.67%	30	
cis-1,2-Dichloroethene	20.05	0.50	20.0	0	100%	72	119	20.5	2.41%	30	
Chloroform	19.11	0.50	20.0	0	95.6%	65	126	19.7	2.98%	30	
Carbon Tetrachloride	21.02	0.50	20.0	0	105%	58	140	21.6	2.64%	30	
1,1,1-Trichloroethane	20.26	0.50	20.0	0	101%	61	132	21.3	4.82%	30	
Benzene	19.46	0.50	20.0	0	97.3%	74	118	20.1	3.34%	30	
1,2-Dichloroethane	18.50	0.50	20.0	0	92.5%	68	128	19.6	5.70%	30	
Trichloroethene	20.34	0.50	20.0	0	102%	75	113	21.0	3.46%	30	
1,2-Dichloropropane	19.40	1.0	20.0	0	97.0%	63	126	20.2	4.12%	30	
Bromodichloromethane	18.95	0.50	20.0	0	94.8%	69	124	19.6	3.55%	30	
cis-1,3-Dichloropropene	20.43	1.0	20.0	0	102%	63	133	21.2	3.51%	30	
Toluene	19.25	0.50	20.0	0	96.3%	76	133	19.6	1.95%	30	
Tetrachloroethene	18.99	0.50	20.0	0	95.0%	60	129	19.9	4.56%	30	
trans-1,3-Dichloropropene	17.87	1.0	20.0	0	89.4%	66	139	18.9	5.48%	30	
1,1,2-Trichloroethane	17.79	0.50	20.0	0	88.9%	64	132	19.1	6.97%	30	
Dibromochloromethane	18.80	0.50	20.0	0	94.0%	72	135	19.7	4.73%	30	
Chlorobenzene	19.09	0.50	20.0	0	95.5%	79	119	19.4	1.84%	30	
Ethylbenzene	20.96	0.50	20.0	0	105%	77	129	21.4	2.28%	30	
m,p-Xylene	43.02	0.50	40.0	0	108%	82	129	43.9	1.98%	30	
o-Xylene	20.37	0.50	20.0	0	102%	84	126	20.6	1.21%	30	
Bromoform	16.75	0.50	20.0	0	83.8%	71	129	17.8	6.31%	30	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1304230
Project: 003154 Former Simpson Reman Facility

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

1,1,2,2-Tetrachloroethane	17.31	0.50	20.0	0	86.5%	62	138	18.4	6.40%	30
1,3-Dichlorobenzene	20.10	0.50	20.0	0	101%	73	128	20.2	0.353%	30
1,4-Dichlorobenzene	20.03	0.50	20.0	0	100%	79	121	20.2	1.10%	30
1,2-Dichlorobenzene	19.36	0.50	20.0	0	96.8%	73	122	19.8	2.09%	30
Surrogate: Dibromofluoromethane	0.995	0.10	1.00	0	99.5%	72	120	0.997	0.201%	30
Surrogate: 1,2-Dichloroethane-d4	0.987	0.10	1.00	0	98.7%	69	126	1.02	3.71%	30
Surrogate: Toluene-d8	1.00	0.10	1.00	0	100%	78	137	1.01	0.229%	30

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

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Chain of Custody

LABORATORY NUMBER: 1304127

Attention: DIANA WARD
Results & Invoice to: SHN
Address: 812 W. WABASH AVE, EUREKA, CA 95501
Phone: 707-441-8855
Copies of Report to:
Sampler (Sign & Print): ERIC WARD

PROJECT INFORMATION
Project Number: 003154
Project Name: FORMER SIMPSON REMAN FACILITY
Purchase Order Number:

TAT: ☒ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH SAMPLES.

REPORTING REQUIREMENTS:
☐ State Forms
☒ Geotracker ☐ SWAMP ☐ Other EDD:
☐ Final Report PDF ☐ FAX By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—40 ml VOA; 9—60 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other
PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: VOCs 8260 WTPH
	MW-2	4/11/13	1305	GW	b	8	
	MW-3	"	1610	"	"	"	
	MW-4	"	1355	"	"	"	
	MW-7	"	1505	"	"	"	
	DUP	"	"	"	"	"	

SPECIAL INSTRUCTIONS	SAMPLE CONDITION
	Temperature 7.0 °C
	Received On Ice? Y / N
	Samples Intact? Y / N
	Preserved? Y / N
	Preserved @ NCL?
	Y / N / NA

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
ERIC WARD 4/11/13	1642		
		4/11/13	1642

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; WW=Waste Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.

February 23, 2015

The Sun Valley Group
3160 Upper Bay Road
Arcata, CA 95521

Attn: Tanner Allen

RE: Settling Pond

Order No.: 1502040
Invoice No.: 119970
PO No.: 97903
ELAP No.1247-Expires July 2016

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	SVG614N1

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

Flag = Explanation in Case Narrative

All solid results are expressed on a wet-weight basis unless otherwise noted.

REPORT CERTIFIED BY

Laboratory Supervisor(s) | QA Unit | Jesse G. Chaney, Jr. Laboratory Director

5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831
Printed on Recycled Paper

North Coast Laboratories, Ltd. Date: 23-Feb-2015

CLIENT: The Sun Valley Group
Project: Settling Pond
Lab Order: 1502040

CASE NARRATIVE

EPA 614:
The laboratory control sample duplicate recovery was above the upper acceptance limit for ethion. The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) recoveries were above the upper acceptance limits for some analytes. The elevated recoveries equate to a high bias. There were no detectable levels of these analytes in the sample; therefore, the data were accepted.

The relative percent difference (RPD) between the laboratory control samples was above the acceptance limit for some analytes. This indicates that the sample results could be variable. Since there were no detectable levels of analyte in the sample, the data were accepted.

Date: 23-Feb-2015
WorkOrder: 1502040

ANALYTICAL REPORT

Client Sample ID: SVG614N1
Lab ID: 1502040-01A

Received: 2/3/2015
Collected: 2/3/2015 13:30

Test Name: Organophosphorous Pesticides **Reference:** EPA 614

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Demeton	ND		2.0	µg/L	1.0	2/5/2015	2/11/2015
Diazinon	ND		0.50	µg/L	1.0	2/5/2015	2/11/2015
Disulfoton	ND		0.50	µg/L	1.0	2/5/2015	2/11/2015
Methyl Parathion	ND		0.50	µg/L	1.0	2/5/2015	2/11/2015
Malathion	ND		0.50	µg/L	1.0	2/5/2015	2/11/2015
Parathion	ND		0.50	µg/L	1.0	2/5/2015	2/11/2015
Ethion	ND		0.50	µg/L	1.0	2/5/2015	2/11/2015
Azinphos Methyl	ND		2.5	µg/L	1.0	2/5/2015	2/11/2015
Surrogate: Triphenylphosphate	88.5		20-165	% Rec	1.0	2/5/2015	2/11/2015

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CLIENT: The Sun Valley Group
Work Order: 1502040
Project: Settling Pond

QC SUMMARY REPORT

Method Blank

Sample ID **MB-31649** Batch ID: **31649** Test Code: **614** Units: **µg/L** Analysis Date **2/11/2015 21:06:59** Prep Date **2/5/2015**

Client ID: Run ID: **ORGC13_150211A** SeqNo: **1177020**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Demeton	ND	2.0									
Diazinon	ND	0.50									
Disulfoton	ND	0.50									
Methyl Parathion	ND	0.50									
Malathion	ND	0.50									
Parathion	ND	0.50									
Ethion	ND	0.50									
Azinphos Methyl	ND	2.5									
Surrogate: Triphenylphosphate	21.5	0.10	25.0	0	86.2%	20	165	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

North Coast Laboratories, Ltd.

Date: 2/23/2015

CLIENT: The Sun Valley Group
Work Order: 1502040
Project: Settling Pond

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID **LCS-31649** Batch ID: **31649** Test Code: **614** Units: **µg/L** Analysis Date **2/11/2015 21:52:05** Prep Date **2/5/2015**
Client ID: Run ID: **ORGC13_150211A** SeqNo: **1177021**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Demeton	3.607	2.0	12.5	0	28.9%	27	106	0			
Diazinon	11.36	0.50	12.5	0	90.9%	59	103	0			
Disulfoton	7.561	0.50	12.5	0	60.5%	46	101	0			
Methyl Parathion	12.61	0.50	12.5	0	101%	56	110	0			
Malathion	11.88	0.50	12.5	0	95.1%	58	110	0			
Parathion	12.30	0.50	12.5	0	98.4%	57	105	0			
Ethion	13.46	0.50	12.5	0	108%	57	106	0			S
Azinphos Methyl	10.05	2.5	12.5	0	80.4%	36	137	0			
Surrogate: Triphenylphosphate	24.5	0.10	25.0	0	98.1%	20	165	0			

Sample ID **LCSD-31649** Batch ID: **31649** Test Code: **614** Units: **µg/L** Analysis Date **2/11/2015 22:37:32** Prep Date **2/5/2015**
Client ID: Run ID: **ORGC13_150211A** SeqNo: **1177022**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Demeton	6.099	2.0	12.5	0	48.8%	27	106	3.61	51.4%	30	R
Diazinon	16.33	0.50	12.5	0	131%	59	103	11.4	35.9%	30	SR
Disulfoton	8.687	0.50	12.5	0	69.5%	46	101	7.56	13.9%	30	
Methyl Parathion	17.09	0.50	12.5	0	137%	56	110	12.6	30.2%	30	SR
Malathion	17.98	0.50	12.5	0	144%	58	110	11.9	40.8%	30	SR
Parathion	18.07	0.50	12.5	0	145%	57	105	12.3	38.0%	30	SR
Ethion	18.75	0.50	12.5	0	150%	57	106	13.5	32.8%	30	SR
Azinphos Methyl	14.23	2.5	12.5	0	114%	36	137	10.0	34.4%	30	R
Surrogate: Triphenylphosphate	24.4	0.10	25.0	0	97.8%	20	165	24.5	0.307%	30	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

P. _____ of _____

LABORATORY NUMBER: 1502040

Attention: Tanner Allen
Results & Invoice to: The Sun Valley Group
Address: 3160 upper Bay Rd
Arcata, CA 95521
Phone: (707) 298-7458
Copies of Report to: tallen@TSVG.com
Sampler (Sign & Print): Tanner Allen

PROJECT INFORMATION
Project Number:
Project Name: Settling Pond
Purchase Order Number: 97903

TAT: ☐ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH SAMPLES.

REPORTING REQUIREMENTS:
☐ State Forms
☐ Geotracker ☐ SWAMP ☐ Other EDD:
☐ Final Report PDF ☐ FAX By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—40 ml VOA; 9—60 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other
PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS
	SVG 694 N1	2/3/15	13:30				614

SPECIAL INSTRUCTIONS	SAMPLE CONDITION
	Temperature 1.4 °C
	Received On Ice? Y / N
	Samples Intact? Y / N
	Preserved? Y / N
	Preserved @ NCL? Y / N / NA

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
			2/3/15 1547

SAMPLE DISPOSAL
☐ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; WW=Waste Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX C: REGULATORY DATABASE REPORT

PARTNER

Arcata Properties
3318 Foster Avenue, 2725 Simpson Mill Road, 4044 L
Arcata, CA 95521

Inquiry Number: 4293018.2s
May 13, 2015

The EDR Radius Map™ Report with GeoCheck®

EDR® Environmental Data Resources Inc

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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GEOCHECK ADDENDUM

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

3318 FOSTER AVENUE, 2725 SIMPSON MILL ROAD, 4044 L
ARCATA, CA 95521

COORDINATES

Latitude (North):	40.8893000 - 40° 53' 21.48"
Longitude (West):	124.1069000 - 124° 6' 24.84"
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	406749.1
UTM Y (Meters):	4526846.5
Elevation:	24 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	40124-H1 ARCATA NORTH, CA
Most Recent Revision:	1972
South Map:	40124-G1 ARCATA SOUTH, CA
Most Recent Revision:	1972
West Map:	40124-H2 TYEE CITY, CA
Most Recent Revision:	1972

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20120610
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
3318 FOSTER AVENUE, 2725 SIMPSON MILL ROAD, 4044 L
ARCATA, CA 95521

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
1	SIMPSON REDWOOD CO.	FOSTER AVENUE	VCP, ENVIROSTOR	Higher	1 ft.
2	EEL RIVER SAWMILLL,	FOSTER AVENUE	HIST CORTESE, LUST, SLIC	Higher	8, 0.002, SE
A3	SUN VALLEY BULB FARM	1780 27TH STREET	Notify 65	Higher	35, 0.007, East
A4	SUN VALLEY BULB FARM	1780 27TH STREET	Notify 65	Higher	35, 0.007, East
A5	SUN VALLEY BULB FARM	1780 27TH STREET	Notify 65	Higher	35, 0.007, East
6	ROBERT GRAHAM	3466 SEIDEL RD	HIST UST	Lower	49, 0.009, NW
A7	SUN VALLEY BULB FARM	1780 TWENTYSEVENTH	SLIC, LDS	Higher	66, 0.013, East
B8	SUN VALLEY FLORAL FA	3160 UPPER BAY ROAD	Notify 65	Higher	75, 0.014, NNE
B9		3160 UPPER BAY RD	AST	Higher	75, 0.014, NNE
B10	SUN VALLEY FLORAL FA	3160 UPPER BAY RD	CUPA Listings	Higher	75, 0.014, NNE
C11	TROUT, ELMER B.	3655 SPEAR AVE	CA FID UST, SWEEPS UST	Higher	378, 0.072, ENE
C12	ELMER B. TROUT	3655 SPEAR AVE	HIST UST	Higher	378, 0.072, ENE
D13	S&H AUTO WRECKERS	3028 ALLIANCE ROAD	LUST, SLIC	Higher	663, 0.126, East
D14	ARCATA PETRO MART	3197 ALLIANCE RD	UST	Higher	671, 0.127, East
D15	GAS-4-LESS	3197 ALLIANCE ROAD	HIST CORTESE, LUST, CUPA Listings, EMI	Higher	671, 0.127, East
D16	HPI ARCATA SHELL PET	3197 ALLIANCE RD	CA FID UST, SWEEPS UST	Higher	671, 0.127, East
D17	BEACON	3198 ALLIANCE RD	HIST UST	Higher	683, 0.129, East
18	CITY OF ARCATA - ALL	2815 ALLIANCE RD	CUPA Listings	Higher	728, 0.138, East
E19	SIMPSON TIMBER COMPA	3315 FOSTER AVENUE	SLIC	Lower	743, 0.141, SW
E20	BAR M ORGANIC DAIRY	3364 FOSTER AVE	CUPA Listings	Lower	808, 0.153, SW
21	COOK, ESSE & LINDA	2809 BAY SCHOOL ROAD	SLIC, ENF	Lower	886, 0.168, SSE
F22	PACIFIC UNION SCHOOL	3001 JANES RD	HIST UST	Higher	996, 0.189, ENE
F23	PACIFIC UNION ELEMEN	3001 JANES	HIST CORTESE, LUST	Higher	996, 0.189, ENE
F24	PACIFIC UNION ELEMEN	3001 JANES RD	CA FID UST, SWEEPS UST	Higher	996, 0.189, ENE
G25	ALLIANCE MARKET	1499 SPEAR AVE	CA FID UST, SWEEPS UST	Higher	1009, 0.191, East
G26	ALLIANCE MARKET	1499 SPEAR AVE	HIST UST	Higher	1009, 0.191, East
H27		2505 ALLIANCE RD	EDR US Hist Cleaners	Higher	1037, 0.196, ESE
H28	WESTWOOD LAUNDROMAT	2505 ALLIANCE	HIST CORTESE, LUST	Higher	1037, 0.196, ESE
I29	CASCADE FOREST PRO.	1800 Q ST	HIST UST, CUPA Listings	Lower	1211, 0.229, SE
I30		1800 Q ST	EDR US Hist Auto Stat	Lower	1211, 0.229, SE
31	ARCATA 76	2205 ALLIANCE ROAD	HIST CORTESE, LUST, CUPA Listings, EMI	Higher	1827, 0.346, ESE
32	HOMEM DAIRY	4003 SEIDEL RD	HIST CORTESE, LUST, CUPA Listings	Lower	2316, 0.439, NNW
33	SUNSET SCHOOL	2400 BALDWIN	HIST CORTESE, LUST	Higher	2326, 0.441, ESE
J34	CAL-KIRK LANDSCAPING	2905 ST LOUIS RD	HIST CORTESE, LUST, CUPA Listings	Higher	2488, 0.471, East
J35	MAD RIVER LUMBER	2935 ST LOUIS RD	HIST CORTESE, LUST, CUPA Listings	Higher	2488, 0.471, East
36	CHISUM, SHIRLEY	JANES & ELEVENTH STR	SLIC	Lower	2544, 0.482, SSE
J37	SAMOA LANDFILL SITE	1/2 MI S OF LOUISIAN	SWF/LF, Financial Assurance	Higher	2555, 0.484, East
38	ARCATA COMMUNITY REC	1380 NINTH STREET	LUST, SLIC, Notify 65	Lower	3864, 0.732, SSE

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ..... National Priority List
Proposed NPL ..... Proposed National Priority List Sites
NPL LIENS ..... Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ..... National Priority List Deletions

Federal CERCLIS list

CERCLIS ..... Comprehensive Environmental Response, Compensation, and Liability Information System
FEDERAL FACILITY ..... Federal Facility Site Information listing

Federal CERCLIS NFRAP site List

CERC-NFRAP ..... CERCLIS No Further Remedial Action Planned

Federal RCRA CORRACTS facilities list

CORRACTS ..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ..... RCRA - Large Quantity Generators
RCRA-SQG ..... RCRA - Small Quantity Generators
RCRA-CESQG ..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

US ENG CONTROLS ..... Engineering Controls Sites List
US INST CONTROL ..... Sites with Institutional Controls

LUCIS..... Land Use Control Information System

Federal ERNS list

ERNS..... Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE..... State Response Sites

State and tribal leaking storage tank lists

INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

INDIAN UST..... Underground Storage Tanks on Indian Land
FEMA UST..... Underground Storage Tank Listing

State and tribal voluntary cleanup sites

INDIAN VCP..... Voluntary Cleanup Priority Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

ODI..... Open Dump Inventory
DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations
SWRCY..... Recycler Database
HAULERS..... Registered Waste Tire Haulers Listing
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands
WMUDS/SWAT..... Waste Management Unit Database

Local Lists of Hazardous waste / Contaminated Sites

US CDL..... Clandestine Drug Labs
HIST Cal-Sites..... Historical Calsites Database
SCH..... School Property Evaluation Program
Toxic Pits..... Toxic Pits Cleanup Act Sites
CDL..... Clandestine Drug Labs
US HIST CDL..... National Clandestine Laboratory Register

Local Land Records

LIENS 2..... CERCLA Lien Information
LIENS..... Environmental Liens Listing
DEED..... Deed Restriction Listing

Records of Emergency Release Reports

HMIRS..... Hazardous Materials Information Reporting System

CHMIRS..... California Hazardous Material Incident Report System
LDS..... Land Disposal Sites Listing
MCS..... Military Cleanup Sites Listing
SPILLS 90..... SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR..... RCRA - Non Generators / No Longer Regulated
DOT OPS..... Incident and Accident Data
DOD..... Department of Defense Sites
FUDS..... Formerly Used Defense Sites
CONSENT..... Superfund (CERCLA) Consent Decrees
ROD..... Records Of Decision
UMTRA..... Uranium Mill Tailings Sites
US MINES..... Mines Master Index File
TRIS..... Toxic Chemical Release Inventory System
TSCA..... Toxic Substances Control Act
FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS..... FIFRA/TSCA Tracking System Administrative Case Listing
SSTS..... Section 7 Tracking Systems
ICIS..... Integrated Compliance Information System
PADS..... PCB Activity Database System
MLTS..... Material Licensing Tracking System
RADINFO..... Radiation Information Database
FINDS..... Facility Index System/Facility Registry System
RAATS..... RCRA Administrative Action Tracking System
RMP..... Risk Management Plans
CA BOND EXP. PLAN..... Bond Expenditure Plan
NPDES..... NPDES Permits Listing
UIC..... UIC Listing
Cortese..... "Cortese" Hazardous Waste & Substances Sites List
DRYCLEANERS..... Cleaner Facilities
WIP..... Well Investigation Program Case List
ENF..... Enforcement Action Listing
HAZNET..... Facility and Manifest Data
EMI..... Emissions Inventory Data
INDIAN RESERV..... Indian Reservations
SCRD DRYCLEANERS..... State Coalition for Remediation of Drycleaners Listing
WDS..... Waste Discharge System
MWMP..... Medical Waste Management Program Listing
PCB TRANSFORMER..... PCB Transformer Registration Database
US FIN ASSUR..... Financial Assurance Information
EPA WATCH LIST..... EPA WATCH LIST
LEAD SMELTERS..... Lead Smelter Sites
Financial Assurance..... Financial Assurance Information Listing
PROC..... Certified Processors Database
HWT..... Registered Hazardous Waste Transporter Database
HWP..... EnviroStor Permitted Facilities Listing
COAL ASH EPA..... Coal Combustion Residues Surface Impoundments List
US AIRS..... Aerometric Information Retrieval System Facility Subsystem
COAL ASH DOE..... Steam-Electric Plant Operation Data
2020 COR ACTION..... 2020 Corrective Action Program List
PRP..... Potentially Responsible Parties

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP..... EDR Proprietary Manufactured Gas Plants

EXECUTIVE SUMMARY

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LUST..... Recovered Government Archive Leaking Underground Storage Tank
RGA LF..... Recovered Government Archive Solid Waste Facilities List

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

State- and tribal - equivalent CERCLIS

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 03/11/2015 has revealed that there is 1 ENVIROSTOR site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SIMPSON REDWOOD CO. Facility Id: 12240118 Status: Certified / Operation & Maintenance	***FOSTER AVENUE***	***0 - 1/8 (0.000 mi.)***	*1*	*8*

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: The Solid Waste Facilities/Landfill Sites records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. The data come from the Integrated Waste Management Board's Solid Waste Information System (SWIS) database.

A review of the SWF/LF list, as provided by EDR, and dated 02/16/2015 has revealed that there is 1

SWF/LF site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SAMOA LANDFILL SITE Facility ID: 12-AA-0017 Regulation Status: Permitted Operational Status: Closed	*1/2 MI S OF LOUISIAN*	*E 1/4 - 1/2 (0.484 mi.)*	*J37*	*80*

State and tribal leaking storage tank lists

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

A review of the LUST list, as provided by EDR, and dated 03/13/2015 has revealed that there are 10 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
EEL RIVER SAWMILLL, Status: Completed - Case Closed Facility Id: 1THU518 Global Id: T0602300394	*FOSTER AVENUE*	*SE 0 - 1/8 (0.002 mi.)*	*2*	*22*
S&H AUTO WRECKERS Status: Completed - Case Closed Global Id: T0602392503	*3028 ALLIANCE ROAD*	*E 1/8 - 1/4 (0.126 mi.)*	*D13*	*28*
GAS-4-LESS Status: Completed - Case Closed Facility Id: 1THU163 Global Id: T0602300129	*3197 ALLIANCE ROAD*	*E 1/8 - 1/4 (0.127 mi.)*	*D15*	*35*
PACIFIC UNION ELEMEN Status: Completed - Case Closed Facility Id: 1THU279 Global Id: T0602300211	*3001 JANES*	*ENE 1/8 - 1/4 (0.189 mi.)*	*F23*	*50*
WESTWOOD LAUNDROMAT Status: Completed - Case Closed Facility Id: 1THU431 Global Id: T0602300326	*2505 ALLIANCE*	*ESE 1/8 - 1/4 (0.196 mi.)*	*H28*	*55*
ARCATA 76 Status: Open - Site Assessment Facility Id: 1THU339 Global Id: T0602300259	*2205 ALLIANCE ROAD*	*ESE 1/4 - 1/2 (0.346 mi.)*	*31*	*58*
SUNSET SCHOOL Status: Completed - Case Closed Facility Id: 1THU415 Global Id: T0602300315	*2400 BALDWIN*	*ESE 1/4 - 1/2 (0.441 mi.)*	*33*	*70*
CAL-KIRK LANDSCAPING Status: Completed - Case Closed Facility Id: 1THU082 Global Id: T0602300075	*2905 ST LOUIS RD*	*E 1/4 - 1/2 (0.471 mi.)*	*J34*	*72*
MAD RIVER LUMBER Status: Open - Verification Monitoring Facility Id: 1THU387 Global Id: T0602300292	*2935 ST LOUIS RD*	*E 1/4 - 1/2 (0.471 mi.)*	*J35*	*74*

Lower Elevation	Address	Direction / Distance	Map ID	Page
HOMEM DAIRY	***4003 SEIDEL RD***	***NNW 1/4 - 1/2 (0.439 mi.)***	***32***	***68***
Status: Completed - Case Closed Facility Id: 1THU361 Global Id: T0602300273				

SLIC: SLIC Region comes from the California Regional Water Quality Control Board.

A review of the SLIC list, as provided by EDR, and dated 03/13/2015 has revealed that there are 6 SLIC sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
EEL RIVER SAWMILLL,	***FOSTER AVENUE***	***SE 0 - 1/8 (0.002 mi.)***	***2***	***22***
Facility Id: 1NHU518 Facility Status: Completed - Case Closed Global Id: T0602391361				
SUN VALLEY BULB FARM	***1780 TWENTYSEVENTH***	***E 0 - 1/8 (0.013 mi.)***	***A7***	***25***
Facility Id: 1NHU091				
S&H AUTO WRECKERS	***3028 ALLIANCE ROAD***	***E 1/8 - 1/4 (0.126 mi.)***	***D13***	***28***
Facility Status: Completed - Case Closed Global Id: SL0602311838				

Lower Elevation	Address	Direction / Distance	Map ID	Page
SIMPSON TIMBER COMPA	3315 FOSTER AVENUE	SW 1/8 - 1/4 (0.141 mi.)	E19	45
Facility Id: 1NHU661 Facility Status: Open - Verification Monitoring Global Id: T0602393409				
COOK, ESSE & LINDA	***2809 BAY SCHOOL ROAD***	***SSE 1/8 - 1/4 (0.168 mi.)***	***21***	***47***
Facility Id: 1NHU319 Facility Status: Open - Inactive Global Id: T0602393236				
CHISUM, SHIRLEY	JANES & ELEVENTH STR	SSE 1/4 - 1/2 (0.482 mi.)	36	79
Facility Id: 1NHU452 Facility Status: Open - Site Assessment Global Id: T0602393280				

State and tribal registered storage tank lists

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, and dated 03/13/2015 has revealed that there is 1 UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ARCATA PETRO MART	3197 ALLIANCE RD	E 1/8 - 1/4 (0.127 mi.)	D14	35
Facility Id: 12-000-000421				

AST: A listing of aboveground storage tank petroleum storage tank locations.

A review of the AST list, as provided by EDR, and dated 08/01/2009 has revealed that there is 1 AST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
Not reported	3160 UPPER BAY RD	NNE 0 - 1/8 (0.014 mi.)	B9	26

State and tribal voluntary cleanup sites

VCP: Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

A review of the VCP list, as provided by EDR, and dated 03/11/2015 has revealed that there is 1 VCP site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SIMPSON REDWOOD CO. Status: Certified / Operation & Maintenance Facility Id: 12240118	***FOSTER AVENUE***	***0 - 1/8 (0.000 mi.)***	***1***	***8***

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Registered Storage Tanks

CA FID UST: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, and dated 10/31/1994 has revealed that there are 4 CA FID UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
TROUT, ELMER B. Status: I Facility Id: 12001242	***3655 SPEAR AVE***	***ENE 0 - 1/8 (0.072 mi.)***	***C11***	***27***
HPI ARCATA SHELL PET Status: A Facility Id: 12000111	***3197 ALLIANCE RD***	***E 1/8 - 1/4 (0.127 mi.)***	***D16***	***42***
PACIFIC UNION ELEMEN Status: I Facility Id: 12001139	***3001 JANES RD***	***ENE 1/8 - 1/4 (0.189 mi.)***	***F24***	***51***
ALLIANCE MARKET Status: I Facility Id: 12001340	***1499 SPEAR AVE***	***E 1/8 - 1/4 (0.191 mi.)***	***G25***	***52***

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there are 6 HIST UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ELMER B. TROUT Facility Id: 00000014727	3655 SPEAR AVE	ENE 0 - 1/8 (0.072 mi.)	C12	28
BEACON Facility Id: 00000002895	3198 ALLIANCE RD	E 1/8 - 1/4 (0.129 mi.)	D17	44
PACIFIC UNION SCHOOL Facility Id: 00000011592 Facility Id: 00000044839	3001 JANES RD	ENE 1/8 - 1/4 (0.189 mi.)	F22	49
ALLIANCE MARKET Facility Id: 00000052739	1499 SPEAR AVE	E 1/8 - 1/4 (0.191 mi.)	G26	54

Lower Elevation	Address	Direction / Distance	Map ID	Page
ROBERT GRAHAM Facility Id: 00000031492	3466 SEIDEL RD	NW 0 - 1/8 (0.009 mi.)	6	25
CASCADE FOREST PRO. Facility Id: 00000050374	***1800 Q ST***	***SE 1/8 - 1/4 (0.229 mi.)***	***I29***	***57***

SWEEPS UST: Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there are 4 SWEEPS UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
TROUT, ELMER B. Comp Number: 14727	***3655 SPEAR AVE***	***ENE 0 - 1/8 (0.072 mi.)***	***C11***	***27***
HPI ARCATA SHELL PET Status: A Tank Status: A Comp Number: 2895	***3197 ALLIANCE RD***	***E 1/8 - 1/4 (0.127 mi.)***	***D16***	***42***
PACIFIC UNION ELEMEN Comp Number: 11592	***3001 JANES RD***	***ENE 1/8 - 1/4 (0.189 mi.)***	***F24***	***51***
ALLIANCE MARKET Comp Number: 52739	***1499 SPEAR AVE***	***E 1/8 - 1/4 (0.191 mi.)***	***G25***	***52***

Other Ascertainable Records

HIST CORTESE: The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

A review of the HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there

are 9 HIST CORTESE sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
EEL RIVER SAWMILLL, Reg Id: 1THU518	***FOSTER AVENUE***	***SE 0 - 1/8 (0.002 mi.)***	***2***	***22***
GAS-4-LESS Reg Id: 1THU163	***3197 ALLIANCE ROAD***	***E 1/8 - 1/4 (0.127 mi.)***	***D15***	***35***
PACIFIC UNION ELEMEN Reg Id: 1THU279	***3001 JANES***	***ENE 1/8 - 1/4 (0.189 mi.)***	***F23***	***50***
WESTWOOD LAUNDROMAT Reg Id: 1THU431	***2505 ALLIANCE***	***ESE 1/8 - 1/4 (0.196 mi.)***	***H28***	***55***
ARCATA 76 Reg Id: 1THU339	***2205 ALLIANCE ROAD***	***ESE 1/4 - 1/2 (0.346 mi.)***	***31***	***58***
SUNSET SCHOOL Reg Id: 1THU415	***2400 BALDWIN***	***ESE 1/4 - 1/2 (0.441 mi.)***	***33***	***70***
CAL-KIRK LANDSCAPING Reg Id: 1THU082	***2905 ST LOUIS RD***	***E 1/4 - 1/2 (0.471 mi.)***	***J34***	***72***
MAD RIVER LUMBER Reg Id: 1THU387	***2935 ST LOUIS RD***	***E 1/4 - 1/2 (0.471 mi.)***	***J35***	***74***

Lower Elevation	Address	Direction / Distance	Map ID	Page
HOMEM DAIRY Reg Id: 1THU361	***4003 SEIDEL RD***	***NNW 1/4 - 1/2 (0.439 mi.)***	***32***	***68***

CUPA Listings: A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

A review of the CUPA Listings list, as provided by EDR, has revealed that there are 5 CUPA Listings sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SUN VALLEY FLORAL FA Local Site Id: FA0003203 Permit Status: (none) Permit Status: Active Permit Status: Inactive	3160 UPPER BAY RD	NNE 0 - 1/8 (0.014 mi.)	B10	26
GAS-4-LESS Local Site Id: FA0000128 Permit Status: Active	***3197 ALLIANCE ROAD***	***E 1/8 - 1/4 (0.127 mi.)***	***D15***	***35***
CITY OF ARCATA - ALL Local Site Id: FA0000649 Permit Status: (none) Permit Status: Active	2815 ALLIANCE RD	E 1/8 - 1/4 (0.138 mi.)	18	45

Lower Elevation	Address	Direction / Distance	Map ID	Page
BAR M ORGANIC DAIRY Local Site Id: FA0004539 Permit Status: Active Permit Status: (none)	3364 FOSTER AVE	SW 1/8 - 1/4 (0.153 mi.)	E20	46

EXECUTIVE SUMMARY

Lower Elevation	Address	Direction / Distance	Map ID	Page
CASCADE FOREST PRO.	***1800 Q ST***	***SE 1/8 - 1/4 (0.229 mi.)***	***I29***	***57***
Local Site Id: FA0002525				
Permit Status: Active				
Permit Status: Inactive				

Notify 65: Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

A review of the Notify 65 list, as provided by EDR, and dated 10/21/1993 has revealed that there are 5 Notify 65 sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SUN VALLEY BULB FARM	1780 27TH STREET	E 0 - 1/8 (0.007 mi.)	A3	24
SUN VALLEY BULB FARM	1780 27TH STREET	E 0 - 1/8 (0.007 mi.)	A4	24
SUN VALLEY BULB FARM	1780 27TH STREET	E 0 - 1/8 (0.007 mi.)	A5	24
SUN VALLEY FLORAL FA	3160 UPPER BAY ROAD	NNE 0 - 1/8 (0.014 mi.)	B8	26

Lower Elevation	Address	Direction / Distance	Map ID	Page
ARCATA COMMUNITY REC	***1380 NINTH STREET***	***SSE 1/2 - 1 (0.732 mi.)***	***38***	***82***

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR US Hist Auto Stat: EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR US Hist Auto Stat list, as provided by EDR, has revealed that there is 1 EDR US Hist Auto Stat site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
Not reported	1800 Q ST	SE 1/8 - 1/4 (0.229 mi.)	I30	58

EXECUTIVE SUMMARY

EDR US Hist Cleaners: EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR US Hist Cleaners list, as provided by EDR, has revealed that there is 1 EDR US Hist Cleaners site within approximately 0.25 miles of the target property.

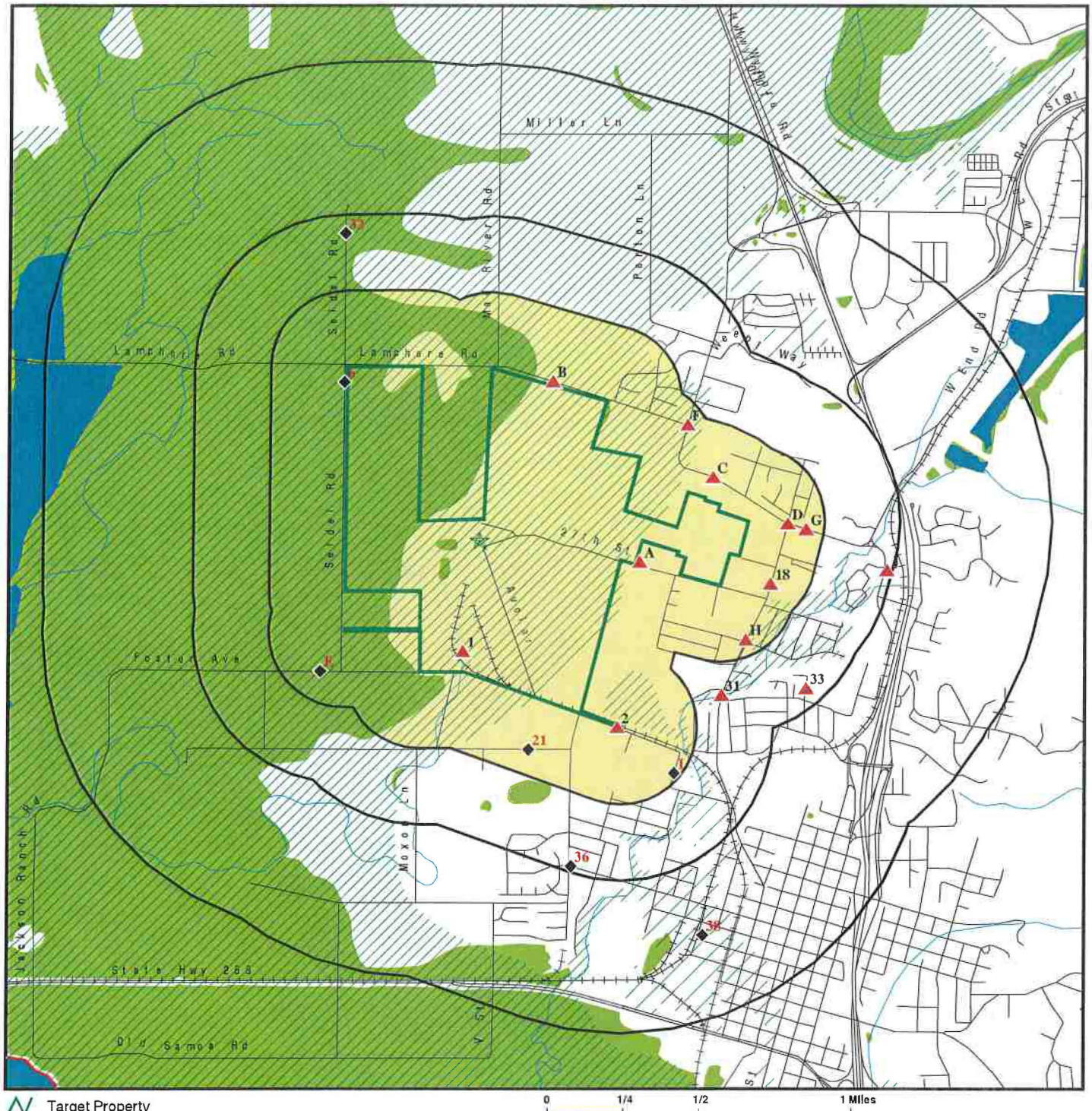
Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
Not reported	2505 ALLIANCE RD	ESE 1/8 - 1/4 (0.196 mi.)	H27	54

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 3 records.

Site Name	Database(s)
ARCATA REMANUFACTURING	CA FID UST, SWEEPS UST
S&H AUTO WRECKERS	LUST
ARCATA REMANUFACTURING	HIST UST

OVERVIEW MAP - 4293018.2S



Target Property
Sites at elevations higher than or equal to the target property
Sites at elevations lower than the target property
Manufactured Gas Plants
National Priority List Sites
Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA
County Boundary
Oil & Gas pipelines from USGS
100-year flood zone
500-year flood zone
National Wetland Inventory

Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Arcata Properties ADDRESS: 3318 Foster Avenue, 2725 Simpson Mill Road, 4044 L Arcata CA 95521 LAT/LONG: 40.8893 / 124.1069	CLIENT: Partner Engineering and Science, Inc. CONTACT: Brett Nielsen INQUIRY #: 4293018.2s DATE: May 13, 2015 3:44 pm

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DETAIL MAP - 4293018.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Arcata Properties	CLIENT: Partner Engineering and Science, Inc.
ADDRESS: 3318 Foster Avenue, 2725 Simpson Mill Road, 4044 L Arcata CA 95521	CONTACT: Brett Nielsen
LAT/LONG: 40.8893 / 124.1069	INQUIRY #: 4293018.2s
	DATE: May 13, 2015 3:47 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
CERCLIS	0.500		0	0	0	NR	NR	0
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site List								
CERC-NFRAP	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
LUCIS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		1	0	0	0	NR	1
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	1	NR	NR	1
State and tribal leaking storage tank lists								
LUST	0.500		1	4	5	NR	NR	10

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
SLIC	0.500		2	3	1	NR	NR	6
INDIAN LUST	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
UST	0.250		0	1	NR	NR	NR	1
AST	0.250		1	0	NR	NR	NR	1
INDIAN UST	0.250		0	0	NR	NR	NR	0
FEMA UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		1	0	0	NR	NR	1
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	TP		NR	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US CDL	TP		NR	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
US HIST CDL	TP		NR	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
CA FID UST	0.250		1	3	NR	NR	NR	4
HIST UST	0.250		2	4	NR	NR	NR	6
SWEEPS UST	0.250		1	3	NR	NR	NR	4
Local Land Records								
LIENS 2	TP		NR	NR	NR	NR	NR	0
LIENS	TP		NR	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
CHMIRS	TP		NR	NR	NR	NR	NR	0
LDS	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
MCS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
DOD	1.000		0	0	0	0	NR	0
FUDS	1.000		0	0	0	0	NR	0
CONSENT	1.000		0	0	0	0	NR	0
ROD	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
Cortese	0.500		0	0	0	NR	NR	0
HIST CORTESE	0.500		1	3	5	NR	NR	9
CUPA Listings	0.250		1	4	NR	NR	NR	5
Notify 65	1.000		4	0	0	1	NR	5
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
ENF	TP		NR	NR	NR	NR	NR	0
HAZNET	TP		NR	NR	NR	NR	NR	0
EMI	TP		NR	NR	NR	NR	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
WDS	TP		NR	NR	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
HWT	0.250		0	0	NR	NR	NR	0
HWP	1.000		0	0	0	0	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR US Hist Auto Stat	0.250		0	1	NR	NR	NR	1
EDR US Hist Cleaners	0.250		0	1	NR	NR	NR	1
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LUST	TP		NR	NR	NR	NR	NR	0
RGA LF	TP		NR	NR	NR	NR	NR	0
- Totals --		0	16	27	12	1	0	56

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

1 **SIMPSON REDWOOD CO.** **VCP** **S102564437**
FOSTER AVENUE **ENVIROSTOR** **N/A**
< 1/8 **ARCATA, CA 95518**
1 ft.

Relative: Higher

Actual: 24 ft.

VCP:

Facility ID:	12240118
Site Type:	Voluntary Cleanup
Site Type Detail:	Voluntary Cleanup
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	209
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 1 - North Coast
Lead Agency:	SMBRP
Lead Agency Description:	DTSC - Site Cleanup Program
Project Manager:	Charles (Chip) Gribble
Supervisor:	Denise Tsuji
Division Branch:	Cleanup Berkeley
Site Code:	200917
Assembly:	02
Senate:	02
Special Programs Code:	Voluntary Cleanup Program
Status:	Certified / Operation & Maintenance
Status Date:	02/18/1999
Restricted Use:	NO
Funding:	Responsible Party
Lat/Long:	40.88412 / -124.1079
APN:	505-151-03, 505-151-04, 505-151-05, 505-161-09, 505-161-10, 505-161-29, 505-181-07, 50515103, 50515104, 50515105, 50516109, 50516110, 50516129, 50518107, 506-131-11, 506-231-01, 506-231-02, 506-231-04, 506-231-05, 506-241-16, 50613111, 50623104, 50623105, 50624116
Past Use:	MANUFACTURING - LUMBER/WOOD PRODUCTS
Potential COC:	30019, 30027, 30195, 30448
Confirmed COC:	30019,30027,30195,30448
Potential Description:	OTH, SOIL
Alias Name:	FORMER SIMPSON TIMBER CO. RMNFCTNG PLANT
Alias Type:	Alternate Name
Alias Name:	SIMPSON ARCATA
Alias Type:	Alternate Name
Alias Name:	SIMPSON COMMON PAYMASTER COMPANY
Alias Type:	Alternate Name
Alias Name:	SIMPSON REDWOOD
Alias Type:	Alternate Name
Alias Name:	SIMPSON REMANUFACTURING
Alias Type:	Alternate Name
Alias Name:	SIMPSON TIMBER COMPANY
Alias Type:	Alternate Name
Alias Name:	505-151-03
Alias Type:	APN
Alias Name:	505-151-04
Alias Type:	APN
Alias Name:	505-151-05
Alias Type:	APN
Alias Name:	505-161-09
Alias Type:	APN
Alias Name:	505-161-10
Alias Type:	APN
Alias Name:	505-161-29

SIMPSON REDWOOD CO. (Continued) **S102564437**

Alias Type:	APN
Alias Name:	505-181-07
Alias Type:	APN
Alias Name:	50515103
Alias Type:	APN
Alias Name:	50515104
Alias Type:	APN
Alias Name:	50515105
Alias Type:	APN
Alias Name:	50516109
Alias Type:	APN
Alias Name:	50516110
Alias Type:	APN
Alias Name:	50516129
Alias Type:	APN
Alias Name:	50518107
Alias Type:	APN
Alias Name:	506-131-11
Alias Type:	APN
Alias Name:	506-231-01
Alias Type:	APN
Alias Name:	506-231-02
Alias Type:	APN
Alias Name:	506-231-04
Alias Type:	APN
Alias Name:	506-231-05
Alias Type:	APN
Alias Name:	506-241-16
Alias Type:	APN
Alias Name:	50613111
Alias Type:	APN
Alias Name:	50623104
Alias Type:	APN
Alias Name:	50623105
Alias Type:	APN
Alias Name:	50624116
Alias Type:	APN
Alias Name:	110033609263
Alias Type:	EPA (FRS #)
Alias Name:	200917
Alias Type:	Project Code (Site Code)
Alias Name:	12240118
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	5 Year Review Reports
Completed Date:	07/06/2005
Comments:	Two additional monitoring wells (MW-7 and MW-8 in the former south lunchroom area) were installed January 2004 in accordance with the DTSC-approved Five Year Review Workplan. DTSC concurred with the Five Year Review Report's recommendation to implement a Monitored Natural Attenuation (MNA) program on a quarterly basis for one year. After one year, the additional information will be evaluated and used to determine if contaminant concentrations in groundwater are being effectively reduced and if water quality objectives can be achieved in a reasonable timeframe.

SIMPSON REDWOOD CO. (Continued) **S102564437**

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	02/13/1999
Comments:	Approximately 8600 cubic yards of soil was excavated and disposed off-site. Approximately 1.2 million gallons of water was removed and treated through a transporable treatment unit before being discharged to the Greater Eureka Area (Elk River) Waste Water Treatment Plant. All cleanup goals were met except for the presence of cis-1,2-dichloroethylene, found in the groundwater at levels 10 to 15 micrograms per liter (exceeding drinking water standards).

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Workplan
Completed Date:	11/07/1997
Comments:	Approved RAW requiring hot spot soil and groundwater removal. Groundwater monitoring is also required after removal of impacted soil and groundwater.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Report
Completed Date:	08/28/1997
Comments:	Completed PEA. Investigations conducted in 1987 determined that the soil was contaminated with pentachlorophenol (PCP). The groundwater detected PCP, cis-1,2-dichloroethylene, benzene, toluene, and xylenes. Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	5 Year Review Reports
Completed Date:	06/29/2011
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Fact Sheets
Completed Date:	09/15/1997
Comments:	Mailed out on 9/13/1997 and hand-delivered 9/15 and 9/16/1997.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Notice
Completed Date:	09/15/1997
Comments:	Published in the Times-Standard on 9/15/1997.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Operations and Maintenance Report
Completed Date:	01/16/2007
Comments:	Comments sent requiring continued quarterly groundwater monitoring as well as the addition of ethane and ethane, biodegradation products of volatile organic compounds including vinyl chloride, to the analytical suite for the quarterly groundwater monitoring

Completed Area Name: PROJECT WIDE

SIMPSON REDWOOD CO. (Continued) **S102564437**

Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report
Completed Date: 09/12/2008
Comments: Quarterly monitoring will continue.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report
Completed Date: 06/23/2008
Comments: Groundwater monitoring will continue.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report
Completed Date: 10/21/2008
Comments: Report approved. Approval sets groundwater monitoring schedule to occur during the second week of the sampling month each time.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report
Completed Date: 03/16/2009
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report
Completed Date: 05/28/2009
Comments: Quarterly groundwater monitoring will continue.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 01/13/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 09/28/2009
Comments: DTSC annual cost estimate letter sent.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Correspondence
Completed Date: 04/18/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 09/19/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operation & Maintenance Order/Agreement

SIMPSON REDWOOD CO. (Continued) **S102564437**

Completed Date: 01/28/1999
Comments: Six groundwater monitoring wells surrounding the excavation and extraction zone require quarterly monitoring as a part of required operation and maintenance activities.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 09/25/1997
Comments: Added Simpson Common Paymaster Company as a project proponent, and updated scope of work, cost estimate, and schedule.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Certification
Completed Date: 02/18/1999
Comments: Certified Removal Action Workplan implementation. Groundwater monitoring is required as a part of operation and maintenance activities.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: CEQA - Initial Study/ Neg. Declaration
Completed Date: 11/07/1997
Comments: Approved becoming an Appendix to the Final RAW. Based on the initial study findings, no significant environmental impacts will occur from Final Removal Action Workplan implementation.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 04/21/1997
Comments: Amendment updates schedule and cost estimate.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 02/05/1997
Comments: Simpson Redwood Company entered into the VCA for DTSC to oversee site investigation and remediation activities.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report
Completed Date: 07/15/2009
Comments: Groundwater sampling results indicate chemicals of concerns remain elevated above Site cleanup goals. Groundwater sampling will continue.
Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report
Completed Date: 12/03/2010
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported

SIMPSON REDWOOD CO. (Continued) **S102564437**

Completed Document Type: Operations and Maintenance Report
Completed Date: 12/20/2010
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report
Completed Date: 01/11/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report
Completed Date: 04/11/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report
Completed Date: 06/13/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report
Completed Date: 01/12/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report
Completed Date: 01/13/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: *Correspondence - Received
Completed Date: 07/18/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Financial Assurance Documentation
Completed Date: 06/23/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Public Notice
Completed Date: 10/28/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: *Correspondence - Received
Completed Date: 05/11/2011
Comments: Not reported

SIMPSON REDWOOD CO. (Continued) **S102564437**

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report
Completed Date: 02/01/2012
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report
Completed Date: 12/07/2012
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report
Completed Date: 07/11/2012
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report
Completed Date: 08/09/2013
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Plan Amendment
Completed Date: 09/11/2013
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 11/06/2012
Comments: Not reported

Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Operations and Maintenance Report
Future Due Date: 2015
Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Operations and Maintenance Report
Future Due Date: 2016
Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: 5 Year Review Reports
Future Due Date: 2016
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

ENVIROSTOR:
Facility ID: 12240118
Status: Certified / Operation & Maintenance

SIMPSON REDWOOD CO. (Continued) **S102564437**

Status Date:	02/18/1999
Site Code:	200917
Site Type:	Voluntary Cleanup
Site Type Detailed:	Voluntary Cleanup
Acres:	209
NPL:	NO
Regulatory Agencies:	SMBRP, RWQCB 1 - North Coast
Lead Agency:	SMBRP
Program Manager:	Charles (Chip) Gribble
Supervisor:	Denise Tsuji
Division Branch:	Cleanup Berkeley
Assembly:	02
Senate:	02
Special Program:	Voluntary Cleanup Program
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	Responsible Party
Latitude:	40.88412
Longitude:	-124.1079
APN:	505-151-03, 505-151-04, 505-151-05, 505-161-09, 505-161-10, 505-161-29, 505-181-07, 50515103, 50515104, 50515105, 50516109, 50516110, 50516129, 50518107, 506-131-11, 506-231-01, 506-231-02, 506-231-04, 506-231-05, 506-241-16, 50613111, 50623104, 50623105, 50624116
Past Use:	MANUFACTURING - LUMBER/WOOD PRODUCTS
Potential COC:	Polynuclear aromatic hydrocarbons (PAHs Trichloroethylene (TCE 1,2-Dichloroethylene (cis Pentachlorophenol
Confirmed COC:	Polynuclear aromatic hydrocarbons (PAHs Trichloroethylene (TCE 1,2-Dichloroethylene (cis Pentachlorophenol
Potential Description:	OTH, SOIL
Alias Name:	FORMER SIMPSON TIMBER CO. RMNFCTNG PLANT
Alias Type:	Alternate Name
Alias Name:	SIMPSON ARCATA
Alias Type:	Alternate Name
Alias Name:	SIMPSON COMMON PAYMASTER COMPANY
Alias Type:	Alternate Name
Alias Name:	SIMPSON REDWOOD
Alias Type:	Alternate Name
Alias Name:	SIMPSON REMANUFACTURING
Alias Type:	Alternate Name
Alias Name:	SIMPSON TIMBER COMPANY
Alias Type:	Alternate Name
Alias Name:	505-151-03
Alias Type:	APN
Alias Name:	505-151-04
Alias Type:	APN
Alias Name:	505-151-05
Alias Type:	APN
Alias Name:	505-161-09
Alias Type:	APN
Alias Name:	505-161-10
Alias Type:	APN
Alias Name:	505-161-29
Alias Type:	APN
Alias Name:	505-181-07
Alias Type:	APN
Alias Name:	50515103

SIMPSON REDWOOD CO. (Continued) **S102564437**

Alias Type:	APN
Alias Name:	50515104
Alias Type:	APN
Alias Name:	50515105
Alias Type:	APN
Alias Name:	50516109
Alias Type:	APN
Alias Name:	50516110
Alias Type:	APN
Alias Name:	50516129
Alias Type:	APN
Alias Name:	50518107
Alias Type:	APN
Alias Name:	506-131-11
Alias Type:	APN
Alias Name:	506-231-01
Alias Type:	APN
Alias Name:	506-231-02
Alias Type:	APN
Alias Name:	506-231-04
Alias Type:	APN
Alias Name:	506-231-05
Alias Type:	APN
Alias Name:	506-241-16
Alias Type:	APN
Alias Name:	50613111
Alias Type:	APN
Alias Name:	50623104
Alias Type:	APN
Alias Name:	50623105
Alias Type:	APN
Alias Name:	50624116
Alias Type:	APN
Alias Name:	110033609263
Alias Type:	EPA (FRS #)
Alias Name:	200917
Alias Type:	Project Code (Site Code)
Alias Name:	12240118
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	5 Year Review Reports
Completed Date:	07/06/2005
Comments:	Two additional monitoring wells (MW-7 and MW-8 in the former south lunchroom area) were installed January 2004 in accordance with the DTSC-approved Five Year Review Workplan. DTSC concurred with the Five Year Review Report's recommendation to implement a Monitored Natural Attenuation (MNA) program on a quarterly basis for one year. After one year, the additional information will be evaluated and used to determine if contaminant concentrations in groundwater are being effectively reduced and if water quality objectives can be achieved in a reasonable timeframe.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report

SIMPSON REDWOOD CO. (Continued) **S102564437**

Completed Date:	02/13/1999
Comments:	Approximately 8600 cubic yards of soil was excavated and disposed off-site. Approximately 1.2 million gallons of water was removed and treated through a transporable treatment unit before being discharged to the Greater Eureka Area (Elk River) Waste Water Treatment Plant. All cleanup goals were met except for the presence of cis-1,2-dichloroethylene, found in the groundwater at levels 10 to 15 micrograms per liter (exceeding drinking water standards).
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Workplan
Completed Date:	11/07/1997
Comments:	Approved RAW requiring hot spot soil and groundwater removal. Groundwater monitoring is also required after removal of impacted soil and groundwater.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Report
Completed Date:	08/28/1997
Comments:	Completed PEA. Investigations conducted in 1987 determined that the soil was contaminated with pentachlorophenol (PCP). The groundwater detected PCP, cis-1,2-dichloroethylene, benzene, toluene, and xylenes. Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	5 Year Review Reports
Completed Date:	06/29/2011
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Fact Sheets
Completed Date:	09/15/1997
Comments:	Mailed out on 9/13/1997 and hand-delivered 9/15 and 9/16/1997.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Notice
Completed Date:	09/15/1997
Comments:	Published in the Times-Standard on 9/15/1997.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Operations and Maintenance Report
Completed Date:	01/16/2007
Comments:	Comments sent requiring continued quarterly groundwater monitoring as well as the addition of ethane and ethane, biodegradation products of volatile organic compounds including vinyl chloride, to the analytical suite for the quarterly groundwater monitoring
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Operations and Maintenance Report
Completed Date:	09/12/2008

SIMPSON REDWOOD CO. (Continued) **S102564437**

Comments:	Quarterly monitoring will continue.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Operations and Maintenance Report
Completed Date:	06/23/2008
Comments:	Groundwater monitoring will continue.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Operations and Maintenance Report
Completed Date:	10/21/2008
Comments:	Report approved. Approval sets groundwater monitoring schedule to occur during the second week of the sampling month each time.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Operations and Maintenance Report
Completed Date:	03/16/2009
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Operations and Maintenance Report
Completed Date:	05/28/2009
Comments:	Quarterly groundwater monitoring will continue.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Annual Oversight Cost Estimate
Completed Date:	01/13/2011
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Annual Oversight Cost Estimate
Completed Date:	09/28/2009
Comments:	DTSC annual cost estimate letter sent.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Correspondence
Completed Date:	04/18/2011
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Annual Oversight Cost Estimate
Completed Date:	09/19/2011
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Operation & Maintenance Order/Agreement
Completed Date:	01/28/1999
Comments:	Six groundwater monitoring wells surrounding the excavation and extraction zone require quarterly monitoring as a part of required

SIMPSON REDWOOD CO. (Continued) **S102564437**

operation and maintenance activities.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 09/25/1997
Comments: Added Simpson Common Paymaster Company as a project proponent, and updated scope of work, cost estimate, and schedule.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Certification
Completed Date: 02/18/1999
Comments: Certified Removal Action Workplan implementation. Groundwater monitoring is required as a part of operation and maintenance activities.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: CEQA - Initial Study/ Neg. Declaration
Completed Date: 11/07/1997
Comments: Approved becoming an Appendix to the Final RAW. Based on the initial study findings, no significant environmental impacts will occur from Final Removal Action Workplan implementation.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 04/21/1997
Comments: Amendment updates schedule and cost estimate.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 02/05/1997
Comments: Simpson Redwood Company entered into the VCA for DTSC to oversee site investigation and remediation activities.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report
Completed Date: 07/15/2009
Comments: Groundwater sampling results indicate chemicals of concerns remain elevated above Site cleanup goals. Groundwater sampling will continue.
Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report
Completed Date: 12/03/2010
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report
Completed Date: 12/20/2010
Comments: Not reported

SIMPSON REDWOOD CO. (Continued) **S102564437**

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report
Completed Date: 01/11/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report
Completed Date: 04/11/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report
Completed Date: 06/13/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report
Completed Date: 01/12/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report
Completed Date: 01/13/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: *Correspondence - Received
Completed Date: 07/18/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Financial Assurance Documentation
Completed Date: 06/23/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Public Notice
Completed Date: 10/28/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: *Correspondence - Received
Completed Date: 05/11/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report

SIMPSON REDWOOD CO. (Continued) **S102564437**

Completed Date: 02/01/2012
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report
Completed Date: 12/07/2012
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report
Completed Date: 07/11/2012
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report
Completed Date: 08/09/2013
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Plan Amendment
Completed Date: 09/11/2013
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 11/06/2012
Comments: Not reported

Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Operations and Maintenance Report
Future Due Date: 2015
Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Operations and Maintenance Report
Future Due Date: 2016
Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: 5 Year Review Reports
Future Due Date: 2016
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

2
SE
< 1/8
0.002 mi.
8 ft.

EEL RIVER SAWMILLL, SPECIALITY
FOSTER AVENUE
ARCATA, CA 0

HIST CORTESE
LUST
SLIC

S102429138
N/A

Relative:
Higher

Actual:
25 ft.

HIST CORTESE:

Region:	CORTESE
Facility County Code:	12
Reg By:	LTNKA
Reg Id:	1THU518

LUST:

Region:	STATE
Global Id:	T0602300394
Latitude:	40.881698
Longitude:	-124.09478
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	05/22/2001
Lead Agency:	HUMBOLDT COUNTY LOP
Case Worker:	MAV
Local Agency:	HUMBOLDT COUNTY LOP
RB Case Number:	1THU518
LOC Case Number:	12518
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Waste Oil / Motor / Hydraulic / Lubricating
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0602300394
Contact Type:	Regional Board Caseworker
Contact Name:	HUMBOLDT COUNTY LOP CLOSED SITE
Organization Name:	NORTH COAST RWQCB (REGION 1)
Address:	5550 SKYLANE BOULEVARD, SUITE A
City:	SANTA ROSA
Email:	Not reported
Phone Number:	Not reported

Global Id:	T0602300394
Contact Type:	Local Agency Caseworker
Contact Name:	Mark Verhey
Organization Name:	HUMBOLDT COUNTY LOP
Address:	100 H Street, Suite 100
City:	Eureka
Email:	mark.verhey@co.humboldt.ca.us
Phone Number:	Not reported

Status History:

Global Id:	T0602300394
Status:	Completed - Case Closed
Status Date:	05/22/2001

Global Id:	T0602300394
Status:	Open - Verification Monitoring
Status Date:	05/21/2001

EEL RIVER SAWMILLL, SPECIALITY (Continued) **S102429138**

Global Id: T0602300394
Status: Open - Case Begin Date
Status Date: 02/28/1995

Global Id: T0602300394
Status: Open - Remediation
Status Date: 05/21/2001

Global Id: T0602300394
Status: Open - Site Assessment
Status Date: 03/20/1995

Global Id: T0602300394
Status: Open - Site Assessment
Status Date: 05/21/2001

Regulatory Activities:
Global Id: T0602300394
Action Type: ENFORCEMENT
Date: 05/22/2001
Action: Closure/No Further Action Letter

Global Id: T0602300394
Action Type: Other
Date: 02/28/1995
Action: Leak Discovery

Global Id: T0602300394
Action Type: Other
Date: 02/28/1995
Action: Leak Stopped

Global Id: T0602300394
Action Type: Other
Date: 02/28/1995
Action: Leak Reported

LUST REG 1:
Region: 1
Facility ID: 1THU518
Staff Initials: HUM

SLIC:
Region: STATE
Facility Status: **Completed - Case Closed**
Status Date: 03/10/2009
Global Id: T0602391361
Lead Agency: NORTH COAST RWQCB (REGION 1)
Lead Agency Case Number: Not reported
Latitude: 40.880935
Longitude: -124.099052
Case Type: Cleanup Program Site
Case Worker: ZZZ
Local Agency: Not reported
RB Case Number: 1NHU518

EEL RIVER SAWMILLL, SPECIALITY (Continued) **S102429138**

File Location: Regional Board
Potential Media Affected: Aquifer used for drinking water supply, Soil
Potential Contaminants of Concern: Waste Oil / Motor / Hydraulic / Lubricating
Site History: Redwood mill - dioxins found associated with former teepee burner. contaminated soils removed. No further action required as of 2-2-09.

Click here to access the California GeoTracker records for this facility:

SLIC REG 1:
Region: 1
Facility ID: 1NHU518
Staff Initials: AAA

A3 **SUN VALLEY BULB FARMS INC** **Notify 65** **S100178248**
East **1780 27TH STREET** **N/A**
< 1/8 **ARCATA, CA 93923**
0.007 mi.
35 ft. **Site 1 of 4 in cluster A**

Relative:
Higher

Actual:
32 ft.

NOTIFY 65:
Date Reported: Not reported
Staff Initials: Not reported
Board File Number: Not reported
Facility Type: Not reported
Discharge Date: Not reported
Incident Description: 93923

A4 **SUN VALLEY BULB FARMS** **Notify 65** **S100178356**
East **1780 27TH STREET** **N/A**
< 1/8 **ARCATA, CA 93923**
0.007 mi.
35 ft. **Site 2 of 4 in cluster A**

Relative:
Higher

Actual:
32 ft.

NOTIFY 65:
Date Reported: Not reported
Staff Initials: Not reported
Board File Number: Not reported
Facility Type: Not reported
Discharge Date: Not reported
Incident Description: 93923

A5 **SUN VALLEY BULB FARMS** **Notify 65** **S100178419**
East **1780 27TH STREET** **N/A**
< 1/8 **ARCATA, CA 93923**
0.007 mi.
35 ft. **Site 3 of 4 in cluster A**

Relative:
Higher

Actual:
32 ft.

NOTIFY 65:
Date Reported: Not reported
Staff Initials: Not reported
Board File Number: Not reported
Facility Type: Not reported
Discharge Date: Not reported
Incident Description: 93923

6
NW
< 1/8
0.009 mi.
49 ft.

ROBERT GRAHAM — **HIST UST** — **U001611506**
3466 SEIDEL RD — **N/A**
ARCATA, CA 95521

Relative:
Lower

Actual:
14 ft.

HIST UST:

Region:	STATE
Facility ID:	00000031492
Facility Type:	Other
Other Type:	FARM
Contact Name:	Not reported
Telephone:	7078221234
Owner Name:	ROBERT GRAHAM
Owner Address:	3466 SEIDEL ROAD
Owner City,St,Zip:	ARCATA, CA 95521
Total Tanks:	0001
Tank Num:	001
Container Num:	1
Year Installed:	1945
Tank Capacity:	00000300
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Container Construction Thickness:	Not reported
Leak Detection:	Visual, Stock Inventor

A7
East
< 1/8
0.013 mi.
66 ft.

SUN VALLEY BULB FARMS — **SLIC** — **S105050870**
1780 TWENTYSEVENTH — **LDS** — **N/A**
ARCATA, CA 95521

Site 4 of 4 in cluster A

Relative:
Higher

Actual:
33 ft.

SLIC REG 1:

Region:	1
Facility ID:	1NHU091
Staff Initials:	RRA

LDS:

Global Id:	T0602393182
Latitude:	40.88841
Longitude:	-124.0967
Case Type:	Land Disposal Site
Status:	Open - Site Assessment
Status Date:	02/01/1989
Lead Agency:	NORTH COAST RWQCB (REGION 1)
Caseworker:	LDP
Local Agency:	HUMBOLDT COUNTY LOP
RB Case Number:	1LDHU091
LOC Case Number:	Not reported
File Location:	Regional Board
Potential Media Affect:	Under Investigation
EDR Link ID:	T0602393182
Potential Contaminants of Concern:	Other Insecticides / Pesticide / Fumigants / Herbicides
Site History:	Not reported

SUN VALLEY BULB FARMS (Continued) **S105050870**

Click here to access the California GeoTracker records for this facility:

B8 **SUN VALLEY FLORAL FARMS** **Notify 65** **S100562407**
NNE **3160 UPPER BAY ROAD** **N/A**
< 1/8 **ARCATA, CA 95521**
0.014 mi.
75 ft. **Site 1 of 3 in cluster B**

Relative:
Higher

Actual:
25 ft.

NOTIFY 65:

Date Reported:	19930623
Staff Initials:	SAW
Board File Number:	0TE930000
Facility Type:	NONPOINT
Discharge Date:	Not reported
Incident Description:	95521 SELF-MONITORING REPORTS FROM SVFF SHOWS PESTICIDES LIKE ZIRAM (DITHIOCARBAMATES)IN WELL WATER ON-SITE, AND RUN

B9 **AST** **A100211422**
NNE **3160 UPPER BAY RD** **N/A**
< 1/8 **ARCATA, CA 95521**
0.014 mi.
75 ft. **Site 2 of 3 in cluster B**

Relative:
Higher

Actual:
25 ft.

AST:

Certified Unified Program Agencies:	Humboldt
Owner:	Sun Valley Floral Farms
Total Gallons:	33,875

B10 **SUN VALLEY FLORAL FARMS - ARCATA DIVISION** **CUPA Listings** **S107146144**
NNE **3160 UPPER BAY RD** **N/A**
< 1/8 **ARCATA, CA 95521**
0.014 mi.
75 ft. **Site 3 of 3 in cluster B**

Relative:
Higher

Actual:
25 ft.

CUPA HUMBOLDT:

Local Site Id:	FA0003203
Facility Address 2:	Not reported
Program Identifier:	CUPA - Hazardous Materials Facility Fee
Program Element Code Desc:	4202 Hazardous Materials Facility Fee
Permit Status:	(none)
Latitude:	40.89607
Longitude:	-124.1007

Local Site Id:	FA0003203
Facility Address 2:	Not reported
Program Identifier:	CUPA - Hazardous Waste Generator (SQG)
Program Element Code Desc:	4401 Hazardous Waste Generator (SQG)
Permit Status:	Active
Latitude:	40.89607
Longitude:	-124.1007

Local Site Id:	FA0003203
Facility Address 2:	Not reported
Program Identifier:	CUPA - Response Team Support

SUN VALLEY FLORAL FARMS - ARCATA DIVISION (Continued) **S107146144**

Program Element Code Desc: 5056 HazMat Emergency Response Team Support
Permit Status: Inactive
Latitude: 40.89607
Longitude: -124.1007

Local Site Id: FA0003203
Facility Address 2: Not reported
Program Identifier: CUPA - APSA Engineered Facility
Program Element Code Desc: 4007 APSA Engineered Facility
Permit Status: Active
Latitude: 40.89607
Longitude: -124.1007

Local Site Id: FA0003203
Facility Address 2: Not reported
Program Identifier: CUPA - HMBP and/or Inventory
Program Element Code Desc: 4201 HMBP and/or Inventory
Permit Status: Active
Latitude: 40.89607
Longitude: -124.1007

C11 **TROUT, ELMER B.** **CA FID UST** **S101582093**
ENE **3655 SPEAR AVE** **SWEEPS UST** **N/A**
< 1/8 **ARCATA, CA 95521**
0.072 mi.
378 ft. **Site 1 of 2 in cluster C**

Relative:
Higher

Actual:
36 ft.

CA FID UST:
Facility ID: 12001242
Regulated By: UTNKI
Regulated ID: 00014727
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: Not reported
Mail To: Not reported
Mailing Address: 3655 SPEAR AVE
Mailing Address 2: Not reported
Mailing City,St,Zip: ARCATA 95521
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Inactive

SWEEPS UST:
Status: Not reported
Comp Number: 14727
Number: Not reported
Board Of Equalization: Not reported
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 12-000-014727-000001
Tank Status: Not reported

TROUT, ELMER B. (Continued) **S101582093**

Capacity:	550
Active Date:	Not reported
Tank Use:	M.V. FUEL
STG:	PRODUCT
Content:	LEADED
Number Of Tanks:	1

C12 **ELMER B. TROUT** **HIST UST** **U001611426**
ENE **3655 SPEAR AVE** **N/A**
< 1/8 **ARCATA, CA 95521**
0.072 mi.
378 ft. **Site 2 of 2 in cluster C**

Relative: HIST UST:
Higher

Region:	STATE
Facility ID:	00000014727
Facility Type:	Other
Other Type:	HOME
Contact Name:	Not reported
Telephone:	7078225762
Owner Name:	ELMER B. TROUT
Owner Address:	3655 SPEAR AVE.
Owner City,St,Zip:	ARCATA, CA 95521
Total Tanks:	0001
Tank Num:	001
Container Num:	012
Year Installed:	1976
Tank Capacity:	00000550
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Container Construction Thickness:	Not reported
Leak Detection:	None

Actual:
36 ft.

D13 **S&H AUTO WRECKERS** **LUST** **S103866821**
East **3028 ALLIANCE ROAD** **SLIC** **N/A**
1/8-1/4 **ARCATA, CA 95521**
0.126 mi.
663 ft. **Site 1 of 5 in cluster D**

Relative: LUST:
Higher

Region:	STATE
Global Id:	T0602392503
Latitude:	40.888840736
Longitude:	-124.087688089
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	08/04/2010
Lead Agency:	HUMBOLDT COUNTY LOP
Case Worker:	BS
Local Agency:	HUMBOLDT COUNTY LOP
RB Case Number:	1THU737
LOC Case Number:	12737
File Location:	Local Agency
Potential Media Affect:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	Gasoline, Benzene, Toluene, Xylene

Actual:
36 ft.

S&H AUTO WRECKERS (Continued) **S103866821**

Site History: site submitted to RB for nfa decision 3/1/0/10 RB concur 5/10/10

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0602392503
Contact Type:	Regional Board Caseworker
Contact Name:	HUMBOLDT COUNTY HD LOP LEAD
Organization Name:	NORTH COAST RWQCB (REGION 1)
Address:	5550 SKYLANE BOULEVARD, SUITE A
City:	SANTA ROSA
Email:	Not reported
Phone Number:	7074456215

Global Id:	T0602392503
Contact Type:	Local Agency Caseworker
Contact Name:	BOB STONE
Organization Name:	HUMBOLDT COUNTY LOP
Address:	100 H STREET, SUITE 100
City:	EUREKA
Email:	bstone@co.humboldt.ca.us
Phone Number:	Not reported

Status History:

Global Id:	T0602392503
Status:	Open - Site Assessment
Status Date:	12/20/2004

Global Id:	T0602392503
Status:	Open - Site Assessment
Status Date:	03/28/2005

Global Id:	T0602392503
Status:	Open - Site Assessment
Status Date:	02/01/2006

Global Id:	T0602392503
Status:	Open - Site Assessment
Status Date:	03/10/2006

Global Id:	T0602392503
Status:	Open - Site Assessment
Status Date:	06/15/2006

Global Id:	T0602392503
Status:	Open - Site Assessment
Status Date:	07/31/2006

Global Id:	T0602392503
Status:	Open - Site Assessment
Status Date:	09/21/2006

Global Id:	T0602392503
Status:	Open - Site Assessment
Status Date:	01/18/2007

Global Id: T0602392503

S&H AUTO WRECKERS (Continued) **S103866821**

Status: Open - Site Assessment
Status Date: 04/09/2007

Global Id: T0602392503
Status: Open - Site Assessment
Status Date: 07/09/2007

Global Id: T0602392503
Status: Completed - Case Closed
Status Date: 08/04/2010

Global Id: T0602392503
Status: Open - Verification Monitoring
Status Date: 02/21/2008

Global Id: T0602392503
Status: Open - Verification Monitoring
Status Date: 02/25/2009

Global Id: T0602392503
Status: Open - Case Begin Date
Status Date: 07/01/1998

Global Id: T0602392503
Status: Open - Remediation
Status Date: 05/25/2005

Global Id: T0602392503
Status: Open - Remediation
Status Date: 05/31/2005

Global Id: T0602392503
Status: Open - Remediation
Status Date: 11/15/2007

Global Id: T0602392503
Status: Open - Remediation
Status Date: 01/14/2008

Global Id: T0602392503
Status: Open - Remediation
Status Date: 06/02/2008

Global Id: T0602392503
Status: Open - Site Assessment
Status Date: 01/14/2000

Global Id: T0602392503
Status: Open - Site Assessment
Status Date: 08/21/2000

Global Id: T0602392503
Status: Open - Site Assessment
Status Date: 02/10/2004

Global Id: T0602392503
Status: Open - Site Assessment

S&H AUTO WRECKERS (Continued) **S103866821**

Status Date: 04/21/2004

Global Id: T0602392503
Status: Open - Site Assessment
Status Date: 05/26/2004

Global Id: T0602392503
Status: Open - Site Assessment
Status Date: 09/15/2004

Regulatory Activities:
Global Id: T0602392503
Action Type: ENFORCEMENT
Date: 06/01/2005
Action: Staff Letter

Global Id: T0602392503
Action Type: ENFORCEMENT
Date: 03/23/2010
Action: Staff Letter

Global Id: T0602392503
Action Type: ENFORCEMENT
Date: 03/23/2010
Action: LOP Case Closure Summary to RB

Global Id: T0602392503
Action Type: ENFORCEMENT
Date: 03/23/2010
Action: Notification - Public Participation Document

Global Id: T0602392503
Action Type: ENFORCEMENT
Date: 05/19/2010
Action: Staff Letter

Global Id: T0602392503
Action Type: ENFORCEMENT
Date: 05/13/2010
Action: Technical Correspondence / Assistance / Other

Global Id: T0602392503
Action Type: RESPONSE
Date: 06/07/2002
Action: Soil and Water Investigation Workplan

Global Id: T0602392503
Action Type: ENFORCEMENT
Date: 02/17/2004
Action: Staff Letter

Global Id: T0602392503
Action Type: ENFORCEMENT
Date: 02/17/2004
Action: Staff Letter

Global Id: T0602392503

S&H AUTO WRECKERS (Continued) **S103866821**

Action Type: ENFORCEMENT
Date: 01/06/2005
Action: Staff Letter

Global Id: T0602392503
Action Type: Other
Date: 06/01/2000
Action: Leak Discovery

Global Id: T0602392503
Action Type: ENFORCEMENT
Date: 09/28/2006
Action: Staff Letter

Global Id: T0602392503
Action Type: ENFORCEMENT
Date: 07/09/2007
Action: Site Visit / Inspection / Sampling

Global Id: T0602392503
Action Type: ENFORCEMENT
Date: 03/10/2006
Action: Staff Letter

Global Id: T0602392503
Action Type: ENFORCEMENT
Date: 05/18/2007
Action: Staff Letter

Global Id: T0602392503
Action Type: ENFORCEMENT
Date: 04/09/2007
Action: File review

Global Id: T0602392503
Action Type: ENFORCEMENT
Date: 09/21/2006
Action: Verbal Communication

Global Id: T0602392503
Action Type: ENFORCEMENT
Date: 01/19/2007
Action: File review

Global Id: T0602392503
Action Type: ENFORCEMENT
Date: 06/15/2006
Action: File review

Global Id: T0602392503
Action Type: ENFORCEMENT
Date: 07/31/2006
Action: File review

Global Id: T0602392503
Action Type: ENFORCEMENT
Date: 09/17/2010

S&H AUTO WRECKERS (Continued) **S103866821**

Action:	Technical Correspondence / Assistance / Other
Global Id:	T0602392503
Action Type:	RESPONSE
Date:	04/16/2004
Action:	Soil and Water Investigation Workplan
Global Id:	T0602392503
Action Type:	RESPONSE
Date:	07/30/2004
Action:	Other Workplan
Global Id:	T0602392503
Action Type:	RESPONSE
Date:	03/07/2005
Action:	Corrective Action Plan / Remedial Action Plan
Global Id:	T0602392503
Action Type:	REMEDIATION
Date:	03/24/2008
Action:	In Situ Physical/Chemical Treatment (other than SVE)
Global Id:	T0602392503
Action Type:	REMEDIATION
Date:	07/09/2007
Action:	In Situ Physical/Chemical Treatment (other than SVE)
Global Id:	T0602392503
Action Type:	ENFORCEMENT
Date:	02/21/2008
Action:	Staff Letter
Global Id:	T0602392503
Action Type:	ENFORCEMENT
Date:	07/16/2007
Action:	Staff Letter
Global Id:	T0602392503
Action Type:	ENFORCEMENT
Date:	08/04/2010
Action:	Closure/No Further Action Letter
Global Id:	T0602392503
Action Type:	Other
Date:	06/01/2000
Action:	Leak Stopped
Global Id:	T0602392503
Action Type:	Other
Date:	08/21/2000
Action:	Leak Reported
Global Id:	T0602392503
Action Type:	ENFORCEMENT
Date:	06/20/2002
Action:	Meeting

S&H AUTO WRECKERS (Continued) **S103866821**

Global Id: T0602392503
Action Type: ENFORCEMENT
Date: 02/25/2009
Action: File review

Global Id: T0602392503
Action Type: ENFORCEMENT
Date: 07/02/2004
Action: Staff Letter

Global Id: T0602392503
Action Type: ENFORCEMENT
Date: 08/14/2008
Action: File review

Global Id: T0602392503
Action Type: ENFORCEMENT
Date: 12/10/2008
Action: Staff Letter

Global Id: T0602392503
Action Type: ENFORCEMENT
Date: 03/02/2009
Action: Staff Letter

Global Id: T0602392503
Action Type: RESPONSE
Date: 08/14/2008
Action: Monitoring Report - Quarterly

Global Id: T0602392503
Action Type: ENFORCEMENT
Date: 02/04/2002
Action: * Historical Enforcement

Global Id: T0602392503
Action Type: ENFORCEMENT
Date: 02/01/2006
Action: Staff Letter

Global Id: T0602392503
Action Type: ENFORCEMENT
Date: 07/08/2002
Action: Staff Letter

Global Id: T0602392503
Action Type: ENFORCEMENT
Date: 09/01/2009
Action: File review

SLIC:
Region: STATE
Facility Status: **Completed - Case Closed**
Status Date: 04/18/2003
Global Id: SL0602311838
Lead Agency: NORTH COAST RWQCB (REGION 1)

S&H AUTO WRECKERS (Continued) **S103866821**

Lead Agency Case Number:	Not reported
Latitude:	40.888633
Longitude:	-124.086536
Case Type:	Cleanup Program Site
Case Worker:	ZZZ
Local Agency:	HUMBOLDT COUNTY LOP
RB Case Number:	1NHU737
File Location:	Not reported
Potential Media Affected:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	Lead, Waste Oil / Motor / Hydraulic / Lubricating
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

D14 **ARCATA PETRO MART** **UST** **U003775959**
East **3197 ALLIANCE RD** **N/A**
1/8-1/4 **ARCATA, CA 95521**
0.127 mi.
671 ft. **Site 2 of 5 in cluster D**

Relative:
Higher

Actual:
37 ft.

UST:

Facility ID:	12-000-000421
Permitting Agency:	HUMBOLDT COUNTY
Latitude:	40.891343
Longitude:	-124.08648

D15 **GAS-4-LESS** **HIST CORTESE** **S101294715**
East **3197 ALLIANCE ROAD** **LUST** **N/A**
1/8-1/4 **ARCATA, CA 95521** **CUPA Listings**
0.127 mi. **EMI**
671 ft. **Site 3 of 5 in cluster D**

Relative:
Higher

Actual:
37 ft.

HIST CORTESE:

Region:	CORTESE
Facility County Code:	12
Reg By:	LTNKA
Reg Id:	1THU163

LUST:

Region:	STATE
Global Id:	T0602300129
Latitude:	40.8902788
Longitude:	-124.0867166
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	02/09/2010
Lead Agency:	HUMBOLDT COUNTY LOP
Case Worker:	MAV
Local Agency:	HUMBOLDT COUNTY LOP
RB Case Number:	1THU163
LOC Case Number:	12163
File Location:	Local Agency
Potential Media Affect:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

GAS-4-LESS (Continued) **S101294715**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0602300129
Contact Type:	Regional Board Caseworker
Contact Name:	HUMBOLDT COUNTY HD LOP LEAD
Organization Name:	NORTH COAST RWQCB (REGION 1)
Address:	5550 SKYLANE BOULEVARD, SUITE A
City:	SANTA ROSA
Email:	Not reported
Phone Number:	7074456215

Global Id:	T0602300129
Contact Type:	Local Agency Caseworker
Contact Name:	Mark Verhey
Organization Name:	HUMBOLDT COUNTY LOP
Address:	100 H Street, Suite 100
City:	Eureka
Email:	mark.verhey@co.humboldt.ca.us
Phone Number:	Not reported

Status History:

Global Id:	T0602300129
Status:	Completed - Case Closed
Status Date:	02/09/2010

Global Id:	T0602300129
Status:	Open - Verification Monitoring
Status Date:	03/24/2006

Global Id:	T0602300129
Status:	Open - Verification Monitoring
Status Date:	07/01/2009

Global Id:	T0602300129
Status:	Open - Case Begin Date
Status Date:	09/07/1989

Global Id:	T0602300129
Status:	Open - Remediation
Status Date:	04/28/2004

Global Id:	T0602300129
Status:	Open - Remediation
Status Date:	06/07/2004

Global Id:	T0602300129
Status:	Open - Site Assessment
Status Date:	09/07/1989

Global Id:	T0602300129
Status:	Open - Site Assessment
Status Date:	08/30/1991

Global Id:	T0602300129
Status:	Open - Site Assessment

GAS-4-LESS (Continued) **S101294715**

Status Date: 09/18/1991

Global Id: T0602300129
Status: Open - Site Assessment
Status Date: 04/03/2003

Global Id: T0602300129
Status: Open - Site Assessment
Status Date: 04/14/2003

Global Id: T0602300129
Status: Open - Site Assessment
Status Date: 06/04/2003

Global Id: T0602300129
Status: Open - Site Assessment
Status Date: 08/12/2003

Global Id: T0602300129
Status: Open - Site Assessment
Status Date: 09/10/2003

Global Id: T0602300129
Status: Open - Site Assessment
Status Date: 01/28/2004

Global Id: T0602300129
Status: Open - Site Assessment
Status Date: 02/05/2004

Global Id: T0602300129
Status: Open - Site Assessment
Status Date: 04/30/2004

Regulatory Activities:
Global Id: T0602300129
Action Type: ENFORCEMENT
Date: 02/08/2010
Action: Closure/No Further Action Letter

Global Id: T0602300129
Action Type: ENFORCEMENT
Date: 08/12/2003
Action: Staff Letter

Global Id: T0602300129
Action Type: ENFORCEMENT
Date: 06/04/2003
Action: Staff Letter

Global Id: T0602300129
Action Type: ENFORCEMENT
Date: 09/10/2003
Action: Staff Letter

Global Id: T0602300129
Action Type: ENFORCEMENT

GAS-4-LESS (Continued) **S101294715**

Date: 02/05/2004
Action: Staff Letter

Global Id: T0602300129
Action Type: ENFORCEMENT
Date: 04/28/2004
Action: Staff Letter

Global Id: T0602300129
Action Type: ENFORCEMENT
Date: 04/03/2003
Action: Staff Letter

Global Id: T0602300129
Action Type: ENFORCEMENT
Date: 03/24/2006
Action: Staff Letter

Global Id: T0602300129
Action Type: Other
Date: 09/07/1989
Action: Leak Discovery

Global Id: T0602300129
Action Type: REMEDIATION
Date: 06/09/2004
Action: Not reported

Global Id: T0602300129
Action Type: ENFORCEMENT
Date: 11/15/2006
Action: Staff Letter

Global Id: T0602300129
Action Type: Other
Date: 09/07/1989
Action: Leak Stopped

Global Id: T0602300129
Action Type: Other
Date: 09/07/1989
Action: Leak Reported

Global Id: T0602300129
Action Type: ENFORCEMENT
Date: 06/07/2004
Action: Staff Letter

Global Id: T0602300129
Action Type: ENFORCEMENT
Date: 04/14/2003
Action: Staff Letter

Global Id: T0602300129
Action Type: ENFORCEMENT
Date: 01/28/2004
Action: Staff Letter

GAS-4-LESS (Continued) **S101294715**

Global Id: T0602300129
Action Type: ENFORCEMENT
Date: 04/30/2004
Action: Staff Letter

Global Id: T0602300129
Action Type: ENFORCEMENT
Date: 01/08/2009
Action: Staff Letter

Global Id: T0602300129
Action Type: ENFORCEMENT
Date: 07/28/2009
Action: LOP Case Closure Summary to RB

Global Id: T0602300129
Action Type: ENFORCEMENT
Date: 08/12/2009
Action: Staff Letter

Global Id: T0602300129
Action Type: ENFORCEMENT
Date: 09/07/1989
Action: * Historical Enforcement

Global Id: T0602300129
Action Type: ENFORCEMENT
Date: 09/17/2009
Action: Notification - Public Participation Document

Global Id: T0602300129
Action Type: ENFORCEMENT
Date: 11/19/2009
Action: Closure/No Further Action Letter

LUST REG 1:
Region: 1
Facility ID: 1THU163
Staff Initials: HUM

CUPA HUMBOLDT:
Local Site Id: FA0000128
Facility Address 2: Not reported
Program Identifier: CUPA - Response Team Support
Program Element Code Desc: 5056 HazMat Emergency Response Team Support
Permit Status: Active
Latitude: 40.89012
Longitude: -124.0878

Local Site Id: FA0000128
Facility Address 2: Not reported
Program Identifier: CUPA - SQG
Program Element Code Desc: 4401 Hazardous Waste Generator (SQG)
Permit Status: Active
Latitude: 40.89012

GAS-4-LESS (Continued) **S101294715**

Longitude: -124.0878

Local Site Id: FA0000128
Facility Address 2: Not reported
Program Identifier: CUPA - Hazardous Materials Facility Fee
Program Element Code Desc: 4202 Hazardous Materials Facility Fee
Permit Status: Active
Latitude: 40.89012
Longitude: -124.0878

Local Site Id: FA0000128
Facility Address 2: Not reported
Program Identifier: CUPA - HMBP
Program Element Code Desc: 4201 HMBP and/or Inventory
Permit Status: Active
Latitude: 40.89012
Longitude: -124.0878

Local Site Id: FA0000128
Facility Address 2: Not reported
Program Identifier: CUPA - UST
Program Element Code Desc: 4101 UST Facility Operating Permit
Permit Status: Active
Latitude: 40.89012
Longitude: -124.0878

EMI:
Year: 2006
County Code: 12
Air Basin: NC
Facility ID: 622
Air District Name: NCU
SIC Code: 5541
Air District Name: NORTH COAST UNIFIED AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: .1624486962705177233
Reactive Organic Gases Tons/Yr: .1616374
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

Year: 2007
County Code: 12
Air Basin: NC
Facility ID: 622
Air District Name: NCU
SIC Code: 5541
Air District Name: NORTH COAST UNIFIED AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: .1446305093052274067
Reactive Organic Gases Tons/Yr: .1439082
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0

GAS-4-LESS (Continued) **S101294715**

SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	2008
County Code:	12
Air Basin:	NC
Facility ID:	622
Air District Name:	NCU
SIC Code:	5541
Air District Name:	NORTH COAST UNIFIED AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.1315822440854620378
Reactive Organic Gases Tons/Yr:	.1309251
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	2009
County Code:	12
Air Basin:	NC
Facility ID:	622
Air District Name:	NCU
SIC Code:	5541
Air District Name:	NORTH COAST UNIFIED AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.118310764125935
Reactive Organic Gases Tons/Yr:	0.1177199
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	2010
County Code:	12
Air Basin:	NC
Facility ID:	622
Air District Name:	NCU
SIC Code:	5541
Air District Name:	NORTH COAST UNIFIED AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.118310764125935
Reactive Organic Gases Tons/Yr:	0.1177199
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	2011
County Code:	12

GAS-4-LESS (Continued) **S101294715**

Air Basin:	NC
Facility ID:	622
Air District Name:	NCU
SIC Code:	5541
Air District Name:	NORTH COAST UNIFIED AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.13871928751
Reactive Organic Gases Tons/Yr:	0.1380265
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

D16 **HPI ARCATA SHELL PETRO MART** **CA FID UST** **S101581998**
East **3197 ALLIANCE RD** **SWEEPS UST** **N/A**
1/8-1/4 **ARCATA, CA 95521**
0.127 mi.
671 ft. **Site 4 of 5 in cluster D**

Relative:
Higher

Actual:
37 ft.

CA FID UST:

Facility ID:	12000111
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	Not reported
Mail To:	Not reported
Mailing Address:	P O BOX
Mailing Address 2:	Not reported
Mailing City,St,Zip:	ARCATA 95521
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	Not reported
Comp Number:	2895
Number:	Not reported
Board Of Equalization:	Not reported
Referral Date:	Not reported
Action Date:	Not reported
Created Date:	Not reported
Owner Tank Id:	Not reported
SWRCB Tank Id:	12-000-002895-000503
Tank Status:	Not reported
Capacity:	6000
Active Date:	Not reported
Tank Use:	M.V. FUEL
STG:	PRODUCT
Content:	REG UNLEADED
Number Of Tanks:	3

HPI ARCATA SHELL PETRO MART (Continued) **S101581998**

Status:	Not reported
Comp Number:	2895
Number:	Not reported
Board Of Equalization:	Not reported
Referral Date:	Not reported
Action Date:	Not reported
Created Date:	Not reported
Owner Tank Id:	Not reported
SWRCB Tank Id:	12-000-002895-005901
Tank Status:	Not reported
Capacity:	6000
Active Date:	Not reported
Tank Use:	M.V. FUEL
STG:	PRODUCT
Content:	LEADED
Number Of Tanks:	Not reported

Status:	Not reported
Comp Number:	2895
Number:	Not reported
Board Of Equalization:	Not reported
Referral Date:	Not reported
Action Date:	Not reported
Created Date:	Not reported
Owner Tank Id:	Not reported
SWRCB Tank Id:	12-000-002895-005902
Tank Status:	Not reported
Capacity:	8000
Active Date:	Not reported
Tank Use:	M.V. FUEL
STG:	PRODUCT
Content:	REG UNLEADED
Number Of Tanks:	Not reported

Status:	Active
Comp Number:	2895
Number:	1
Board Of Equalization:	Not reported
Referral Date:	06-11-91
Action Date:	06-11-91
Created Date:	12-05-88
Owner Tank Id:	1
SWRCB Tank Id:	12-000-002895-000001
Tank Status:	A
Capacity:	8000
Active Date:	06-05-92
Tank Use:	M.V. FUEL
STG:	P
Content:	REG UNLEADED
Number Of Tanks:	3

Status:	Active
Comp Number:	2895
Number:	1
Board Of Equalization:	Not reported
Referral Date:	06-11-91
Action Date:	06-11-91

HPI ARCATA SHELL PETRO MART (Continued) **S101581998**

Created Date:	12-05-88
Owner Tank Id:	2
SWRCB Tank Id:	12-000-002895-000002
Tank Status:	A
Capacity:	6000
Active Date:	06-05-92
Tank Use:	M.V. FUEL
STG:	P
Content:	REG UNLEADED
Number Of Tanks:	Not reported
Status:	Active
Comp Number:	2895
Number:	1
Board Of Equalization:	Not reported
Referral Date:	06-11-91
Action Date:	06-11-91
Created Date:	12-05-88
Owner Tank Id:	3
SWRCB Tank Id:	12-000-002895-000003
Tank Status:	A
Capacity:	6000
Active Date:	06-05-92
Tank Use:	M.V. FUEL
STG:	P
Content:	REG UNLEADED
Number Of Tanks:	Not reported

D17 **BEACON** **HIST UST** **U001611409**
East **3198 ALLIANCE RD** **N/A**
1/8-1/4 **ARCATA, CA 95521**
0.129 mi.
683 ft. **Site 5 of 5 in cluster D**

Relative:
Higher

Actual:
37 ft.

HIST UST:

Region:	STATE
Facility ID:	00000002895
Facility Type:	Gas Station
Other Type:	Not reported
Contact Name:	DAVID CRIBB
Telephone:	7078228741
Owner Name:	RUELL OIL COMPANY
Owner Address:	1125 4TH STREET
Owner City,St,Zip:	EUREKA, CA 95501
Total Tanks:	0003
Tank Num:	001
Container Num:	1
Year Installed:	Not reported
Tank Capacity:	00006000
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Container Construction Thickness:	Not reported
Leak Detection:	Stock Inventor
Tank Num:	002
Container Num:	2
Year Installed:	Not reported

BEACON (Continued) **U001611409**

Tank Capacity:	00006000
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Container Construction Thickness:	Not reported
Leak Detection:	Stock Inventor
Tank Num:	003
Container Num:	3
Year Installed:	Not reported
Tank Capacity:	00006000
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Container Construction Thickness:	Not reported
Leak Detection:	Stock Inventor

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18 **CITY OF ARCATA - ALLIANCE ROAD TRANSFER STATION** **CUPA Listings** **S110737982**
East **2815 ALLIANCE RD** **N/A**
1/8-1/4 **ARCATA, CA 95521**
0.138 mi.
728 ft.

Relative: **Higher**

Actual: **35 ft.**

CUPA HUMBOLDT:

Local Site Id:	FA0000649
Facility Address 2:	Not reported
Program Identifier:	CUPA - Response Team Support
Program Element Code Desc:	5056 HazMat Emergency Response Team Support
Permit Status:	(none)
Latitude:	40.88744
Longitude:	-124.0887
Local Site Id:	FA0000649
Facility Address 2:	Not reported
Program Identifier:	CUPA - Hazardous Materials Facility Fee
Program Element Code Desc:	4202 Hazardous Materials Facility Fee
Permit Status:	(none)
Latitude:	40.88744
Longitude:	-124.0887
Local Site Id:	FA0000649
Facility Address 2:	Not reported
Program Identifier:	CUPA - HMBP
Program Element Code Desc:	4201 HMBP and/or Inventory
Permit Status:	Active
Latitude:	40.88744
Longitude:	-124.0887

E19 **SIMPSON TIMBER COMPANY, ARCATA** **SLIC** **S105050961**
SW **3315 FOSTER AVENUE** **N/A**
1/8-1/4 **ARCATA, CA 95521**
0.141 mi.
743 ft. **Site 1 of 2 in cluster E**

Relative: **Lower**

Actual: **16 ft.**

SLIC:

Region:	STATE
Facility Status:	**Open - Verification Monitoring**
Status Date:	08/05/2013

SIMPSON TIMBER COMPANY, ARCATA (Continued) **S105050961**

Global Id:	T0602393409
Lead Agency:	NORTH COAST RWQCB (REGION 1)
Lead Agency Case Number:	Not reported
Latitude:	40.8831338898209
Longitude:	-124.106991291046
Case Type:	Cleanup Program Site
Case Worker:	RBD
Local Agency:	DEPARTMENT OF TOXIC SUBSTANCES CONTROL
RB Case Number:	1NHU661
File Location:	Regional Board
Potential Media Affected:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	* Solvents, Dichloroethene (DCE), Other Chlorinated Hydrocarbons, Vinyl chloride, Dioxin / Furans, Polychlorinated biphenyls (PCBs), Other Insecticides / Pesticide / Fumigants / Herbicides, Pentachlorophenol (PCP), Nickel, Benzene, Diesel, Gasoline, Toluene, Waste Oil / Motor / Hydraulic / Lubricating, Xylene
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

SLIC REG 1:

Region:	1
Facility ID:	1NHU661
Staff Initials:	KSA

E20 **BAR M ORGANIC DAIRY** **CUPA Listings** **S112135829**
SW **3364 FOSTER AVE** **N/A**
1/8-1/4 **ARCATA, CA 95521**
0.153 mi.
808 ft. **Site 2 of 2 in cluster E**

Relative:
Lower

Actual:
15 ft.

CUPA HUMBOLDT:

Local Site Id:	FA0004539
Facility Address 2:	Not reported
Program Identifier:	CUPA - SQG - Ag Facility
Program Element Code Desc:	4413 Haz Waste Generator (SQG) - Ag Facility
Permit Status:	Active
Latitude:	40.88323
Longitude:	-124.1110

Local Site Id:	FA0004539
Facility Address 2:	Not reported
Program Identifier:	CUPA - Response Team Support
Program Element Code Desc:	5056 HazMat Emergency Response Team Support
Permit Status:	(none)
Latitude:	40.88323
Longitude:	-124.1110

Local Site Id:	FA0004539
Facility Address 2:	Not reported
Program Identifier:	CUPA - Hazardous Materials Facility Fee
Program Element Code Desc:	4202 Hazardous Materials Facility Fee
Permit Status:	(none)
Latitude:	40.88323
Longitude:	-124.1110

Local Site Id: FA0004539

BAR M ORGANIC DAIRY (Continued) **S112135829**

Facility Address 2:	Not reported
Program Identifier:	CUPA - HMBP and/or Inventory - Ag Facility
Program Element Code Desc:	4213 HMBP and/or Inventory - Ag Facility
Permit Status:	Active
Latitude:	40.88323
Longitude:	-124.1110

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21 **COOK, ESSE & LINDA** **SLIC S105051183**
SSE **2809 BAY SCHOOL ROAD** **ENF N/A**
1/8-1/4 **ARCATA, CA 95521**
0.168 mi.
886 ft.

Relative:
Lower

Actual:
22 ft.

SLIC:

Region:	STATE
Facility Status:	**Open - Inactive**
Status Date:	02/19/2009
Global Id:	T0602393236
Lead Agency:	NORTH COAST RWQCB (REGION 1)
Lead Agency Case Number:	Not reported
Latitude:	40.879363
Longitude:	-124.103619
Case Type:	Cleanup Program Site
Case Worker:	BBB
Local Agency:	HUMBOLDT COUNTY LOP
RB Case Number:	1NHU319
File Location:	Regional Board
Potential Media Affected:	Under Investigation
Potential Contaminants of Concern:	Waste Oil / Motor / Hydraulic / Lubricating
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

SLIC REG 1:

Region:	1
Facility ID:	1NHU319
Staff Initials:	KSA

ENF:

Region:	1
Facility Id:	215627
Agency Name:	Not reported
Place Type:	Facility
Place Subtype:	Groundwater Cleanup Site
Facility Type:	All other facilities
Agency Type:	Not reported
# Of Agencies:	Not reported
Place Latitude:	40.879442
Place Longitude:	-124.103757
SIC Code 1:	Not reported
SIC Desc 1:	Not reported
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported

COOK, ESSE & LINDA (Continued) **S105051183**

NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Enf Action
Design Flow:	Not reported
Threat To Water Quality:	Not reported
Complexity:	Not reported
Pretreatment:	Not reported
Facility Waste Type:	Not reported
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	Not reported
Program Category1:	Not reported
Program Category2:	TANKS
# Of Programs:	Not reported
WDID:	Not reported
Reg Measure Id:	Not reported
Reg Measure Type:	Not reported
Region:	Not reported
Order #:	Not reported
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported
Reclamation:	Not reported
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	Not reported
Status:	Not reported
Status Date:	Not reported
Effective Date:	Not reported
Expiration/Review Date:	Not reported
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	Not reported
Individual/General:	Not reported
Fee Code:	Not reported
Direction/Volce:	Not reported
Enforcement Id(EID):	225010
Region:	1
Order / Resolution Number:	Not reported
Enforcement Action Type:	Staff Enforcement Letter
Effective Date:	12/23/1999
Adoption/Issuance Date:	Not reported
Achieve Date:	Not reported
Termination Date:	12/23/1999
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	Enforcement - 1B1HU319NSL Cook, Jesse & Linda

COOK, ESSE & LINDA (Continued) **S105051183**

Description:	WORKPLAN LATE BY 3.5 MONTHS
Program:	SLIC
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	$0.00
Initial Assessed Amount:	$0.00
Liability $ Amount:	$0.00
Project $ Amount:	$0.00
Liability $ Paid:	$0.00
Project $ Completed:	$0.00
Total $ Paid/Completed Amount:	$0.00

F22 **PACIFIC UNION SCHOOL** **HIST UST** **U001611492**
ENE **3001 JANES RD** **N/A**
1/8-1/4 **ARCATA, CA 95521**
0.189 mi.
996 ft. **Site 1 of 3 in cluster F**

Relative:
Higher

Actual:
34 ft.

HIST UST:

Region:	STATE
Facility ID:	00000011592
Facility Type:	Other
Other Type:	SCHOOL
Contact Name:	Not reported
Telephone:	7078223594
Owner Name:	PACIFIC UNION SCHOOL DISTRICT
Owner Address:	3001 JANES RD
Owner City,St,Zip:	ARCATA, CA 95521
Total Tanks:	0002
Tank Num:	001
Container Num:	1
Year Installed:	Not reported
Tank Capacity:	00000000
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Container Construction Thickness:	Not reported
Leak Detection:	None
Tank Num:	001
Container Num:	1
Year Installed:	1959
Tank Capacity:	00000550
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Container Construction Thickness:	Not reported
Leak Detection:	Visual, Stock Inventor
Tank Num:	002
Container Num:	2
Year Installed:	Not reported
Tank Capacity:	00000000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	Not reported
Leak Detection:	None

F23 **PACIFIC UNION ELEMENTARY** **HIST CORTESE** **S104164062**
ENE **3001 JANES** **LUST** **N/A**
1/8-1/4 **ARCATA, CA 95521**
0.189 mi.
996 ft. **Site 2 of 3 in cluster F**

Relative:
Higher

Actual:
34 ft.

HIST CORTESE:

Region:	CORTESE
Facility County Code:	12
Reg By:	LTNKA
Reg Id:	1THU279

LUST:

Region:	STATE
Global Id:	T0602300211
Latitude:	40.894747
Longitude:	-124.093431
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	08/14/1991
Lead Agency:	NORTH COAST RWQCB (REGION 1)
Case Worker:	ZZZ
Local Agency:	HUMBOLDT COUNTY LOP
RB Case Number:	1THU279
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0602300211
Contact Type:	Regional Board Caseworker
Contact Name:	REGIONAL WATER BOARD SITE CLOSED
Organization Name:	NORTH COAST RWQCB (REGION 1)
Address:	5550 SKYLANE BOULEVARD, SUITE A
City:	SANTA ROSA
Email:	craig.hunt@waterboards.ca.gov
Phone Number:	7075762220

Global Id:	T0602300211
Contact Type:	Local Agency Caseworker
Contact Name:	Mark Verhey
Organization Name:	HUMBOLDT COUNTY LOP
Address:	100 H Street, Suite 100
City:	Eureka
Email:	mark.verhey@co.humboldt.ca.us
Phone Number:	Not reported

Status History:

Global Id:	T0602300211
Status:	Open - Verification Monitoring
Status Date:	08/13/1991

Global Id:	T0602300211
Status:	Open - Case Begin Date
Status Date:	08/02/1990

PACIFIC UNION ELEMENTARY (Continued) **S104164062**

Global Id: T0602300211
Status: Open - Remediation
Status Date: 08/13/1991

Global Id: T0602300211
Status: Open - Site Assessment
Status Date: 08/03/1990

Global Id: T0602300211
Status: Open - Site Assessment
Status Date: 08/13/1991

Global Id: T0602300211
Status: Completed - Case Closed
Status Date: 08/14/1991

Regulatory Activities:
Global Id: T0602300211
Action Type: Other
Date: 08/02/1990
Action: Leak Discovery

Global Id: T0602300211
Action Type: Other
Date: 08/02/1990
Action: Leak Stopped

Global Id: T0602300211
Action Type: Other
Date: 08/02/1990
Action: Leak Reported

Global Id: T0602300211
Action Type: ENFORCEMENT
Date: 08/03/1990
Action: * Historical Enforcement

LUST REG 1:
Region: 1
Facility ID: 1THU279
Staff Initials: Closed

F24 **PACIFIC UNION ELEMENTARY SCHOOL** **CA FID UST S101629711**
ENE **3001 JANES RD** **SWEEPS UST N/A**
1/8-1/4 **ARCATA, CA 95521**
0.189 mi.
996 ft. **Site 3 of 3 in cluster F**

Relative:
Higher

Actual:
34 ft.

CA FID UST:
Facility ID: 12001139
Regulated By: UTNKI
Regulated ID: 00011592
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: Not reported
Mail To: Not reported

PACIFIC UNION ELEMENTARY SCHOOL (Continued) **S101629711**

Mailing Address: 3001 JANES RD
Mailing Address 2: Not reported
Mailing City,St,Zip: ARCATA 95521
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Inactive

SWEEPS UST:
Status: Not reported
Comp Number: 11592
Number: Not reported
Board Of Equalization: 44-004907
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 12-000-011592-000001
Tank Status: Not reported
Capacity: Not reported
Active Date: Not reported
Tank Use: M.V. FUEL
STG: PRODUCT
Content: LEADED
Number Of Tanks: 2

Status: Not reported
Comp Number: 11592
Number: Not reported
Board Of Equalization: 44-004907
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 12-000-011592-000002
Tank Status: Not reported
Capacity: Not reported
Active Date: Not reported
Tank Use: M.V. FUEL
STG: PRODUCT
Content: DIESEL
Number Of Tanks: Not reported

G25 **ALLIANCE MARKET** **CA FID UST S101627531**
East **1499 SPEAR AVE** **SWEEPS UST N/A**
1/8-1/4 **ARCATA, CA 95521**
0.191 mi.
1009 ft. **Site 1 of 2 in cluster G**

Relative:
Higher

Actual:
38 ft.

CA FID UST:
Facility ID: 12001340
Regulated By: UTNKI
Regulated ID: 00052739
Cortese Code: Not reported

ALLIANCE MARKET (Continued) **S101627531**

SIC Code:	Not reported
Facility Phone:	Not reported
Mail To:	Not reported
Mailing Address:	4972 CRESTWOOD CT
Mailing Address 2:	Not reported
Mailing City,St,Zip:	ARCATA 95521
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

SWEEPS UST:

Status:	Not reported
Comp Number:	52739
Number:	Not reported
Board Of Equalization:	44-005115
Referral Date:	Not reported
Action Date:	Not reported
Created Date:	Not reported
Owner Tank Id:	Not reported
SWRCB Tank Id:	12-000-052739-000001
Tank Status:	Not reported
Capacity:	300
Active Date:	Not reported
Tank Use:	M.V. FUEL
STG:	PRODUCT
Content:	REG UNLEADED
Number Of Tanks:	2

Status:	Not reported
Comp Number:	52739
Number:	Not reported
Board Of Equalization:	44-005115
Referral Date:	Not reported
Action Date:	Not reported
Created Date:	Not reported
Owner Tank Id:	Not reported
SWRCB Tank Id:	12-000-052739-000002
Tank Status:	Not reported
Capacity:	300
Active Date:	Not reported
Tank Use:	M.V. FUEL
STG:	PRODUCT
Content:	LEADED
Number Of Tanks:	Not reported

G26 **ALLIANCE MARKET** **HIST UST** **U001611394**
East **1499 SPEAR AVE** **N/A**
1/8-1/4 **ARCATA, CA 95521**
0.191 mi.
1009 ft. **Site 2 of 2 in cluster G**

Relative:
Higher

Actual:
38 ft.

HIST UST:

Region:	STATE
Facility ID:	00000052739
Facility Type:	Other
Other Type:	GROCERY STORE
Contact Name:	HIRAM J DIMMICK
Telephone:	7078221653
Owner Name:	HIRAM J & MARJORIE A DIMMICK
Owner Address:	4972 CRESTWOOD COURT
Owner City,St,Zip:	ARCATA, CA 95521
Total Tanks:	0002
Tank Num:	001
Container Num:	#1
Year Installed:	Not reported
Tank Capacity:	00000300
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Container Construction Thickness:	Not reported
Leak Detection:	None
Tank Num:	002
Container Num:	#2
Year Installed:	Not reported
Tank Capacity:	00000300
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Container Construction Thickness:	Not reported
Leak Detection:	None

H27 **EDR US Hist Cleaners** **1015028064**
ESE **2505 ALLIANCE RD** **N/A**
1/8-1/4 **ARCATA, CA 95521**
0.196 mi.
1037 ft. **Site 1 of 2 in cluster H**

Relative:
Higher

Actual:
29 ft.

EDR Historical Cleaners:

Name:	WESTWOOD LAUNDROMAT
Year:	1999
Address:	2505 ALLIANCE RD
Name:	WESTWOOD LAUNDROMAT
Year:	2000
Address:	2505 ALLIANCE RD

H28 **WESTWOOD LAUNDROMAT** **HIST CORTESE** **S101294714**
ESE **2505 ALLIANCE** **LUST** **N/A**
1/8-1/4 **ARCATA, CA 95521**
0.196 mi.
1037 ft. **Site 2 of 2 in cluster H**

Relative:
Higher

Actual:
29 ft.

HIST CORTESE:

Region:	CORTESE
Facility County Code:	12
Reg By:	LTNKA
Reg Id:	1THU431

LUST:

Region:	STATE
Global Id:	T0602300326
Latitude:	40.884782
Longitude:	-124.090218
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	06/30/1999
Lead Agency:	HUMBOLDT COUNTY LOP
Case Worker:	MAV
Local Agency:	HUMBOLDT COUNTY LOP
RB Case Number:	1THU431
LOC Case Number:	12431
File Location:	Not reported
Potential Media Affect:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0602300326
Contact Type:	Regional Board Caseworker
Contact Name:	HUMBOLDT COUNTY LOP CLOSED SITE
Organization Name:	NORTH COAST RWQCB (REGION 1)
Address:	5550 SKYLANE BOULEVARD, SUITE A
City:	SANTA ROSA
Email:	Not reported
Phone Number:	Not reported

Global Id:	T0602300326
Contact Type:	Local Agency Caseworker
Contact Name:	Mark Verhey
Organization Name:	HUMBOLDT COUNTY LOP
Address:	100 H Street, Suite 100
City:	Eureka
Email:	mark.verhey@co.humboldt.ca.us
Phone Number:	Not reported

Status History:

Global Id:	T0602300326
Status:	Completed - Case Closed
Status Date:	06/30/1999

Global Id:	T0602300326
Status:	Open - Verification Monitoring
Status Date:	06/29/1999

WESTWOOD LAUNDROMAT (Continued) **S101294714**

Global Id: T0602300326
Status: Open - Case Begin Date
Status Date: 08/31/1992

Global Id: T0602300326
Status: Open - Remediation
Status Date: 06/29/1999

Global Id: T0602300326
Status: Open - Site Assessment
Status Date: 10/05/1992

Global Id: T0602300326
Status: Open - Site Assessment
Status Date: 09/26/1994

Global Id: T0602300326
Status: Open - Site Assessment
Status Date: 06/29/1999

Regulatory Activities:
Global Id: T0602300326
Action Type: Other
Date: 08/31/1992
Action: Leak Discovery

Global Id: T0602300326
Action Type: Other
Date: 08/31/1992
Action: Leak Stopped

Global Id: T0602300326
Action Type: Other
Date: 08/31/1992
Action: Leak Reported

Global Id: T0602300326
Action Type: ENFORCEMENT
Date: 10/05/1992
Action: * Historical Enforcement

LUST REG 1:
Region: 1
Facility ID: 1THU431
Staff Initials: HUM

I29 **CASCADE FOREST PRO. INC.** **HIST UST** **U001611419**
SE **1800 Q ST** **CUPA Listings** **N/A**
1/8-1/4 **ARCATA, CA 95521**
0.229 mi.
1211 ft. **Site 1 of 2 in cluster I**

Relative:
Lower

Actual:
19 ft.

HIST UST:

Region:	STATE
Facility ID:	00000050374
Facility Type:	Other
Other Type:	COMPOST MFG. CO.
Contact Name:	JOE LINDAREN
Telephone:	7078222476
Owner Name:	CASCADE FOREST PRO. INC.
Owner Address:	1800 Q ST.
Owner City,St,Zip:	ARCATA, CA 95521
Total Tanks:	0001
Tank Num:	001
Container Num:	001
Year Installed:	Not reported
Tank Capacity:	00000500
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Container Construction Thickness:	Not reported
Leak Detection:	None

CUPA HUMBOLDT:

Local Site Id:	FA0002525
Facility Address 2:	Not reported
Program Identifier:	CUPA - SQG
Program Element Code Desc:	4401 Hazardous Waste Generator (SQG)
Permit Status:	Active
Latitude:	40.87852
Longitude:	-124.0940
Local Site Id:	FA0002525
Facility Address 2:	Not reported
Program Identifier:	CUPA - Hazardous Materials Facility Fee
Program Element Code Desc:	4202 Hazardous Materials Facility Fee
Permit Status:	Inactive
Latitude:	40.87852
Longitude:	-124.0940
Local Site Id:	FA0002525
Facility Address 2:	Not reported
Program Identifier:	CUPA - Response Team Support
Program Element Code Desc:	5056 HazMat Emergency Response Team Support
Permit Status:	Inactive
Latitude:	40.87852
Longitude:	-124.0940
Local Site Id:	FA0002525
Facility Address 2:	Not reported
Program Identifier:	CUPA - HMBP
Program Element Code Desc:	4201 HMBP and/or Inventory
Permit Status:	Active
Latitude:	40.87852
Longitude:	-124.0940

I30
SE
1/8-1/4
0.229 mi.
1211 ft.

1800 Q ST
ARCATA, CA 95521

Site 2 of 2 in cluster I

EDR US Hist Auto Stat **1015277803**
N/A

Relative:
Lower

Actual:
19 ft.

EDR Historical Auto Stations:

Name:	G & M QUALITY TRUCK REPAIR
Year:	1999
Address:	1800 Q ST
Name:	G & M QUALITY TRUCK REPAIR
Year:	2000
Address:	1800 Q ST
Name:	G & M QUALITY TRUCK REPAIR
Year:	2001
Address:	1800 Q ST
Name:	G & M QUALITY TRUCK REPAIR
Year:	2002
Address:	1800 Q ST
Name:	G & M QUALITY TRUCK REPAIR
Year:	2003
Address:	1800 Q ST
Name:	G & M QUALITY TRUCK REPAIR
Year:	2004
Address:	1800 Q ST
Name:	G & M QUALITY TRUCK REPAIR
Year:	2005
Address:	1800 Q ST
Name:	SHIFT EZE TRANSMISSION SPECIALISTS
Year:	2007
Address:	1800 Q ST
Name:	Q ST SVC CTR
Year:	2010
Address:	1800 Q ST

31
ESE
1/4-1/2
0.346 mi.
1827 ft.

ARCATA 76
2205 ALLIANCE ROAD
ARCATA, CA 0

HIST CORTESE **S101307182**
LUST **N/A**
CUPA Listings
EMI

Relative:
Higher

Actual:
24 ft.

HIST CORTESE:

Region:	CORTESE
Facility County Code:	12
Reg By:	LTNKA
Reg Id:	1THU339

LUST:

Region:	STATE
Global Id:	T0602300259
Latitude:	40.8823938671991

ARCATA 76 (Continued) **S101307182**

Longitude:	-124.091567611754
Case Type:	LUST Cleanup Site
Status:	Open - Site Assessment
Status Date:	05/02/2013
Lead Agency:	HUMBOLDT COUNTY LOP
Case Worker:	MAV
Local Agency:	HUMBOLDT COUNTY LOP
RB Case Number:	1THU339
LOC Case Number:	12339
File Location:	Local Agency
Potential Media Affect:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	Waste Oil / Motor / Hydraulic / Lubricating
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0602300259
Contact Type:	Regional Board Caseworker
Contact Name:	HUMBOLDT COUNTY HD LOP LEAD
Organization Name:	NORTH COAST RWQCB (REGION 1)
Address:	5550 SKYLANE BOULEVARD, SUITE A
City:	SANTA ROSA
Email:	Not reported
Phone Number:	7074456215

Global Id:	T0602300259
Contact Type:	Local Agency Caseworker
Contact Name:	Mark Verhey
Organization Name:	HUMBOLDT COUNTY LOP
Address:	100 H Street, Suite 100
City:	Eureka
Email:	mark.verhey@co.humboldt.ca.us
Phone Number:	Not reported

Status History:

Global Id:	T0602300259
Status:	Open - Site Assessment
Status Date:	10/31/2005

Global Id:	T0602300259
Status:	Open - Site Assessment
Status Date:	02/01/2006

Global Id:	T0602300259
Status:	Open - Site Assessment
Status Date:	02/02/2006

Global Id:	T0602300259
Status:	Open - Site Assessment
Status Date:	04/12/2006

Global Id:	T0602300259
Status:	Open - Site Assessment
Status Date:	05/04/2006

Global Id: T0602300259

ARCATA 76 (Continued) **S101307182**

Status: Open - Site Assessment
Status Date: 10/11/2006

Global Id: T0602300259
Status: Open - Site Assessment
Status Date: 10/20/2006

Global Id: T0602300259
Status: Open - Site Assessment
Status Date: 11/15/2006

Global Id: T0602300259
Status: Open - Site Assessment
Status Date: 02/26/2007

Global Id: T0602300259
Status: Open - Site Assessment
Status Date: 04/19/2007

Global Id: T0602300259
Status: Open - Site Assessment
Status Date: 05/25/2007

Global Id: T0602300259
Status: Open - Site Assessment
Status Date: 08/08/2007

Global Id: T0602300259
Status: Open - Site Assessment
Status Date: 11/19/2007

Global Id: T0602300259
Status: Open - Site Assessment
Status Date: 12/21/2007

Global Id: T0602300259
Status: Open - Site Assessment
Status Date: 08/04/2009

Global Id: T0602300259
Status: Open - Site Assessment
Status Date: 05/02/2013

Global Id: T0602300259
Status: Open - Case Begin Date
Status Date: 03/14/1991

Global Id: T0602300259
Status: Open - Site Assessment
Status Date: 03/15/1991

Global Id: T0602300259
Status: Open - Site Assessment
Status Date: 10/26/1994

Global Id: T0602300259
Status: Open - Site Assessment

ARCATA 76 (Continued) **S101307182**

Status Date: 07/31/2003

Global Id: T0602300259
Status: Open - Site Assessment
Status Date: 09/02/2003

Global Id: T0602300259
Status: Open - Site Assessment
Status Date: 12/08/2003

Global Id: T0602300259
Status: Open - Site Assessment
Status Date: 12/14/2003

Regulatory Activities:
Global Id: T0602300259
Action Type: RESPONSE
Date: 10/08/2014
Action: Soil and Water Investigation Workplan - Regulator Responded

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 07/31/2003
Action: Staff Letter

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 09/02/2003
Action: Staff Letter

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 10/20/2006
Action: Staff Letter

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 04/12/2006
Action: Staff Letter

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 10/19/2011
Action: Staff Letter

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 05/13/2011
Action: Staff Letter

Global Id: T0602300259
Action Type: Other
Date: 03/14/1991
Action: Leak Discovery

Global Id: T0602300259
Action Type: ENFORCEMENT

ARCATA 76 (Continued) **S101307182**

Date: 10/31/2005
Action: Staff Letter

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 05/04/2006
Action: Staff Letter

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 08/08/2007
Action: File review

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 02/02/2006
Action: File review

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 11/15/2006
Action: File review

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 02/01/2006
Action: Site Visit / Inspection / Sampling

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 04/19/2007
Action: Meeting

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 02/03/2011
Action: Staff Letter

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 10/11/2006
Action: Staff Letter

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 11/19/2007
Action: Staff Letter

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 05/25/2007
Action: Staff Letter

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 12/14/2006
Action: Verbal Communication

ARCATA 76 (Continued) **S101307182**

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 03/15/2011
Action: Staff Letter

Global Id: T0602300259
Action Type: Other
Date: 03/14/1991
Action: Leak Stopped

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 01/16/2013
Action: Staff Letter

Global Id: T0602300259
Action Type: Other
Date: 03/14/1991
Action: Leak Reported

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 03/15/1991
Action: * Historical Enforcement

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 12/08/2003
Action: Staff Letter

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 02/26/2007
Action: File review

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 04/19/2012
Action: Staff Letter

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 10/11/2012
Action: Notice of Violation

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 08/23/2012
Action: Warning Letter

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 03/17/2009
Action: Staff Letter

Global Id: T0602300259
Action Type: ENFORCEMENT

ARCATA 76 (Continued) **S101307182**

Date: 11/14/2008
Action: Notice of Violation

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 12/22/2008
Action: Staff Letter

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 02/26/2009
Action: Meeting

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 02/17/2009
Action: Staff Letter

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 06/10/2009
Action: Staff Letter

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 06/30/2014
Action: File review

Global Id: T0602300259
Action Type: RESPONSE
Date: 01/19/2009
Action: Conceptual Site Model

Global Id: T0602300259
Action Type: RESPONSE
Date: 05/01/2009
Action: Conceptual Site Model

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 08/04/2009
Action: Staff Letter

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 07/29/2009
Action: Meeting

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 10/20/2014
Action: Staff Letter

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 12/22/2014
Action: Staff Letter

ARCATA 76 (Continued) **S101307182**

Global Id: T0602300259
Action Type: RESPONSE
Date: 08/04/2014
Action: Clean Up Fund - 5-Year Review Summary

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 10/03/2002
Action: Staff Letter

Global Id: T0602300259
Action Type: ENFORCEMENT
Date: 02/20/2015
Action: Staff Letter

Global Id: T0602300259
Action Type: RESPONSE
Date: 08/04/2014
Action: Clean Up Fund - 5-Year Review Summary

LUST REG 1:
Region: 1
Facility ID: 1THU339
Staff Initials: HUM

CUPA HUMBOLDT:
Local Site Id: FA0000345
Facility Address 2: Not reported
Program Identifier: CUPA - Hazardous Materials Facility Fee
Program Element Code Desc: 4202 Hazardous Materials Facility Fee
Permit Status: (none)
Latitude: 40.88247
Longitude: -124.0916

Local Site Id: FA0000345
Facility Address 2: Not reported
Program Identifier: CUPA - Response Team Support
Program Element Code Desc: 5056 HazMat Emergency Response Team Support
Permit Status: Inactive
Latitude: 40.88247
Longitude: -124.0916

Local Site Id: FA0000345
Facility Address 2: Not reported
Program Identifier: CUPA - SQG
Program Element Code Desc: 4401 Hazardous Waste Generator (SQG)
Permit Status: Active
Latitude: 40.88247
Longitude: -124.0916

Local Site Id: FA0000345
Facility Address 2: Not reported
Program Identifier: CUPA - HMBP
Program Element Code Desc: 4201 HMBP and/or Inventory
Permit Status: Active

ARCATA 76 (Continued) **S101307182**

Latitude: 40.88247
Longitude: -124.0916

Local Site Id: FA0000345
Facility Address 2: Not reported
Program Identifier: CUPA - UST
Program Element Code Desc: 4101 UST Facility Operating Permit
Permit Status: Active
Latitude: 40.88247
Longitude: -124.0916

EMI:

Year:	2006
County Code:	12
Air Basin:	NC
Facility ID:	654
Air District Name:	NCU
SIC Code:	5541
Air District Name:	NORTH COAST UNIFIED AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.2556406124061688464
Reactive Organic Gases Tons/Yr:	.2543639
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2007
County Code:	12
Air Basin:	NC
Facility ID:	654
Air District Name:	NCU
SIC Code:	5541
Air District Name:	NORTH COAST UNIFIED AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.2419636073666034703
Reactive Organic Gases Tons/Yr:	.2407552
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2008
County Code:	12
Air Basin:	NC
Facility ID:	654
Air District Name:	NCU
SIC Code:	5541
Air District Name:	NORTH COAST UNIFIED AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.1949648875870952269
Reactive Organic Gases Tons/Yr:	.1939912

ARCATA 76 (Continued) **S101307182**

Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	2009
County Code:	12
Air Basin:	NC
Facility ID:	654
Air District Name:	NCU
SIC Code:	5541
Air District Name:	NORTH COAST UNIFIED AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.13227409917298499
Reactive Organic Gases Tons/Yr:	0.13161349999999999
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	2010
County Code:	12
Air Basin:	NC
Facility ID:	654
Air District Name:	NCU
SIC Code:	5541
Air District Name:	NORTH COAST UNIFIED AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.13227409917298499
Reactive Organic Gases Tons/Yr:	0.13161349999999999
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	2011
County Code:	12
Air Basin:	NC
Facility ID:	654
Air District Name:	NCU
SIC Code:	5541
Air District Name:	NORTH COAST UNIFIED AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.21631671256
Reactive Organic Gases Tons/Yr:	0.2152534
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

32
NNW
1/4-1/2
0.439 mi.
2316 ft.

HOMEM DAIRY
4003 SEIDEL RD
ARCATA, CA 95521

HIST CORTESE **S100272092**
LUST **N/A**
CUPA Listings

Relative:
Lower

Actual:
10 ft.

HIST CORTESE:

Region:	CORTESE
Facility County Code:	12
Reg By:	LTNKA
Reg Id:	1THU361

LUST:

Region:	STATE
Global Id:	T0602300273
Latitude:	40.906124
Longitude:	-124.115285
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	02/20/2003
Lead Agency:	HUMBOLDT COUNTY LOP
Case Worker:	MAV
Local Agency:	HUMBOLDT COUNTY LOP
RB Case Number:	1THU361
LOC Case Number:	12361
File Location:	Not reported
Potential Media Affect:	Well used for drinking water supply
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0602300273
Contact Type:	Regional Board Caseworker
Contact Name:	HUMBOLDT COUNTY LOP CLOSED SITE
Organization Name:	NORTH COAST RWQCB (REGION 1)
Address:	5550 SKYLANE BOULEVARD, SUITE A
City:	SANTA ROSA
Email:	Not reported
Phone Number:	Not reported

Global Id:	T0602300273
Contact Type:	Local Agency Caseworker
Contact Name:	Mark Verhey
Organization Name:	HUMBOLDT COUNTY LOP
Address:	100 H Street, Suite 100
City:	Eureka
Email:	mark.verhey@co.humboldt.ca.us
Phone Number:	Not reported

Status History:

Global Id:	T0602300273
Status:	Completed - Case Closed
Status Date:	02/20/2003

Global Id:	T0602300273
Status:	Open - Case Begin Date
Status Date:	06/19/1991

HOMEM DAIRY (Continued) **S100272092**

Global Id: T0602300273
Status: Open - Site Assessment
Status Date: 07/05/1991

Regulatory Activities:
Global Id: T0602300273
Action Type: ENFORCEMENT
Date: 11/19/2002
Action: Technical Correspondence / Assistance / Other

Global Id: T0602300273
Action Type: ENFORCEMENT
Date: 02/20/2003
Action: Closure/No Further Action Letter

Global Id: T0602300273
Action Type: ENFORCEMENT
Date: 11/26/2002
Action: Technical Correspondence / Assistance / Other

Global Id: T0602300273
Action Type: Other
Date: 06/19/1991
Action: Leak Discovery

Global Id: T0602300273
Action Type: Other
Date: 06/19/1991
Action: Leak Stopped

Global Id: T0602300273
Action Type: Other
Date: 06/19/1991
Action: Leak Reported

Global Id: T0602300273
Action Type: ENFORCEMENT
Date: 07/05/1991
Action: * Historical Enforcement

Global Id: T0602300273
Action Type: ENFORCEMENT
Date: 05/01/2003
Action: Staff Letter

LUST REG 1:
Region: 1
Facility ID: 1THU361
Staff Initials: HUM

CUPA HUMBOLDT:
Local Site Id: FA0001461
Facility Address 2: Not reported
Program Identifier: CUPA - SQG- Ag Facility
Program Element Code Desc: 4413 Haz Waste Generator (SQG) - Ag Facility

HOMEM DAIRY (Continued) **S100272092**

Permit Status:	Active
Latitude:	40.90512
Longitude:	-124.1152
Local Site Id:	FA0001461
Facility Address 2:	Not reported
Program Identifier:	CUPA - HMBP and/or Inventory - Ag Facility
Program Element Code Desc:	4213 HMBP and/or Inventory - Ag Facility
Permit Status:	Active
Latitude:	40.90512
Longitude:	-124.1152
Local Site Id:	FA0001461
Facility Address 2:	Not reported
Program Identifier:	CUPA - Response Team Support
Program Element Code Desc:	5056 HazMat Emergency Response Team Support
Permit Status:	(none)
Latitude:	40.90512
Longitude:	-124.1152
Local Site Id:	FA0001461
Facility Address 2:	Not reported
Program Identifier:	CUPA - Hazardous Materials Facility Fee
Program Element Code Desc:	4202 Hazardous Materials Facility Fee
Permit Status:	(none)
Latitude:	40.90512
Longitude:	-124.1152

33
ESE
1/4-1/2
0.441 mi.
2326 ft.

Relative:
Higher

Actual:
48 ft.

SUNSET SCHOOL
2400 BALDWIN
ARCATA, CA 95521

HIST CORTESE **S101294717**
LUST **N/A**

HIST CORTESE:

Region:	CORTESE
Facility County Code:	12
Reg By:	LTNKA
Reg Id:	1THU415

LUST:

Region:	STATE
Global Id:	T0602300315
Latitude:	40.8833967
Longitude:	-124.0842319
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	06/07/2002
Lead Agency:	HUMBOLDT COUNTY LOP
Case Worker:	BS
Local Agency:	HUMBOLDT COUNTY LOP
RB Case Number:	1THU415
LOC Case Number:	12415
File Location:	Local Agency
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

SUNSET SCHOOL (Continued) **S101294717**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0602300315
Contact Type:	Regional Board Caseworker
Contact Name:	HUMBOLDT COUNTY LOP CLOSED SITE
Organization Name:	NORTH COAST RWQCB (REGION 1)
Address:	5550 SKYLANE BOULEVARD, SUITE A
City:	SANTA ROSA
Email:	Not reported
Phone Number:	Not reported

Global Id:	T0602300315
Contact Type:	Local Agency Caseworker
Contact Name:	BOB STONE
Organization Name:	HUMBOLDT COUNTY LOP
Address:	100 H STREET, SUITE 100
City:	EUREKA
Email:	bstone@co.humboldt.ca.us
Phone Number:	Not reported

Status History:

Global Id:	T0602300315
Status:	Completed - Case Closed
Status Date:	06/07/2002

Global Id:	T0602300315
Status:	Open - Case Begin Date
Status Date:	08/24/1992

Global Id:	T0602300315
Status:	Open - Site Assessment
Status Date:	08/24/1992

Regulatory Activities:

Global Id:	T0602300315
Action Type:	Other
Date:	08/24/1992
Action:	Leak Discovery

Global Id:	T0602300315
Action Type:	Other
Date:	08/24/1992
Action:	Leak Stopped

Global Id:	T0602300315
Action Type:	Other
Date:	08/24/1992
Action:	Leak Reported

Global Id:	T0602300315
Action Type:	ENFORCEMENT
Date:	08/24/1992
Action:	* Historical Enforcement

Global Id: T0602300315

SUNSET SCHOOL (Continued) **S101294717**

Action Type: ENFORCEMENT
Date: 06/07/2002
Action: Closure/No Further Action Letter

LUST REG 1:
Region: 1
Facility ID: 1THU415
Staff Initials: HUM

J34 **CAL-KIRK LANDSCAPING** **HIST CORTESE** **S101294733**
East **2905 ST LOUIS RD** **LUST** **N/A**
1/4-1/2 **ARCATA, CA 95521** **CUPA Listings**
0.471 mi.
2488 ft. **Site 1 of 3 in cluster J**

Relative:
Higher

Actual:
38 ft.

HIST CORTESE:
Region: CORTESE
Facility County Code: 12
Reg By: LTNKA
Reg Id: 1THU082

LUST:
Region: STATE
Global Id: T0602300075
Latitude: 40.884786
Longitude: -124.081179
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 01/17/2001
Lead Agency: HUMBOLDT COUNTY LOP
Case Worker: MAV
Local Agency: HUMBOLDT COUNTY LOP
RB Case Number: 1THU082
LOC Case Number: 12082
File Location: Not reported
Potential Media Affect: Aquifer used for drinking water supply
Potential Contaminants of Concern: Diesel
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0602300075
Contact Type: Regional Board Caseworker
Contact Name: HUMBOLDT COUNTY LOP CLOSED SITE
Organization Name: NORTH COAST RWQCB (REGION 1)
Address: 5550 SKYLANE BOULEVARD, SUITE A
City: SANTA ROSA
Email: Not reported
Phone Number: Not reported

Global Id: T0602300075
Contact Type: Local Agency Caseworker
Contact Name: Mark Verhey
Organization Name: HUMBOLDT COUNTY LOP
Address: 100 H Street, Suite 100

CAL-KIRK LANDSCAPING (Continued) **S101294733**

City: Eureka
Email: mark.verhey@co.humboldt.ca.us
Phone Number: Not reported

Status History:
Global Id: T0602300075
Status: Completed - Case Closed
Status Date: 01/17/2001

Global Id: T0602300075
Status: Open - Case Begin Date
Status Date: 01/23/1989

Global Id: T0602300075
Status: Open - Site Assessment
Status Date: 01/23/1989

Global Id: T0602300075
Status: Open - Site Assessment
Status Date: 05/19/1992

Global Id: T0602300075
Status: Open - Site Assessment
Status Date: 06/10/1992

Regulatory Activities:
Global Id: T0602300075
Action Type: ENFORCEMENT
Date: 01/17/2001
Action: Closure/No Further Action Letter

Global Id: T0602300075
Action Type: Other
Date: 01/23/1989
Action: Leak Discovery

Global Id: T0602300075
Action Type: Other
Date: 01/23/1989
Action: Leak Stopped

Global Id: T0602300075
Action Type: ENFORCEMENT
Date: 01/16/2001
Action: Closure/No Further Action Letter

Global Id: T0602300075
Action Type: Other
Date: 01/23/1989
Action: Leak Reported

Global Id: T0602300075
Action Type: ENFORCEMENT
Date: 03/14/1989
Action: * Historical Enforcement

CAL-KIRK LANDSCAPING (Continued) **S101294733**

LUST REG 1:
Region: 1
Facility ID: 1THU082
Staff Initials: Closed

CUPA HUMBOLDT:
Local Site Id: FA0000491
Facility Address 2: 2905 St Louis Rd
Program Identifier: CUPA - SQG
Program Element Code Desc: 4401 Hazardous Waste Generator (SQG)
Permit Status: Active
Latitude: 40.88390
Longitude: -124.0826

Local Site Id: FA0000491
Facility Address 2: 2905 St Louis Rd
Program Identifier: CUPA - Hazardous Materials Facility Fee
Program Element Code Desc: 4202 Hazardous Materials Facility Fee
Permit Status: Active
Latitude: 40.88390
Longitude: -124.0826

Local Site Id: FA0000491
Facility Address 2: 2905 St Louis Rd
Program Identifier: CUPA - Response Team Support
Program Element Code Desc: 5056 HazMat Emergency Response Team Support
Permit Status: Active
Latitude: 40.88390
Longitude: -124.0826

Local Site Id: FA0000491
Facility Address 2: 2905 St Louis Rd
Program Identifier: CUPA - HMBP
Program Element Code Desc: 4201 HMBP and/or Inventory
Permit Status: Active
Latitude: 40.88390
Longitude: -124.0826

J35 **MAD RIVER LUMBER** **HIST CORTESE** **S101294734**
East **2935 ST LOUIS RD** **LUST** **N/A**
1/4-1/2 **ARCATA, CA 95521** **CUPA Listings**
0.471 mi.
2488 ft. **Site 2 of 3 in cluster J**

Relative:
Higher

Actual:
38 ft.

HIST CORTESE:
Region: CORTESE
Facility County Code: 12
Reg By: LTNKA
Reg Id: 1THU387

LUST:
Region: STATE
Global Id: T0602300292
Latitude: 40.8860053
Longitude: -124.080992664
Case Type: LUST Cleanup Site

MAD RIVER LUMBER (Continued) **S101294734**

Status:	Open - Verification Monitoring
Status Date:	02/24/2015
Lead Agency:	HUMBOLDT COUNTY LOP
Case Worker:	MAV
Local Agency:	HUMBOLDT COUNTY LOP
RB Case Number:	1THU387
LOC Case Number:	12387
File Location:	Local Agency
Potential Media Affect:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0602300292
Contact Type:	Regional Board Caseworker
Contact Name:	HUMBOLDT COUNTY HD LOP LEAD
Organization Name:	NORTH COAST RWQCB (REGION 1)
Address:	5550 SKYLANE BOULEVARD, SUITE A
City:	SANTA ROSA
Email:	Not reported
Phone Number:	7074456215

Global Id:	T0602300292
Contact Type:	Local Agency Caseworker
Contact Name:	Mark Verhey
Organization Name:	HUMBOLDT COUNTY LOP
Address:	100 H Street, Suite 100
City:	Eureka
Email:	mark.verhey@co.humboldt.ca.us
Phone Number:	Not reported

Status History:

Global Id:	T0602300292
Status:	Open - Site Assessment
Status Date:	07/17/2006

Global Id:	T0602300292
Status:	Open - Site Assessment
Status Date:	08/17/2009

Global Id:	T0602300292
Status:	Open - Site Assessment
Status Date:	08/19/2009

Global Id:	T0602300292
Status:	Open - Verification Monitoring
Status Date:	02/24/2015

Global Id:	T0602300292
Status:	Open - Case Begin Date
Status Date:	12/16/1991

Global Id:	T0602300292
Status:	Open - Remediation
Status Date:	04/01/2013

MAD RIVER LUMBER (Continued) **S101294734**

Global Id: T0602300292
Status: Open - Site Assessment
Status Date: 12/23/1991

Global Id: T0602300292
Status: Open - Site Assessment
Status Date: 08/10/1992

Global Id: T0602300292
Status: Open - Site Assessment
Status Date: 12/30/1992

Global Id: T0602300292
Status: Open - Site Assessment
Status Date: 02/19/2003

Global Id: T0602300292
Status: Open - Site Assessment
Status Date: 06/20/2003

Global Id: T0602300292
Status: Open - Site Assessment
Status Date: 08/29/2003

Global Id: T0602300292
Status: Open - Site Assessment
Status Date: 12/18/2003

Global Id: T0602300292
Status: Open - Site Assessment
Status Date: 12/24/2003

Global Id: T0602300292
Status: Open - Site Assessment
Status Date: 01/02/2004

Regulatory Activities:
Global Id: T0602300292
Action Type: ENFORCEMENT
Date: 04/21/2014
Action: Staff Letter

Global Id: T0602300292
Action Type: RESPONSE
Date: 12/12/2012
Action: Remedial Investigation Workplan - Regulator Responded

Global Id: T0602300292
Action Type: RESPONSE
Date: 04/03/2014
Action: Remedial Investigation Workplan - Regulator Responded

Global Id: T0602300292
Action Type: ENFORCEMENT
Date: 02/19/2003
Action: Staff Letter

MAD RIVER LUMBER (Continued) **S101294734**

Global Id: T0602300292
Action Type: ENFORCEMENT
Date: 12/18/2003
Action: Staff Letter

Global Id: T0602300292
Action Type: ENFORCEMENT
Date: 06/20/2003
Action: Staff Letter

Global Id: T0602300292
Action Type: ENFORCEMENT
Date: 12/24/2003
Action: Staff Letter

Global Id: T0602300292
Action Type: ENFORCEMENT
Date: 01/02/2004
Action: Staff Letter

Global Id: T0602300292
Action Type: Other
Date: 12/16/1991
Action: Leak Discovery

Global Id: T0602300292
Action Type: ENFORCEMENT
Date: 07/17/2006
Action: Site Visit / Inspection / Sampling

Global Id: T0602300292
Action Type: ENFORCEMENT
Date: 12/05/2006
Action: Staff Letter

Global Id: T0602300292
Action Type: ENFORCEMENT
Date: 07/28/2011
Action: Staff Letter

Global Id: T0602300292
Action Type: ENFORCEMENT
Date: 04/07/2008
Action: Staff Letter

Global Id: T0602300292
Action Type: Other
Date: 12/16/1991
Action: Leak Stopped

Global Id: T0602300292
Action Type: Other
Date: 12/16/1991
Action: Leak Reported

Global Id: T0602300292
Action Type: ENFORCEMENT

MAD RIVER LUMBER (Continued) **S101294734**

Date: 12/23/1991
Action: * Historical Enforcement

Global Id: T0602300292
Action Type: ENFORCEMENT
Date: 08/29/2003
Action: Staff Letter

Global Id: T0602300292
Action Type: ENFORCEMENT
Date: 02/20/2013
Action: Staff Letter

Global Id: T0602300292
Action Type: ENFORCEMENT
Date: 06/13/2012
Action: Staff Letter

Global Id: T0602300292
Action Type: ENFORCEMENT
Date: 10/18/2012
Action: Staff Letter

Global Id: T0602300292
Action Type: ENFORCEMENT
Date: 11/25/2008
Action: Staff Letter

Global Id: T0602300292
Action Type: ENFORCEMENT
Date: 02/09/2009
Action: Staff Letter

Global Id: T0602300292
Action Type: ENFORCEMENT
Date: 08/17/2009
Action: Staff Letter

LUST REG 1:
Region: 1
Facility ID: 1THU387
Staff Initials: HUM

CUPA HUMBOLDT:
Local Site Id: FA0001960
Facility Address 2: 2935 St Louis Rd
Program Identifier: CUPA - SQG
Program Element Code Desc: 4401 Hazardous Waste Generator (SQG)
Permit Status: Active
Latitude: 40.88546
Longitude: -124.0807

Local Site Id: FA0001960
Facility Address 2: 2935 St Louis Rd
Program Identifier: CUPA - Hazardous Materials Facility Fee

MAD RIVER LUMBER (Continued) **S101294734**

Program Element Code Desc: 4202 Hazardous Materials Facility Fee
Permit Status: Inactive
Latitude: 40.88546
Longitude: -124.0807

Local Site Id: FA0001960
Facility Address 2: 2935 St Louis Rd
Program Identifier: CUPA - Response Team Support
Program Element Code Desc: 5056 HazMat Emergency Response Team Support
Permit Status: Inactive
Latitude: 40.88546
Longitude: -124.0807

Local Site Id: FA0001960
Facility Address 2: 2935 St Louis Rd
Program Identifier: CUPA - HMBP
Program Element Code Desc: 4201 HMBP and/or Inventory
Permit Status: Active
Latitude: 40.88546
Longitude: -124.0807

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36 **CHISUM, SHIRLEY** **SLIC** **S105051246**
SSE **JANES & ELEVENTH STREET** **N/A**
1/4-1/2 **ARCATA, CA 95521**
0.482 mi.
2544 ft.

Relative:
Lower

Actual:
14 ft.

SLIC:
Region: STATE
Facility Status: Open - Site Assessment
Status Date: 01/23/2015
Global Id: T0602393280
Lead Agency: NORTH COAST RWQCB (REGION 1)
Lead Agency Case Number: Not reported
Latitude: 40.8740987590641
Longitude: -124.100289214611
Case Type: Cleanup Program Site
Case Worker: RBD
Local Agency: HUMBOLDT COUNTY LOP
RB Case Number: 1NHU452
File Location: Regional Board
Potential Media Affected: Aquifer used for drinking water supply
Potential Contaminants of Concern: Waste Oil / Motor / Hydraulic / Lubricating
Site History: Former creamery

Click here to access the California GeoTracker records for this facility:

SLIC REG 1:
Region: 1
Facility ID: 1NHU452
Staff Initials: LMB

J37 **SAMOA LANDFILL SITE** **SWF/LF** **S102360140**
East **1/2 MI S OF LOUISIANA-PAC DR & NAVY RD** **Financial Assurance** **N/A**
1/4-1/2 **SAMOA, CA**
0.484 mi.
2555 ft. **Site 3 of 3 in cluster J**

Relative:
Higher

Actual:
43 ft.

SWF/LF (SWIS):

Region:	STATE
Facility ID:	12-AA-0017
Lat/Long:	40.80583 / -124.19833
Owner Name:	Freshwater Tissue Co. LLC
Owner Telephone:	7074457952
Owner Address:	James Lund
Owner Address2:	PO Box 248
Owner City,St,Zip:	Samoa, CA 95564
Operational Status:	Closed
Operator:	Freshwater Tissue Co. LLC
Operator Phone:	7074457952
Operator Address:	James Lund
Operator Address2:	PO Box 248
Operator City,St,Zip:	Samoa, CA 95564
Permit Date:	07/24/1978
Permit Status:	Permitted
Permitted Acreage:	6
Activity:	Wood Waste Disposal Site
Regulation Status:	Permitted
Landuse Name:	Not reported
GIS Source:	Map
Category:	Disposal
Unit Number:	01
Inspection Frequency:	Annual
Accepted Waste:	Not reported
Closure Date:	12/31/1998
Closure Type:	Estimated
Disposal Acreage:	0
SWIS Num:	12-AA-0017
Waste Discharge Requirement Num:	III
Program Type:	Not reported
Permitted Throughput with Units:	50
Actual Throughput with Units:	Cu Yards/day
Permitted Capacity with Units:	Not reported
Remaining Capacity:	Not reported
Remaining Capacity with Units:	Not reported
Lat/Long:	40.80583 / -124.19833

CA Financial Assurance 2:

Region:	2
SWIS_NO:	12-AA-0017
Closure Approved:	Yes
Closure Inf Coverage Date:	Not reported
Closure Plan Coverage:	$180,000.00
Closure Plan Date:	06/09/1998
PostClose Approved:	Yes
PostClose Adequacy Date:	06/09/1998
PostClose Inf Coverage:	$0.00
PostClose Inf Coverage Date:	Not reported
CorActCoverage:	$0.00
CorActApproved:	No
CorAct Mec Adequacy Date:	Not reported

SAMOA LANDFILL SITE (Continued) **S102360140**

CorAct Inf Coverage:	$0.00
CorActPlanCoverage:	$0.00
CorAct Plan Date:	Not reported
Lia Coverage:	$0.00
Lia Approved:	No
Review:	Not reported
Closure Mechanism A:	LETTER OF CREDIT
Closure Mechanism B:	Not reported
Closure Coverage:	$3,816,868.87
Closure Adequacy:	Not reported
Closure Approved:	Yes
Closure Inflation Estimate:	$0.00
Closure Inflation Date:	Not reported
Closure Plan Coverage:	$180,000.00
Closure Plan Date:	06/09/1998
Post Closure Mechanism A:	FINANCIAL MEANS TEST
Post Closure Established A:	Not reported
Post Closure Mechanism B:	Not reported
Post Closure Coverate:	$236,885.87
Post Closure Adequacy:	Not reported
Post Closure Approved:	Yes
Post Close Inflation Estimate:	$0.00
Post Closure Inflation Date:	Not reported
Post Closure Plan Date:	06/09/1998
Corrective Action Extablished A:	Not reported
Corrective Actiont Coverage:	$0.00
Corrective Action Adequacy:	Not reported
Corrective Action Approved:	No
Corrective Action Inflation Estimate:	$0.00
Corrective Action Inflationdate:	Not reported
Corrective Action Plan Estimate:	$0.00
Corrective Action Plan Date:	Not reported
Liability Mechanism A:	Not reported
Liability Established A:	Not reported
Liability Mechanism B:	Not reported
Liability Coverage:	$0.00
CostAnniversary:	Not reported
ClosureEstablishedA:	Not reported
ClosureEstablishedB:	Not reported
ClosureDisbursement:	0
PostClosureEstablishedB:	Not reported
PostClosureDisbursement:	0
CorrectiveActionMechanismA:	Not reported
CorrectiveActionMechanismB:	Not reported
CorrectiveActionExtablishedB:	Not reported
CorrectiveActiontDisbursement:	0
LiabilityEstabilishedB:	Not reported
LiabilityAdequacy:	Not reported
Liability Approved:	No
Contact:	Not reported

38
SSE
1/2-1
0.732 mi.
3864 ft.

ARCATA COMMUNITY RECYCLING CENTER
1380 NINTH STREET
ARCATA, CA 95521

LUST **U000069517**
SLIC **N/A**
Notify 65

Relative:
Lower

Actual:
18 ft.

LUST:

Region:	STATE
Global Id:	T0602300054
Latitude:	40.8708769
Longitude:	-124.0914066
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	08/02/2010
Lead Agency:	HUMBOLDT COUNTY LOP
Case Worker:	MAV
Local Agency:	HUMBOLDT COUNTY LOP
RB Case Number:	1THU060
LOC Case Number:	12060
File Location:	Local Agency
Potential Media Affect:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	Diesel, Gasoline, * Petroleum - Waste Oil
Site History:	Excavation has been concurred with (5/2010)

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0602300054
Contact Type:	Regional Board Caseworker
Contact Name:	HUMBOLDT COUNTY HD LOP LEAD
Organization Name:	NORTH COAST RWQCB (REGION 1)
Address:	5550 SKYLANE BOULEVARD, SUITE A
City:	SANTA ROSA
Email:	Not reported
Phone Number:	7074456215

Global Id:	T0602300054
Contact Type:	Local Agency Caseworker
Contact Name:	Mark Verhey
Organization Name:	HUMBOLDT COUNTY LOP
Address:	100 H Street, Suite 100
City:	Eureka
Email:	mark.verhey@co.humboldt.ca.us
Phone Number:	Not reported

Status History:

Global Id:	T0602300054
Status:	Open - Site Assessment
Status Date:	11/13/2006

Global Id:	T0602300054
Status:	Open - Site Assessment
Status Date:	09/16/2007

Global Id:	T0602300054
Status:	Open - Site Assessment
Status Date:	10/26/2007

Global Id: T0602300054

ARCATA COMMUNITY RECYCLING CENTER (Continued) **U000069517**

Status: Open - Site Assessment
Status Date: 05/19/2010

Global Id: T0602300054
Status: Completed - Case Closed
Status Date: 05/19/2010

Global Id: T0602300054
Status: Completed - Case Closed
Status Date: 08/02/2010

Global Id: T0602300054
Status: Open - Case Begin Date
Status Date: 02/07/1987

Global Id: T0602300054
Status: Open - Site Assessment
Status Date: 02/07/1987

Global Id: T0602300054
Status: Open - Site Assessment
Status Date: 10/04/1988

Global Id: T0602300054
Status: Open - Site Assessment
Status Date: 03/02/1995

Global Id: T0602300054
Status: Open - Site Assessment
Status Date: 03/06/1995

Global Id: T0602300054
Status: Open - Site Assessment
Status Date: 08/20/2002

Global Id: T0602300054
Status: Open - Site Assessment
Status Date: 10/24/2002

Global Id: T0602300054
Status: Open - Site Assessment
Status Date: 02/27/2003

Global Id: T0602300054
Status: Open - Site Assessment
Status Date: 03/04/2003

Global Id: T0602300054
Status: Open - Site Assessment
Status Date: 05/14/2003

Global Id: T0602300054
Status: Open - Site Assessment
Status Date: 10/28/2003

Global Id: T0602300054
Status: Open - Site Assessment

ARCATA COMMUNITY RECYCLING CENTER (Continued) **U000069517**

Status Date: 12/10/2003

Global Id: T0602300054
Status: Open - Site Assessment
Status Date: 03/23/2004

Global Id: T0602300054
Status: Open - Site Assessment
Status Date: 04/23/2004

Regulatory Activities:
Global Id: T0602300054
Action Type: ENFORCEMENT
Date: 04/23/2004
Action: File review

Global Id: T0602300054
Action Type: ENFORCEMENT
Date: 04/13/2010
Action: Staff Letter

Global Id: T0602300054
Action Type: ENFORCEMENT
Date: 06/24/2010
Action: Notification - Public Participation Document

Global Id: T0602300054
Action Type: ENFORCEMENT
Date: 04/08/2005
Action: Notice of Responsibility

Global Id: T0602300054
Action Type: ENFORCEMENT
Date: 08/02/2010
Action: Closure/No Further Action Letter

Global Id: T0602300054
Action Type: Other
Date: 10/04/1988
Action: Leak Discovery

Global Id: T0602300054
Action Type: ENFORCEMENT
Date: 10/26/2007
Action: Technical Correspondence / Assistance / Other

Global Id: T0602300054
Action Type: ENFORCEMENT
Date: 06/24/2010
Action: Staff Letter

Global Id: T0602300054
Action Type: ENFORCEMENT
Date: 04/07/2008
Action: Staff Letter

Global Id: T0602300054

ARCATA COMMUNITY RECYCLING CENTER (Continued) **U000069517**

Action Type:	ENFORCEMENT
Date:	06/24/2010
Action:	LOP Case Closure Summary to RB
Global Id:	T0602300054
Action Type:	Other
Date:	10/04/1988
Action:	Leak Stopped
Global Id:	T0602300054
Action Type:	Other
Date:	10/04/1988
Action:	Leak Reported
Global Id:	T0602300054
Action Type:	ENFORCEMENT
Date:	05/21/2008
Action:	Staff Letter
Global Id:	T0602300054
Action Type:	ENFORCEMENT
Date:	01/04/2000
Action:	* Historical Enforcement
Global Id:	T0602300054
Action Type:	ENFORCEMENT
Date:	04/20/2007
Action:	Staff Letter
Global Id:	T0602300054
Action Type:	ENFORCEMENT
Date:	10/10/2008
Action:	Staff Letter
Global Id:	T0602300054
Action Type:	ENFORCEMENT
Date:	03/23/2004
Action:	* No Action
Global Id:	T0602300054
Action Type:	ENFORCEMENT
Date:	12/16/2008
Action:	Staff Letter
Global Id:	T0602300054
Action Type:	ENFORCEMENT
Date:	03/03/2009
Action:	Staff Letter
Global Id:	T0602300054
Action Type:	ENFORCEMENT
Date:	02/19/2009
Action:	Staff Letter
Global Id:	T0602300054
Action Type:	ENFORCEMENT
Date:	07/10/2009

ARCATA COMMUNITY RECYCLING CENTER (Continued) **U000069517**

Action: Staff Letter

Global Id: T0602300054
Action Type: ENFORCEMENT
Date: 07/31/2009
Action: Staff Letter

Global Id: T0602300054
Action Type: ENFORCEMENT
Date: 10/28/2003
Action: Meeting

Global Id: T0602300054
Action Type: ENFORCEMENT
Date: 12/10/2003
Action: Staff Letter

SLIC:
Region: STATE
Facility Status: **Open - Assessment & Interim Remedial Action**
Status Date: 12/23/2010
Global Id: T10000002709
Lead Agency: NORTH COAST RWQCB (REGION 1)
Lead Agency Case Number: Not reported
Latitude: 40.870528
Longitude: -124.092514
Case Type: Cleanup Program Site
Case Worker: DWP
Local Agency: Not reported
RB Case Number: 1NHU060
File Location: Regional Board
Potential Media Affected: Aquifer used for drinking water supply, Soil
Potential Contaminants of Concern: Diesel, Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

NOTIFY 65:
Date Reported: Not reported
Staff Initials: Not reported
Board File Number: Not reported
Facility Type: Not reported
Discharge Date: Not reported
Incident Description: 93923

Count: 3 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
ARCATA	S104857214	S&H AUTO WRECKERS	ALLIANCE ROAD 3028		LUST
ARCATA	U001611403	ARCATA REMANUFACTURING	FOSTER ROAD	95521	HIST UST
ARCATA	S101627537	ARCATA REMANUFACTURING	FOSTER RD	95521	CA FID UST, SWEEPS UST

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 12/16/2014
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 02/09/2015
Number of Days to Update: 32

Source: EPA
Telephone: N/A
Last EDR Contact: 04/08/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 12/16/2014
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 02/09/2015
Number of Days to Update: 32

Source: EPA
Telephone: N/A
Last EDR Contact: 04/08/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 12/16/2014
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 02/09/2015
Number of Days to Update: 32

Source: EPA
Telephone: N/A
Last EDR Contact: 04/08/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Quarterly

Federal CERCLIS list

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 02/13/2014
Number of Days to Update: 94

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 05/01/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Quarterly

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 07/21/2014
Date Data Arrived at EDR: 10/07/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 04/08/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Varies

Federal CERCLIS NFRAP site List

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 02/13/2014
Number of Days to Update: 94

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 05/01/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/09/2014
Date Data Arrived at EDR: 12/29/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 31

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 12/09/2014
Date Data Arrived at EDR: 12/29/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/09/2014
Date Data Arrived at EDR: 12/29/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 12/09/2014
Date Data Arrived at EDR: 12/29/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/09/2014
Date Data Arrived at EDR: 12/29/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal institutional controls / engineering controls registries

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 09/18/2014
Date Data Arrived at EDR: 09/19/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/26/2015
Next Scheduled EDR Contact: 06/15/2015
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 09/18/2014
Date Data Arrived at EDR: 09/19/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/26/2015
Next Scheduled EDR Contact: 06/15/2015
Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/03/2014
Date Data Arrived at EDR: 12/12/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 48

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/16/2015
Next Scheduled EDR Contact: 06/01/2015
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/29/2014
Date Data Arrived at EDR: 09/30/2014
Date Made Active in Reports: 11/06/2014
Number of Days to Update: 37

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Annually

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 03/11/2015
Date Data Arrived at EDR: 03/12/2015
Date Made Active in Reports: 03/18/2015
Number of Days to Update: 6

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/05/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 03/11/2015
Date Data Arrived at EDR: 03/12/2015
Date Made Active in Reports: 03/18/2015
Number of Days to Update: 6

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/05/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 02/16/2015
Date Data Arrived at EDR: 02/17/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 14

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 02/17/2015
Next Scheduled EDR Contact: 06/01/2015
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST REG 6L: Leaking Underground Storage Tank Case Listing

For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List
Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST: Geotracker's Leaking Underground Fuel Tank Report
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 03/13/2015
Date Data Arrived at EDR: 03/18/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 6

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 03/18/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Quarterly

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 9: Leaking Underground Storage Tank Report
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

SLIC: Statewide SLIC Cases
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 03/13/2015
Date Data Arrived at EDR: 03/18/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 6

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/18/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 02/03/2015
Date Data Arrived at EDR: 02/12/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 29

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Quarterly

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 01/28/2015
Date Data Arrived at EDR: 01/30/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 42

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 09/23/2014
Date Data Arrived at EDR: 11/25/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 65

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 02/01/2013
Date Data Arrived at EDR: 05/01/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 184

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 04/03/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 01/30/2015
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 32

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 01/23/2015
Date Data Arrived at EDR: 02/10/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 31

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 09/30/2014
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 10

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Semi-Annually

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 01/08/2015
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 02/09/2015
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/08/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Quarterly

State and tribal registered storage tank lists

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 03/13/2015
Date Data Arrived at EDR: 03/18/2015
Date Made Active in Reports: 03/26/2015
Number of Days to Update: 8

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 03/18/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 08/01/2009
Date Data Arrived at EDR: 09/10/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 21

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 07/13/2015
Next Scheduled EDR Contact: 04/13/2015
Data Release Frequency: Quarterly

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 02/01/2013
Date Data Arrived at EDR: 05/01/2013
Date Made Active in Reports: 01/27/2014
Number of Days to Update: 271

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 04/28/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 09/30/2014
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 10

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 01/30/2015
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 36

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 01/23/2015
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 28

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014
Date Data Arrived at EDR: 11/25/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 65

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 01/29/2015
Date Data Arrived at EDR: 01/30/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 42

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 02/03/2015
Date Data Arrived at EDR: 02/12/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 29

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 12/14/2014
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 28

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Quarterly

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 04/13/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 09/29/2014
Date Data Arrived at EDR: 10/01/2014
Date Made Active in Reports: 11/06/2014
Number of Days to Update: 36

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 04/02/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 03/11/2015
Date Data Arrived at EDR: 03/12/2015
Date Made Active in Reports: 03/18/2015
Number of Days to Update: 6

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/05/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 12/22/2014
Date Data Arrived at EDR: 12/22/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 38

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 03/24/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 04/23/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 03/16/2015
Date Data Arrived at EDR: 03/18/2015
Date Made Active in Reports: 03/26/2015
Number of Days to Update: 8

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/18/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 04/04/2015
Date Data Arrived at EDR: 04/07/2015
Date Made Active in Reports: 04/13/2015
Number of Days to Update: 6

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 02/16/2015
Next Scheduled EDR Contact: 06/01/2015
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 05/01/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Varies

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 05/06/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Local Lists of Hazardous waste / Contaminated Sites

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 02/25/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 15

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/03/2015
Next Scheduled EDR Contact: 06/15/2015
Data Release Frequency: Quarterly

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 03/11/2015
Date Data Arrived at EDR: 03/12/2015
Date Made Active in Reports: 03/18/2015
Number of Days to Update: 6

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/05/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/18/2015
Number of Days to Update: 8

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 04/13/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Varies

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 02/25/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 15

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/03/2015
Next Scheduled EDR Contact: 06/15/2015
Data Release Frequency: No Update Planned

Local Lists of Registered Storage Tanks

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 09/23/2009
Date Data Arrived at EDR: 09/23/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 8

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 02/26/2015
Next Scheduled EDR Contact: 06/15/2015
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 03/11/2015
Date Data Arrived at EDR: 03/13/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 11

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 03/09/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Varies

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 03/09/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/18/2015
Number of Days to Update: 8

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 03/10/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/29/2014
Date Data Arrived at EDR: 12/30/2014
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 69

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Annually

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 01/21/2015
Date Data Arrived at EDR: 01/28/2015
Date Made Active in Reports: 02/26/2015
Number of Days to Update: 29

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing

The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units.

Date of Government Version: 03/13/2015
Date Data Arrived at EDR: 03/18/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 6

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/18/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing

The State Water Resources Control Board and nine Regional Water Quality Control Boards partner with the Department of Defense (DoD) through the Defense and State Memorandum of Agreement (DSMOA) to oversee the investigation and remediation of water quality issues at military facilities.

Date of Government Version: 03/13/2015
Date Data Arrived at EDR: 03/18/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 6

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/18/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 12/09/2014
Date Data Arrived at EDR: 12/29/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Varies

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 05/05/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 04/14/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 06/06/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 8

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 03/13/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 01/23/2015
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 24

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 03/30/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 03/10/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 02/27/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Varies

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 12/30/2014
Date Data Arrived at EDR: 12/31/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 29

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 03/06/2015
Next Scheduled EDR Contact: 06/15/2015
Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/31/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 44

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 01/29/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 03/27/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems
Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 04/10/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 01/23/2015
Date Data Arrived at EDR: 02/06/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 04/09/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 10/15/2014
Date Made Active in Reports: 11/17/2014
Number of Days to Update: 33

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 04/17/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 12/29/2014
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 21

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 03/09/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 02/27/2015
Date Data Arrived at EDR: 02/27/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 26

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 04/09/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 01/18/2015
Date Data Arrived at EDR: 02/27/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 26

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 03/09/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 02/01/2015
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 02/26/2013
Date Made Active in Reports: 04/19/2013
Number of Days to Update: 52

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 02/24/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Biennially

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UIC: UIC Listing

A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 11/19/2014
Date Data Arrived at EDR: 12/15/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 45

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 03/20/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 03/12/2015
Date Data Arrived at EDR: 03/13/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 11

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 03/13/2015
Next Scheduled EDR Contact: 06/01/2015
Data Release Frequency: Quarterly

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 03/10/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 04/10/2015
Number of Days to Update: 10

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List
The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 10/21/1993
Date Data Arrived at EDR: 11/01/1993
Date Made Active in Reports: 11/19/1993
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 03/23/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: No Update Planned

DRYCLEANERS: Cleaner Facilities
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 02/18/2015
Date Data Arrived at EDR: 02/20/2015
Date Made Active in Reports: 03/12/2015
Number of Days to Update: 20

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 03/09/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Annually

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 03/30/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 01/26/2015
Date Data Arrived at EDR: 01/28/2015
Date Made Active in Reports: 02/26/2015
Number of Days to Update: 29

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 10/15/2014
Date Made Active in Reports: 11/19/2014
Number of Days to Update: 35

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 04/17/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Annually

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 03/25/2014
Date Made Active in Reports: 04/28/2014
Number of Days to Update: 34

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 03/27/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: Varies

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 04/14/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Semi-Annually

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 02/18/2015
Next Scheduled EDR Contact: 06/01/2015
Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 04/14/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: N/A

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 11/25/2014
Date Data Arrived at EDR: 11/26/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 04/10/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Varies

WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Quarterly

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 02/13/2015
Next Scheduled EDR Contact: 05/25/2015
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 05/07/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 02/13/2015
Next Scheduled EDR Contact: 05/25/2015
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 05/01/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 03/16/2015
Date Data Arrived at EDR: 03/18/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 6

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/18/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Quarterly

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 02/02/2015
Date Data Arrived at EDR: 02/06/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 25

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing
A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 02/17/2015
Date Data Arrived at EDR: 02/20/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 11

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 02/16/2015
Next Scheduled EDR Contact: 06/01/2015
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information
All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 03/09/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 15

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 02/16/2015
Next Scheduled EDR Contact: 06/01/2015
Data Release Frequency: Quarterly

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 03/13/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Varies

MWMP: Medical Waste Management Program Listing

The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 01/16/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/18/2015
Number of Days to Update: 8

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 03/10/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Varies

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/16/2014
Date Data Arrived at EDR: 10/31/2014
Date Made Active in Reports: 11/17/2014
Number of Days to Update: 17

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 03/30/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/16/2014
Date Data Arrived at EDR: 10/31/2014
Date Made Active in Reports: 11/17/2014
Number of Days to Update: 17

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 03/30/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Annually

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 04/15/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Varies

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 04/13/2015
Date Data Arrived at EDR: 04/15/2015
Date Made Active in Reports: 04/23/2015
Number of Days to Update: 8

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 04/15/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Quarterly

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 02/23/2015
Date Data Arrived at EDR: 02/24/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 7

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/24/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR US Hist Auto Stat: EDR Exclusive Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR US Hist Cleaners: EDR Exclusive Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/21/2015
Date Data Arrived at EDR: 01/28/2015
Date Made Active in Reports: 02/26/2015
Number of Days to Update: 29

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 03/30/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 01/21/2015
Date Data Arrived at EDR: 01/28/2015
Date Made Active in Reports: 02/26/2015
Number of Days to Update: 29

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 03/30/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA Facility List

Cupa Facility List

Date of Government Version: 03/09/2015
Date Data Arrived at EDR: 03/24/2015
Date Made Active in Reports: 03/31/2015
Number of Days to Update: 7

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 03/23/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA Facility Listing

Cupa facility list.

Date of Government Version: 11/20/2014
Date Data Arrived at EDR: 11/24/2014
Date Made Active in Reports: 01/07/2015
Number of Days to Update: 44

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 04/14/2015
Next Scheduled EDR Contact: 04/27/2015
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 04/17/2015
Date Data Arrived at EDR: 04/21/2015
Date Made Active in Reports: 05/07/2015
Number of Days to Update: 16

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 03/30/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 06/11/2014
Date Data Arrived at EDR: 06/13/2014
Date Made Active in Reports: 07/07/2014
Number of Days to Update: 24

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 05/07/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Varies

CONTRA COSTA COUNTY:

Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 02/23/2015
Date Data Arrived at EDR: 02/25/2015
Date Made Active in Reports: 03/04/2015
Number of Days to Update: 7

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 05/04/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA Facility List
Cupa Facility list

Date of Government Version: 02/23/2015
Date Data Arrived at EDR: 02/25/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 6

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 05/04/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 02/24/2015
Date Data Arrived at EDR: 02/25/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 6

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 05/04/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA Resources List

Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 03/31/2015
Date Data Arrived at EDR: 04/15/2015
Date Made Active in Reports: 04/23/2015
Number of Days to Update: 8

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 04/06/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Semi-Annually

HUMBOLDT COUNTY:

CUPA Facility List

CUPA facility list.

Date of Government Version: 03/11/2015
Date Data Arrived at EDR: 03/13/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 11

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Varies

IMPERIAL COUNTY:

CUPA Facility List

Cupa facility list.

Date of Government Version: 02/10/2015
Date Data Arrived at EDR: 02/12/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 19

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List

Cupa facility list.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 33

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Varies

KERN COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 07/22/2014
Date Data Arrived at EDR: 11/12/2014
Date Made Active in Reports: 12/19/2014
Number of Days to Update: 37

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 05/07/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 03/26/2015
Date Data Arrived at EDR: 04/16/2015
Date Made Active in Reports: 04/23/2015
Number of Days to Update: 7

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 04/10/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Varies

LAKE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 01/20/2015
Date Data Arrived at EDR: 01/21/2015
Date Made Active in Reports: 02/05/2015
Number of Days to Update: 15

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 04/16/2015
Next Scheduled EDR Contact: 08/03/2015
Data Release Frequency: Varies

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 03/23/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 11/24/2014
Date Data Arrived at EDR: 01/30/2015
Date Made Active in Reports: 03/04/2015
Number of Days to Update: 33

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 04/13/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 04/20/2015
Date Data Arrived at EDR: 04/20/2015
Date Made Active in Reports: 05/07/2015
Number of Days to Update: 17

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 04/20/2015
Next Scheduled EDR Contact: 08/03/2015
Data Release Frequency: Varies

City of Los Angeles Landfills

Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/05/2009
Date Data Arrived at EDR: 03/10/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 29

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 04/15/2015
Next Scheduled EDR Contact: 08/03/2015
Data Release Frequency: Varies

Site Mitigation List

Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/15/2015
Date Data Arrived at EDR: 01/29/2015
Date Made Active in Reports: 03/10/2015
Number of Days to Update: 40

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 04/16/2015
Next Scheduled EDR Contact: 08/03/2015
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank

Underground storage tank sites located in El Segundo city.

Date of Government Version: 03/30/2015
Date Data Arrived at EDR: 04/02/2015
Date Made Active in Reports: 04/13/2015
Number of Days to Update: 11

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 03/06/2015
Next Scheduled EDR Contact: 08/03/2015
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank

Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 01/29/2015
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 02/26/2015
Number of Days to Update: 13

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Annually

City of Torrance Underground Storage Tank

Underground storage tank sites located in the city of Torrance.

Date of Government Version: 04/14/2015
Date Data Arrived at EDR: 04/23/2015
Date Made Active in Reports: 05/11/2015
Number of Days to Update: 18

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 04/13/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA Facility List

A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 03/20/2015
Date Data Arrived at EDR: 03/24/2015
Date Made Active in Reports: 03/31/2015
Number of Days to Update: 7

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 03/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 10/08/2014
Date Data Arrived at EDR: 10/22/2014
Date Made Active in Reports: 12/15/2014
Number of Days to Update: 54

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 05/05/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 02/23/2015
Date Data Arrived at EDR: 02/24/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 7

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Varies

MONO COUNTY:

CUPA Facility List
CUPA Facility List

Date of Government Version: 02/27/2015
Date Data Arrived at EDR: 03/06/2015
Date Made Active in Reports: 03/10/2015
Number of Days to Update: 4

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 02/26/2015
Next Scheduled EDR Contact: 06/15/2015
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 03/19/2015
Date Data Arrived at EDR: 03/20/2015
Date Made Active in Reports: 03/31/2015
Number of Days to Update: 11

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Varies

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 12/05/2011
Date Data Arrived at EDR: 12/06/2011
Date Made Active in Reports: 02/07/2012
Number of Days to Update: 63

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/26/2015
Next Scheduled EDR Contact: 06/15/2015
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 23

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/26/2015
Next Scheduled EDR Contact: 06/15/2015
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 02/12/2015
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 18

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 05/04/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 02/01/2015
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 18

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/06/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 02/03/2015
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 18

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/06/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 02/01/2015
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 02/26/2015
Number of Days to Update: 13

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/12/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

PLACER COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 03/10/2015
Date Data Arrived at EDR: 03/12/2015
Date Made Active in Reports: 03/18/2015
Number of Days to Update: 6

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 03/09/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 01/28/2015
Date Data Arrived at EDR: 01/29/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 33

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/23/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 01/28/2015
Date Data Arrived at EDR: 01/29/2015
Date Made Active in Reports: 02/26/2015
Number of Days to Update: 28

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/23/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 02/02/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 04/16/2015
Number of Days to Update: 8

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 04/08/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 02/02/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 04/16/2015
Number of Days to Update: 8

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 04/08/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 03/02/2015
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/10/2015
Number of Days to Update: 7

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 05/12/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 09/23/2013
Date Data Arrived at EDR: 09/24/2013
Date Made Active in Reports: 10/17/2013
Number of Days to Update: 23

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 03/10/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2014
Date Data Arrived at EDR: 11/21/2014
Date Made Active in Reports: 12/29/2014
Number of Days to Update: 38

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 03/09/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 05/06/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/29/2010
Date Data Arrived at EDR: 03/10/2011
Date Made Active in Reports: 03/15/2011
Number of Days to Update: 5

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 05/06/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 03/24/2015
Date Data Arrived at EDR: 03/25/2015
Date Made Active in Reports: 03/31/2015
Number of Days to Update: 6

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 03/23/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 02/23/2015
Date Data Arrived at EDR: 02/24/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 7

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Varies

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 04/13/2015
Date Data Arrived at EDR: 04/15/2015
Date Made Active in Reports: 04/23/2015
Number of Days to Update: 8

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/16/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/16/2015
Date Data Arrived at EDR: 03/17/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 7

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/13/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Varies

SANTA CLARA COUNTY:

Cupa Facility List
Cupa facility list

Date of Government Version: 02/23/2015
Date Data Arrived at EDR: 02/25/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 6

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Varies

HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 02/26/2015
Next Scheduled EDR Contact: 06/15/2015
Data Release Frequency: Annually

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 02/23/2015
Date Data Arrived at EDR: 02/24/2015
Date Made Active in Reports: 03/04/2015
Number of Days to Update: 8

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 05/07/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List
CUPA facility listing.

Date of Government Version: 11/24/2014
Date Data Arrived at EDR: 11/25/2014
Date Made Active in Reports: 12/31/2014
Number of Days to Update: 36

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 03/11/2015
Date Data Arrived at EDR: 03/13/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 11

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Varies

SOLANO COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 03/13/2015
Date Data Arrived at EDR: 03/19/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 5

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/13/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 03/13/2015
Date Data Arrived at EDR: 03/20/2015
Date Made Active in Reports: 03/31/2015
Number of Days to Update: 11

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/13/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Quarterly

SONOMA COUNTY:

Cupa Facility List
Cupa Facility list

Date of Government Version: 03/31/2015
Date Data Arrived at EDR: 04/02/2015
Date Made Active in Reports: 04/10/2015
Number of Days to Update: 8

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 03/30/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Varies

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 04/01/2015
Date Data Arrived at EDR: 04/02/2015
Date Made Active in Reports: 04/13/2015
Number of Days to Update: 11

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 03/30/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 03/09/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/18/2015
Number of Days to Update: 8

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 03/09/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Semi-Annually

TUOLUMNE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 01/30/2015
Date Data Arrived at EDR: 02/03/2015
Date Made Active in Reports: 02/27/2015
Number of Days to Update: 24

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks

The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 01/27/2015
Date Data Arrived at EDR: 02/19/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 12

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 02/16/2015
Next Scheduled EDR Contact: 06/01/2015
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites

Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 04/02/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 02/16/2015
Next Scheduled EDR Contact: 06/01/2015
Data Release Frequency: Quarterly

Medical Waste Program List

To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 12/29/2014
Date Data Arrived at EDR: 01/30/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 32

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Quarterly

Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 02/27/2015
Date Data Arrived at EDR: 03/18/2015
Date Made Active in Reports: 03/26/2015
Number of Days to Update: 8

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 03/18/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 03/26/2015
Date Data Arrived at EDR: 04/01/2015
Date Made Active in Reports: 04/13/2015
Number of Days to Update: 12

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 03/23/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 02/17/2015
Date Data Arrived at EDR: 02/19/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 12

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 05/04/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 07/30/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 11/17/2014
Next Scheduled EDR Contact: 03/02/2015
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/19/2012
Date Made Active in Reports: 08/28/2012
Number of Days to Update: 40

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 04/14/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2015
Date Data Arrived at EDR: 02/04/2015
Date Made Active in Reports: 02/27/2015
Number of Days to Update: 23

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 05/06/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 07/21/2014
Date Made Active in Reports: 08/25/2014
Number of Days to Update: 35

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 04/16/2015
Next Scheduled EDR Contact: 08/03/2015
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 07/15/2014
Date Made Active in Reports: 08/13/2014
Number of Days to Update: 29

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 03/19/2015
Date Made Active in Reports: 04/07/2015
Number of Days to Update: 19

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 03/13/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

STREET AND ADDRESS INFORMATION

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GEOCHECK®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

ARCATA PROPERTIES
3318 FOSTER AVENUE, 2725 SIMPSON MILL ROAD, 4044 L
ARCATA, CA 95521

TARGET PROPERTY COORDINATES

Latitude (North):	40.8893 - 40° 53' 21.48"
Longitude (West):	124.1069 - 124° 6' 24.84"
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	406749.1
UTM Y (Meters):	4526846.5
Elevation:	24 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	40124-H1 ARCATA NORTH, CA
Most Recent Revision:	1972
South Map:	40124-G1 ARCATA SOUTH, CA
Most Recent Revision:	1972
West Map:	40124-H2 TYEE CITY, CA
Most Recent Revision:	1972

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

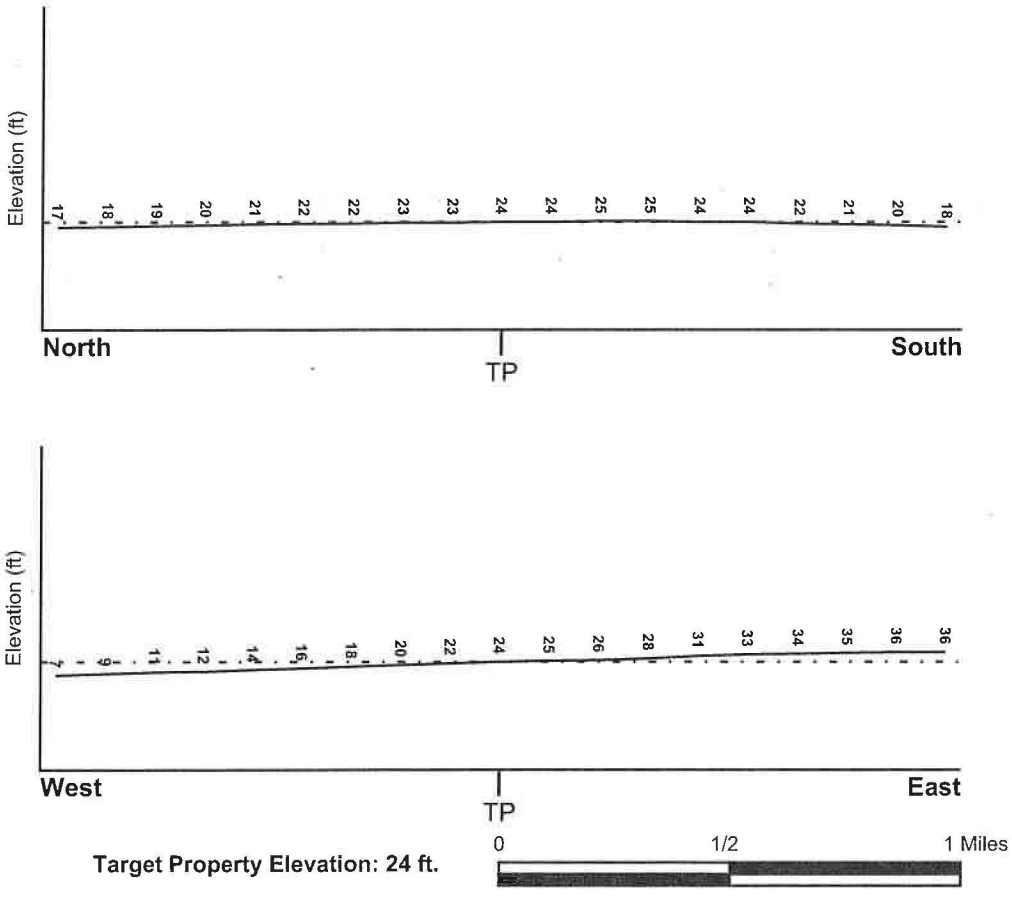
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General WNW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Target Property Elevation: 24 ft.

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
HUMBOLDT, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property:	0600600615C - FEMA Q3 Flood data
Additional Panels in search area:	0600610002D - FEMA Q3 Flood data 0600600780B - FEMA Q3 Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
ARCATA NORTH	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site-specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT **GEOLOGIC AGE IDENTIFICATION**

Era:	Cenozoic	Category:	Stratifed Sequence
System:	Quaternary		
Series:	Quaternary		
Code:	Q *(decoded above as Era, System & Series)*		

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name:	FERNDALE
Soil Surface Texture:	silt loam
Hydrologic Group:	Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.
Soil Drainage Class:	Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: HIGH

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	21 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 2.00 Min: 0.60	Max: 7.80 Min: 6.60
2	21 inches	61 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 2.00 Min: 0.60	Max: 8.40 Min: 7.40
3	61 inches	80 inches	loamy fine sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 20.00 Min: 6.00	Max: 8.40 Min: 7.40

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: silty clay loam
very gravelly - sand
loam
sand
sandy loam

Surficial Soil Types: silty clay loam
very gravelly - sand
loam
sand
sandy loam

Shallow Soil Types: No Other Soil Types

Deeper Soil Types: sandy clay loam
stratified
silty clay loam
sand
silt loam
coarse sand

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A1	USGS40000194710	1/4 - 1/2 Mile SSW
B4	USGS40000194707	1/2 - 1 Mile South
C5	USGS40000194715	1/2 - 1 Mile NW
C6	USGS40000194714	1/2 - 1 Mile NW

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

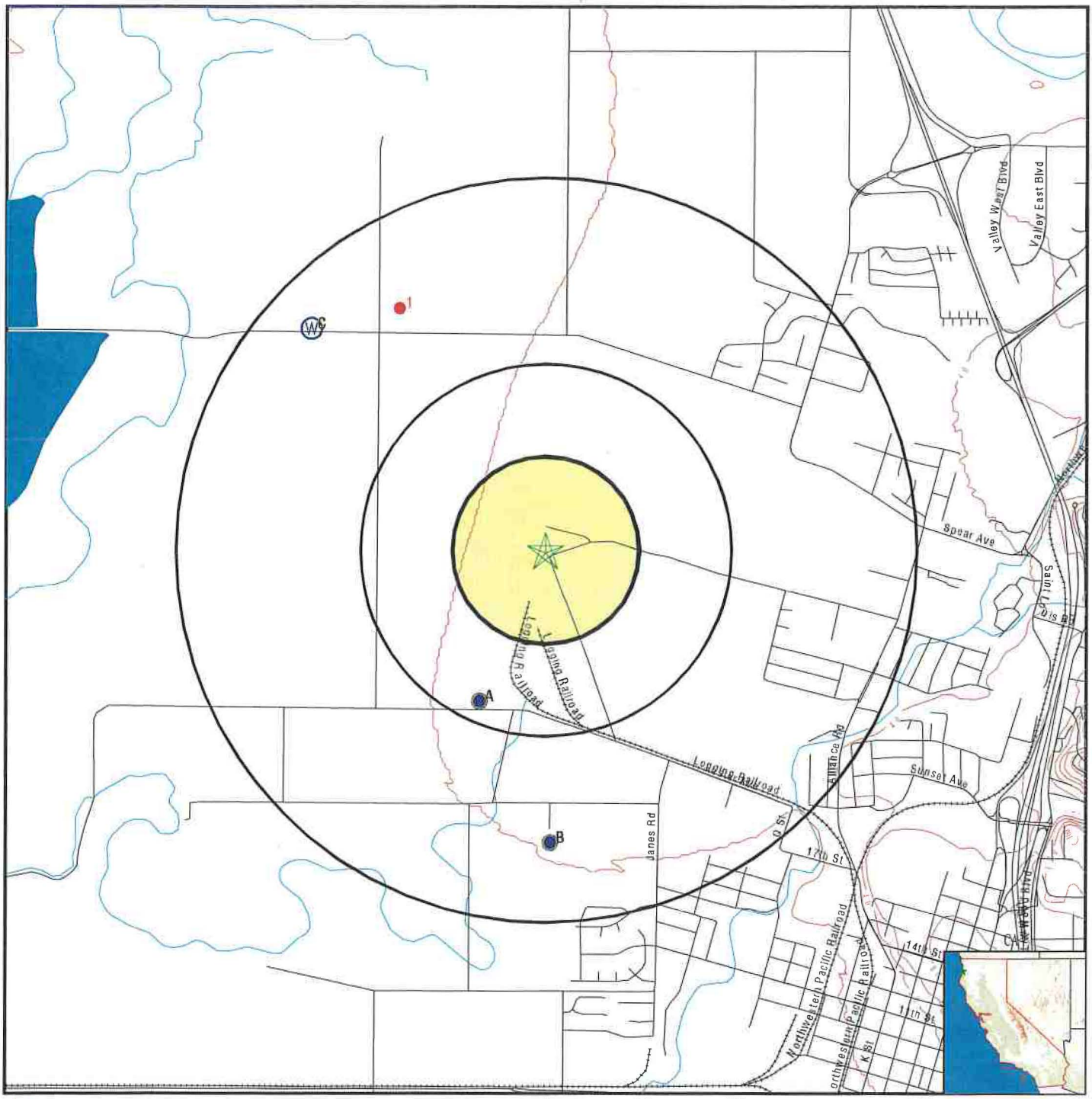
MAP ID	WELL ID	LOCATION FROM TP
A2	CADW50000034486	1/4 - 1/2 Mile SSW
B3	6488	1/2 - 1 Mile South

OTHER STATE DATABASE INFORMATION

STATE OIL/GAS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	CAOG9A000217582	1/2 - 1 Mile NNW

PHYSICAL SETTING SOURCE MAP - 4293018.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME:	Arcata Properties	CLIENT:	Partner Engineering and Science, Inc.
ADDRESS:	3318 Foster Avenue, 2725 Simpson Mill Road, 4044 L Arcata CA 95521	CONTACT:	Brett Nielsen
		INQUIRY #:	4293018.2s
LAT/LONG:	40.8893 / 124.1069	DATE:	May 13, 2015 3:48 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

	Database	EDR ID Number
A1 **SSW** **1/4 - 1/2 Mile** **Higher**	**FED USGS**	**USGS40000194710**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-405302124063201		
Monloc name:	006N001E19Q001H		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18010102	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	40.883738
Longitude:	-124.110063	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	19.00
Vert measure units:	feet	Vertacc measure val:	20
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Quaternary Alluvium		
Aquifer type:	Not Reported		
Construction date:	19500101	Welldepth:	108
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 38

Date	Feet below Surface	Feet to Sealevel
1983-03-30	5.9	
1982-03-31	7.1	
1981-03-25	10.0	
1980-04-10	10.0	
1979-04-10	11.0	
1978-04-05	9.6	
1977-09-19	0.00	
Note: The site was being pumped.		
1977-07-27	0.00	
Note: The site was being pumped.		
1977-04-06	13.2	
1976-04-07	10.7	
1975-04-29	10.5	
1958-04-15	5.7	
1957-04-17	9.6	
1956-08-21	16.9	
1955-08-26	12.8	
1954-08-20	14.36	
1953-08-28	10.03	
1952-11-11	11.61	
1952-09-06	11.56	
1952-05-10	8.89	
1982-10-19	14.2	
1981-10-15	14.8	
1980-09-24	15.5	
1979-11-06	18.5	
1978-11-09	14.8	
1977-11-02	15.1	
1976-10-26	14.8	
1975-10-14	14.5	
1958-10-14	12.0	
1957-10-24	13.9	
1956-10-18	17.9	
1956-04-25	9.9	
1955-05-27	8.4	
1954-05-18	9.02	
1953-04-27	7.90	
1952-09-29	12.32	
1952-08-05	10.40	
1951-06-07	9.33	

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

	Database	EDR ID Number
A2 **SSW** **1/4 - 1/2 Mile** **Lower**	**CA WELLS**	**CADW50000034486**

Latitude :	40.8831		
Longitude :	124.1105		
Site code:	408831N1241105W001	Casgem sta:	06N01E19Q001H
Local well:	06N01E19Q001H	Casgem s 1:	Residential
County id:	12		
Basin cd:	1-8.01	Basin desc:	Mad River Valley Lowland
Org unit n:	Northern Region Office	Site id:	CADW50000034486

B3 **South** **1/2 - 1 Mile** **Lower**		**CA WELLS**	**6488**

Water System Information:

Prime Station Code:	06N/01E-30G02 H	User ID:	ATT
FRDS Number:	1200692001	County:	Humboldt
District Number:	01	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	405241.0 1240619.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 01		
System Number:	1200692		
System Name:	Marilann Court WS		
Organization That Operates System:			
	710 E ST 150		
	EUREKA, C9 5501		
Pop Served:	24	Connections:	8
Area Served:	Not Reported		

B4 **South** **1/2 - 1 Mile** **Lower**		**FED USGS**	**USGS40000194707**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-405241124062001		
Monloc name:	006N001E30G002H		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18010102	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	40.8779049
Longitude:	-124.1067295	Sourcemap scale:	24000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	16.00
Vert measure units:	feet	Vertacc measure val:	3
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

C5
NW
1/2 - 1 Mile
Lower

FED USGS **USGS40000194715**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-405353124070301		
Monloc name:	006N001E18M002H		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18010102	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	40.8979044
Longitude:	-124.1186749	Sourcemap scale:	24000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	8.00
Vert measure units:	feet	Vertacc measure val:	005
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

C6
NW
1/2 - 1 Mile
Lower

FED USGS **USGS40000194714**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-405352124070901		
Monloc name:	006N001E18N001H		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18010102	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	40.8979444
Longitude:	-124.1193056	Sourcemap scale:	24000
Horiz Acc measure:	.5	Horiz Acc measure units:	seconds
Horiz Collection method:	Global positioning system (GPS), uncorrected		
Horiz coord refsys:	NAD83	Vert measure val:	10
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from digital elevation model (DEM)		
Vert coord refsys:	NAVD88	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	200
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance

Database | EDR ID Number

1
NNW
1/2 - 1 Mile

OIL_GAS | **CAOG9A000217582**

Districtnu:	6	Apinumber:	02320028
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	Y	Wellstatus:	P
Operatorna:	Juniper Petroleum Corp.		
Countyname:	Humboldt	Fieldname:	Any Field
Areaname:	Any Area		
Section:	18		
Township:	06N	Range:	01E
Basemeridi:	H	Elevation:	22
Locationde:	Not Reported		
Glat:	40.898719		
Glong:	-124.114465		
Gissourcec:	hud		
Comments:	Status Code 006		
Leasename:	Ferreira	Wellnumber:	24X-18
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	30-DEC-99
Welldeptha:	Not Reported	Redrillfoo:	Not Reported
Abandonedd:	/ /	Completion:	/ /
Gissymbol:	PDH	Site id:	CAOG9A000217582

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
95521	16	0

Federal EPA Radon Zone for HUMBOLDT County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 95521

Number of sites tested: 8

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.288 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

OTHER STATE DATABASE INFORMATION

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

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APPENDIX D: QUALIFICATIONS

PARTNER

David Gerhardstein
Staff Professional II

PARTNER
Engineering and Science, Inc.

Education
Wright State University, Dayton, Ohio
Bachelor of Science in Environmental Science, June 2007

Registrations
OSHA 40-hour HAZWOPER

Summary of Professional Experience
Mr. Gerhardstein has six years of experience in the environmental service industry. He has significant experience in due diligence assessments for a variety of property types and the needs and requirements of varied number of reporting standards including ASTM standards, EPA's All Appropriate Inquiry (AAI), and customized client formats. Specifically, Mr. Gerhardstein has performed Phase I environmental site assessments, Phase II subsurface investigations, remediation design and oversight, regulatory compliance assessments, soil, water and air sampling and analysis, vapor intrusion assessments and mitigation, and design, operation and maintenance of remediation systems.

Relevant Project Experience
Mr. Gerhardstein provided services for transfer of 14 commercial and industrial facilities in the states of Kansas, Missouri, Nebraska, South Dakota, and Tennessee. He conducted site visits, interviewed key-personnel and prepared final reports. Additionally, he performed Phase II investigations at nine of the properties. He coordinated subcontractors and laboratory services, conducted subsurface analysis and sampling, and managed disposal of investigation derived waste.

Mr. Gerhardstein managed tasks for two Superfund vapor intrusion sites in the states of Ohio and California. Duties included coordinating between regulators, clients and interested parties. He was responsible for inspecting numerous residential and commercial properties to assess potential vapor intrusion pathways. He managed the associated air sampling programs, worked on design of mitigation measures, oversaw installation of mitigation systems and implemented monitoring plans to ensure efficacy.

Mr. Gerhardstein managed a groundwater and residential drinking water sampling program related to a TCE plume at an active automotive parts manufacturing facility. Responsibilities included evaluating performance of a pump-and-treat system installed to prevent further offsite contaminant migration and assistance in design and implementation of multiple system upgrades. He was responsible for monitoring system performance to ensure compliance with an NPDES permit for effluent discharge to surface water. He further performed groundwater, surface water and drinking water sampling activities, completed associated reports and managed hazardous investigation derived waste.

Mr. Gerhardstein oversaw installation of a methane monitoring and mitigation system at a new retail development constructed atop a former landfill. Duties included ensuring that system construction details matched design criteria, troubleshooting and optimizing system performance, and conducting regular monitoring to ensure proper functionality. He prepared reports related to system construction and operation and worked with local regulators to design an ongoing methane monitoring program at the property.

Additionally, Mr. Gerhardstein has experience in the following areas:

- Pilot testing, design, optimization, operation and maintenance of groundwater and soil gas remediation systems
- Use of a wide range of environmental field equipment including multiple soil and groundwater sampling methods, PIDs, nuclear density gauges, soil gas and landfill monitoring equipment, and air sampling and monitoring equipment
- Subsurface investigation techniques including direct push, hollow-stem auger and sonic drilling
- Vapor intrusion assessment, sampling and mitigation solutions
- Preparation of health and safety plans and use and maintenance of a variety of personal protective equipment

Finally, Mr. Gerhardstein's diversity across residential, industrial, and commercial environments is a major contribution to Partner Engineering and Science's team in the West region of the United States.

Steve G. Kovach
Project Manager

PARTNER
Engineering and Science, Inc.

Education
B.A. - Botany, Miami University (Ohio)
Minor - Conservation and the Environment

Summary of Professional Experience
Mr. Kovach has over thirteen years of experience in a broad range of environmental and engineering disciplines including: engineering and environmental due diligence services, industrial air, water, and wastewater permit compliance and monitoring, hazardous waste management and disposal, electrical utilities projects, environmental engineering projects, and wetland ecology research. Mr. Kovach has worked closely with regulatory agencies including the United States Environmental Protection Agency, California Department of Toxic Substance Control, California State Water Resources Control Board, California Integrated Waste Management Board, Bay Area Air Quality Management District, East Bay Municipal Utilities District, and the United States Department of Energy.

Specifically, Mr. Kovach has performed Phase I Environmental Site Assessments, Environmental Transaction Screens, Property Condition Assessments (PCAs), Regulatory Compliance Assessments, Asbestos sampling, Lead-based Paint sampling, Radon Studies, Lead-in-water sampling, permit compliance, hazardous waste storage and handling, air quality monitoring, and environmental emergency responses.

Finally, Mr. Kovach's diversity of experience with residential, industrial, municipal, and commercial environments is a major contribution to Partner Engineering and Science's Associate team in the San Francisco Bay Area and throughout the United States.

Jay Grenfell
National Client Manager

PARTNER
Engineering and Science, Inc.

Education
B.A. in Environmental Science, University of California at Berkeley

Registrations
Registered Environmental Assessor, California, #07798 (program canceled in July 2012)
LEED Accredited Professional, United States Green Building Council

Summary of Professional Experience
Mr. Grenfell has over 14 years experience in the environmental consulting industry and has worked in various disciplines, including regulatory compliance, EH&S, asbestos abatement, air monitoring, Tier II reporting, Phase II ESAs, and environmental due diligence practices, including Phase I ESAs and PCAs. Mr. Grenfell's primary area of expertise is in the environmental due diligence field, where he has performed hundreds of Phase I ESAs and has managed thousands of due diligence projects.

Mr. Grenfell has conducted and managed Phase I ESAs on industrial, office, multi-family, government, retail, and hospitality properties. Most notably, Mr. Grenfell has managed multiple large multi-site due diligence portfolios for varied and demanding clients, including a 300-site portfolio of Class A high-rise office buildings. He has developed scopes of work, mentored field personnel, identified environmental risks, and regularly provides detailed reports within strict deadlines.

Mr. Grenfell is familiar with all aspects of due diligence property assessments and reporting standards, including Fannie Mae DUS, Freddie Mac, HUD, and is especially knowledgeable on EPA's All Appropriate Inquiry and ASTM E1527-05. In addition, he has worked with diverse client groups with unique client-specific scopes of work and reporting requirements.

A sample of Mr. Grenfell's project experience includes:

- Completed hundreds of Phase I ESAs on multi-family properties, commercial office buildings, shopping centers, gasoline stations, hotels, dry cleaners, auto repair shops, and industrial facilities, including a former blueprint and film manufacturing facility. Areas of concern included former chemical storage/transfer areas, areas of drainage/deteriorated piping, historical groundwater dispersion wells, and former underground storage tanks systems.
- Managed numerous multi-site portfolios, including a 300-site portfolio of Class A high-rise office buildings, at the time valued as the largest real estate transaction in history.
- Reviewed and evaluated hundreds of third-party Phase I, Phase II and Phase III reports
- Conducted eight Phase II Site Assessments at gasoline stations over a four-day period, coordinating and supervising the advancement of soil borings and collected soil and groundwater samples. Documented results in concise, well-written reports.

- Managed a compliance evaluation team at an 8,000 employee, 24-hour aircraft maintenance center, evaluating environmental regulatory compliance. Provided solutions and established protocols for ensuring compliance.
- Conducted 3rd-party reviews of over 150 gasoline stations, documenting previous report findings and providing a matrix listing issues and updated risk-based recommendations.

Currently, Mr. Grenfell provides management and senior review expertise of Phase I ESAs, transaction screens, and other product types, and is extensively involved in project management and client communications, maintaining an emphasis on providing exemplary client service. Mr. Grenfell is responsible for ensuring consistency and quality of due diligence services and ensuring that client-specific requirements are met, as well as the requirements of ASTM and AAI standards. Mr. Grenfell displays excellent written and verbal communication skills, effectively communicating environmental risks in a succinct fashion by distilling assorted information into pertinent findings and conclusions. Mr. Grenfell excels at providing effective risk-based results for multiple demanding client groups.

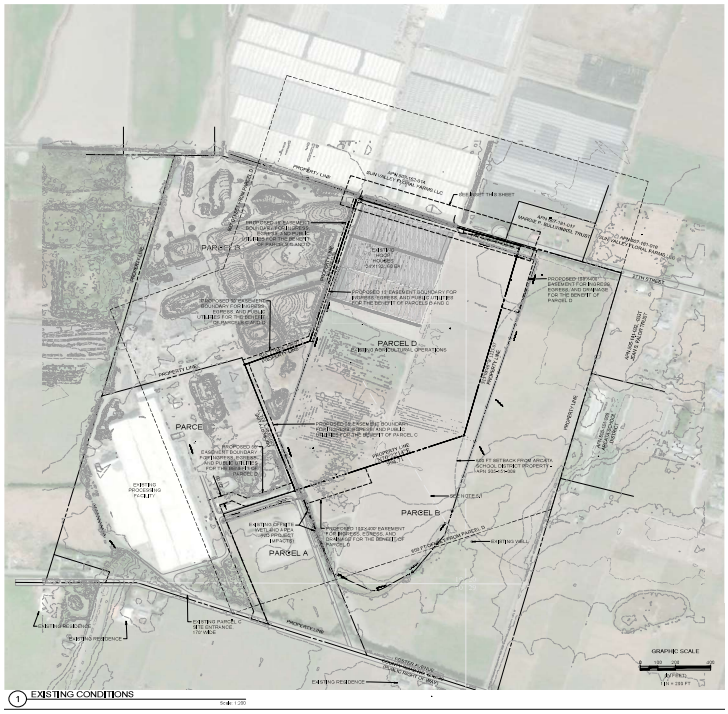
Mr. Grenfell has worked with national and regional lenders, banks, investors, equity stakeholders, and property owners, including:

- Bank of America
- Principal Real Estate
- Wachovia
- Wells Fargo
- Morgan Stanley
- Merrill Lynch
- Prudential
- Nationwide Life
- Bear Stearns
- Blackstone Group
- Principal Financial
- Countrywide
- Capmark Finance
- Cingular Wireless

Mr. Grenfell is also a LEED Accredited Professional (AP) who has studied energy auditing practices in commercial buildings and continues to explore energy efficiency and green business practices in the built environment.

Finally, Mr. Grenfell's diversity across managing projects across industrial, residential, retail, and commercial environments, as well as his diverse project experience, is a major contribution to Partner Engineering and Science's Project Management team.

Final Traffic Impact Study for the Arcata Land Company Commercial Cannabis Project



1 EXISTING CONDITIONS

Source: Wallace Group

Prepared for the County of Humbolt

Submitted by
W-Trans

January 21, 2021

TRAFFIC ENGINEERING
TRANSPORTATION PLANNING
Balancing Functionality and Livability since 1995
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D. Proportional Share Fee Calculations
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Executive Summary

The proposed project is a cannabis cultivation facility to be located on the north side of Foster Avenue, west of the City of Arcata, in the County of Humboldt. Based on standard ITE rates, the project would be expected to result in 232 new trips per day at peak operation, including 40 trips during the a.m. peak hour and 37 trips during the p.m. peak hour, though the actual peak hour trip generation is expected to be less since the beginning and end of shifts would not coincide with the peak hours of the transportation network.

The study intersections of Sunset Avenue/US 101 South Ramps, Sunset Avenue/US 101 North Ramps, Janes Road/11th Street, SR 255/Jackson Ranch Road, and SR 255/V Street all have a calculated collision rate above the statewide average for similar facilities. The City and Caltrans may wish to review the need for additional signing at Sunset Avenue/US 101 South Ramps to notify drivers of conditions that require their attention. Consolidation of Sunset Avenue/US 101 North Ramps and Sunset Avenue/LK Wood Boulevard into a single roundabout with five legs would have a beneficial impact on safety at this location. Increased enforcement may help to reduce the frequency of DUI collisions at SR 255/Jackson Ranch Road and right-of-way infractions at SR 255/V Street.

All study intersections would be expected to operate at LOS C or better overall under Existing and Baseline Conditions without or with the addition of project-related trips, though roundabouts would be needed at Foster Avenue/Alliance Road and Sunset Avenue/US 101 North Ramps to accommodate the anticipated Future volumes, as documented in the *Central Arcata Areawide Traffic Study* (CAATS). With these improvements and with the addition of project traffic to Future volumes, all intersections would operate acceptably. It is recommended that the applicant pay proportional share fees toward the cost of the roundabout projects needed at Foster Avenue/Alliance Road and Sunset Avenue/US 101 North Ramps consistent with the Traffic Mitigation Fee Program established by the CAATS.

As of the date of this analysis, the County of Humboldt has not yet established thresholds of significance related to VMT so the project was assessed based on guidance provided by the California Governor's Office of Planning and Research (OPR) in the publication *Transportation Impacts (SB 743) CEQA Guidelines Update and Technical Advisory*. Under this guidance and using data contained in the countywide travel demand model, the project is expected to have a less-than-significant transportation impact on VMT.

A connected pedestrian network would be provided on-site consisting of sidewalks and pathways. The lack of existing pedestrian facilities on Foster Avenue or transit service within acceptable walking distance does not result in an impact given the rural setting. Existing bicycle facilities in the project vicinity, including the shared use of minor streets, provide adequate access for bicyclists and connectivity would be further improved upon completion of planned bicycle projects in the area. Although not considered walkable, employees could use a bicycle to reach nearby transit stops. It is recommended that a minimum of 12 bicycle parking spaces be provided on-site to encourage employees to commute via bicycle.

Sight lines on Foster Avenue are adequate to accommodate all turns into and out of the project driveway and no channelization in the form of a turn pocket would not be warranted. To maintain existing sight lines, any new signage to be located along the project frontage should be placed outside of the vision triangle of a driver waiting on the driveway.

Introduction

This report presents an analysis of the potential traffic impacts that would be associated with development of a cannabis cultivation facility to be located on the north side of Foster Avenue in the County of Humboldt. The traffic study was completed in accordance with the criteria established by the County of Humboldt, reflects a scope of work requested by County staff, and is consistent with standard traffic engineering techniques.

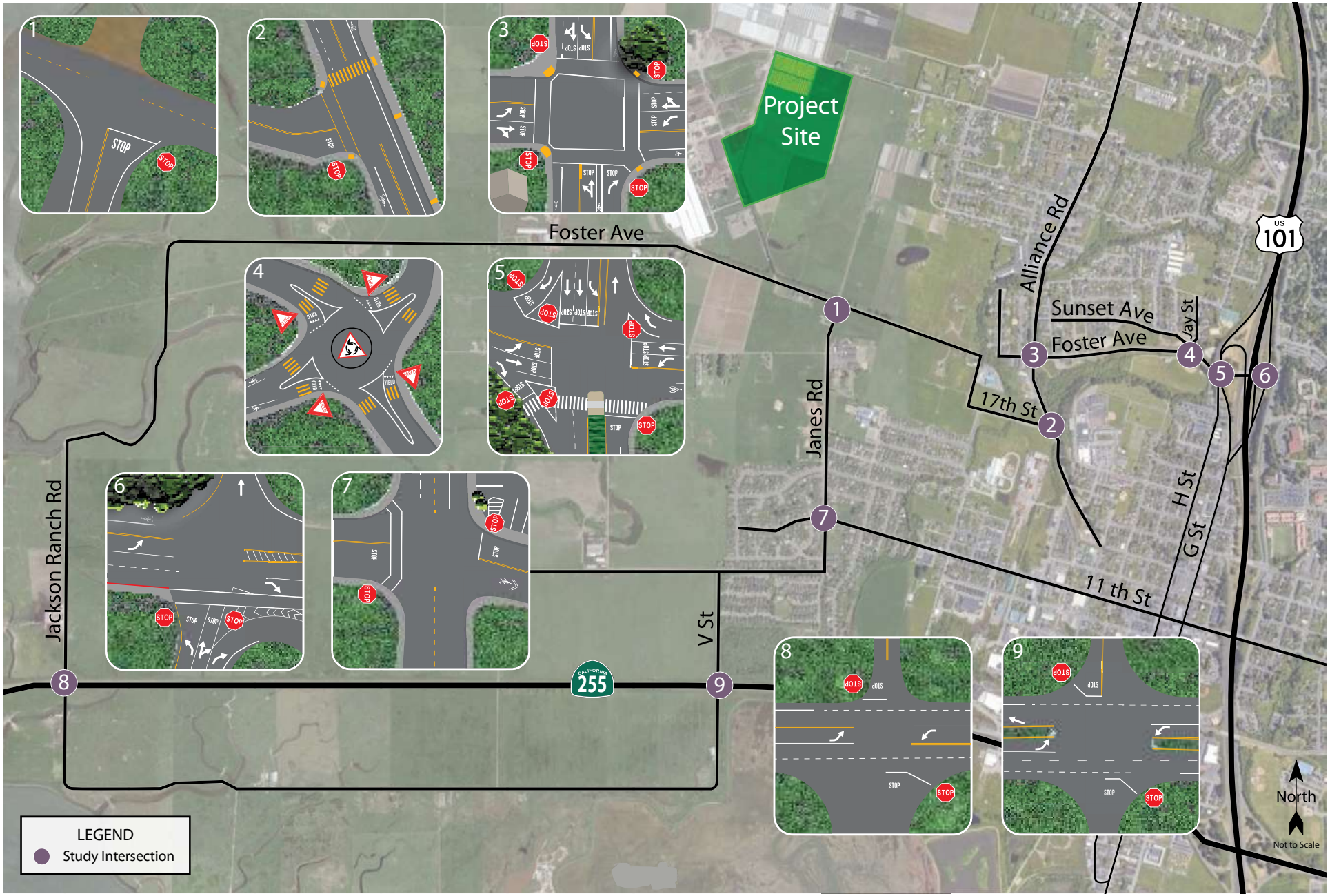
Prelude

The purpose of a traffic impact study is to provide County staff and policy makers with data that they can use to make an informed decision regarding the potential transportation impacts of a proposed project, and any associated improvements that would be required in order to mitigate these impacts to an acceptable level under CEQA, the City's General Plan, or other policies. Impacts relative to access for pedestrians, bicyclists, and to transit are addressed in the context of the CEQA criteria. Consistent with SB 743, the project's transportation impacts were analyzed using VMT. While no longer a part of the CEQA review process, vehicular traffic service levels at key intersections were evaluated for consistency with General Plan policies by determining the number of new trips that the proposed use would be expected to generate, distributing these trips to the surrounding street system based on anticipated travel patterns specific to the proposed project, then analyzing the impact the new traffic would be expected to have on the study intersections.

Project Profile

The project site is located at 3318 Foster Avenue, west of Arcata in the County of Humboldt. The proposed project is a partial mixed-light and outdoor cannabis cultivation facility and would be located on a parcel contiguous to a recently approved manufacturing, processing, and distribution business. As proposed, the project includes approximately 28.4 acres of cultivation and would require up to 116 employees during the peak season, though 40 of these employees would be shared with the already-approved processing facility so the project would result in a net increase of 76 new employees. Most employees would work shifts scheduled to begin between 6:00 and 6:30 a.m. and end between 3:00 and 3:30 p.m., though 15 employees would work a shift that would begin late morning and end in the evening in order to support the proposed light deprivation cultivation process. Although there would be an internal access road connecting to the existing Sun Valley Group Farms operation to the north near the terminus of 27th Street, the connection would be gated so all access to the site would occur at the existing driveway on Foster Avenue.

The location of the project site is shown in Figure 1.



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Final Traffic Impact Study for the Arcata Land Company Commercial Cannabis Project

Figure 1 – Study Area and Existing Lane Configurations

W-Trans

Transportation Setting

Operational Analysis

Study Area and Periods

The study area consists of the section of Foster Avenue fronting the project site as well as the following intersections:

1. Foster Avenue/Janes Road
2. Alliance Road/17th Street
3. Foster Avenue/Alliance Road
4. Sunset Avenue/Foster Avenue-Jay Street
5. Sunset Avenue/US 101 South Ramps
6. Sunset Avenue/US 101 North Ramps
7. Janes Road/11th Street
8. Samoa Boulevard (SR 255)/Jackson Ranch Road
9. Samoa Boulevard (SR 255)/V Street

Operating conditions during the weekday a.m. and p.m. peak periods were evaluated to capture the highest volumes on the local transportation network. The morning peak hour typically occurs between 7:00 and 9:00 a.m. and reflects conditions during the home to work or school commute, while the p.m. peak hour occurs between 4:00 and 6:00 p.m. and typically reflects the highest level of congestion during the homeward bound commute.

Study Intersections

Foster Avenue/Janes Road is a three-legged intersection stop-controlled on the northbound Janes Road approach.

Alliance Road/17th Street is a three-legged intersection with a stop control on the eastbound 17th Street approach. A yellow basic crosswalk is striped on the west leg and a yellow continental crosswalk is striped on the north leg. Class II bike lanes are present on Alliance Road.

Foster Avenue/Alliance Road is a four-legged intersection with stop controls on all four approaches and crosswalks on all four legs. Class II bike lanes are present on the north, south, and east legs.

Sunset Avenue/Foster Avenue-Jay Street is a modern roundabout with crosswalks and raised splitter islands on all four legs of the intersection; the center island is mountable. Class II bike lanes are present on the Foster Avenue leg.

Sunset Avenue/US 101 South Ramps is a four-legged, all-way stop-controlled intersection with a crosswalk on the south leg only. The north leg is composed of the US 101 southbound on- and off-ramps and G and H Streets form a one-way couplet on the south leg, with G Street serving the northbound approach to the intersection and H Street carrying southbound traffic away from intersection. A Class II bike lane is present on the westbound approach and the eastbound approach is considered a Class III bike route.

Sunset Avenue/US 101 North Ramps is a four-legged intersection with the off- and on-ramps forming the south and north legs of the intersection respectively. The off-ramp approach is stop-controlled and has a crosswalk connecting through to LK Wood Boulevard. Class II bike lanes are marked on Sunset Avenue.

Janes Road/11th Street is a four-legged intersection with stop-controls on the eastbound and westbound 11th Street approaches. There is a crosswalk on the west leg.

Samoa Boulevard (SR 255)/Jackson Ranch Road is a four-legged intersection with stop controls on the northbound and southbound minor street approaches. The north leg is Jackson Ranch Road and the south leg is Old Samoa Road.

Samoa Boulevard (SR 255)/V Street is a four-legged intersection with stop controls on the northbound and southbound minor street approaches. The north leg is V Street and the south leg is Old Samoa Road. SR 255 transitions to a single lane in each direction to the west of the intersection.

The locations of the study intersections along with the existing lane configurations and controls are shown in Figure 1.

Collision History

The collision history for the study area was reviewed to determine any trends or patterns that may indicate a safety issue. Collision rates were calculated based on records available from the California Highway Patrol, as published in their Statewide Integrated Traffic Records System (SWITRS) reports. The most current five-year period available is April 1, 2014 through March 31, 2019.

As presented in Table 1, the calculated collision rates for the study intersections were compared to average collision rates for similar facilities statewide, as indicated in *2016 Collision Data on California State Highways*, California Department of Transportation (Caltrans). These average rates statewide are for intersections in the same environment (urban, suburban, or rural), with the same number of approaches (three or four), and the same controls (all-way stop, two-way stop, or roundabout). As indicated in the table, five of the nine study intersections experienced collisions at rates higher than the statewide average for similar facilities. The collision rate calculations are provided in Appendix A and the intersections with above-average collision rates are discussed below.

Table 1 – Collision Rates at the Study Intersections

Study Intersection	Number of Collisions (2014-2019)	Calculated Collision Rate (c/mve)	Statewide Average Collision Rate (c/mve)
1. Foster Ave/Janes Rd	0	0.00	0.14
2. Alliance Rd/17th St	1	0.07	0.08
3. Foster Ave/Alliance Rd	1	0.05	0.19
4. Sunset Ave/Foster Ave-Jay St	1	0.08	0.13
5. Sunset Ave/US 101 S Ramps	8	**0.33**	0.19
6. Sunset Ave/US 101 N Ramps	5	**0.22**	0.13
7. Janes Rd/11th St	2	**0.34**	0.13
8. SR 255/Jackson Ranch Rd	4	**0.30**	0.22
9. SR 255/V St	5	**0.37**	0.23

Note: c/mve = collisions per million vehicles entering; **Bold** = collision rate higher than the Statewide average

Further review was performed to determine any trends or concerns present at those locations with above-average collision rates. It is noted that the statewide rates are for highway facilities that generally carry much higher

volumes; because the volumes are relatively low at some of the study intersections, even a minimal number of crashes results in an above-average collision rate. Consideration was therefore given not just to the rate, but also to the actual number of crashes reported.

Sunset Avenue/US 101 South Ramps – Of the eight reported collisions, six involved objects, one was a broadside, and one was a rear-end. All six of the object collisions involved a motorist travelling southbound on either the off-ramp approach or moving away from the intersection on H Street. On the off-ramp, three collisions with objects occurred between 200 and 250 feet north of the intersection, which is near a horizontal curve, and all three were attributed to improper turning. On H Street, three collisions with objects occurred between 10 and 70 feet south of the intersection; two were attributed to improper turning and one was due to unsafe speed. The City and Caltrans may wish to review the need for additional signing at this location to notify drivers of conditions that require their attention.

Sunset Avenue/US 101 North Ramps – Five collisions occurred during the study period, consisting of three collisions with objects, one sideswipe, and one overturn. The proximity to the adjacent intersection at Sunset Avenue/LK Wood Boulevard results in an unusual striping configuration and an elongated crosswalk extending from the west side of the study intersection to the east side of LK Wood Boulevard. The recommendation presented in the *Central Arcata Areawide Traffic Study,* including consolidation of the two intersections into a single roundabout with five legs, would be expected to have a beneficial impact on safety at this location.

Janes Road/11th Street – Both collisions at this location were broadsides between southbound and westbound vehicles that occurred between 4:00 and 4:30 p.m. Sight lines appear to be adequate, and speed was *not* indicated as a collision factor, so it is unclear what precipitated this trend. Because the calculation rate has the volume in the denominator, the rate at this location is quite high despite the fact that there were only two collisions in five years. Further, the most recent collision occurred in September 2015 so the latter three years of the study period did not have a single collision; as a study period of two to three years is often considered adequate, no mediation appears necessary.

SR 255/Jackson Ranch Road – Of the four collisions that occurred within the study period, one was a broadside, one was a rear-end, and two collisions were with objects. The rear-end collision and one of the object-related collisions were attributed to driving under the influence (DUI). Given the lack of adequate data points to determine a clear trend, no remedial measures are suggested, though increased enforcement may help to reduce the frequency of DUI collisions.

SR 255/V Street – Four of the five total collisions that occurred within the study period were broadside crashes with the other being a collision with an object. All four of the broadside collisions involved a motorist entering the intersection from the southbound V Street approach and three were attributed to right-of-way violations. The width of the intersection is approximately 85 feet wide between the opposing minor street limit lines with two travel lanes in each direction, a left-turn lane, a median, and shoulders, which results in a more time-consuming turning movement from the stop-controlled approaches. It appears that sight lines are adequate for the posted 55-mph speed limit, though increased enforcement of right-of-way laws may be beneficial at this location.

Alternative Modes

Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, curb ramps, curb extensions, and various streetscape amenities such as lighting, benches, etc. While there are limited pedestrian facilities on many of the streets in the study area, there are no pedestrian facilities on the segment of Foster Avenue to the west of McDaniel Slough, as might be expected for the rural setting.

- **Alliance Road** – Sidewalks exist continuously on Alliance Road on either one side of the street or the other, with crosswalks connecting locations where the sidewalk switches from one side to the other. Additionally, crosswalks exist at the study intersections.

- **Foster Avenue (East of McDaniel Slough)** – Intermittent sidewalk coverage is provided on Foster Road with gaps between Alliance Road and Jay Street. There is a multi-use pathway on the south side of the street that connects to existing facilities at Jay Street and Alliance Road. Curb ramps and crosswalks are present at side-street approaches. Lighting is provided by overhead streetlights.

- **Sunset Avenue** – Continuous sidewalks are provided on the south side of this street east of Jay Street where there is a connection to the regional trail system. The geometrics of the intersections with US 101 North and LK Wood Boulevard result in pedestrians traveling a substantial distance in crossing both of these intersecting streets in a configuration that is difficult and results in undesirable crossing conditions.

Bicycle Facilities

The *Highway Design Manual*, Caltrans, 2017, classifies bikeways into four categories:

- **Class I Multi-Use Path** – a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.
- **Class II Bike Lane** – a striped and signed lane for one-way bike travel on a street or highway.
- **Class III Bike Route** – signing only for shared use with motor vehicles within the same travel lane on a street or highway.
- **Class IV Bikeway** – also known as a separated bikeway, a Class IV Bikeway is for the exclusive use of bicycles and includes a separation between the bikeway and the motor vehicle traffic lane. The separation may include, but is not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking.

In the project area, Class II bike lanes exist on sections of Alliance Road, Sunset Avenue and Foster Avenue. Additionally, 11th Street is classified as a Class III bike route between Janes Road and Redwood Park and there is a multi-use pathway on the south side of Foster Avenue between the intersections of Alliance Road/17th Street and Sunset Avenue/Foster Avenue-Jay Street. Bicyclists ride in the roadway and/or on sidewalks along other streets within the project study area. Table 2 summarizes the existing and planned bicycle facilities in the surrounding vicinity, as contained in the *City of Arcata Pedestrian & Bicycle Master Plan,* City of Arcata, 2010 and the *Humboldt Regional Bicycle Plan,* Humboldt County Association of Governments, 2018.

Table 2 – Bicycle Facility Summary				
Status **Facility**	**Class**	**Length (miles)**	**Begin Point**	**End Point**
Existing				
Foster Ave Path	I	0.46	Alliance Rd	Sunset Ave
Alliance Rd	II	1.30	Spear Ave	11th St
Sunset Ave	II	0.13	G St	L.K. Wood Blvd
Foster Ave	II	0.37	Jay St	Alliance Rd
11th St	III	1.60	Janes Rd	Redwood Park
Planned				
Annie & Mary Rail Trail	I	3.50	West End Rd	Arcata Skate Park
Hammond Trail	I	1.40	Western City Limits	Annie & Mary Rail Trail
Sunset Ave	II	0.45	Western Ave	G St
11th St	II	0.30	Q St	Janes Rd
Foster Ave	III	0.40	Janes Rd	Alliance Rd
Janes Rd-V St	III	1.10	SR 255	Foster Ave
Baldwin St	III	0.22	Cahill Park	Sunset Ave

Sources: *City of Arcata Pedestrian & Bicycle Master Plan*, City of Arcata, 2010; *Humboldt Regional Bicycle Plan*, Humboldt County Association of Governments, 2018

Transit Facilities

The Humboldt Transit Authority (HTA) provides fixed route bus service in the City of Arcata through the Arcata and Mad River Transit System (AMRTS) route, the Willow Creek-Arcata route, and the Redwood Transit System (RTS) route. Dial-a-ride, also known as paratransit, or door-to-door service, is available for those who are unable to independently use the transit system due to a physical or mental disability. Arcata Dial-A-Ride service is designed to serve the needs of individuals with disabilities throughout Humboldt County.

AMRTS Gold Route provides loop service to destinations throughout the City of Arcata and stops near the intersection of Foster Avenue/Alliance Road approximately 1.3 miles from the project site, so while not within what is typically considered an acceptable walking distance of one-half a mile, a bicycle could be used to close the gap between the transit stop and the project site. Gold Route operates Monday through Friday with approximately one-hour headways between 7:00 a.m. and 10:00 p.m. AMRTS Orange Route provides Saturday service with approximately one-hour headways between 7:00 a.m. and 7:00 p.m.

The Redwood Transit System (RTS) route provides regional service between the City of Arcata and surrounding communities in Humboldt County. RTS stops at the Arcata Transit Center between 9th Street and 10th Street, a bikeable distance of approximately two miles from the project site. RTS operates Monday through Friday with approximately one- to three-hour headways between 6:30 a.m. and 10:00 p.m. Saturday and Sunday service operates with similar headways between 9:00 a.m. and 8:00 p.m.

The Willow Creek-Arcata route provides regional service between the City of Arcata and Willow Creek and stops at Arcata High School approximately 1.4 miles from the project site. The route is timed to align with the high school schedule on weekdays and has limited service on weekends.

Two bicycles can be carried on most HTA buses. Bike rack space is on a first come, first served basis. Additional bicycles are allowed on HTA buses at the discretion of the driver.

Capacity Analysis

Intersection Level of Service Methodologies

Level of Service (LOS) is used to rank traffic operation on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, Level of Service A represents free flow conditions and Level of Service F represents forced flow or breakdown conditions. A unit of measure that indicates a level of delay generally accompanies the LOS designation.

The study intersections were analyzed using methodologies published in the *Highway Capacity Manual* (HCM), 6th Edition, Transportation Research Board, 2018. This source contains methodologies for various types of intersection control, all of which are related to a measurement of delay in average number of seconds per vehicle.

The Levels of Service for the intersections with side-street stop controls, or those which are unsignalized and have one or two approaches stop controlled, were analyzed using the "Two-Way Stop-Controlled" (TWSC) intersection capacity method from the HCM. This methodology determines a level of service for each minor turning movement by estimating the level of average delay in seconds per vehicle. Results are presented for individual movements together with the weighted overall average delay for the intersection.

The study intersections with stop signs on all approaches were analyzed using the "All-Way Stop-Controlled" (AWSC) intersection methodology from the HCM. This methodology evaluates delay for each approach based on turning movements, opposing and conflicting traffic volumes, and the number of lanes. Average vehicle delay is computed for the intersection as a whole and is then related to a Level of Service.

Intersections that are currently or are proposed to be controlled by modern roundabouts were evaluated using the FHWA Roundabout Method, also contained within the Unsignalized Methodology of the HCM. This methodology determines intersection operation using the gap acceptance method using basic geometric and volume data to calculate entering and circulating flows. This information is then translated to an overall average vehicle delay, with LOS break points at the same delays as used in the signalized methodology. Because the HCM roundabout methodology is relatively unsophisticated, the more advanced SIDRA roundabout analysis software was utilized in any cases where the basic HCM methodology predicts operation worse than LOS A.

The ranges of delay associated with the various levels of service are indicated in Table 3.

Table 3 – Intersection Level of Service Criteria			
LOS	**Two-Way Stop-Controlled (TWSC)**	**All-Way Stop-Controlled (AWSC)**	**Roundabout**
A	Delay of 0 to 10 seconds. Gaps in traffic are readily available for drivers exiting the minor street.	Delay of 0 to 10 seconds. Upon stopping, drivers are immediately able to proceed.	Delay of 0 to 10 seconds.
B	Delay of 10 to 15 seconds. Gaps in traffic are somewhat less readily available than with LOS A, but no queuing occurs on the minor street.	Delay of 10 to 15 seconds. Drivers may wait for one or two vehicles to clear the intersection before proceeding from a stop.	Delay of 10 to 20 seconds.
C	Delay of 15 to 25 seconds. Acceptable gaps in traffic are less frequent, and drivers may approach while another vehicle is already waiting to exit the side street.	Delay of 15 to 25 seconds. Drivers will enter a queue of one or two vehicles on the same approach and wait for vehicle to clear from one or more approaches prior to entering the intersection.	Delay of 20 to 35 seconds.
D	Delay of 25 to 35 seconds. There are fewer acceptable gaps in traffic, and drivers may enter a queue of one or two vehicles on the side street.	Delay of 25 to 35 seconds. Queues of more than two vehicles are encountered on one or more approaches.	Delay of 35 to 55 seconds.
E	Delay of 35 to 50 seconds. Few acceptable gaps in traffic are available, and longer queues may form on the side street.	Delay of 35 to 50 seconds. Longer queues are encountered on more than one approach to the intersection.	Delay of 55 to 80 seconds.
F	Delay of more than 50 seconds. Drivers may wait for long periods before there is an acceptable gap in traffic for exiting the side streets, creating long queues.	Delay of more than 50 seconds. Drivers enter long queues on all approaches.	Delay of more than 80 seconds.

Reference: *Highway Capacity Manual,* Transportation Research Board, 2018

Traffic Operation Standards

County of Humboldt

The County's LOS standard is specified in Policy C-P5 of the *Humboldt County General Plan,* which states that the County shall strive to maintain LOS C operation on all roadway segments and intersections except for US 101, where LOS D is considered acceptable. For the purposes of this analysis, the standard was applied to the overall operation of the intersection, not any single movement or approach. The policy also states that LOS improvements for automobiles should not adversely affect the LOS or quality of service for other modes of transportation, if possible.

City of Arcata

Because many of the study intersections are located in the City of Arcata rather than County jurisdiction, these intersections were evaluated with respect to operational thresholds previously accepted by the City. The City of Arcata does not have an adopted LOS policy; however, through discussions with City staff as part of our involvement in preparation of the *Central Arcata Areawide Traffic Study*, W-Trans, 2017, an operational threshold of LOS C was identified as being the desired minimum within the City. This threshold is to be applied to the operation of the intersection as whole and not that of any one movement or approach. Further, the City's preference has been not to use traffic signals to achieve acceptable operation, instead using all-way stop controls where feasible or roundabouts where volumes exceed what can be handled by an all-way stop-controlled

intersection. The need for improvements to increase capacity and reduce delay was therefore considered only if the overall intersection delay was projected to exceed 25 seconds.

Existing Conditions

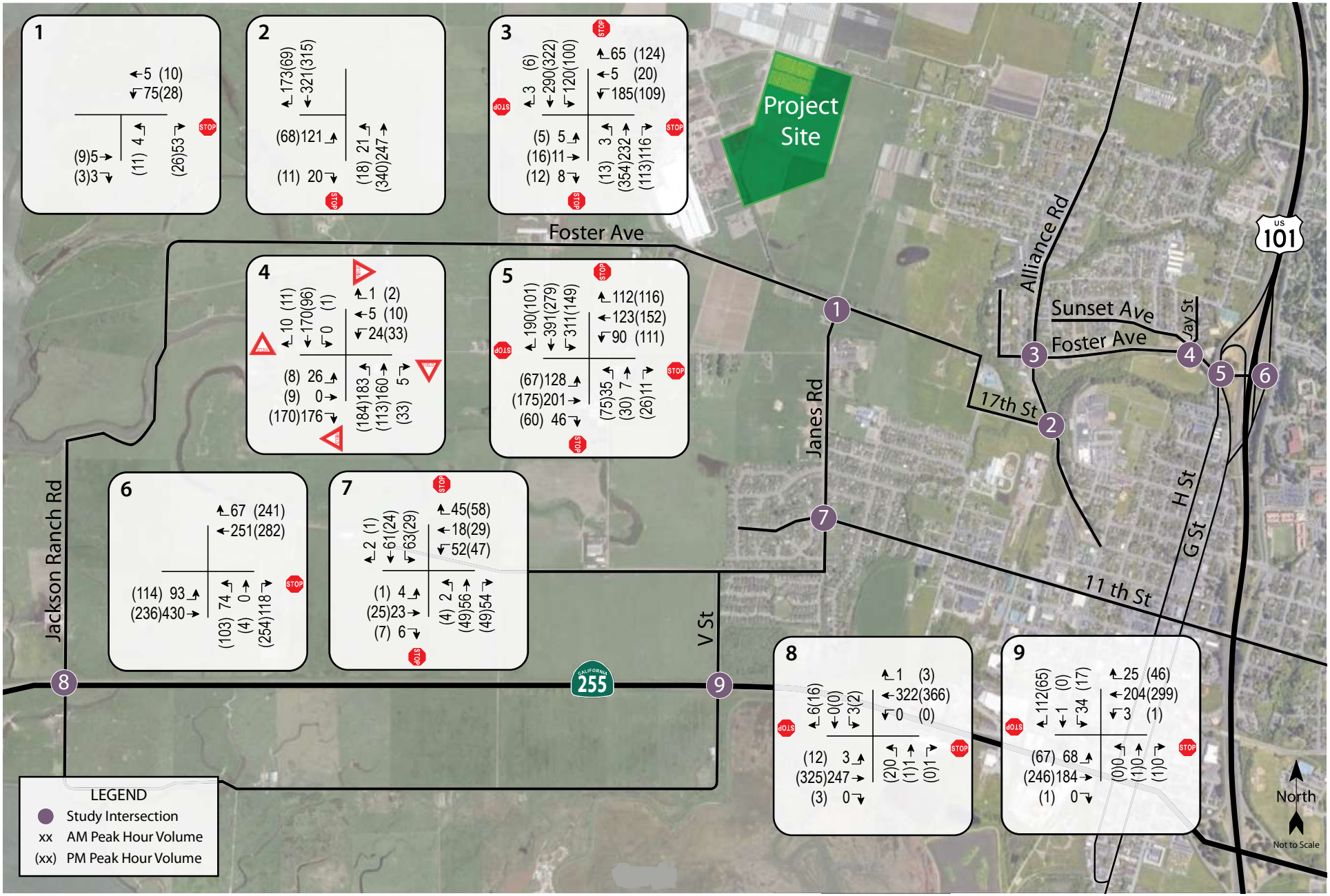
The Existing Conditions scenario provides an evaluation of operation based on existing traffic volumes during the weekday a.m. and p.m. peak periods. This condition does not include project-generated traffic volumes. Volume data was collected in March 2019 at the study intersections on SR 255. For the remaining intersections, data collected in March 2016 for the *Central Arcata Areawide Traffic Study* was also used in this analysis to be consistent with previous planning work completed in the area. All data was collected while local schools, including Humboldt State, were in session. Additionally, the counts were collected prior to the shelter-in-place directives associated with the COVID-19 public health pandemic so the Existing Conditions analysis is representative of typical conditions before the pandemic and could represent volumes that are maintained for some time as businesses recover from the financial fall-out associated with the pandemic.

Under Existing Conditions, all study intersections operate acceptably based on the applicable LOS standards at LOS C or better overall during both peak periods evaluated. A summary of the intersection level of service calculations is contained in Table 4 and copies of the Level of Service calculations for all evaluated scenarios are provided in Appendix B. The Existing traffic volumes are shown in Figure 2.

Table 4 – Existing Peak Hour Intersection Levels of Service

Study Intersection ***Approach***	**AM Peak**		**PM Peak**	
	Delay	**LOS**	**Delay**	**LOS**
1. Foster Ave/Janes Rd	7.2	A	6.1	A
Northbound (Janes Rd) Approach	*8.7*	*A*	*8.7*	*A*
2. Alliance Rd/17th St	3.3	A	1.9	A
Eastbound (17th St) Approach	*19.6*	*C*	*17.4*	*C*
3. Foster Ave/Alliance Rd	13.5	B	16.6	C
4. Sunset Ave/Foster Ave-Jay St	5.3	A	4.7	A
5. Sunset Ave/US 101 S Ramps	14.2	B	11.4	B
6. Sunset Ave/US 101 N Ramps	5.4	A	7.2	A
Northbound (US 101 Off-ramp) Approach	*24.8*	*C*	*21.8*	*C*
7. Janes Rd/11th St	5.5	A	5.9	A
Eastbound (11th St) Approach	*11.3*	*B*	*10.2*	*B*
Westbound (11th St) Approach	*10.8*	*B*	*9.9*	*A*
8. SR 255/Jackson Ranch Rd	0.3	A	0.5	A
Northbound (Old Samoa Rd) Approach	*12.0*	*B*	*15.5*	*C*
Southbound (Jackson Ranch Rd) Approach	*11.6*	*B*	*11.5*	*B*
9. SR 255/V St	3.3	A	2.0	A
Northbound (Old Samoa Rd) Approach	*12.5*	*B*	*13.2*	*B*
Southbound (V St) Approach	*10.5*	*B*	*11.0*	*B*

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*



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Figure 2 – Existing Traffic Volumes

W-Trans

Baseline Conditions

The Baseline Conditions scenario provides an evaluation of operation with traffic from approved or pending projects in the study area that could be operational within the next three to five years. At the request of County staff, projects at the following four Accessor Parcel Numbers (APNs) were included in the Baseline Conditions analysis. The trip generation potential for each Baseline project was estimated using standard rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 10th Edition, 2017.

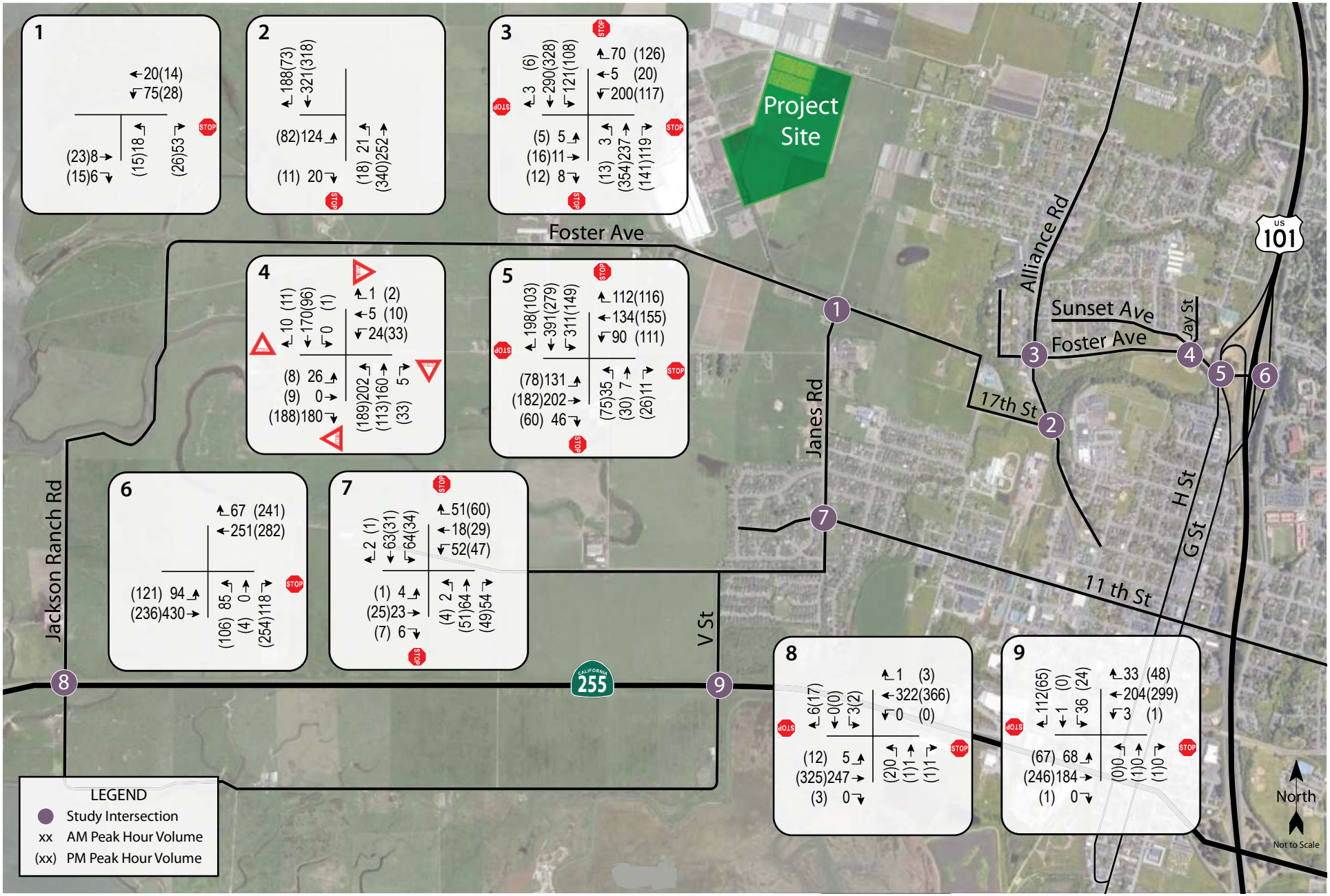
- **APN 507-161-015** is located north of Upper Bay Road and east of Mad River Road and has an application in process for 10,000 square feet of mixed light cannabis cultivation and 4,000 square feet of indoor cultivation. Since the number of employees is unknown, the trip generation was estimated using standard ITE rates based on floor area for the "General Light Industrial" (ITE #110) land use. Based on these rates, the project would be expected to result in an average of 69 daily trips with ten trips during the a.m. peak hour and nine trips during the p.m. peak hour. The majority of patrons would be expected to use the US 101 ramps at Giuntoli Lane to reach the site unless travelling to/from the Central Arcata area, so for the purposes of this analysis it was assumed that one-third of the trips would be to/from Alliance Road south of 17th Street.

- **APN 505-151-009** is located to the west of Stewart Avenue and has an application in process for 10,000 square feet of mixed light cannabis cultivation. Based on standard ITE rates for General Light Industrial and using the total floor area of the canopy as the independent variable, the project would be expected to result in 50 trips per day on average, with seven trips during the a.m. peak hour and six trips during the p.m. peak hour. For the purpose of assigning trips to the surrounding roadway network, it was assumed that one-third of the trips would each be to/from US 101 North at Sunset Avenue, US 101 South at Sunset Avenue, and south on Alliance Road.

- **APN 506-231-010** is the site on which the proposed Arcata Land Company Commercial Cannabis Project would be located. The proposed cultivation project would be located on Parcel D, while a recently approved manufacturing, processing, and distribution business is to be located on Parcel C. The approved uses are not yet operational but are expected to be within the next year. The project was approved with a maximum of 46 employees so the trip generation potential was estimated based on this maximum employment count using standard ITE rates for the General Light Industrial land use. Based on these rates, the approved cannabis manufacturing, processing, and distribution business would be expected to generate 140 trips per day, including 24 trips during the a.m. peak hour and 23 trips during the p.m. peak hour. The same trip distribution assumptions applied for the proposed Arcata Land Company Commercial Cannabis Project were applied to the approved processing uses (see the Trip Distribution section for additional information).

- **APN 506-231-009** is an adjacent parcel to the proposed cultivation project and is on the north side of the street at 2730 Foster Avenue. The details of the application are not finalized, but the most recent proposal includes conversion of a three-acre site to 82,000 square feet of cannabis cultivation as well as reuse of a 17,000 square-foot former mill building to manufacturing, processing, and distribution uses. The project is expected to require up to 25 employees at peak times. Based on this maximum employment count and using standard ITE rates for the General Light Industrial land use, the project would be expected to generate 76 trips per day, including 13 trips during the a.m. peak hour and 12 trips during the p.m. peak hour. The same trip distribution assumptions applied for the approved uses on APN 506-231-010 as well as the proposed Arcata Land Company Commercial Cannabis Project were applied to this project (see the Trip Distribution section for additional information).

Upon the addition of traffic associated the approved or pending Baseline County projects in the study area to Existing volumes, all the study intersections would be expected to continue operating acceptably at LOS C or better overall during both peak hours. Baseline volumes are shown in Figure 3 and these results are summarized in Table 5.



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Figure 3 – Baseline Traffic Volumes

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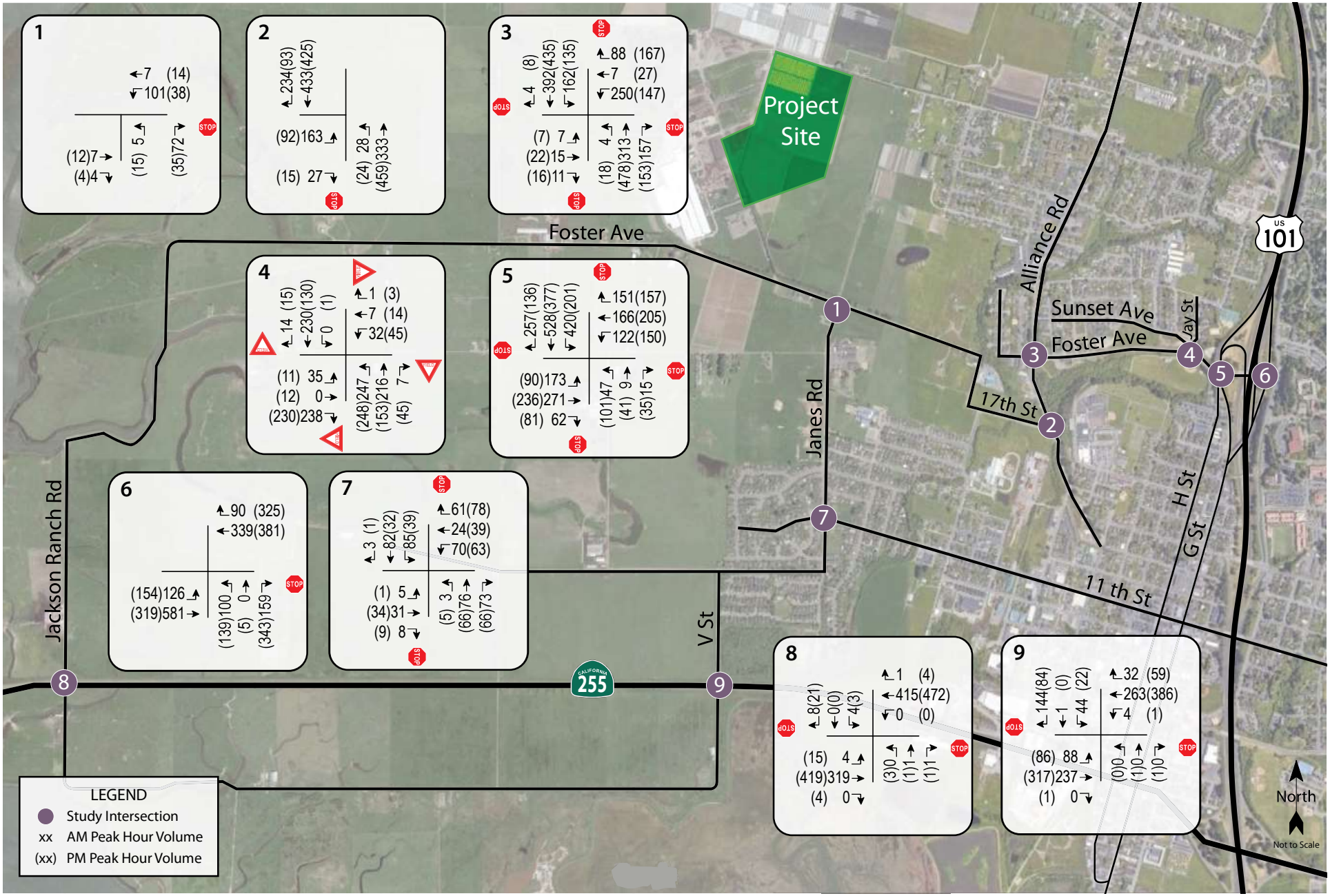
Table 5 – Baseline Peak Hour Intersection Levels of Service					
Study Intersection ***Approach***		**AM Peak**		**PM Peak**	
		Delay	**LOS**	**Delay**	**LOS**
1.	Foster Ave/Janes Rd	6.6	A	4.7	A
	Northbound (Janes Rd) Approach	*9.1*	*A*	*8.9*	*A*
2.	Alliance Rd/17th St	3.4	A	2.2	A
	Eastbound (17th St) Approach	*20.3*	*C*	*18.4*	*C*
3.	Foster Ave/Alliance Rd	14.0	B	17.0	C
4.	Sunset Ave/Foster Ave-Jay St	5.4	A	4.7	A
5.	Sunset Ave/US 101 S Ramps	14.3	B	11.5	B
6.	Sunset Ave/US 101 N Ramps	6.2	A	7.7	A
	Northbound (US 101 Off-ramp) Approach	*28.4*	*D*	*23.4*	*C*
7.	Janes Rd/11th St	5.5	A	5.9	A
	Eastbound (11th St) Approach	*11.4*	*B*	*10.4*	*B*
	Westbound (11th St) Approach	*10.9*	*B*	*10.0*	*B*
8.	SR 255/Jackson Ranch Rd	0.3	A	0.5	A
	Northbound (Old Samoa Rd) Approach	*12.0*	*B*	*15.5*	*C*
	Southbound (Jackson Ranch Rd) Approach	*11.6*	*B*	*11.4*	*B*
9.	SR 255/V St	3.3	A	2.1	A
	Northbound (Old Samoa Rd) Approach	*12.6*	*B*	*13.2*	*B*
	Southbound (V St) Approach	*10.6*	*B*	*11.4*	*B*

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*

Future Conditions

Future traffic volumes were developed using an assumed growth rate of 1.5 percent per year to a horizon year of 2036 to be consistent with the analysis prepared for the *Central Arcata Areawide Traffic Study* (CAATS). For Intersections 1 through 7, a growth factor of 1.35 was applied to the existing volumes since the future horizon year is 20 years from the year that the data was collected in 2016. For Intersections 8 and 9, an exponential growth factor of 1.29 was applied to the existing volumes since the future year is 17 years from the year that the existing count data was collected in 2019. No changes to the existing infrastructure or transportation system were assumed for this scenario.

Under the anticipated Future volumes, all study intersections are expected to operate acceptably based on the applicable standards for each intersection at LOS C or better overall during both peak hours, except for Foster Avenue/Alliance Road and Sunset Avenue/US 101 North Ramps which would both operate unacceptably at LOS D overall during the p.m. peak hour. Future volumes are shown in Figure 4 and Future operating conditions are summarized in Table 6.



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Figure 4 – Future Traffic Volumes

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Table 6 – Future Peak Hour Intersection Levels of Service					
Study Intersection ***Approach***		**AM Peak**		**PM Peak**	
		Delay	**LOS**	**Delay**	**LOS**
1.	Foster Ave/Janes Rd	7.2	A	6.1	A
	Northbound (Janes Rd) Approach	*8.7*	*A*	*8.8*	*A*
2.	Alliance Rd/17th St	5.0	A	2.4	A
	Eastbound (17th St) Approach	*30.8*	*D*	*23.2*	*C*
3.	Foster Ave/Alliance Rd	18.3	C	**32.7**	**D**
	Mini-Roundabout	8.4	A	9.0	A
4.	Sunset Ave/Foster Ave-Jay St	6.0	A	5.5	A
5.	Sunset Ave/US 101 S Ramps	20.1	C	13.0	B
6.	Sunset Ave/US 101 N Ramps	10.9	B	**31.1**	**D**
	Northbound (US 101 Off-ramp) Approach	*54.6*	*F*	*103.2*	*F*
	Roundabout	10.6	B	19.8	C
7.	Janes Rd/11th St	5.8	A	5.9	A
	Eastbound (11th St) Approach	*12.2*	*B*	*10.2*	*B*
	Westbound (11th St) Approach	*11.7*	*B*	*9.9*	*A*
8.	SR 255/Jackson Ranch Rd	0.3	A	0.5	A
	Northbound (Old Samoa Rd) Approach	*12.8*	*B*	*15.5*	*C*
	Southbound (Jackson Ranch Rd) Approach	*12.6*	*B*	*11.5*	*B*
9.	SR 255/V St	3.5	A	2.0	A
	Northbound (Old Samoa Rd) Approach	*13.6*	*B*	*13.2*	*B*
	Southbound (V St) Approach	*11.1*	*B*	*11.0*	*A*

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics;* **Bold** text denotes unacceptable operation; Shaded cells = conditions with recommended improvements

The CAATS identified the need for short-term improvements at Foster Avenue/Alliance Road consisting of striping modifications to provide dedicated turn lanes and installation of a mini-roundabout to accommodate the anticipated long-term growth. The striping improvements have already been completed so the new intersection geometry was included in all scenarios of this analysis; however, consistent with the results of the CAATS, installation of a mini-roundabout would be needed to achieve acceptable operation under Future Conditions.

Also recommended in the CAATS was consolidation of the two closely-spaced intersections of Sunset Avenue with the US 101 North Ramps and LK Wood Boulevard into a five-leg roundabout. This improvement would be expected to result in sufficient right-of-way to include a separated bikeway or cycle track on the south side of Sunset Avenue between the US 101 South Ramps and LK Wood Boulevard. With installation of a mini-roundabout at Foster Avenue/Alliance Road and a roundabout at Sunset Avenue/US 101 North Ramps, all study intersections would operate acceptably. Concept layouts for these improvements are included in Appendix C.

It is noted that volumes associated with each of the six proposed projects within the City of Arcata that were assessed individually in the CAATS could reasonably be expected to be included in the anticipated Future volumes since a growth factor methodology was applied; therefore trips associated with these projects were not added to the Future volumes to avoid double-counting trips. It was recommended in the CAATS that no improvements be

made beyond those that are needed for Future Conditions estimated by a growth factor to avoid providing excess capacity, which must often come at the expense of pedestrian and bicycle safety and comfort.

Project Description

As proposed, the project includes approximately 28.4 acres of cannabis cultivation and would require up to 116 employees during the peak season, though 40 of these employees would be shared with an already-approved processing facility on-site so the project would result in a net increase of 76 new employees. The permitted processing facilities are located on Parcel C, while the proposed cultivation facilities would be located on Parcel D. Most employees would work shifts scheduled to begin between 6:00 and 6:30 a.m. and end between 3:00 and 3:30 p.m., though 15 employees would work a shift that would begin late morning and end in the evening in order to support the proposed light deprivation cultivation process. All access to the site would occur at the existing driveway on Foster Avenue. The project site plan is shown in Figure 5.

Trip Generation

Numerous trip generation rates and categories in the *Trip Generation Manual*, 10th Edition, 2017, published by the Institute of Transportation Engineers (ITE) were explored in determining the potential trip generation associated with the proposed project since the manual does not have any published standard rates for cannabis cultivation land uses. It was determined that cannabis cultivation could be classified as a light industrial use so standard rates for "General Light Industrial" (Land Use #110) were further examined.

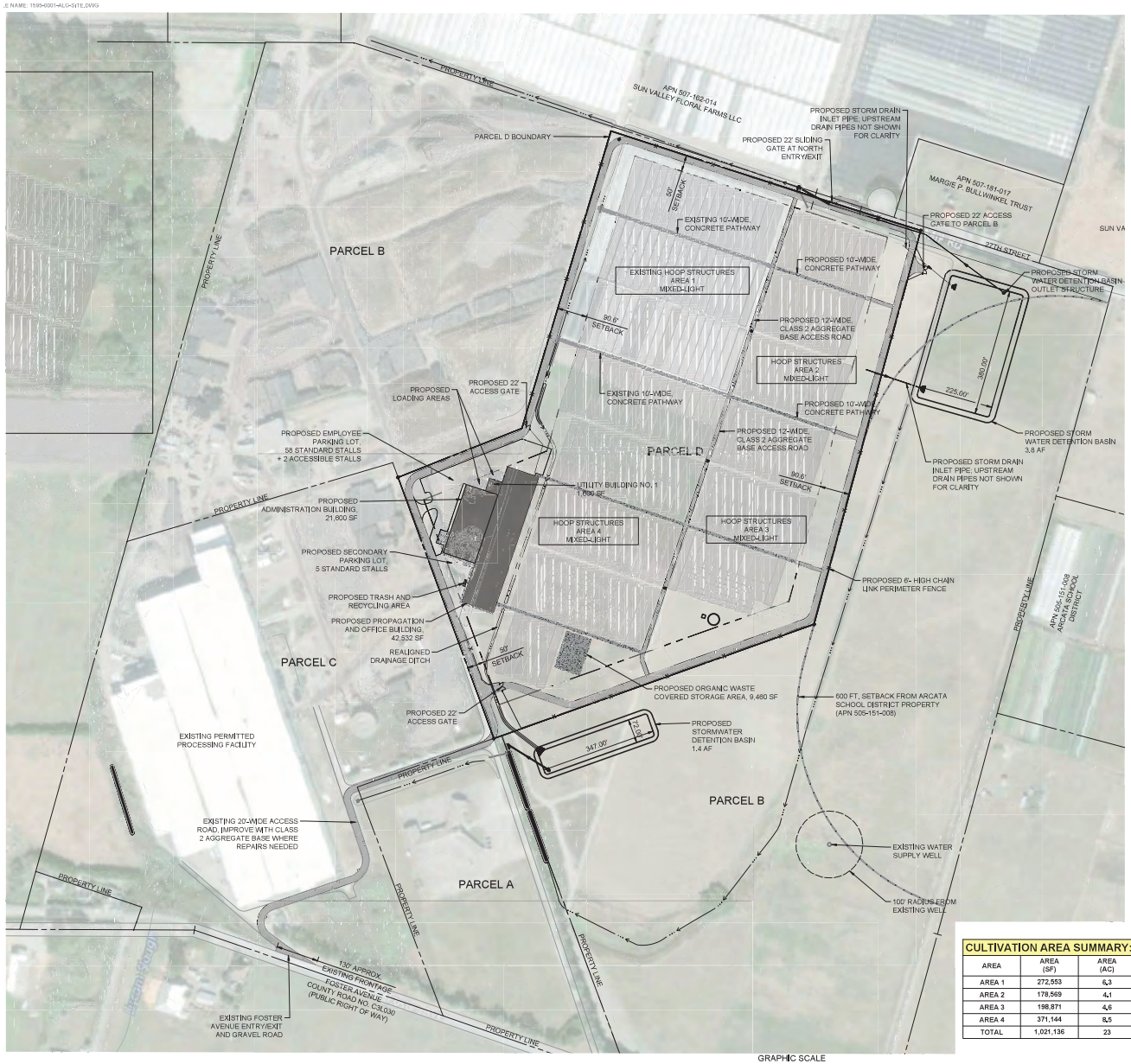
A review of standard rates for light industrial uses and a comparison of those based on area versus those based on employees indicate that the average ratio between employees and floor space is about 770 square feet per employee. For a total of 1,237,104 square feet (28.4 acres) of light industrial space, this would translate to an anticipated work force of about 1,600 persons. The project anticipates a maximum of 76 new employees during the peak season so standard rates based on floor area appear unreasonable and would substantially overestimate the trip generation potential. Because the proposed uses require such substantial floor area dedicated to each employee it was determined that standard rates for General Light Industrial uses based on employees, rather than floor area, would provide a more accurate estimate of the trip generation potential of the project.

Based on a total of 76 net new employees, the proposed project would be expected to result in 232 new trips per day at peak operation, including 40 trips during the a.m. peak hour and 37 trips during the p.m. peak hour. As is the case with all standard trip generation rates, although employees are the independent variable, trips generated by all aspects of the use are included, so trips associated with deliveries, visitors, shipments, and other activities are reflected in the rate and resulting trip estimates. The trip generation estimate, as approved by County staff, is summarized in Table 7.

Table 7 – Trip Generation Summary

Land Use	Units	Daily		AM Peak Hour			PM Peak Hour		
		Rate	Trips	Trips	In	Out	Trips	In	Out
General Light Industrial	76 employees	3.05	232	40	33	7	37	8	29

It should be noted that the daily trip generation shown in the table above is likely conservative for the project since all trips associated with delivery of products would be internal to the adjacent processing facility, meaning that they would not occur on the surrounding street network. The peak hour trip generations are also likely conservative since employees would work shifts scheduled to begin and end outside the peak periods for the transportation network so employees would be expected to generate few trips during the critical peak hours. The trip generation numbers are therefore expected to result in a conservative assessment of the project's potential effects.



CULTIVATION AREA SUMMARY:

AREA	AREA (SF)	AREA (AC)	192' LONG HOOP HOUSE	177' LONG HOOP HOUSE	144' LONG HOOP HOUSE	TOTAL HOOP HOUSE COUNT
AREA 1	272,553	6.3	36	18	0	54
AREA 2	178,569	4.1	23	11	0	34
AREA 3	198,871	4.6	35	0	2	37
AREA 4	371,144	8.5	72	0	0	72
TOTAL	1,021,136	23	166	29	2	197

North

Not to Scale

Source: Wallace Group 8/20

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Figure 5 – Site Plan

Trip Distribution

The pattern used to allocate new project trips to the street network was determined based on a review of the existing count data, familiarity with the area and surrounding region, and likely origins and destinations for employees and material deliveries. The applicant was consulted to learn where employees of the adjacent Sun Valley Farms operation live as well as the path that trucks needed for deliveries and shipments would be expected to take. The highest number of employees are expected to live to the south in Eureka, which has the County's largest housing supply; these employees are anticipated to use the US 101 South Ramps at Sunset Avenue. A relatively even number of employees are anticipated to live in Arcata and McKinleyville and would either use 11th Street east of Janes Road or the US 101 North Ramps at Sunset Avenue, respectively. A small percentage of trips are anticipated via SR 255 to the west of Jackson Ranch Road, while most origins and destinations for truck trips are expected to be to the south on US 101, though trucks are expected to use SR 255, V Street, and Janes Road to reach the site to avoid the more heavily travelled intersections along Sunset Avenue.

The applied trip distribution assumptions are shown in Table 8 and on Figure 6.

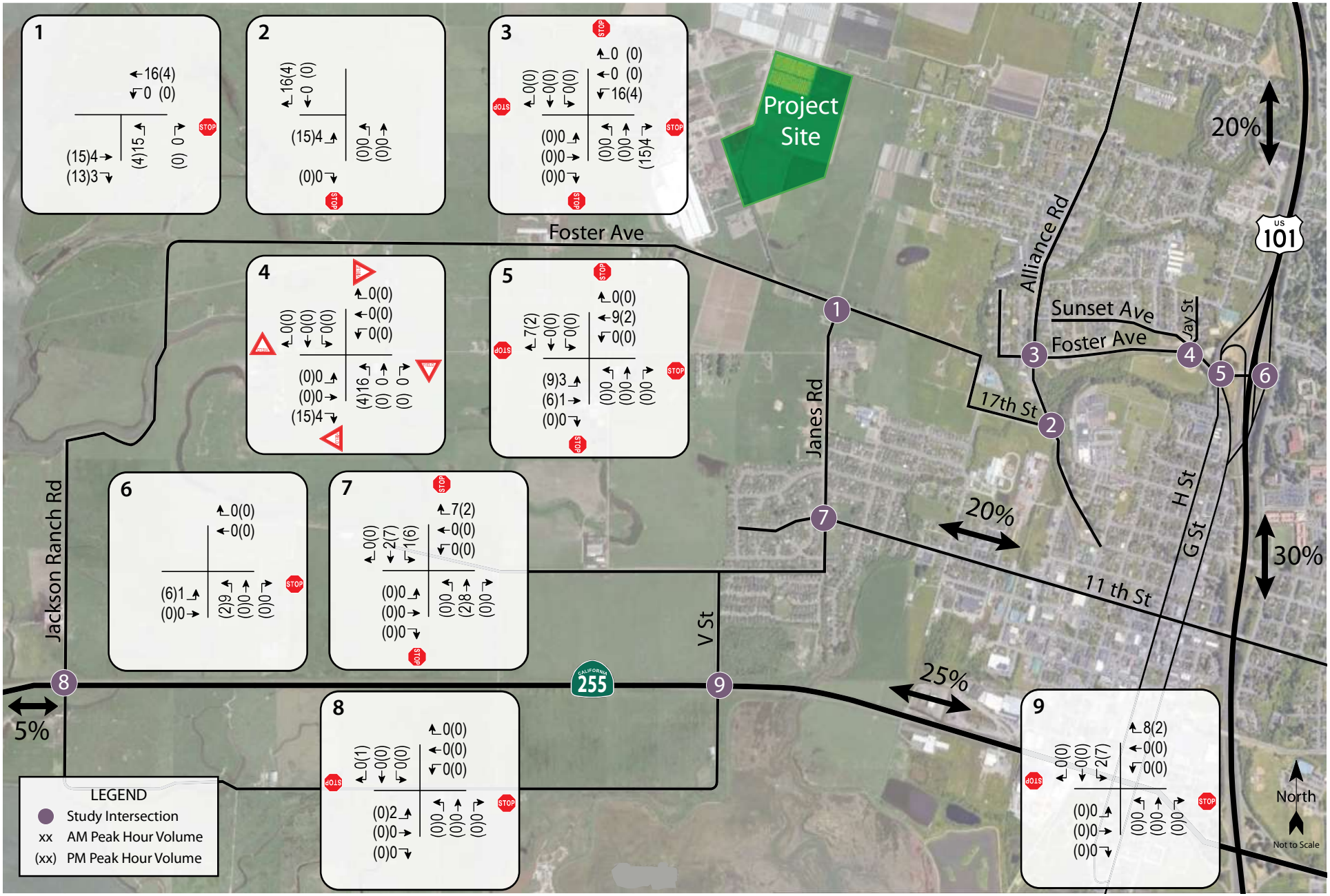
Table 8 – Trip Distribution Assumptions

Routes	Percent
To/from US 101 North of Sunset Ave	20
To/from US 101 South of Sunset Ave	30
To/from 11th St East of Janes Rd	20
To/from SR 255 East of V St	25
To/from SR 255 West of Jackson Ranch Rd	5
TOTAL	**100**

Intersection Operation

Existing plus Project Conditions

Upon the addition of project-related traffic to the Existing volumes, the study intersections are expected to continue operating at acceptable service levels overall and with minor increases in delay during both the a.m. and p.m. peak hours. Project traffic volumes are shown in Figure 6 and these results are summarized in Table 9.



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Figure 6 – Project Traffic Volumes and Trip Distribution

Table 9 – Existing and Existing plus Project Peak Hour Intersection Levels of Service

	Study Intersection *Approach*	Existing Conditions				Existing plus Project			
		AM Peak		PM Peak		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1.	Foster Ave/Janes Rd	7.2	A	6.1	A	6.6	A	4.6	A
	NB (Janes Rd) Approach	*8.7*	*A*	*8.7*	*A*	*9.1*	*A*	*8.9*	*A*
2.	Alliance Rd/17th St	3.3	A	1.9	A	3.4	A	2.2	A
	EB (17th St) Approach	*19.6*	*C*	*17.4*	*C*	*20.2*	*C*	*18.3*	*C*
3.	Foster Ave/Alliance Rd	13.5	B	16.6	C	13.9	B	16.6	C
4.	Sunset Ave/Foster Ave-Jay St	5.3	A	4.7	A	5.4	A	4.7	A
5.	Sunset Ave/US 101 S Ramps	14.2	B	11.4	B	14.3	B	11.4	B
6.	Sunset Ave/US 101 N Ramps	5.4	A	7.2	A	6.1	A	7.8	A
	NB (US 101 Off-ramp) Approach	*24.8*	*C*	*21.8*	*C*	*27.8*	*D*	*22.9*	*C*
7.	Janes Rd/11th St	5.5	A	5.9	A	5.5	A	5.9	A
	EB (11th St) Approach	*11.3*	*B*	*10.2*	*B*	*11.4*	*B*	*10.4*	*B*
	WB (11th St) Approach	*10.8*	*B*	*9.9*	*A*	*10.8*	*B*	*10.0*	*B*
8.	SR 255/Jackson Ranch Rd	0.3	A	0.5	A	0.3	A	0.5	A
	NB (Old Samoa Rd) Approach	*12.0*	*B*	*15.5*	*C*	*12.0*	*B*	*15.5*	*C*
	SB (Jackson Ranch Rd) Approach	*11.6*	*B*	*11.5*	*B*	*11.6*	*B*	*11.4*	*B*
9.	SR 255/V St	3.3	A	2.0	A	3.3	A	2.1	A
	NB (Old Samoa Rd) Approach	*12.5*	*B*	*13.2*	*B*	*12.6*	*B*	*13.2*	*B*
	SB (V St) Approach	*10.5*	*B*	*11.0*	*B*	*10.6*	*B*	*11.4*	*B*

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics;* NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound

It should be noted that with the addition of project-related traffic volumes, average overall delay at the intersection of Foster Avenue/Janes Road decreases slightly during each peak hour. While this is counter-intuitive, this condition occurs when a project adds trips to movements that are currently underutilized or have delays that are below the intersection average, resulting in a better balance between approaches and lower overall average delay. At this location, the project adds trips predominantly to the Foster Avenue through movements, which have delays that are lower than the overall intersection average resulting in a slight reduction in average delay. The conclusion could incorrectly be drawn that the project improves operation based on this data alone; however, it is more appropriate to conclude that the project trips are expected to make use of excess capacity, so drivers will experience little, if any, change in conditions as a result of the project.

Finding – All study intersections are expected to continue operating acceptably at LOS C or better overall upon the addition of project trips to the Existing volumes and the project would not result in an adverse effect to the surrounding roadway network.

Baseline plus Project Conditions

Upon the addition of project-related traffic to the Baseline volumes, the study intersections are expected to continue operating acceptably at the same service levels overall during both peak hours. These results are summarized in Table 10.

Table 10 – Baseline and Baseline plus Project Peak Hour Intersection Levels of Service

Study Intersection *Approach*		Baseline Conditions				Baseline plus Project			
		AM Peak		PM Peak		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1.	Foster Ave/Janes Rd	6.6	A	4.7	A	6.3	A	3.9	A
	NB (Janes Rd) Approach	*9.1*	*A*	*8.9*	*A*	*9.5*	*A*	*9.1*	*A*
2.	Alliance Rd/17th St	3.4	A	2.2	A	3.4	A	2.6	A
	EB (17th St) Approach	*20.3*	*C*	*18.4*	*C*	*20.9*	*C*	*19.4*	*C*
3.	Foster Ave/Alliance Rd	14.0	B	17.0	C	14.4	B	17.1	C
4.	Sunset Ave/Foster Ave-Jay St	5.4	A	4.7	A	5.5	A	4.8	A
5.	Sunset Ave/US 101 S Ramps	14.3	B	11.5	B	14.4	B	11.5	B
6.	Sunset Ave/US 101 N Ramps	6.2	A	7.7	A	7.5	A	8.3	A
	NB (US 101 Off-ramp) Approach	*28.4*	*D*	*23.4*	*C*	*33.2*	*D*	*25.0*	*D*
7.	Janes Rd/11th St	5.5	A	5.9	A	5.5	A	5.8	A
	EB (11th St) Approach	*11.4*	*B*	*10.4*	*B*	*11.6*	*B*	*10.5*	*B*
	WB (11th St) Approach	*10.9*	*B*	*10.0*	*B*	*10.9*	*B*	*10.1*	*B*
8.	SR 255/Jackson Ranch Rd	0.3	A	0.5	A	0.3	A	0.5	A
	NB (Old Samoa Rd) Approach	*12.0*	*B*	*15.5*	*C*	*12.0*	*B*	*15.6*	*C*
	SB (Jackson Ranch Rd) Approach	*11.6*	*B*	*11.4*	*B*	*11.5*	*B*	*11.4*	*B*
9.	SR 255/V St	3.3	A	2.1	A	3.3	A	2.3	A
	NB (Old Samoa Rd) Approach	*12.6*	*B*	*13.2*	*B*	*12.6*	*B*	*13.2*	*B*
	SB (V St) Approach	*10.6*	*B*	*11.4*	*B*	*10.7*	*B*	*11.8*	*B*

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics;* NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound

It is noted that with the addition of project-related traffic volumes, average overall delay decreases at Foster Avenue/Janes Road during both peak hours and at Janes Road/11th Street during the p.m. peak hour. This is for the same reasons as described at Foster Avenue/Janes Road under Existing plus Project Conditions. At Janes Road/11th Street, the project adds trips predominantly to the through and right-turn movements during the evening peak hour, which have delays that are lower than the overall intersection average resulting in a slight reduction in average delay.

Finding – All study intersections are expected to continue operating acceptably at LOS C or better overall upon the addition of project trips to the Baseline volumes; the project would therefore not result in an adverse effect to the surrounding roadway network.

Future plus Project Conditions

Upon the addition of project-related traffic to the anticipated Future volumes, and with no changes to the existing configurations or controls, the study intersections are expected to continue operating acceptably per the applicable LOS standards for each jurisdiction at LOS C or better overall during both peak hours, except for Foster Avenue/Alliance Road and Sunset Avenue/US 101 North Ramps. With the improvements identified as being needed under Future Conditions (without project trips), including a mini-roundabout at Foster Avenue/Alliance Road and a five-legged roundabout at Sunset Avenue/US 101 North Ramps, all intersections would operate acceptably even with the addition of project trips. These results are summarized in Table 11.

Table 11 – Future and Future plus Project Peak Hour Intersection Levels of Service

	Study Intersection ***Approach***	**Future Conditions**				**Future plus Project**			
		AM Peak		**PM Peak**		**AM Peak**		**PM Peak**	
		Delay	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
1.	Foster Ave/Janes Rd	7.2	A	6.1	A	6.8	A	5.0	A
	NB (Janes Rd) Approach	*8.7*	*A*	*8.8*	*A*	*9.2*	*A*	*9.0*	*A*
2.	Alliance Rd/17th St	5.0	A	2.4	A	5.3	A	2.9	A
	EB (17th St) Approach	*30.8*	*D*	*23.2*	*C*	*32.2*	*D*	*25.1*	*D*
3.	Foster Ave/Alliance Rd	18.3	C	**32.7**	**D**	19.0	C	**33.0**	**D**
	Mini-Roundabout	8.4	A	9.0	A	8.6	A	9.1	A
4.	Sunset Ave/Foster Ave-Jay St	6.0	A	5.5	A	6.1	A	5.5	A
5.	Sunset Ave/US 101 S Ramps	20.1	C	13.0	B	20.3	C	13.1	B
6.	Sunset Ave/US 101 N Ramps	10.9	B	**31.1**	**D**	13.2	B	**33.7**	**D**
	NB (US 101 Off-ramp) Approach	*54.6*	*F*	*103.2*	*F*	*65.2*	*F*	*111.9*	*F*
	Roundabout	10.6	B	19.8	C	10.7	B	20.4	C
7.	Janes Rd/11th St	5.8	A	5.9	A	5.8	A	6.1	A
	EB (11th St) Approach	*12.2*	*B*	*10.2*	*B*	*12.3*	*B*	*10.8*	*B*
	WB (11th St) Approach	*11.7*	*B*	*9.9*	*A*	*11.7*	*B*	*10.4*	*B*
8.	SR 255/Jackson Ranch Rd	0.3	A	0.5	A	0.3	A	0.6	A
	NB (Old Samoa Rd) Approach	*12.8*	*B*	*15.5*	*C*	*12.8*	*B*	*18.3*	*C*
	SB (Jackson Ranch Rd) Approach	*12.6*	*B*	*11.5*	*B*	*12.6*	*B*	*12.5*	*B*
9.	SR 255/V St	3.5	A	2.0	A	3.5	A	2.2	A
	NB (Old Samoa Rd) Approach	*13.6*	*B*	*13.2*	*B*	*13.7*	*B*	*14.6*	*B*
	SB (V St) Approach	*11.1*	*B*	*11.0*	*A*	*11.1*	*B*	*12.1*	*B*

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics;* NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound; **Bold** text denotes unacceptable operation; Shaded cells = conditions with recommended improvements

Again, it is noted that with the addition of project-related traffic volumes, average overall delay at Foster Avenue/Janes Road would decrease slightly during each peak hour for the same reasons specified under Existing plus Project and Baseline plus Project Conditions.

Since the project would contribute to the need for future improvements at Foster Avenue/Alliance Road and Sunset Avenue/US 101 North Ramps, the applicant should pay proportional share fees toward the cost of both roundabout projects. The project would add 19 trips to Foster Avenue/Alliance Road during the p.m. peak hour and eight trips to Sunset Avenue/US 101 North Ramps, which represents 4.2 and 1.8 percent of the anticipated growth at each respective intersection by the year 2036. As contained in the *Central Arcata Areawide Traffic Study* (CAATS), the mini-roundabout at Foster Avenue/Alliance Road is expected to have a total cost of $325,000; therefore, the applicant should pay a fee of $13,512 to the City of Arcata to alleviate the cumulative effects that project traffic would have on the intersection. The roundabout project at Sunset Avenue/US 101 North Ramps is projected to have a cost of $3,125,000, though only 15 percent of this cost was included in the Traffic Impact Mitigation Fee Program established by the CAATS so the project should contribute a proportional share fee of $8,714 to the roundabout project. Copies of the proportional share fee calculations are contained in Appendix D.

Finding – All study intersections are expected to continue operating acceptably at LOS C or better overall upon the addition of project trips to the anticipated Future volumes, except for Foster Avenue/Alliance Road and Sunset Avenue/US 101 North Ramps both of which would operate at LOS D overall during the p.m. peak hour. With installation of a mini-roundabout at Foster Avenue/Alliance Road and a roundabout at Sunset Avenue/US 101 North Ramps, both intersections would operate acceptably with project trips added to Future volumes.

Recommendation – The applicant should pay proportional share fees to the City of Arcata to alleviate the project's contribution to the needed improvements at Foster Avenue/Alliance Road and Sunset Avenue/US 101 North Ramps, consisting of $13,512 and $8,714, respectively.

Vehicle Miles Traveled

Background and Threshold of Significance

Senate Bill (SB) 743 established a change in the metric to be applied for determining transportation impacts associated with development projects. Rather than the delay-based criteria associated with a Level of Service (LOS) analysis, the increase in Vehicle Miles Traveled (VMT) as a result of a project is now the basis for determining California Environmental Quality Act (CEQA) impacts with respect to transportation and traffic. As of the date of this analysis, the County of Humboldt has not yet established thresholds of significance related to VMT. As a result, the project-related VMT impacts were assessed based on guidance provided by the California Governor's Office of Planning and Research (OPR) in the publication *Transportation Impacts (SB 743) CEQA Guidelines Update and Technical Advisory*, 2018.

OPR provides guidance for VMT analysis based on VMT per capita for residential projects and VMT per worker for employment-based projects. Since the VMT associated with the proposed project would be primarily associated with employment-based travel, VMT per employee was used as the metric for this analysis. Projects that generate vehicle travel exceeding 15 percent below the existing regional average VMT per employee may indicate a significant transportation impact. OPR guidance states that a county is an appropriate geographical boundary for a baseline if that is the area within which workers of the project would be expected to live. Employees of the proposed project are expected to reside within the County Humboldt so countywide data was used to establish the baseline VMT per employee.

Project Impact

The County of Humboldt has a travel demand model that includes numerous traffic analysis zones (TAZs) within the region that contain VMT information. Caltrans District 1 staff was consulted to obtain the VMT information for the entire county as well as TAZ 235, which is the zone in which the project site is located. The countywide average daily VMT per employee of 14.59 was used as a baseline for this analysis. Applying OPR's guidance, an employee-based project generating a VMT that is 15 percent or more below this value, or 12.40 miles per employee per day or less, would have a less-than-significant VMT impact. TAZ 235 has a daily VMT per employee of 2.41; however, the TAZ only has two employees so data for adjacent TAZs was also reviewed. The existing processing uses on Parcel C are located in TAZ 886 along with the Sun Valley Group flower business to the north of the project site. This TAZ has 505 employees with a VMT per employee of 3.64, or approximately 75 percent below the existing countywide average. Given the similar land use characteristics to the proposed project and substantially more employee data points available, the VMT for TAZ 886 rather than TAZ 235 was determined to be a better representation of the project. Since it is reasonable to presume that the travel patterns of workers for the proposed project would be similar to those of workers in TAZ 886, it is reasonable to conclude that the project would have a less-than-significant VMT impact associated with employee travel. This information is summarized in Table 12.

Table 12 – Vehicle Miles Traveled Analysis Summary

VMT Metric	Countywide Baseline VMT Rate	Significance Threshold	Project VMT Rate	Resulting Significance
VMT per Employee	14.59	12.40	3.64	Less than Significant

Note: VMT Rate is measured in VMT/Employee, or the number of daily miles driven per employee

Finding – Based on OPR guidance, the project would be expected to have a less-than-significant transportation impact on VMT.

Alternative Modes

Pedestrian Facilities

Given the rural location of the site, pedestrian trips to external destinations are expected to be limited. The project site is not located within what is generally considered an acceptable walking distance (one-quarter mile) of any destinations that would be reachable with the provision of pedestrian facilities so the lack of existing facilities for pedestrians does not result in an impact. Although external pedestrian trips are not anticipated, internal trips are expected between the various facilities. As shown on the site plan, pedestrian facilities including sidewalks and pathways would be provided throughout the site.

Finding – A connected pedestrian network would be provided on-site, though the lack of existing pedestrian infrastructure on Foster Avenue does not result in an impact given the rural setting.

Bicycle Facilities

Existing bike lanes on Sunset Avenue, Alliance Road, and Foster Avenue together with the shared use of minor streets provide adequate access for bicyclists within the study area. Upon completion of the planned improvements outlined in the *City of Arcata Pedestrian & Bicycle Master Plan* and the *Humboldt Regional Bicycle Plan*, including the provision of Class III bike routes on Foster Avenue between Alliance Road and Janes Road and on Janes Road to the south of Foster Avenue, access for bicyclists would be improved and the project site would be connected to the surrounding network. It should be noted that even upon completion of the planned improvements, the approximately one-third mile segment of Foster Avenue between the project driveway and Janes Road would not have a bicycle facility; however, given the low volume of vehicles and short length of the segment, it would be considered acceptable for bicyclists to share the roadway with motorists.

Bicycle Storage

Zoning regulations for the County of Humboldt do not specify bicycle parking requirements for cultivation uses, though because the site would be accessible for bicyclists the project should include dedicated bicycle parking. It is recommended that bicycle parking be provided at a rate of one space for every 10 employees. This would translate to a need for 12 bicycle parking spaces based on the maximum employment count of 116 employees.

Finding – Existing bicycle facilities in the project vicinity, including the shared use of minor streets, provide adequate access for bicyclists and connectivity would be further improved upon completion of planned bicycle projects.

Recommendation – A minimum of 12 bicycle parking spaces should be provided on-site and this information should be added to the site plan.

Transit

The lack of existing transit service within acceptable walking distance of the project site is typical for its rural location. Should an employee need to use transit, they could bike to the nearest transit stops at Foster Avenue/Alliance Road, the Arcata Transit Center, or Arcata High School.

Finding – The lack of transit facilities serving the project does not result in an impact given the rural location and expected demand.

Access and Circulation

Site Access

As proposed, access to the site would occur at the existing driveway on Foster Avenue approximately one-third mile west of the Janes Road intersection. Foster Avenue is approximately 20 feet wide with a single lane in each direction and has a posted speed limit of 25 miles per hour (mph) adjacent to the project site. Based on count data collected in March 2019 specifically for this study, the roadway has an average daily traffic (ADT) volume of 310 vehicles per day, with 23 vehicles counted during the a.m. peak hour and 41 vehicles during the p.m. peak hour.

Sight Distance

At unsignalized intersections and driveways a substantially clear line of sight should be maintained between the driver of a vehicle waiting at the crossroad and the driver of an approaching vehicle. Adequate time should be provided for the waiting vehicle to either cross, turn left, or turn right, without requiring the through traffic to radically alter their speed. Sight distances along Foster Avenue at the project driveway were evaluated based on sight distance criteria contained in the *Highway Design Manual* published by Caltrans. The recommended sight distance at driveways is based on stopping sight distance, with approach travel speed used as the basis for determining the recommended sight distance.

For the posted speed limit of 25 mph on Foster Avenue, the minimum stopping sight distance needed is 150 feet. Based on a review of field conditions, at the position of a driver waiting on the driveway sight lines extend approximately 300 feet to the west to a horizontal curve in the roadway alignment and extend more than 500 feet to the east, both of which are more than adequate for the posted speed limit. Additionally, adequate stopping sight distance is available for a following driver to notice and react to a preceding motorist slowing or stopped waiting to turn into the project site. In order to maintain existing adequate sight lines, it is recommended that any new signage to be installed near the driveway be placed outside of the vision triangle.

Finding – Sight lines on Foster Avenue are adequate to accommodate all turns into and out of the project driveway.

Recommendation – Any new signage to be located along the project frontage should be placed outside of the vision triangle of a driver waiting on the driveway.

Turn Lane Warrants

The need for a left-turn lane on Foster Avenue at the existing project driveway was evaluated based on criteria contained in the *Intersection Channelization Design Guide*, National Cooperative Highway Research Program (NCHRP) Report No. 279, Transportation Research Board, 1985, as well as an update of the methodology developed by the Washington State Department of Transportation and published in the *Method For Prioritizing Intersection Improvements*, January 1997. The NCHRP report references a methodology developed by M. D. Harmelink that includes equations that can be applied to expected or actual traffic volumes in order to determine the need for a turn pocket based on safety issues.

Under on the anticipated Future plus Project volumes, which represents worst-case conditions, and accounting for trips associated with the already-approved cannabis processing facility, a left-turn lane would not be warranted at the project driveway during either peak hour. The turn lane warrant analysis sheets are contained in Appendix E.

Finding – No channelization in the form of a turn pocket would be warranted at the project driveway.

Conclusions and Recommendations

Conclusions

- Based on standard ITE rates, the proposed project would be expected to result in 232 new trips per day at peak operation, including 40 trips during the a.m. peak hour and 37 trips during the p.m. peak hour, though the actual peak hour trip generation is expected to be less since the beginning and end of shifts would not coincide with the peak hours of the transportation network.

- The study intersections of Sunset Avenue/US 101 South Ramps, Sunset Avenue/US 101 North Ramps, Janes Road/11th Street, SR 255/Jackson Ranch Road, and SR 255/V Street all have a calculated collision rate above the statewide average for similar facilities.

- All study intersections would be expected to operate at LOS C or better overall under Existing and Baseline Conditions without or with the addition of project-related trips, though roundabouts would be needed at Foster Avenue/Alliance Road and Sunset Avenue/US 101 North Ramps to accommodate the anticipated Future volumes. With these improvements and with the addition of project traffic to Future volumes, all intersections would operate acceptably.

- Based on OPR guidance, the project would be expected to have a less-than-significant transportation impact on VMT.

- A connected pedestrian network would be provided on-site consisting of sidewalks and pathways. The lack of existing pedestrian facilities on Foster Avenue does not result in an impact given the rural setting.

- Existing bicycle facilities in the project vicinity, including the shared use of minor streets, provide adequate access for bicyclists and connectivity would be further improved upon completion of planned bicycle projects in the area.

- The lack of existing transit service within an acceptable walking distance of the project site is typical for its rural location and is therefore considered acceptable, though employees could use a bicycle to reach nearby transit stops.

- Sight lines on Foster Avenue are adequate to accommodate all turns into and out of the project driveway.

- No channelization in the form of a turn pocket would not be warranted on Foster Avenue at the project driveway.

Recommendations

- The City and Caltrans may wish to review the need for additional signing at Sunset Avenue/US 101 South Ramps to notify drivers of conditions that require their attention. Consolidation of Sunset Avenue/US 101 North Ramps and Sunset Avenue/LK Wood Boulevard into a single roundabout with five legs would have a beneficial impact on safety at this location. Increased enforcement may help to reduce the frequency of DUI collisions at SR 255/Jackson Ranch Road and right-of-way infractions at SR 255/V Street.

- The applicant should pay proportional share fees toward the cost of the roundabout projects needed at Foster Avenue/Alliance Road and Sunset Avenue/US 101 North Ramps consistent with the Traffic Mitigation Fee Program established by the *Central Arcata Areawide Traffic Study*.

- A minimum of 12 bicycle parking spaces should be provided on-site and this information should be added to the site plan.

- Any new signage to be located along the project frontage should be placed outside of the vision triangle of a driver waiting on the driveway.

Study Participants and References

Study Participants

Principal in Charge	Dalene J. Whitlock, PE, PTOE
Senior Planner	Barry Bergman, AICP
Associate Engineer	Cameron Nye, EIT
Graphics/Formatting	Alex Scrobonia
Quality Control	Dalene J. Whitlock, PE, PTOE

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Appendix A

Collision Rate Calculations

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Intersection Collision Rate Worksheet

Arcata Land Company Cannabis Cultivation Project TIS

Intersection # 1: Foster Avenue & Janes Road
Date of Count: Thursday, September 17, 2020

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
Average Daily Traffic (ADT): 870
Start Date: April 1, 2014
End Date: March 31, 2019
Number of Years: 5

Intersection Type: Tee
Control Type: Stop & Yield Controls
Area: Suburban

$$\text{Collision Rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x Days per Year x Number of Years}}$$

$$\text{Collision Rate} = \frac{0 \times 1{,}000{,}000}{870 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.00 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.14 c/mve**	**1.2%**	**38.2%**

Notes
ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection # 2: Alliane Road & 17th Street
Date of Count: Thursday, September 17, 2020

Number of Collisions: 1
Number of Injuries: 0
Number of Fatalities: 0
Average Daily Traffic (ADT): 8200
Start Date: April 1, 2014
End Date: March 31, 2019
Number of Years: 5

Intersection Type: Tee
Control Type: Stop & Yield Controls
Area: Urban

$$\text{Collision Rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x Days per Year x Number of Years}}$$

$$\text{Collision Rate} = \frac{1 \times 1{,}000{,}000}{8{,}200 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.07 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.08 c/mve**	**1.0%**	**45.1%**

Notes
ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Worksheet

Arcata Land Company Cannabis Cultivation Project TIS

Intersection # 3: Foster Avenue & Alliance Road
Date of Count: Thursday, September 17, 2020

Number of Collisions: 1
Number of Injuries: 0
Number of Fatalities: 0
Average Daily Traffic (ADT): 10800
Start Date: April 1, 2014
End Date: March 31, 2019
Number of Years: 5

Intersection Type: Four-Legged
Control Type: 4 Way Stop
Area: Urban

$$\text{Collision Rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x Days per Year x Number of Years}}$$

$$\text{Collision Rate} = \frac{1 \times 1{,}000{,}000}{10{,}800 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.05 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.19 c/mve**	**0.4%**	**29.2%**

Notes
ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection # 4: Sunset Avenue & Foster Avenue-Jay Street
Date of Count: Thursday, September 17, 2020

Number of Collisions: 1
Number of Injuries: 0
Number of Fatalities: 0
Average Daily Traffic (ADT): 6700
Start Date: April 1, 2014
End Date: March 31, 2019
Number of Years: 5

Intersection Type: Four-Legged
Control Type: Stop & Yield Controls
Area: Urban

$$\text{Collision Rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x Days per Year x Number of Years}}$$

$$\text{Collision Rate} = \frac{1 \times 1{,}000{,}000}{6{,}700 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.08 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.13 c/mve**	**1.1%**	**43.8%**

Notes
ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Worksheet

Arcata Land Company Cannabis Cultivation Project TIS

Intersection # 5: Sunset Avenue & US 101 South Ramps
Date of Count: Thursday, September 17, 2020

Number of Collisions: 8
Number of Injuries: 3
Number of Fatalities: 0
Average Daily Traffic (ADT): 13400
Start Date: April 1, 2014
End Date: March 31, 2019
Number of Years: 5

Intersection Type: Four-Legged
Control Type: 4 Way Stop
Area: Urban

$$\text{Collision Rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x Days per Year x Number of Years}}$$

$$\text{Collision Rate} = \frac{8 \times 1{,}000{,}000}{13{,}400 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.33 c/mve**	**0.0%**	**37.5%**
Statewide Average*	**0.19 c/mve**	**0.4%**	**29.2%**

Notes
ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection # 6: Susnet Avenue & US 101 North Ramps
Date of Count: Thursday, September 17, 2020

Number of Collisions: 5
Number of Injuries: 2
Number of Fatalities: 0
Average Daily Traffic (ADT): 12300
Start Date: April 1, 2014
End Date: March 31, 2019
Number of Years: 5

Intersection Type: Four-Legged
Control Type: Stop & Yield Controls
Area: Urban

$$\text{Collision Rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x Days per Year x Number of Years}}$$

$$\text{Collision Rate} = \frac{5 \times 1{,}000{,}000}{12{,}300 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.22 c/mve**	**0.0%**	**40.0%**
Statewide Average*	**0.13 c/mve**	**1.1%**	**43.8%**

Notes
ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Worksheet

Arcata Land Company Cannabis Cultivation Project TIS

Intersection # 7: Janes Road & 11th Street

Date of Count: Thursday, September 17, 2020

Number of Collisions: 2
Number of Injuries: 2
Number of Fatalities: 0
Average Daily Traffic (ADT): 3200
Start Date: April 1, 2014
End Date: March 31, 2019
Number of Years: 5

Intersection Type: Four-Legged
Control Type: Stop & Yield Controls
Area: Urban

$$\text{Collision Rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times \text{Days per Year} \times \text{Number of Years}}$$

$$\text{Collision Rate} = \frac{2 \times 1{,}000{,}000}{3{,}200 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.34 c/mve**	**0.0%**	**100.0%**
Statewide Average*	**0.13 c/mve**	**1.1%**	**43.8%**

Notes
ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection # 8: SR 255 & Jackson Ranch Road

Date of Count: Thursday, September 17, 2020

Number of Collisions: 4
Number of Injuries: 2
Number of Fatalities: 0
Average Daily Traffic (ADT): 7300
Start Date: April 1, 2014
End Date: March 31, 2019
Number of Years: 5

Intersection Type: Four-Legged
Control Type: Stop & Yield Controls
Area: Rural

$$\text{Collision Rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times \text{Days per Year} \times \text{Number of Years}}$$

$$\text{Collision Rate} = \frac{4 \times 1{,}000{,}000}{7{,}300 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.30 c/mve**	**0.0%**	**50.0%**
Statewide Average*	**0.22 c/mve**	**2.5%**	**43.4%**

Notes
ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Worksheet

Arcata Land Company Cannabis Cultivation Project TIS

Intersection # 9: SR 255 & V Street

Date of Count: Thursday, September 17, 2020

Number of Collisions: 5
Number of Injuries: 3
Number of Fatalities: 0
Average Daily Traffic (ADT): 7400
Start Date: April 1, 2014
End Date: March 31, 2019
Number of Years: 5

Intersection Type: Four-Legged
Control Type: Stop & Yield Controls
Area: Suburban

$$\text{Collision Rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x Days per Year x Number of Years}}$$

$$\text{Collision Rate} = \frac{5 \times 1{,}000{,}000}{7{,}400 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.37 c/mve**	**0.0%**	**60.0%**
Statewide Average*	**0.23 c/mve**	**1.9%**	**39.0%**

Notes
ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

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Appendix B

Intersection Level of Service Calculations

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Intersection Level Of Service Report
Intersection 1: Janes Rd/Foster Ave

Control Type:	Two-way stop	Delay (sec / veh):	9.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name	Janes Rd		Foster Ave		Foster Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Janes Rd		Foster Ave		Foster Ave	
Base Volume Input [veh/h]	4	53	5	3	75	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	53	5	3	75	5
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	15	1	1	21	1
Total Analysis Volume [veh/h]	4	59	6	3	83	6
Pedestrian Volume [ped/h]	0		0		0	

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Version 7.00-06

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.05	0.00	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	9.91	8.57	0.00	0.00	7.36	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.19	0.19	0.00	0.00	0.16	0.16
95th-Percentile Queue Length [ft/ln]	4.79	4.79	0.00	0.00	4.07	4.07
d_A, Approach Delay [s/veh]	8.65		0.00		6.86	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	7.18					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Alliance Rd/17th St

Control Type:	Two-way stop	Delay (sec / veh):	21.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.375

Intersection Setup

Name	Alliance Rd		Alliance Rd		17th St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	20.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Alliance Rd		Alliance Rd		17th St	
Base Volume Input [veh/h]	21	247	321	173	121	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	21	247	321	173	121	20
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	69	89	48	34	6
Total Analysis Volume [veh/h]	23	274	357	192	134	22
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free		Free		Stop	
Flared Lane						
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.37	0.04
d_M, Delay for Movement [s/veh]	8.61	0.00	0.00	0.00	20.98	11.16
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.07	0.07	0.00	0.00	1.70	0.11
95th-Percentile Queue Length [ft/ln]	1.73	1.73	0.00	0.00	42.38	2.82
d_A, Approach Delay [s/veh]	0.67		0.00		19.59	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	3.25					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 3: Alliance Rd/Foster Ave

Control Type:	All-way stop	Delay (sec / veh):	13.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.549

Intersection Setup

Name	Alliance Ave			Alliance Rd			Foster Ave			Foster Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	70.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alliance Ave			Alliance Rd			Foster Ave			Foster Ave		
Base Volume Input [veh/h]	3	232	116	120	290	3	5	11	8	185	5	65
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	232	116	120	290	3	5	11	8	185	5	65
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	64	32	33	81	1	1	3	2	51	1	18
Total Analysis Volume [veh/h]	3	258	129	133	322	3	6	12	9	206	6	72
Pedestrian Volume [ped/h]	14			7			15			10		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	580	654	546	591	467	522	499	594
Degree of Utilization, x	0.45	0.20	0.24	0.55	0.01	0.04	0.41	0.13

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.33	0.73	0.95	3.33	0.04	0.13	2.00	0.45
95th-Percentile Queue Length [ft]	58.14	18.24	23.73	83.17	0.97	3.14	50.05	11.27
Approach Delay [s/veh]	12.47		14.64		10.03		13.47	
Approach LOS	B		B		B		B	
Intersection Delay [s/veh]	13.52							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 4: Foster Ave-Jay St/Sunset Ave

Control Type:	Roundabout	Delay (sec / veh):	5.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Sunset Ave			Sunset Ave			Foster Ave			Jay St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sunset Ave			Sunset Ave			Foster Ave			Jay St		
Base Volume Input [veh/h]	183	160	5	0	170	10	26	0	176	24	5	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	183	160	5	0	170	10	26	0	176	24	5	1
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	51	44	1	0	47	3	7	0	49	7	1	0
Total Analysis Volume [veh/h]	203	178	6	0	189	11	29	0	196	27	6	1
Pedestrian Volume [ped/h]	16			1			42			1		

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Version 7.00-06

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	30			241			220			418		
Exiting Flow Rate [veh/h]	420			212			224			6		
Demand Flow Rate [veh/h]	183	160	5	0	170	10	26	0	176	24	5	1
Adjusted Demand Flow Rate [veh/h]	203	178	6	0	189	11	29	0	196	27	6	1

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	395	204	230	35
Capacity of Entry and Bypass Lanes [veh/h]	1339	1080	1103	901
Pedestrian Impedance	1.00	1.00	0.99	1.00
Capacity per Entry Lane [veh/h]	1310	1059	1075	884
X, volume / capacity	0.30	0.19	0.21	0.04

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	1.24	0.69	0.79	0.12
95th-Percentile Queue Length [ft]	31.12	17.37	19.72	3.00
Approach Delay [s/veh]	5.37	5.14	5.28	4.43
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	5.26			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 5: Sunset Ave/US 101 Ramps-G St-H St

Control Type:	All-way stop	Delay (sec / veh):	14.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.647

Intersection Setup

Name	G St			US 101 Ramps			Sunset Ave			Sunset Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	50.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	G St			US 101 Ramps			Sunset Ave			Sunset Ave		
Base Volume Input [veh/h]	35	7	11	311	391	190	128	201	46	90	123	112
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	35	7	11	311	391	190	128	201	46	90	123	112
Peak Hour Factor	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	2	3	85	107	52	35	55	13	25	34	31
Total Analysis Volume [veh/h]	38	8	12	340	427	207	140	219	50	98	134	122
Pedestrian Volume [ped/h]	60			0			0			0		

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Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	616	525	565	565	631	482	513	564	468	497	545
Degree of Utilization, x	0.09	0.65	0.38	0.38	0.33	0.29	0.43	0.09	0.21	0.27	0.22

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.31	4.60	1.75	1.75	1.43	1.20	2.11	0.29	0.78	1.08	0.85
95th-Percentile Queue Length [ft]	7.76	114.	43.8	43.8	35.6	29.88	52.85	7.27	19.54	27.02	21.26
Approach Delay [s/veh]	9.45	15.46				13.66			12.06		
Approach LOS	A	C				B			B		
Intersection Delay [s/veh]	14.18										
Intersection LOS	B										

Intersection Level Of Service Report
Intersection 6: Sunset Ave/US 101 North Ramps

Control Type:	Two-way stop	Delay (sec / veh):	45.5
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.490

Intersection Setup

Name	US 101 NB Off-Ramp			US 101 NB On-Ramp			Sunset Ave			Sunset Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	320.00	100.00	320.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	US 101 NB Off-Ramp			US 101 NB On-Ramp			Sunset Ave			Sunset Ave		
Base Volume Input [veh/h]	74	0	118	0	0	0	93	430	0	0	251	67
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	74	0	118	0	0	0	93	430	0	0	251	67
Peak Hour Factor	0.9000	0.9000	0.9000	1.0000	1.0000	1.0000	0.9000	0.9000	1.0000	1.0000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	0	33	0	0	0	26	119	0	0	70	19
Total Analysis Volume [veh/h]	82	0	131	0	0	0	103	478	0	0	279	74
Pedestrian Volume [ped/h]	75			0			0			0		

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Version 7.00-06

Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane												
Storage Area [veh]	0			0			0			0		
Two-Stage Gap Acceptance	No											
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.49	0.00	0.22	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	45.53	26.08	11.90	0.00	0.00	0.00	8.26	0.00	0.00	0.00	0.00	0.00
Movement LOS	E	D	B				A	A			A	A
95th-Percentile Queue Length [veh/ln]	2.36	0.37	0.37	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	58.93	9.36	9.36	0.00	0.00	0.00	6.99	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	24.84			0.00			1.47			0.00		
Approach LOS	C			A			A			A		
d_I, Intersection Delay [s/veh]	5.36											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 7: 11th St/Janes Rd

Control Type:	Two-way stop	Delay (sec / veh):	12.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.007

Intersection Setup

Name	Janes Rd			Janes Rd			11th St			11th St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Janes Rd			Janes Rd			11th St			11th St		
Base Volume Input [veh/h]	2	56	54	63	61	2	4	23	6	52	18	45
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	56	54	63	61	2	4	23	6	52	18	45
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	16	15	18	17	1	1	6	2	14	5	13
Total Analysis Volume [veh/h]	2	62	60	70	68	2	4	26	7	58	20	50
Pedestrian Volume [ped/h]	0			0			4			0		

Intersection Settings

Priority Scheme	Free			Free			Stop			Stop		
Flared Lane							Yes			Yes		
Storage Area [veh]	0			0			1			1		
Two-Stage Gap Acceptance							No			No		
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.05	0.00	0.00	0.01	0.05	0.01	0.10	0.03	0.05
d_M, Delay for Movement [s/veh]	7.37	0.00	0.00	7.58	0.00	0.00	11.98	11.85	8.96	11.79	11.89	9.32
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.15	0.15	0.15	0.17	0.17	0.17	0.47	0.47	0.47
95th-Percentile Queue Length [ft/ln]	0.10	0.10	0.10	3.76	3.76	3.76	4.33	4.33	4.33	11.64	11.64	11.64
d_A, Approach Delay [s/veh]	0.12			3.79			11.32			10.84		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	5.48											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 8: SR-255/Jackson Ranch Rd

Control Type:	Two-way stop	Delay (sec / veh):	14.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

Intersection Setup

Name	Old Samoa Rd			Jackson Ranch Rd			SR-255			SR-255		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	400.00	100.00	100.00	400.00	100.00	100.00
Speed [mph]	25.00			25.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Old Samoa Rd			Jackson Ranch Rd			SR-255			SR-255		
Base Volume Input [veh/h]	0	1	1	3	0	6	3	247	0	0	322	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1	1	3	0	6	3	247	0	0	322	1
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	1	0	2	1	69	0	0	89	0
Total Analysis Volume [veh/h]	0	1	1	3	0	7	3	274	0	0	358	1
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	Yes	No		
Storage Area [veh]	2	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.43	14.17	9.72	14.43	14.27	10.37	8.01	0.00	0.00	7.79	0.00	0.00
Movement LOS	B	B	A	B	B	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.05	0.05	0.05	0.01	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.19	0.19	0.19	1.37	1.37	1.37	0.19	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.95			11.59			0.09			0.00		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	0.25											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 9: SR-255/V St

Control Type:	Two-way stop	Delay (sec / veh):	14.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Old Samoa Rd			V St			SR-255			SR-255		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	25.00			25.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Old Samoa Rd			V St			SR-255			SR-255		
Base Volume Input [veh/h]	0	0	0	34	1	112	68	184	0	3	204	25
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	34	1	112	68	184	0	3	204	25
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	9	0	31	19	51	0	1	57	7
Total Analysis Volume [veh/h]	0	0	0	38	1	124	76	204	0	3	227	28
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	Yes	Yes		
Storage Area [veh]	1	1	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.09	0.00	0.14	0.06	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.29	14.48	8.86	13.82	14.80	9.49	7.92	0.00	0.00	7.64	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.48	0.48	0.48	0.18	0.00	0.00	0.01	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	11.96	11.96	11.96	4.62	0.00	0.00	0.17	0.00	0.00
d_A, Approach Delay [s/veh]	12.54			10.53			2.15			0.09		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	3.34											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 1: Janes Rd/Foster Ave

Control Type:	Two-way stop	Delay (sec / veh):	9.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.013

Intersection Setup

Name	Janes Rd		Foster Ave		Foster Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Janes Rd		Foster Ave		Foster Ave	
Base Volume Input [veh/h]	11	26	9	3	28	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	26	9	3	28	10
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	7	3	1	8	3
Total Analysis Volume [veh/h]	12	29	10	3	31	11
Pedestrian Volume [ped/h]	0		0		0	

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Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.03	0.00	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	9.15	8.52	0.00	0.00	7.29	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.13	0.13	0.00	0.00	0.06	0.06
95th-Percentile Queue Length [ft/ln]	3.16	3.16	0.00	0.00	1.48	1.48
d_A, Approach Delay [s/veh]	8.70		0.00		5.38	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	6.07					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Alliance Rd/17th St

Control Type:	Two-way stop	Delay (sec / veh):	18.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.221

Intersection Setup

Name	Alliance Rd		Alliance Rd		17th St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	20.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Alliance Rd		Alliance Rd		17th St	
Base Volume Input [veh/h]	18	340	315	69	68	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	340	315	69	68	11
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	94	88	19	19	3
Total Analysis Volume [veh/h]	20	378	350	77	76	12
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free		Free		Stop	
Flared Lane						
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.22	0.02
d_M, Delay for Movement [s/veh]	8.24	0.00	0.00	0.00	18.45	10.56
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.00	0.00	0.83	0.06
95th-Percentile Queue Length [ft/ln]	1.35	1.35	0.00	0.00	20.82	1.39
d_A, Approach Delay [s/veh]	0.41		0.00		17.37	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.85					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 3: Alliance Rd/Foster Ave

Control Type:	All-way stop	Delay (sec / veh):	16.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.693

Intersection Setup

Name	Alliance Ave			Alliance Rd			Foster Ave			Foster Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	70.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alliance Ave			Alliance Rd			Foster Ave			Foster Ave		
Base Volume Input [veh/h]	13	354	113	100	322	6	5	16	12	109	20	124
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	354	113	100	322	6	5	16	12	109	20	124
Peak Hour Factor	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	96	31	27	88	2	1	4	3	30	5	34
Total Analysis Volume [veh/h]	14	386	123	109	351	7	5	17	13	119	22	135
Pedestrian Volume [ped/h]	14			7			15			10		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	577	652	532	576	447	496	474	555
Degree of Utilization, x	0.69	0.19	0.21	0.62	0.01	0.06	0.25	0.28

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	5.44	0.69	0.76	4.27	0.03	0.19	0.98	1.16
95th-Percentile Queue Length [ft]	135.96	17.24	19.07	106.69	0.85	4.81	24.62	28.91
Approach Delay [s/veh]	18.92		16.95		10.48		12.20	
Approach LOS	C		C		B		B	
Intersection Delay [s/veh]	16.56							
Intersection LOS	C							

Intersection Level Of Service Report
Intersection 4: Foster Ave-Jay St/Sunset Ave

Control Type:	Roundabout	Delay (sec / veh):	4.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Sunset Ave			Sunset Ave			Foster Ave			Jay St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sunset Ave			Sunset Ave			Foster Ave			Jay St		
Base Volume Input [veh/h]	184	113	33	1	96	11	8	9	170	33	10	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	184	113	33	1	96	11	8	9	170	33	10	2
Peak Hour Factor	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	29	8	0	25	3	2	2	44	8	3	1
Total Analysis Volume [veh/h]	189	116	34	1	99	11	8	9	175	34	10	2
Pedestrian Volume [ped/h]	16			1			42			1		

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Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	18			238			137			319		
Exiting Flow Rate [veh/h]	314			129			214			45		
Demand Flow Rate [veh/h]	184	113	33	1	96	11	8	9	170	33	10	2
Adjusted Demand Flow Rate [veh/h]	189	116	34	1	99	11	8	9	175	34	10	2

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	346	114	196	47
Capacity of Entry and Bypass Lanes [veh/h]	1355	1083	1201	997
Pedestrian Impedance	1.00	1.00	0.99	1.00
Capacity per Entry Lane [veh/h]	1325	1062	1171	977
X, volume / capacity	0.26	0.10	0.16	0.05

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	1.02	0.35	0.59	0.15
95th-Percentile Queue Length [ft]	25.58	8.73	14.65	3.70
Approach Delay [s/veh]	4.93	4.31	4.50	4.10
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	4.65			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 5: Sunset Ave/US 101 Ramps-G St-H St

Control Type:	All-way stop	Delay (sec / veh):	11.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.338

Intersection Setup

Name	G St			US 101 Ramps			Sunset Ave			Sunset Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	50.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	G St			US 101 Ramps			Sunset Ave			Sunset Ave		
Base Volume Input [veh/h]	75	30	26	149	279	101	67	175	60	111	152	116
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	75	30	26	149	279	101	67	175	60	111	152	116
Peak Hour Factor	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	8	7	39	73	26	17	46	16	29	40	30
Total Analysis Volume [veh/h]	78	31	27	155	290	105	70	182	62	116	158	121
Pedestrian Volume [ped/h]	60			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	593	528	568	568	634	504	539	597	503	538	597
Degree of Utilization, x	0.23	0.29	0.26	0.26	0.17	0.14	0.34	0.10	0.23	0.29	0.20

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.88	1.22	1.01	1.01	0.59	0.48	1.48	0.35	0.88	1.22	0.75
95th-Percentile Queue Length [ft]	21.97	30.41	25.26	25.26	14.74	11.99	36.99	8.64	22.11	30.41	18.83
Approach Delay [s/veh]	10.86	11.20				11.70			11.53		
Approach LOS	B	B				B			B		
Intersection Delay [s/veh]	11.37										
Intersection LOS	B										

Intersection Level Of Service Report
Intersection 6: Sunset Ave/US 101 North Ramps

Control Type:	Two-way stop	Delay (sec / veh):	49.0
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.588

Intersection Setup

Name	US 101 NB Off-Ramp			US 101 NB On-Ramp			Sunset Ave			Sunset Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	320.00	100.00	320.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	US 101 NB Off-Ramp			US 101 NB On-Ramp			Sunset Ave			Sunset Ave		
Base Volume Input [veh/h]	103	4	254	0	0	0	114	236	0	0	282	241
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	103	4	254	0	0	0	114	236	0	0	282	241
Peak Hour Factor	0.9490	0.9490	0.9490	1.0000	1.0000	1.0000	0.9490	0.9490	1.0000	1.0000	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	1	67	0	0	0	30	62	0	0	74	63
Total Analysis Volume [veh/h]	109	4	268	0	0	0	120	249	0	0	297	254
Pedestrian Volume [ped/h]	75			0			0			0		

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Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane												
Storage Area [veh]	0			0			0			0		
Two-Stage Gap Acceptance	No											
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.59	0.02	0.34	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	48.98	27.32	10.62	0.00	0.00	0.00	9.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	E	D	B				A	A			A	A
95th-Percentile Queue Length [veh/ln]	3.21	0.70	0.66	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	80.23	17.50	16.49	0.00	0.00	0.00	9.98	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	21.77			0.00			2.93			0.00		
Approach LOS	C			A			A			A		
d_I, Intersection Delay [s/veh]	7.21											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 7: 11th St/Janes Rd

Control Type:	Two-way stop	Delay (sec / veh):	10.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Janes Rd			Janes Rd			11th St			11th St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Janes Rd			Janes Rd			11th St			11th St		
Base Volume Input [veh/h]	4	49	49	29	24	1	1	25	7	47	29	58
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	49	49	29	24	1	1	25	7	47	29	58
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	14	14	8	7	0	0	7	2	13	8	16
Total Analysis Volume [veh/h]	4	54	54	32	27	1	1	28	8	52	32	64
Pedestrian Volume [ped/h]	0			0			4			0		

Intersection Settings

Priority Scheme	Free			Free			Stop			Stop		
Flared Lane							Yes			Yes		
Storage Area [veh]	0			0			1			1		
Two-Stage Gap Acceptance							No			No		
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.04	0.01	0.07	0.05	0.07
d_M, Delay for Movement [s/veh]	7.29	0.00	0.00	7.48	0.00	0.00	10.85	10.60	8.66	10.41	10.61	9.07
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.07	0.07	0.07	0.14	0.14	0.14	0.40	0.40	0.40
95th-Percentile Queue Length [ft/ln]	0.19	0.19	0.19	1.65	1.65	1.65	3.41	3.41	3.41	10.10	10.10	10.10
d_A, Approach Delay [s/veh]	0.26			3.99			10.18			9.88		
Approach LOS	A			A			B			A		
d_I, Intersection Delay [s/veh]	5.90											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 8: SR-255/Jackson Ranch Rd

Control Type:	Two-way stop	Delay (sec / veh):	17.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.007

Intersection Setup

Name	Old Samoa Rd			Jackson Ranch Rd			SR-255			SR-255		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	400.00	100.00	100.00	400.00	100.00	100.00
Speed [mph]	25.00			25.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Old Samoa Rd			Jackson Ranch Rd			SR-255			SR-255		
Base Volume Input [veh/h]	2	1	1	2	0	16	12	325	3	0	366	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	1	1	2	0	16	12	325	3	0	366	3
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	0	1	0	4	3	90	1	0	102	1
Total Analysis Volume [veh/h]	2	1	1	2	0	18	13	361	3	0	407	3
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Stop		Stop		Free		Free	
Flared Lane	Yes		No					
Storage Area [veh]	2		0		0		0	
Two-Stage Gap Acceptance	No		No					
Number of Storage Spaces in Median	0		0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	17.53	16.52	10.37	17.20	16.65	10.82	8.17	0.00	0.00	8.01	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.03	0.11	0.11	0.11	0.03	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.76	0.76	0.76	2.69	2.69	2.69	0.86	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	15.49			11.46			0.28			0.00		
Approach LOS	C			B			A			A		
d_I, Intersection Delay [s/veh]	0.49											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 9: SR-255/V St

Control Type:	Two-way stop	Delay (sec / veh):	17.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Old Samoa Rd			V St			SR-255			SR-255		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	25.00			25.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Old Samoa Rd			V St			SR-255			SR-255		
Base Volume Input [veh/h]	0	1	1	17	0	65	67	246	1	1	299	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1	1	17	0	65	67	246	1	1	299	46
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	5	0	18	19	68	0	0	83	13
Total Analysis Volume [veh/h]	0	1	1	19	0	72	74	273	1	1	332	51
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	Yes	Yes		
Storage Area [veh]	1	1	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.06	0.00	0.09	0.06	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	15.62	17.27	9.08	15.96	17.18	9.74	8.28	0.00	0.00	7.80	0.00	0.00
Movement LOS	C	C	A	C	C	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.29	0.29	0.29	0.20	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.26	0.26	0.26	7.22	7.22	7.22	5.05	0.00	0.00	0.06	0.00	0.00
d_A, Approach Delay [s/veh]	13.18			11.04			1.76			0.02		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	2.00											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 1: Janes Rd/Foster Ave

Control Type:	Two-way stop	Delay (sec / veh):	10.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.027

Intersection Setup

Name	Janes Rd		Foster Ave		Foster Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Janes Rd		Foster Ave		Foster Ave	
Base Volume Input [veh/h]	4	53	5	3	75	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	14	0	3	3	0	15
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	53	8	6	75	20
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	15	2	2	21	6
Total Analysis Volume [veh/h]	20	59	9	7	83	22
Pedestrian Volume [ped/h]	0		0		0	

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Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.06	0.00	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	10.15	8.70	0.00	0.00	7.37	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.27	0.27	0.00	0.00	0.16	0.16
95th-Percentile Queue Length [ft/ln]	6.69	6.69	0.00	0.00	4.10	4.10
d_A, Approach Delay [s/veh]	9.07		0.00		5.83	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	6.64					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 2: Alliance Rd/17th St

Control Type:	Two-way stop	Delay (sec / veh):	21.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.394

Intersection Setup

Name	Alliance Rd		Alliance Rd		17th St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	20.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Alliance Rd		Alliance Rd		17th St	
Base Volume Input [veh/h]	21	252	321	173	121	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	15	3	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	21	252	321	188	124	20
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	70	89	52	34	6
Total Analysis Volume [veh/h]	23	280	357	209	138	22
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free		Free		Stop	
Flared Lane						
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.39	0.04
d_M, Delay for Movement [s/veh]	8.66	0.00	0.00	0.00	21.79	11.23
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.07	0.07	0.00	0.00	1.82	0.11
95th-Percentile Queue Length [ft/ln]	1.75	1.75	0.00	0.00	45.59	2.85
d_A, Approach Delay [s/veh]	0.66		0.00		20.34	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	3.36					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 3: Alliance Rd/Foster Ave

Control Type:	All-way stop	Delay (sec / veh):	14.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.559

Intersection Setup

Name	Alliance Ave			Alliance Rd			Foster Ave			Foster Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	70.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alliance Ave			Alliance Rd			Foster Ave			Foster Ave		
Base Volume Input [veh/h]	3	237	116	121	290	3	5	11	8	185	5	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	3	0	0	0	0	0	0	15	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	237	119	121	290	3	5	11	8	200	5	70
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	66	33	34	81	1	1	3	2	56	1	19
Total Analysis Volume [veh/h]	3	263	132	134	322	3	6	12	9	222	6	78
Pedestrian Volume [ped/h]	14			7			15			10		

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Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	570	642	538	582	462	515	496	590
Degree of Utilization, x	0.47	0.21	0.25	0.56	0.01	0.04	0.45	0.14

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.46	0.77	0.98	3.43	0.04	0.13	2.28	0.49
95th-Percentile Queue Length [ft]	61.57	19.16	24.44	85.79	0.99	3.18	57.04	12.36
Approach Delay [s/veh]	12.86		15.03		10.13		14.10	
Approach LOS	B		C		B		B	
Intersection Delay [s/veh]	13.95							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 4: Foster Ave-Jay St/Sunset Ave

Control Type:	Roundabout	Delay (sec / veh):	5.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Sunset Ave			Sunset Ave			Foster Ave			Jay St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sunset Ave			Sunset Ave			Foster Ave			Jay St		
Base Volume Input [veh/h]	187	160	5	0	170	10	26	0	177	24	5	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	15	0	0	0	0	0	0	0	3	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	202	160	5	0	170	10	26	0	180	24	5	1
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	56	44	1	0	47	3	7	0	50	7	1	0
Total Analysis Volume [veh/h]	224	178	6	0	189	11	29	0	200	27	6	1
Pedestrian Volume [ped/h]	16			1			42			1		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	30			262			220			440		
Exiting Flow Rate [veh/h]	424			212			246			6		
Demand Flow Rate [veh/h]	202	160	5	0	170	10	26	0	180	24	5	1
Adjusted Demand Flow Rate [veh/h]	224	178	6	0	189	11	29	0	200	27	6	1

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	417	204	234	35
Capacity of Entry and Bypass Lanes [veh/h]	1339	1057	1103	882
Pedestrian Impedance	1.00	1.00	0.99	1.00
Capacity per Entry Lane [veh/h]	1310	1036	1075	864
X, volume / capacity	0.31	0.19	0.21	0.04

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	1.34	0.71	0.81	0.12
95th-Percentile Queue Length [ft]	33.53	17.83	20.16	3.07
Approach Delay [s/veh]	5.54	5.27	5.32	4.53
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	5.38			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 5: Sunset Ave/US 101 Ramps-G St-H St

Control Type:	All-way stop	Delay (sec / veh):	14.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.650

Intersection Setup

Name	G St			US 101 Ramps			Sunset Ave			Sunset Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	50.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	G St			US 101 Ramps			Sunset Ave			Sunset Ave		
Base Volume Input [veh/h]	35	7	11	311	391	192	129	201	46	90	125	112
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	6	2	1	0	0	9	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	35	7	11	311	391	198	131	202	46	90	134	112
Peak Hour Factor	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	2	3	85	107	54	36	55	13	25	37	31
Total Analysis Volume [veh/h]	38	8	12	340	427	216	143	221	50	98	146	122
Pedestrian Volume [ped/h]	60			0			0			0		

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Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	620	523	562	562	627	480	511	561	467	496	544
Degree of Utilization, x	0.09	0.65	0.38	0.38	0.34	0.30	0.43	0.09	0.21	0.29	0.22

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.31	4.64	1.77	1.77	1.53	1.24	2.16	0.29	0.78	1.22	0.85
95th-Percentile Queue Length [ft]	7.70	115.9	44.19	44.19	38.28	30.90	53.96	7.30	19.61	30.45	21.36
Approach Delay [s/veh]	9.40	15.59				13.80			12.25		
Approach LOS	A	C				B			B		
Intersection Delay [s/veh]	14.31										
Intersection LOS	B										

Intersection Level Of Service Report
Intersection 6: Sunset Ave/US 101 North Ramps

Control Type:	Two-way stop	Delay (sec / veh):	51.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.563

Intersection Setup

Name	US 101 NB Off-Ramp			US 101 NB On-Ramp			Sunset Ave			Sunset Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	320.00	100.00	320.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	US 101 NB Off-Ramp			US 101 NB On-Ramp			Sunset Ave			Sunset Ave		
Base Volume Input [veh/h]	76	0	118	0	0	0	93	430	0	0	251	67
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	0	0	0	0	0	1	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	85	0	118	0	0	0	94	430	0	0	251	67
Peak Hour Factor	0.9000	0.9000	0.9000	1.0000	1.0000	1.0000	0.9000	0.9000	1.0000	1.0000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	0	33	0	0	0	26	119	0	0	70	19
Total Analysis Volume [veh/h]	94	0	131	0	0	0	104	478	0	0	279	74
Pedestrian Volume [ped/h]	75			0			0			0		

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Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane												
Storage Area [veh]	0			0			0			0		
Two-Stage Gap Acceptance	No											
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.56	0.00	0.22	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	51.32	26.15	11.90	0.00	0.00	0.00	8.27	0.00	0.00	0.00	0.00	0.00
Movement LOS	F	D	B				A	A			A	A
95th-Percentile Queue Length [veh/ln]	2.93	0.37	0.37	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	73.24	9.36	9.36	0.00	0.00	0.00	7.07	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	28.37			0.00			1.48			0.00		
Approach LOS	D			A			A			A		
d_I, Intersection Delay [s/veh]	6.24											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 7: 11th St/Janes Rd

Control Type:	Two-way stop	Delay (sec / veh):	12.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

Intersection Setup

Name	Janes Rd			Janes Rd			11th St			11th St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Janes Rd			Janes Rd			11th St			11th St		
Base Volume Input [veh/h]	2	56	54	63	61	2	4	23	6	52	18	45
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	8	0	1	2	0	0	0	0	0	0	6
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	64	54	64	63	2	4	23	6	52	18	51
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	18	15	18	18	1	1	6	2	14	5	14
Total Analysis Volume [veh/h]	2	71	60	71	70	2	4	26	7	58	20	57
Pedestrian Volume [ped/h]	0			0			4			0		

Generated with PTV VISTRO
Version 7.00-06

Intersection Settings

Priority Scheme	Free		Free		Stop		Stop	
Flared Lane					Yes		Yes	
Storage Area [veh]	0		0		1		1	
Two-Stage Gap Acceptance					No		No	
Number of Storage Spaces in Median	0		0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.05	0.00	0.00	0.01	0.05	0.01	0.10	0.04	0.06
d_M, Delay for Movement [s/veh]	7.38	0.00	0.00	7.60	0.00	0.00	12.23	11.98	8.98	11.92	12.00	9.36
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.15	0.15	0.15	0.18	0.18	0.18	0.48	0.48	0.48
95th-Percentile Queue Length [ft/ln]	0.10	0.10	0.10	3.85	3.85	3.85	4.42	4.42	4.42	11.92	11.92	11.92
d_A, Approach Delay [s/veh]	0.11			3.77			11.44			10.85		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	5.45											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 8: SR-255/Jackson Ranch Rd

Control Type:	Two-way stop	Delay (sec / veh):	14.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

Intersection Setup

Name	Old Samoa Rd			Jackson Ranch Rd			SR-255			SR-255		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	400.00	100.00	100.00	400.00	100.00	100.00
Speed [mph]	25.00			25.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Old Samoa Rd			Jackson Ranch Rd			SR-255			SR-255		
Base Volume Input [veh/h]	0	1	1	3	0	6	3	247	0	0	322	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	2	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1	1	3	0	6	5	247	0	0	322	1
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	1	0	2	1	69	0	0	89	0
Total Analysis Volume [veh/h]	0	1	1	3	0	7	6	274	0	0	358	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	Yes	No		
Storage Area [veh]	2	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.53	14.27	9.72	14.53	14.37	10.37	8.02	0.00	0.00	7.79	0.00	0.00
Movement LOS	B	B	A	B	B	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.06	0.06	0.06	0.02	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.19	0.19	0.19	1.38	1.38	1.38	0.38	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.99			11.62			0.17			0.00		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	0.29											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 9: SR-255/V St

Control Type:	Two-way stop	Delay (sec / veh):	14.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Old Samoa Rd			V St			SR-255			SR-255		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	25.00			25.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Old Samoa Rd			V St			SR-255			SR-255		
Base Volume Input [veh/h]	0	0	0	34	1	112	68	184	0	3	204	25
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	2	0	0	0	0	0	0	0	8
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	36	1	112	68	184	0	3	204	33
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	10	0	31	19	51	0	1	57	9
Total Analysis Volume [veh/h]	0	0	0	40	1	124	76	204	0	3	227	37
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane	Yes			Yes								
Storage Area [veh]	1			1			0			0		
Two-Stage Gap Acceptance	No			No								
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.09	0.00	0.14	0.06	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.31	14.60	8.86	13.88	14.86	9.52	7.95	0.00	0.00	7.64	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.48	0.48	0.48	0.19	0.00	0.00	0.01	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	12.05	12.05	12.05	4.66	0.00	0.00	0.17	0.00	0.00
d_A, Approach Delay [s/veh]	12.59			10.61			2.16			0.09		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	3.34											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 1: Janes Rd/Foster Ave

Control Type:	Two-way stop	Delay (sec / veh):	9.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.020

Intersection Setup

Name	Janes Rd		Foster Ave		Foster Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Janes Rd		Foster Ave		Foster Ave	
Base Volume Input [veh/h]	11	26	9	3	28	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	14	12	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	26	23	15	28	14
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	7	6	4	8	4
Total Analysis Volume [veh/h]	17	29	26	17	31	16
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.03	0.00	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	9.34	8.65	0.00	0.00	7.35	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.15	0.15	0.00	0.00	0.06	0.06
95th-Percentile Queue Length [ft/ln]	3.74	3.74	0.00	0.00	1.51	1.51
d_A, Approach Delay [s/veh]	8.91		0.00		4.85	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.69					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Alliance Rd/17th St

Control Type:	Two-way stop	Delay (sec / veh):	19.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.267

Intersection Setup

Name	Alliance Rd		Alliance Rd		17th St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	20.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Alliance Rd		Alliance Rd		17th St	
Base Volume Input [veh/h]	18	340	318	69	68	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	4	14	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	340	318	73	82	11
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	94	88	20	23	3
Total Analysis Volume [veh/h]	20	378	353	81	91	12
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free		Free		Stop	
Flared Lane						
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.27	0.02
d_M, Delay for Movement [s/veh]	8.26	0.00	0.00	0.00	19.37	10.59
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.00	0.00	1.06	0.06
95th-Percentile Queue Length [ft/ln]	1.36	1.36	0.00	0.00	26.43	1.40
d_A, Approach Delay [s/veh]	0.41		0.00		18.35	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	2.20					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 3: Alliance Rd/Foster Ave

Control Type:	All-way stop	Delay (sec / veh):	17.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.702

Intersection Setup

Name	Alliance Ave			Alliance Rd			Foster Ave			Foster Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	70.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alliance Ave			Alliance Rd			Foster Ave			Foster Ave		
Base Volume Input [veh/h]	13	354	127	108	328	6	5	16	12	113	20	126
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	14	0	0	0	0	0	0	4	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	354	141	108	328	6	5	16	12	117	20	126
Peak Hour Factor	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	96	38	29	89	2	1	4	3	32	5	34
Total Analysis Volume [veh/h]	14	386	154	118	357	7	5	17	13	127	22	137
Pedestrian Volume [ped/h]	14			7			15			10		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	570	643	524	567	441	489	468	548
Degree of Utilization, x	0.70	0.24	0.23	0.64	0.01	0.06	0.27	0.29

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	5.59	0.93	0.86	4.56	0.03	0.20	1.09	1.20
95th-Percentile Queue Length [ft]	139.83	23.25	21.43	114.04	0.86	4.89	27.21	29.93
Approach Delay [s/veh]	19.07		17.73		10.61		12.51	
Approach LOS	C		C		B		B	
Intersection Delay [s/veh]	16.99							
Intersection LOS	C							

Intersection Level Of Service Report
Intersection 4: Foster Ave-Jay St/Sunset Ave

Control Type:	Roundabout	Delay (sec / veh):	4.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Sunset Ave			Sunset Ave			Foster Ave			Jay St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sunset Ave			Sunset Ave			Foster Ave			Jay St		
Base Volume Input [veh/h]	185	113	33	1	96	11	8	9	174	33	10	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	0	0	0	0	0	0	14	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	189	113	33	1	96	11	8	9	188	33	10	2
Peak Hour Factor	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	29	8	0	25	3	2	2	48	8	3	1
Total Analysis Volume [veh/h]	195	116	34	1	99	11	8	9	194	34	10	2
Pedestrian Volume [ped/h]	16			1			42			1		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	18			244			137			325		
Exiting Flow Rate [veh/h]	334			129			220			45		
Demand Flow Rate [veh/h]	189	113	33	1	96	11	8	9	188	33	10	2
Adjusted Demand Flow Rate [veh/h]	195	116	34	1	99	11	8	9	194	34	10	2

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	352	114	216	47
Capacity of Entry and Bypass Lanes [veh/h]	1355	1077	1201	991
Pedestrian Impedance	1.00	1.00	0.99	1.00
Capacity per Entry Lane [veh/h]	1325	1055	1171	971
X, volume / capacity	0.26	0.11	0.18	0.05

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	1.05	0.35	0.66	0.15
95th-Percentile Queue Length [ft]	26.18	8.79	16.41	3.73
Approach Delay [s/veh]	4.97	4.34	4.65	4.13
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	4.73			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 5: Sunset Ave/US 101 Ramps-G St-H St

Control Type:	All-way stop	Delay (sec / veh):	11.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.351

Intersection Setup

Name	G St			US 101 Ramps			Sunset Ave			Sunset Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	50.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	G St			US 101 Ramps			Sunset Ave			Sunset Ave		
Base Volume Input [veh/h]	75	30	26	149	279	101	69	177	60	111	153	116
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	2	9	5	0	0	2	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	75	30	26	149	279	103	78	182	60	111	155	116
Peak Hour Factor	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	8	7	39	73	27	20	47	16	29	40	30
Total Analysis Volume [veh/h]	78	31	27	155	290	107	81	189	62	116	161	121
Pedestrian Volume [ped/h]	60			0			0			0		

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Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	597	525	564	564	630	504	539	597	501	536	595
Degree of Utilization, x	0.23	0.30	0.26	0.26	0.17	0.16	0.35	0.10	0.23	0.30	0.20

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.87	1.22	1.02	1.02	0.61	0.57	1.57	0.35	0.89	1.25	0.76
95th-Percentile Queue Length [ft]	21.79	30.62	25.44	25.44	15.19	14.22	39.13	8.65	22.18	31.33	18.91
Approach Delay [s/veh]	10.80	11.26				11.87			11.60		
Approach LOS	B	B				B			B		
Intersection Delay [s/veh]	11.45										
Intersection LOS	B										

Intersection Level Of Service Report
Intersection 6: Sunset Ave/US 101 North Ramps

Control Type:	Two-way stop	Delay (sec / veh):	53.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.626

Intersection Setup

Name	US 101 NB Off-Ramp			US 101 NB On-Ramp			Sunset Ave			Sunset Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	320.00	100.00	320.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	US 101 NB Off-Ramp			US 101 NB On-Ramp			Sunset Ave			Sunset Ave		
Base Volume Input [veh/h]	104	4	254	0	0	0	116	236	0	0	282	241
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	0	0	0	0	0	5	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	106	4	254	0	0	0	121	236	0	0	282	241
Peak Hour Factor	0.9490	0.9490	0.9490	1.0000	1.0000	1.0000	0.9490	0.9490	1.0000	1.0000	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	1	67	0	0	0	32	62	0	0	74	63
Total Analysis Volume [veh/h]	112	4	268	0	0	0	128	249	0	0	297	254
Pedestrian Volume [ped/h]	75			0			0			0		

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Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane												
Storage Area [veh]	0			0			0			0		
Two-Stage Gap Acceptance	No											
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.63	0.02	0.34	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	53.82	27.99	10.63	0.00	0.00	0.00	9.04	0.00	0.00	0.00	0.00	0.00
Movement LOS	F	D	B				A	A			A	A
95th-Percentile Queue Length [veh/ln]	3.53	0.70	0.66	0.00	0.00	0.00	0.43	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	88.19	17.58	16.53	0.00	0.00	0.00	10.73	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	23.41			0.00			3.07			0.00		
Approach LOS	C			A			A			A		
d_I, Intersection Delay [s/veh]	7.73											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 7: 11th St/Janes Rd

Control Type:	Two-way stop	Delay (sec / veh):	11.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Janes Rd			Janes Rd			11th St			11th St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Janes Rd			Janes Rd			11th St			11th St		
Base Volume Input [veh/h]	4	49	49	29	24	1	1	25	7	47	29	58
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	5	7	0	0	0	0	0	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	51	49	34	31	1	1	25	7	47	29	60
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	14	14	9	9	0	0	7	2	13	8	17
Total Analysis Volume [veh/h]	4	57	54	38	34	1	1	28	8	52	32	67
Pedestrian Volume [ped/h]	0			0			4			0		

Intersection Settings

Priority Scheme	Free		Free		Stop		Stop	
Flared Lane					Yes		Yes	
Storage Area [veh]	0		0		1		1	
Two-Stage Gap Acceptance					No		No	
Number of Storage Spaces in Median	0		0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.04	0.01	0.08	0.05	0.07
d_M, Delay for Movement [s/veh]	7.31	0.00	0.00	7.50	0.00	0.00	11.11	10.79	8.70	10.63	10.81	9.10
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.08	0.08	0.08	0.14	0.14	0.14	0.42	0.42	0.42
95th-Percentile Queue Length [ft/ln]	0.19	0.19	0.19	1.98	1.98	1.98	3.53	3.53	3.53	10.52	10.52	10.52
d_A, Approach Delay [s/veh]	0.25			3.90			10.35			9.99		
Approach LOS	A			A			B			A		
d_I, Intersection Delay [s/veh]	5.87											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 8: SR-255/Jackson Ranch Rd

Control Type:	Two-way stop	Delay (sec / veh):	17.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.007

Intersection Setup

Name	Old Samoa Rd			Jackson Ranch Rd			SR-255			SR-255		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	400.00	100.00	100.00	400.00	100.00	100.00
Speed [mph]	25.00			25.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Old Samoa Rd			Jackson Ranch Rd			SR-255			SR-255		
Base Volume Input [veh/h]	2	1	1	2	0	16	12	325	3	0	366	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	1	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	1	1	2	0	17	12	325	3	0	366	3
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	0	1	0	5	3	90	1	0	102	1
Total Analysis Volume [veh/h]	2	1	1	2	0	19	13	361	3	0	407	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	Yes	No		
Storage Area [veh]	2	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	17.56	16.52	10.37	17.21	16.66	10.83	8.17	0.00	0.00	8.01	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.03	0.11	0.11	0.11	0.03	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.76	0.76	0.76	2.81	2.81	2.81	0.86	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	15.50			11.44			0.28			0.00		
Approach LOS	C			B			A			A		
d_I, Intersection Delay [s/veh]	0.50											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 9: SR-255/V St

Control Type:	Two-way stop	Delay (sec / veh):	17.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Old Samoa Rd			V St			SR-255			SR-255		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	25.00			25.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Old Samoa Rd			V St			SR-255			SR-255		
Base Volume Input [veh/h]	0	1	1	17	0	65	67	246	1	1	299	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	7	0	0	0	0	0	0	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1	1	24	0	65	67	246	1	1	299	48
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	7	0	18	19	68	0	0	83	13
Total Analysis Volume [veh/h]	0	1	1	27	0	72	74	273	1	1	332	53
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	Yes	Yes		
Storage Area [veh]	1	1	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.08	0.00	0.09	0.06	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	15.62	17.31	9.08	15.96	17.18	9.72	8.28	0.00	0.00	7.80	0.00	0.00
Movement LOS	C	C	A	C	C	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.29	0.29	0.29	0.20	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.26	0.26	0.26	7.24	7.24	7.24	5.06	0.00	0.00	0.06	0.00	0.00
d_A, Approach Delay [s/veh]	13.19			11.42			1.76			0.02		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	2.13											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 1: Janes Rd/Foster Ave

Control Type:	Two-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.007

Intersection Setup

Name	Janes Rd		Foster Ave		Foster Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Janes Rd		Foster Ave		Foster Ave	
Base Volume Input [veh/h]	4	53	5	3	75	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	72	7	4	101	7
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	18	2	1	25	2
Total Analysis Volume [veh/h]	5	72	7	4	101	7
Pedestrian Volume [ped/h]	0		0		0	

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Version 7.00-06

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.07	0.00	0.00	0.06	0.00
d_M, Delay for Movement [s/veh]	10.27	8.63	0.00	0.00	7.39	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.24	0.24	0.00	0.00	0.20	0.20
95th-Percentile Queue Length [ft/ln]	5.99	5.99	0.00	0.00	5.02	5.02
d_A, Approach Delay [s/veh]	8.74		0.00		6.91	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	7.24					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 2: Alliance Rd/17th St

Control Type:	Two-way stop	Delay (sec / veh):	33.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.578

Intersection Setup

Name	Alliance Rd		Alliance Rd		17th St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	20.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Alliance Rd		Alliance Rd		17th St	
Base Volume Input [veh/h]	21	247	321	173	121	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	333	433	234	163	27
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	83	108	59	41	7
Total Analysis Volume [veh/h]	28	333	433	234	163	27
Pedestrian Volume [ped/h]	0		0		0	

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Intersection Settings

Priority Scheme	Free		Free		Stop	
Flared Lane						
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.00	0.00	0.58	0.05
d_M, Delay for Movement [s/veh]	9.02	0.00	0.00	0.00	33.86	12.09
Movement LOS	A	A	A	A	D	B
95th-Percentile Queue Length [veh/ln]	0.09	0.09	0.00	0.00	3.35	0.16
95th-Percentile Queue Length [ft/ln]	2.35	2.35	0.00	0.00	83.78	3.98
d_A, Approach Delay [s/veh]	0.70		0.00		30.77	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	5.01					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 3: Alliance Rd/Foster Ave

Control Type:	All-way stop	Delay (sec / veh):	18.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.726

Intersection Setup

Name	Alliance Ave			Alliance Rd			Foster Ave			Foster Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	70.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alliance Ave			Alliance Rd			Foster Ave			Foster Ave		
Base Volume Input [veh/h]	3	232	116	120	290	3	5	11	8	185	5	65
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	313	157	162	392	4	7	15	11	250	7	88
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	78	39	41	98	1	2	4	3	63	2	22
Total Analysis Volume [veh/h]	4	313	157	162	392	4	7	15	11	250	7	88
Pedestrian Volume [ped/h]	14			7			15			10		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	532	594	507	546	427	471	464	546
Degree of Utilization, x	0.60	0.26	0.32	0.73	0.02	0.06	0.54	0.17

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	3.87	1.06	1.37	6.00	0.05	0.17	3.13	0.63
95th-Percentile Queue Length [ft]	96.72	26.40	34.18	150.11	1.25	4.37	78.37	15.63
Approach Delay [s/veh]	16.29		21.40		10.89		16.81	
Approach LOS	C		C		B		C	
Intersection Delay [s/veh]	18.31							
Intersection LOS	C							

Intersection Level Of Service Report
Intersection 4: Foster Ave-Jay St/Sunset Ave

Control Type:	Roundabout	Delay (sec / veh):	6.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Sunset Ave			Sunset Ave			Foster Ave			Jay St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sunset Ave			Sunset Ave			Foster Ave			Jay St		
Base Volume Input [veh/h]	183	160	5	0	170	10	26	0	176	24	5	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	247	216	7	0	230	14	35	0	238	32	7	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	62	54	2	0	58	4	9	0	60	8	2	0
Total Analysis Volume [veh/h]	247	216	7	0	230	14	35	0	238	32	7	1
Pedestrian Volume [ped/h]	16			1			42			1		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	36			292			267			508		
Exiting Flow Rate [veh/h]	510			257			273			7		
Demand Flow Rate [veh/h]	247	216	7	0	230	14	35	0	238	32	7	1
Adjusted Demand Flow Rate [veh/h]	247	216	7	0	230	14	35	0	238	32	7	1

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	480	249	279	41
Capacity of Entry and Bypass Lanes [veh/h]	1331	1025	1051	822
Pedestrian Impedance	1.00	1.00	0.99	1.00
Capacity per Entry Lane [veh/h]	1302	1005	1025	806
X, volume / capacity	0.36	0.24	0.27	0.05

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	1.67	0.95	1.08	0.16
95th-Percentile Queue Length [ft]	41.71	23.82	26.95	3.91
Approach Delay [s/veh]	6.13	5.94	6.12	4.95
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	6.03			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 5: Sunset Ave/US 101 Ramps-G St-H St

Control Type:	All-way stop	Delay (sec / veh):	20.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.850

Intersection Setup

Name	G St			US 101 Ramps			Sunset Ave			Sunset Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	50.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	G St			US 101 Ramps			Sunset Ave			Sunset Ave		
Base Volume Input [veh/h]	35	7	11	311	391	190	128	201	46	90	123	112
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	47	9	15	420	528	257	173	271	62	122	166	151
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	2	4	105	132	64	43	68	16	31	42	38
Total Analysis Volume [veh/h]	47	9	15	420	528	257	173	271	62	122	166	151
Pedestrian Volume [ped/h]	60			0			0			0		

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Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	629	494	528	528	585	436	461	501	421	444	482
Degree of Utilization, x	0.11	0.85	0.50	0.50	0.44	0.40	0.59	0.12	0.29	0.37	0.31

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.38	8.74	2.77	2.77	2.23	1.87	3.70	0.42	1.19	1.71	1.33
95th-Percentile Queue Length [ft]	9.49	218.	69.1	69.1	55.7	46.63	92.46	10.50	29.70	42.69	33.19
Approach Delay [s/veh]	9.45	23.52				18.16			14.64		
Approach LOS	A	C				C			B		
Intersection Delay [s/veh]	20.09										
Intersection LOS	C										

Intersection Level Of Service Report
Intersection 6: Sunset Ave/US 101 North Ramps

Control Type:	Two-way stop	Delay (sec / veh):	120.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.866

Intersection Setup

Name	US 101 NB Off-Ramp			US 101 NB On-Ramp			Sunset Ave			Sunset Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	320.00	100.00	320.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	US 101 NB Off-Ramp			US 101 NB On-Ramp			Sunset Ave			Sunset Ave		
Base Volume Input [veh/h]	74	0	118	0	0	0	93	430	0	0	251	67
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.3500	1.3500	1.3500	1.0000	1.0000	1.0000	1.3500	1.3500	1.0000	1.0000	1.3500	1.3500
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	100	0	159	0	0	0	126	581	0	0	339	90
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	0	40	0	0	0	32	145	0	0	85	23
Total Analysis Volume [veh/h]	100	0	159	0	0	0	126	581	0	0	339	90
Pedestrian Volume [ped/h]	75			0			0			0		

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Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane												
Storage Area [veh]	0			0			0			0		
Two-Stage Gap Acceptance	No											
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.87	0.00	0.31	0.00	0.00	0.00	0.11	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	120.35	34.77	13.29	0.00	0.00	0.00	8.58	0.00	0.00	0.00	0.00	0.00
Movement LOS	F	D	B				A	A			A	A
95th-Percentile Queue Length [veh/ln]	5.23	0.54	0.54	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	130.84	13.60	13.60	0.00	0.00	0.00	9.38	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	54.62			0.00			1.53			0.00		
Approach LOS	F			A			A			A		
d_I, Intersection Delay [s/veh]	10.92											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 7: 11th St/Janes Rd

Control Type:	Two-way stop	Delay (sec / veh):	13.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.011

Intersection Setup

Name	Janes Rd			Janes Rd			11th St			11th St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Janes Rd			Janes Rd			11th St			11th St		
Base Volume Input [veh/h]	2	56	54	63	61	2	4	23	6	52	18	45
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	76	73	85	82	3	5	31	8	70	24	61
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	19	18	21	21	1	1	8	2	18	6	15
Total Analysis Volume [veh/h]	3	76	73	85	82	3	5	31	8	70	24	61
Pedestrian Volume [ped/h]	0			0			4			0		

Intersection Settings

Priority Scheme	Free			Free			Stop			Stop		
Flared Lane							Yes			Yes		
Storage Area [veh]	0			0			1			1		
Two-Stage Gap Acceptance							No			No		
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.06	0.00	0.00	0.01	0.06	0.01	0.14	0.05	0.06
d_M, Delay for Movement [s/veh]	7.40	0.00	0.00	7.67	0.00	0.00	13.21	12.77	9.20	13.02	12.93	9.79
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.19	0.19	0.19	0.24	0.24	0.24	0.67	0.67	0.67
95th-Percentile Queue Length [ft/ln]	0.15	0.15	0.15	4.73	4.73	4.73	5.93	5.93	5.93	16.75	16.75	16.75
d_A, Approach Delay [s/veh]	0.15			3.84			12.17			11.73		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	5.81											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 8: SR-255/Jackson Ranch Rd

Control Type:	Two-way stop	Delay (sec / veh):	16.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.012

Intersection Setup

Name	Old Samoa Rd			Jackson Ranch Rd			SR-255			SR-255		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	400.00	100.00	100.00	400.00	100.00	100.00
Speed [mph]	25.00			25.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Old Samoa Rd			Jackson Ranch Rd			SR-255			SR-255		
Base Volume Input [veh/h]	0	1	1	3	0	6	3	247	0	0	322	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1	1	4	0	8	4	319	0	0	415	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	1	0	2	1	80	0	0	104	0
Total Analysis Volume [veh/h]	0	1	1	4	0	8	4	319	0	0	415	1
Pedestrian Volume [ped/h]	0			0			0			0		

Generated with PTV VISTRO
Version 7.00-06

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	Yes	No		
Storage Area [veh]	2	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	16.12	15.54	10.00	16.13	15.71	10.84	8.16	0.00	0.00	7.90	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.08	0.08	0.08	0.01	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.22	0.22	0.22	1.90	1.90	1.90	0.26	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.77			12.60			0.10			0.00		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	0.28											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 9: SR-255/V St

Control Type:	Two-way stop	Delay (sec / veh):	16.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Old Samoa Rd			V St			SR-255			SR-255		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	25.00			25.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Old Samoa Rd			V St			SR-255			SR-255		
Base Volume Input [veh/h]	0	0	0	34	1	112	68	184	0	3	204	25
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	44	1	144	88	237	0	4	263	32
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	11	0	36	22	59	0	1	66	8
Total Analysis Volume [veh/h]	0	0	0	44	1	144	88	237	0	4	263	32
Pedestrian Volume [ped/h]	0			0			0			0		

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Version 7.00-06

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	Yes	Yes		
Storage Area [veh]	1	1	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.12	0.00	0.17	0.07	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	16.00	15.96	8.95	15.23	16.35	9.75	8.06	0.00	0.00	7.72	0.00	0.00
Movement LOS	C	C	A	C	C	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.59	0.59	0.59	0.22	0.00	0.00	0.01	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	14.75	14.75	14.75	5.61	0.00	0.00	0.23	0.00	0.00
d_A, Approach Delay [s/veh]	13.64			11.06			2.18			0.10		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	3.48											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 1: Janes Rd/Foster Ave

Control Type:	Two-way stop	Delay (sec / veh):	9.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.017

Intersection Setup

Name	Janes Rd		Foster Ave		Foster Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Janes Rd		Foster Ave		Foster Ave	
Base Volume Input [veh/h]	11	26	9	3	28	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	35	12	4	38	14
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	9	3	1	10	4
Total Analysis Volume [veh/h]	15	35	12	4	38	14
Pedestrian Volume [ped/h]	0		0		0	

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Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.03	0.00	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	9.32	8.57	0.00	0.00	7.30	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.16	0.16	0.00	0.00	0.07	0.07
95th-Percentile Queue Length [ft/ln]	3.94	3.94	0.00	0.00	1.82	1.82
d_A, Approach Delay [s/veh]	8.79		0.00		5.34	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	6.08					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Alliance Rd/17th St

Control Type:	Two-way stop	Delay (sec / veh):	25.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.342

Intersection Setup

Name	Alliance Rd		Alliance Rd		17th St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	20.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Alliance Rd		Alliance Rd		17th St	
Base Volume Input [veh/h]	18	340	315	69	68	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	459	425	93	92	15
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	115	106	23	23	4
Total Analysis Volume [veh/h]	24	459	425	93	92	15
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free		Free		Stop	
Flared Lane						
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.34	0.03
d_M, Delay for Movement [s/veh]	8.52	0.00	0.00	0.00	25.18	11.24
Movement LOS	A	A	A	A	D	B
95th-Percentile Queue Length [veh/ln]	0.07	0.07	0.00	0.00	1.46	0.08
95th-Percentile Queue Length [ft/ln]	1.76	1.76	0.00	0.00	36.56	1.95
d_A, Approach Delay [s/veh]	0.42		0.00		23.22	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	2.43					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 3: Alliance Rd/Foster Ave

Control Type:	All-way stop	Delay (sec / veh):	32.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.950

Intersection Setup

Name	Alliance Ave			Alliance Rd			Foster Ave			Foster Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	70.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alliance Ave			Alliance Rd			Foster Ave			Foster Ave		
Base Volume Input [veh/h]	13	354	113	100	322	6	5	16	12	109	20	124
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	478	153	135	435	8	7	22	16	147	27	167
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	120	38	34	109	2	2	6	4	37	7	42
Total Analysis Volume [veh/h]	18	478	153	135	435	8	7	22	16	147	27	167
Pedestrian Volume [ped/h]	14			7			15			10		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	522	584	481	517	397	435	430	497
Degree of Utilization, x	0.95	0.26	0.28	0.86	0.02	0.09	0.34	0.39

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	12.11	1.05	1.14	9.06	0.05	0.29	1.50	1.83
95th-Percentile Queue Length [ft]	302.68	26.15	28.50	226.57	1.35	7.14	37.38	45.79
Approach Delay [s/veh]	43.74		32.51		11.80		14.87	
Approach LOS	E		D		B		B	
Intersection Delay [s/veh]	32.72							
Intersection LOS	D							

Intersection Level Of Service Report
Intersection 4: Foster Ave-Jay St/Sunset Ave

Control Type:	Roundabout	Delay (sec / veh):	5.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Sunset Ave			Sunset Ave			Foster Ave			Jay St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sunset Ave			Sunset Ave			Foster Ave			Jay St		
Base Volume Input [veh/h]	184	113	33	1	96	11	8	9	170	33	10	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	248	153	45	1	130	15	11	12	230	45	14	3
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	62	38	11	0	33	4	3	3	58	11	4	1
Total Analysis Volume [veh/h]	248	153	45	1	130	15	11	12	230	45	14	3
Pedestrian Volume [ped/h]	16			1			42			1		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	24			313			180			420		
Exiting Flow Rate [veh/h]	413			170			283			59		
Demand Flow Rate [veh/h]	248	153	45	1	130	15	11	12	230	45	14	3
Adjusted Demand Flow Rate [veh/h]	248	153	45	1	130	15	11	12	230	45	14	3

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	455	149	259	64
Capacity of Entry and Bypass Lanes [veh/h]	1346	1003	1150	899
Pedestrian Impedance	1.00	1.00	0.99	1.00
Capacity per Entry Lane [veh/h]	1317	983	1121	882
X, volume / capacity	0.34	0.15	0.23	0.07

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	1.52	0.52	0.87	0.23
95th-Percentile Queue Length [ft]	37.89	13.02	21.71	5.66
Approach Delay [s/veh]	5.82	5.04	5.28	4.75
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	5.47			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 5: Sunset Ave/US 101 Ramps-G St-H St

Control Type:	All-way stop	Delay (sec / veh):	13.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.456

Intersection Setup

Name	G St			US 101 Ramps			Sunset Ave			Sunset Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	50.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	G St			US 101 Ramps			Sunset Ave			Sunset Ave		
Base Volume Input [veh/h]	75	30	26	149	279	101	67	175	60	111	152	116
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	101	41	35	201	377	136	90	236	81	150	205	157
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	10	9	50	94	34	23	59	20	38	51	39
Total Analysis Volume [veh/h]	101	41	35	201	377	136	90	236	81	150	205	157
Pedestrian Volume [ped/h]	60			0			0			0		

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Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	661	497	532	532	589	486	517	568	480	511	562
Degree of Utilization, x	0.27	0.40	0.35	0.35	0.23	0.19	0.46	0.14	0.31	0.40	0.28

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.08	1.94	1.59	1.59	0.89	0.67	2.36	0.50	1.32	1.91	1.14
95th-Percentile Queue Length [ft]	26.96	48.42	39.73	39.73	22.16	16.81	59.02	12.39	33.03	47.84	28.44
Approach Delay [s/veh]	10.43	13.13				13.53			13.28		
Approach LOS	B	B				B			B		
Intersection Delay [s/veh]	13.00										
Intersection LOS	B										

Intersection Level Of Service Report
Intersection 6: Sunset Ave/US 101 North Ramps

Control Type:	Two-way stop	Delay (sec / veh):	330.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.450

Intersection Setup

Name	US 101 NB Off-Ramp			US 101 NB On-Ramp			Sunset Ave			Sunset Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	320.00	100.00	320.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	US 101 NB Off-Ramp			US 101 NB On-Ramp			Sunset Ave			Sunset Ave		
Base Volume Input [veh/h]	103	4	254	0	0	0	114	236	0	0	282	241
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.3500	1.3500	1.3500	1.0000	1.0000	1.0000	1.3500	1.3500	1.0000	1.0000	1.3500	1.3500
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	139	5	343	0	0	0	154	319	0	0	381	325
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	1	86	0	0	0	39	80	0	0	95	81
Total Analysis Volume [veh/h]	139	5	343	0	0	0	154	319	0	0	381	325
Pedestrian Volume [ped/h]	146			0			0			0		

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Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane												
Storage Area [veh]	0			0			0			0		
Two-Stage Gap Acceptance	No											
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	1.45	0.06	0.48	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	330.12	47.65	11.99	0.00	0.00	0.00	9.87	0.00	0.00	0.00	0.00	0.00
Movement LOS	F	E	B				A	A			A	A
95th-Percentile Queue Length [veh/ln]	10.40	1.20	1.07	0.00	0.00	0.00	0.62	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	260.04	29.96	26.73	0.00	0.00	0.00	15.54	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	103.15			0.00			3.22			0.00		
Approach LOS	F			A			A			A		
d_I, Intersection Delay [s/veh]	31.07											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 7: 11th St/Janes Rd

Control Type:	Two-way stop	Delay (sec / veh):	11.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Janes Rd			Janes Rd			11th St			11th St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Janes Rd			Janes Rd			11th St			11th St		
Base Volume Input [veh/h]	4	49	49	29	24	1	1	25	7	47	29	58
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	66	66	39	32	1	1	34	9	63	39	78
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	17	17	10	8	0	0	9	2	16	10	20
Total Analysis Volume [veh/h]	5	66	66	39	32	1	1	34	9	63	39	78
Pedestrian Volume [ped/h]	0			0			4			0		

Intersection Settings

Priority Scheme	Free			Free			Stop			Stop		
Flared Lane							Yes			Yes		
Storage Area [veh]	0			0			1			1		
Two-Stage Gap Acceptance							No			No		
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.05	0.01	0.10	0.06	0.08
d_M, Delay for Movement [s/veh]	7.30	0.00	0.00	7.55	0.00	0.00	11.57	11.03	8.76	11.01	11.09	9.33
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.08	0.08	0.08	0.18	0.18	0.18	0.55	0.55	0.55
95th-Percentile Queue Length [ft/ln]	0.24	0.24	0.24	2.07	2.07	2.07	4.45	4.45	4.45	13.70	13.70	13.70
d_A, Approach Delay [s/veh]	0.27			4.09			10.58			10.30		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	6.12											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 8: SR-255/Jackson Ranch Rd

Control Type:	Two-way stop	Delay (sec / veh):	20.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.013

Intersection Setup

Name	Old Samoa Rd			Jackson Ranch Rd			SR-255			SR-255		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	400.00	100.00	100.00	400.00	100.00	100.00
Speed [mph]	25.00			25.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Old Samoa Rd			Jackson Ranch Rd			SR-255			SR-255		
Base Volume Input [veh/h]	2	1	1	2	0	16	12	325	3	0	366	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	1	1	3	0	21	15	419	4	0	472	4
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	0	1	0	5	4	105	1	0	118	1
Total Analysis Volume [veh/h]	3	1	1	3	0	21	15	419	4	0	472	4
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Stop		Stop		Free		Free	
Flared Lane	Yes		No					
Storage Area [veh]	2		0		0		0	
Two-Stage Gap Acceptance	No		No					
Number of Storage Spaces in Median	0		0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	20.57	18.81	10.89	20.02	18.97	11.46	8.36	0.00	0.00	8.17	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.05	0.15	0.15	0.15	0.04	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.26	1.26	1.26	3.75	3.75	3.75	1.05	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	18.28			12.53			0.29			0.00		
Approach LOS	C			B			A			A		
d_I, Intersection Delay [s/veh]	0.55											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 9: SR-255/V St

Control Type:	Two-way stop	Delay (sec / veh):	19.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

Intersection Setup

Name	Old Samoa Rd			V St			SR-255			SR-255		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	25.00			25.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Old Samoa Rd			V St			SR-255			SR-255		
Base Volume Input [veh/h]	0	1	1	17	0	65	67	246	1	1	299	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1	1	22	0	84	86	317	1	1	386	59
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	6	0	21	22	79	0	0	97	15
Total Analysis Volume [veh/h]	0	1	1	22	0	84	86	317	1	1	386	59
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane	Yes			Yes								
Storage Area [veh]	1			1			0			0		
Two-Stage Gap Acceptance	No			No								
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.08	0.00	0.11	0.08	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	17.86	19.85	9.23	18.23	19.69	10.05	8.51	0.00	0.00	7.91	0.00	0.00
Movement LOS	C	C	A	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.36	0.36	0.36	0.25	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.31	0.31	0.31	9.01	9.01	9.01	6.28	0.00	0.00	0.06	0.00	0.00
d_A, Approach Delay [s/veh]	14.54			11.75			1.81			0.02		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	2.10											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 1: Janes Rd/Foster Ave

Control Type:	Two-way stop	Delay (sec / veh):	10.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.028

Intersection Setup

Name	Janes Rd		Foster Ave		Foster Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Janes Rd		Foster Ave		Foster Ave	
Base Volume Input [veh/h]	4	53	5	3	75	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	15	0	4	3	0	16
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	53	9	6	75	21
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	15	3	2	21	6
Total Analysis Volume [veh/h]	21	59	10	7	83	23
Pedestrian Volume [ped/h]	0		0		0	

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Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.06	0.00	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	10.18	8.72	0.00	0.00	7.37	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.27	0.27	0.00	0.00	0.16	0.16
95th-Percentile Queue Length [ft/ln]	6.82	6.82	0.00	0.00	4.10	4.10
d_A, Approach Delay [s/veh]	9.10		0.00		5.77	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	6.60					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 2: Alliance Rd/17th St

Control Type:	Two-way stop	Delay (sec / veh):	21.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.394

Intersection Setup

Name	Alliance Rd		Alliance Rd		17th St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	20.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Alliance Rd		Alliance Rd		17th St	
Base Volume Input [veh/h]	21	247	321	173	121	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	16	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	21	247	321	189	125	20
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	69	89	53	35	6
Total Analysis Volume [veh/h]	23	274	357	210	139	22
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.39	0.04
d_M, Delay for Movement [s/veh]	8.67	0.00	0.00	0.00	21.66	11.23
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.07	0.07	0.00	0.00	1.82	0.11
95th-Percentile Queue Length [ft/ln]	1.76	1.76	0.00	0.00	45.59	2.85
d_A, Approach Delay [s/veh]	0.67		0.00		20.24	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	3.37					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 3: Alliance Rd/Foster Ave

Control Type:	All-way stop	Delay (sec / veh):	13.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.557

Intersection Setup

Name	Alliance Ave			Alliance Rd			Foster Ave			Foster Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	70.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alliance Ave			Alliance Rd			Foster Ave			Foster Ave		
Base Volume Input [veh/h]	3	232	116	120	290	3	5	11	8	185	5	65
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	4	0	0	0	0	0	0	16	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	232	120	120	290	3	5	11	8	201	5	65
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	64	33	33	81	1	1	3	2	56	1	18
Total Analysis Volume [veh/h]	3	258	133	133	322	3	6	12	9	223	6	72
Pedestrian Volume [ped/h]	14			7			15			10		

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Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	572	644	539	584	463	517	497	590
Degree of Utilization, x	0.46	0.21	0.25	0.56	0.01	0.04	0.45	0.13

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.37	0.77	0.96	3.41	0.04	0.13	2.29	0.45
95th-Percentile Queue Length [ft]	59.36	19.27	24.11	85.27	0.98	3.17	57.26	11.33
Approach Delay [s/veh]	12.68		14.95		10.10		14.16	
Approach LOS	B		B		B		B	
Intersection Delay [s/veh]	13.88							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 4: Foster Ave-Jay St/Sunset Ave

Control Type:	Roundabout	Delay (sec / veh):	5.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Sunset Ave			Sunset Ave			Foster Ave			Jay St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sunset Ave			Sunset Ave			Foster Ave			Jay St		
Base Volume Input [veh/h]	183	160	5	0	170	10	26	0	176	24	5	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	16	0	0	0	0	0	0	0	4	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	199	160	5	0	170	10	26	0	180	24	5	1
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	44	1	0	47	3	7	0	50	7	1	0
Total Analysis Volume [veh/h]	221	178	6	0	189	11	29	0	200	27	6	1
Pedestrian Volume [ped/h]	16			1			42			1		

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Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	30			259			220			437		
Exiting Flow Rate [veh/h]	424			212			243			6		
Demand Flow Rate [veh/h]	199	160	5	0	170	10	26	0	180	24	5	1
Adjusted Demand Flow Rate [veh/h]	221	178	6	0	189	11	29	0	200	27	6	1

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	414	204	234	35
Capacity of Entry and Bypass Lanes [veh/h]	1339	1060	1103	885
Pedestrian Impedance	1.00	1.00	0.99	1.00
Capacity per Entry Lane [veh/h]	1310	1039	1075	867
X, volume / capacity	0.31	0.19	0.21	0.04

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	1.33	0.71	0.81	0.12
95th-Percentile Queue Length [ft]	33.18	17.77	20.16	3.06
Approach Delay [s/veh]	5.52	5.25	5.32	4.52
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	5.37			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 5: Sunset Ave/US 101 Ramps-G St-H St

Control Type:	All-way stop	Delay (sec / veh):	14.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.650

Intersection Setup

Name	G St			US 101 Ramps			Sunset Ave			Sunset Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	50.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	G St			US 101 Ramps			Sunset Ave			Sunset Ave		
Base Volume Input [veh/h]	35	7	11	311	391	190	128	201	46	90	123	112
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	7	3	1	0	0	9	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	35	7	11	311	391	197	131	202	46	90	132	112
Peak Hour Factor	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	2	3	85	107	54	36	55	13	25	36	31
Total Analysis Volume [veh/h]	38	8	12	340	427	215	143	221	50	98	144	122
Pedestrian Volume [ped/h]	60			0			0			0		

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Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	620	523	562	562	627	480	512	562	467	496	544
Degree of Utilization, x	0.09	0.65	0.38	0.38	0.34	0.30	0.43	0.09	0.21	0.29	0.22

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.31	4.63	1.77	1.77	1.52	1.24	2.16	0.29	0.78	1.20	0.85
95th-Percentile Queue Length [ft]	7.71	115.8	44.15	44.15	37.98	30.88	53.92	7.30	19.60	29.88	21.35
Approach Delay [s/veh]	9.41	15.57				13.79			12.22		
Approach LOS	A	C				B			B		
Intersection Delay [s/veh]	14.30										
Intersection LOS	B										

Intersection Level Of Service Report
Intersection 6: Sunset Ave/US 101 North Ramps

Control Type:	Two-way stop	Delay (sec / veh):	50.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.552

Intersection Setup

Name	US 101 NB Off-Ramp			US 101 NB On-Ramp			Sunset Ave			Sunset Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	320.00	100.00	320.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	US 101 NB Off-Ramp			US 101 NB On-Ramp			Sunset Ave			Sunset Ave		
Base Volume Input [veh/h]	74	0	118	0	0	0	93	430	0	0	251	67
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	0	0	0	0	0	1	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	83	0	118	0	0	0	94	430	0	0	251	67
Peak Hour Factor	0.9000	0.9000	0.9000	1.0000	1.0000	1.0000	0.9000	0.9000	1.0000	1.0000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	0	33	0	0	0	26	119	0	0	70	19
Total Analysis Volume [veh/h]	92	0	131	0	0	0	104	478	0	0	279	74
Pedestrian Volume [ped/h]	75			0			0			0		

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Version 7.00-06

Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane												
Storage Area [veh]	0			0			0			0		
Two-Stage Gap Acceptance	No											
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.55	0.00	0.22	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	50.32	26.15	11.90	0.00	0.00	0.00	8.27	0.00	0.00	0.00	0.00	0.00
Movement LOS	F	D	B				A	A			A	A
95th-Percentile Queue Length [veh/ln]	2.83	0.37	0.37	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	70.79	9.36	9.36	0.00	0.00	0.00	7.07	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	27.75			0.00			1.48			0.00		
Approach LOS	D			A			A			A		
d_I, Intersection Delay [s/veh]	6.09											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 7: 11th St/Janes Rd

Control Type:	Two-way stop	Delay (sec / veh):	12.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

Intersection Setup

Name	Janes Rd			Janes Rd			11th St			11th St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Janes Rd			Janes Rd			11th St			11th St		
Base Volume Input [veh/h]	2	56	54	63	61	2	4	23	6	52	18	45
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	8	0	1	2	0	0	0	0	0	0	7
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	64	54	64	63	2	4	23	6	52	18	52
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	18	15	18	18	1	1	6	2	14	5	14
Total Analysis Volume [veh/h]	2	71	60	71	70	2	4	26	7	58	20	58
Pedestrian Volume [ped/h]	0			0			4			0		

Intersection Settings

Priority Scheme	Free		Free		Stop		Stop	
Flared Lane					Yes		Yes	
Storage Area [veh]	0		0		1		1	
Two-Stage Gap Acceptance					No		No	
Number of Storage Spaces in Median	0		0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.05	0.00	0.00	0.01	0.05	0.01	0.10	0.04	0.06
d_M, Delay for Movement [s/veh]	7.38	0.00	0.00	7.60	0.00	0.00	12.25	11.98	8.98	11.91	11.99	9.35
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.15	0.15	0.15	0.18	0.18	0.18	0.48	0.48	0.48
95th-Percentile Queue Length [ft/ln]	0.10	0.10	0.10	3.85	3.85	3.85	4.42	4.42	4.42	11.92	11.92	11.92
d_A, Approach Delay [s/veh]	0.11			3.77			11.44			10.83		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	5.46											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 8: SR-255/Jackson Ranch Rd

Control Type:	Two-way stop	Delay (sec / veh):	14.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

Intersection Setup

Name	Old Samoa Rd			Jackson Ranch Rd			SR-255			SR-255		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	400.00	100.00	100.00	400.00	100.00	100.00
Speed [mph]	25.00			25.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Old Samoa Rd			Jackson Ranch Rd			SR-255			SR-255		
Base Volume Input [veh/h]	0	1	1	3	0	6	3	247	0	0	322	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	2	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1	1	3	0	6	5	247	0	0	322	1
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	1	0	2	1	69	0	0	89	0
Total Analysis Volume [veh/h]	0	1	1	3	0	7	6	274	0	0	358	1
Pedestrian Volume [ped/h]	0			0			0			0		

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Version 7.00-06

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	Yes	No		
Storage Area [veh]	2	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.53	14.27	9.72	14.53	14.37	10.37	8.02	0.00	0.00	7.79	0.00	0.00
Movement LOS	B	B	A	B	B	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.06	0.06	0.06	0.02	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.19	0.19	0.19	1.38	1.38	1.38	0.38	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.99			11.62			0.17			0.00		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	0.29											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 9: SR-255/V St

Control Type:	Two-way stop	Delay (sec / veh):	14.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Old Samoa Rd			V St			SR-255			SR-255		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	25.00			25.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Old Samoa Rd			V St			SR-255			SR-255		
Base Volume Input [veh/h]	0	0	0	34	1	112	68	184	0	3	204	25
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	2	0	0	0	0	0	0	0	8
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	36	1	112	68	184	0	3	204	33
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	10	0	31	19	51	0	1	57	9
Total Analysis Volume [veh/h]	0	0	0	40	1	124	76	204	0	3	227	37
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Stop		Stop		Free		Free	
Flared Lane	Yes		Yes					
Storage Area [veh]	1		1		0		0	
Two-Stage Gap Acceptance	No		No					
Number of Storage Spaces in Median	0		0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.09	0.00	0.14	0.06	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.31	14.60	8.86	13.88	14.86	9.52	7.95	0.00	0.00	7.64	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.48	0.48	0.48	0.19	0.00	0.00	0.01	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	12.05	12.05	12.05	4.66	0.00	0.00	0.17	0.00	0.00
d_A, Approach Delay [s/veh]	12.59			10.61			2.16			0.09		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	3.34											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 1: Janes Rd/Foster Ave

Control Type:	Two-way stop	Delay (sec / veh):	9.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.020

Intersection Setup

Name	Janes Rd		Foster Ave		Foster Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Janes Rd		Foster Ave		Foster Ave	
Base Volume Input [veh/h]	11	26	9	3	28	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	15	13	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	26	24	16	28	14
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	7	7	4	8	4
Total Analysis Volume [veh/h]	17	29	27	18	31	16
Pedestrian Volume [ped/h]	0		0		0	

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Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.03	0.00	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	9.35	8.66	0.00	0.00	7.35	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.15	0.15	0.00	0.00	0.06	0.06
95th-Percentile Queue Length [ft/ln]	3.75	3.75	0.00	0.00	1.52	1.52
d_A, Approach Delay [s/veh]	8.91		0.00		4.85	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.62					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Alliance Rd/17th St

Control Type:	Two-way stop	Delay (sec / veh):	19.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.269

Intersection Setup

Name	Alliance Rd		Alliance Rd		17th St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	20.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Alliance Rd		Alliance Rd		17th St	
Base Volume Input [veh/h]	18	340	315	69	68	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	4	15	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	340	315	73	83	11
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	94	88	20	23	3
Total Analysis Volume [veh/h]	20	378	350	81	92	12
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.27	0.02
d_M, Delay for Movement [s/veh]	8.25	0.00	0.00	0.00	19.34	10.57
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.00	0.00	1.07	0.06
95th-Percentile Queue Length [ft/ln]	1.35	1.35	0.00	0.00	26.67	1.39
d_A, Approach Delay [s/veh]	0.41		0.00		18.33	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	2.22					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 3: Alliance Rd/Foster Ave

Control Type:	All-way stop	Delay (sec / veh):	16.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.696

Intersection Setup

Name	Alliance Ave			Alliance Rd			Foster Ave			Foster Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	70.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alliance Ave			Alliance Rd			Foster Ave			Foster Ave		
Base Volume Input [veh/h]	13	354	113	100	322	6	5	16	12	109	20	124
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	15	0	0	0	0	0	0	4	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	354	128	100	322	6	5	16	12	113	20	124
Peak Hour Factor	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	96	35	27	88	2	1	4	3	31	5	34
Total Analysis Volume [veh/h]	14	386	139	109	351	7	5	17	13	123	22	135
Pedestrian Volume [ped/h]	14			7			15			10		

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Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	575	650	528	572	445	494	472	553
Degree of Utilization, x	0.70	0.21	0.21	0.63	0.01	0.06	0.26	0.28

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	5.48	0.81	0.77	4.32	0.03	0.19	1.03	1.16
95th-Percentile Queue Length [ft]	137.05	20.15	19.21	108.08	0.85	4.84	25.82	29.07
Approach Delay [s/veh]	18.85		17.16		10.52		12.31	
Approach LOS	C		C		B		B	
Intersection Delay [s/veh]	16.65							
Intersection LOS	C							

Intersection Level Of Service Report
Intersection 4: Foster Ave-Jay St/Sunset Ave

Control Type:	Roundabout	Delay (sec / veh):	4.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Sunset Ave			Sunset Ave			Foster Ave			Jay St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sunset Ave			Sunset Ave			Foster Ave			Jay St		
Base Volume Input [veh/h]	184	113	33	1	96	11	8	9	170	33	10	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	0	0	0	0	0	0	15	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	188	113	33	1	96	11	8	9	185	33	10	2
Peak Hour Factor	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	48	29	8	0	25	3	2	2	48	8	3	1
Total Analysis Volume [veh/h]	194	116	34	1	99	11	8	9	191	34	10	2
Pedestrian Volume [ped/h]	16			1			42			1		

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Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	18			243			137			324		
Exiting Flow Rate [veh/h]	330			129			219			45		
Demand Flow Rate [veh/h]	188	113	33	1	96	11	8	9	185	33	10	2
Adjusted Demand Flow Rate [veh/h]	194	116	34	1	99	11	8	9	191	34	10	2

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	351	114	213	47
Capacity of Entry and Bypass Lanes [veh/h]	1355	1078	1201	992
Pedestrian Impedance	1.00	1.00	0.99	1.00
Capacity per Entry Lane [veh/h]	1325	1057	1171	972
X, volume / capacity	0.26	0.11	0.18	0.05

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	1.04	0.35	0.65	0.15
95th-Percentile Queue Length [ft]	26.08	8.78	16.13	3.72
Approach Delay [s/veh]	4.97	4.33	4.63	4.13
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	4.71			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 5: Sunset Ave/US 101 Ramps-G St-H St

Control Type:	All-way stop	Delay (sec / veh):	11.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.349

Intersection Setup

Name	G St			US 101 Ramps			Sunset Ave			Sunset Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	50.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	G St			US 101 Ramps			Sunset Ave			Sunset Ave		
Base Volume Input [veh/h]	75	30	26	149	279	101	67	175	60	111	152	116
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	2	9	6	0	0	2	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	75	30	26	149	279	103	76	181	60	111	154	116
Peak Hour Factor	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	8	7	39	73	27	20	47	16	29	40	30
Total Analysis Volume [veh/h]	78	31	27	155	290	107	79	188	62	116	160	121
Pedestrian Volume [ped/h]	60			0			0			0		

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Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	597	525	565	565	631	504	539	597	502	536	595
Degree of Utilization, x	0.23	0.30	0.26	0.26	0.17	0.16	0.35	0.10	0.23	0.30	0.20

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.87	1.22	1.02	1.02	0.61	0.55	1.55	0.35	0.89	1.24	0.76
95th-Percentile Queue Length [ft]	21.82	30.58	25.41	25.41	15.16	13.80	38.81	8.65	22.17	31.04	18.90
Approach Delay [s/veh]	10.81	11.25				11.84			11.58		
Approach LOS	B	B				B			B		
Intersection Delay [s/veh]	11.44										
Intersection LOS	B										

Intersection Level Of Service Report
Intersection 6: Sunset Ave/US 101 North Ramps

Control Type:	Two-way stop	Delay (sec / veh):	52.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.615

Intersection Setup

Name	US 101 NB Off-Ramp			US 101 NB On-Ramp			Sunset Ave			Sunset Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	320.00	100.00	320.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	US 101 NB Off-Ramp			US 101 NB On-Ramp			Sunset Ave			Sunset Ave		
Base Volume Input [veh/h]	103	4	254	0	0	0	114	236	0	0	282	241
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	0	0	0	0	0	6	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	105	4	254	0	0	0	120	236	0	0	282	241
Peak Hour Factor	0.9490	0.9490	0.9490	1.0000	1.0000	1.0000	0.9490	0.9490	1.0000	1.0000	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	1	67	0	0	0	32	62	0	0	74	63
Total Analysis Volume [veh/h]	111	4	268	0	0	0	126	249	0	0	297	254
Pedestrian Volume [ped/h]	75			0			0			0		

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Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane												
Storage Area [veh]	0			0			0			0		
Two-Stage Gap Acceptance	No											
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.61	0.02	0.34	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	52.41	27.82	10.63	0.00	0.00	0.00	9.03	0.00	0.00	0.00	0.00	0.00
Movement LOS	F	D	B				A	A			A	A
95th-Percentile Queue Length [veh/ln]	3.43	0.70	0.66	0.00	0.00	0.00	0.42	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	85.81	17.56	16.52	0.00	0.00	0.00	10.54	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	22.91			0.00			3.03			0.00		
Approach LOS	C			A			A			A		
d_I, Intersection Delay [s/veh]	7.57											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 7: 11th St/Janes Rd

Control Type:	Two-way stop	Delay (sec / veh):	11.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Janes Rd			Janes Rd			11th St			11th St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Janes Rd			Janes Rd			11th St			11th St		
Base Volume Input [veh/h]	4	49	49	29	24	1	1	25	7	47	29	58
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	6	7	0	0	0	0	0	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	51	49	35	31	1	1	25	7	47	29	60
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	14	14	10	9	0	0	7	2	13	8	17
Total Analysis Volume [veh/h]	4	57	54	39	34	1	1	28	8	52	32	67
Pedestrian Volume [ped/h]	0			0			4			0		

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Intersection Settings

Priority Scheme	Free			Free			Stop			Stop		
Flared Lane							Yes			Yes		
Storage Area [veh]	0			0			1			1		
Two-Stage Gap Acceptance							No			No		
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.04	0.01	0.08	0.05	0.07
d_M, Delay for Movement [s/veh]	7.31	0.00	0.00	7.50	0.00	0.00	11.14	10.81	8.71	10.65	10.83	9.11
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.08	0.08	0.08	0.14	0.14	0.14	0.42	0.42	0.42
95th-Percentile Queue Length [ft/ln]	0.19	0.19	0.19	2.03	2.03	2.03	3.54	3.54	3.54	10.56	10.56	10.56
d_A, Approach Delay [s/veh]	0.25			3.95			10.36			10.00		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	5.88											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 8: SR-255/Jackson Ranch Rd

Control Type:	Two-way stop	Delay (sec / veh):	17.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.007

Intersection Setup

Name	Old Samoa Rd			Jackson Ranch Rd			SR-255			SR-255		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	400.00	100.00	100.00	400.00	100.00	100.00
Speed [mph]	25.00			25.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Old Samoa Rd			Jackson Ranch Rd			SR-255			SR-255		
Base Volume Input [veh/h]	2	1	1	2	0	16	12	325	3	0	366	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	1	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	1	1	2	0	17	12	325	3	0	366	3
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	0	1	0	5	3	90	1	0	102	1
Total Analysis Volume [veh/h]	2	1	1	2	0	19	13	361	3	0	407	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	Yes	No		
Storage Area [veh]	2	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	17.56	16.52	10.37	17.21	16.66	10.83	8.17	0.00	0.00	8.01	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.03	0.11	0.11	0.11	0.03	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.76	0.76	0.76	2.81	2.81	2.81	0.86	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	15.50			11.44			0.28			0.00		
Approach LOS	C			B			A			A		
d_I, Intersection Delay [s/veh]	0.50											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 9: SR-255/V St

Control Type:	Two-way stop	Delay (sec / veh):	17.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Old Samoa Rd			V St			SR-255			SR-255		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	25.00			25.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Old Samoa Rd			V St			SR-255			SR-255		
Base Volume Input [veh/h]	0	1	1	17	0	65	67	246	1	1	299	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	7	0	0	0	0	0	0	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1	1	24	0	65	67	246	1	1	299	48
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	7	0	18	19	68	0	0	83	13
Total Analysis Volume [veh/h]	0	1	1	27	0	72	74	273	1	1	332	53
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Stop		Stop		Free		Free	
Flared Lane	Yes		Yes					
Storage Area [veh]	1		1		0		0	
Two-Stage Gap Acceptance	No		No					
Number of Storage Spaces in Median	0		0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.08	0.00	0.09	0.06	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	15.62	17.31	9.08	15.96	17.18	9.72	8.28	0.00	0.00	7.80	0.00	0.00
Movement LOS	C	C	A	C	C	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.29	0.29	0.29	0.20	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.26	0.26	0.26	7.24	7.24	7.24	5.06	0.00	0.00	0.06	0.00	0.00
d_A, Approach Delay [s/veh]	13.19			11.42			1.76			0.02		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	2.13											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 1: Janes Rd/Foster Ave

Control Type:	Two-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.051

Intersection Setup

Name	Janes Rd		Foster Ave		Foster Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Janes Rd		Foster Ave		Foster Ave	
Base Volume Input [veh/h]	4	53	5	3	75	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	29	0	6	6	0	32
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	33	53	11	9	75	37
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	15	3	3	21	10
Total Analysis Volume [veh/h]	37	59	12	10	83	41
Pedestrian Volume [ped/h]	0		0		0	

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Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.06	0.00	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	10.45	8.87	0.00	0.00	7.38	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.36	0.36	0.00	0.00	0.16	0.16
95th-Percentile Queue Length [ft/ln]	8.93	8.93	0.00	0.00	4.12	4.12
d_A, Approach Delay [s/veh]	9.48		0.00		4.94	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	6.29					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 2: Alliance Rd/17th St

Control Type:	Two-way stop	Delay (sec / veh):	22.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.408

Intersection Setup

Name	Alliance Rd		Alliance Rd		17th St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	20.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Alliance Rd		Alliance Rd		17th St	
Base Volume Input [veh/h]	21	252	321	173	121	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	32	6	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	21	252	321	205	127	20
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	70	89	57	35	6
Total Analysis Volume [veh/h]	23	280	357	228	141	22
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free		Free		Stop	
Flared Lane						
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.41	0.04
d_M, Delay for Movement [s/veh]	8.72	0.00	0.00	0.00	22.40	11.31
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.07	0.07	0.00	0.00	1.92	0.12
95th-Percentile Queue Length [ft/ln]	1.78	1.78	0.00	0.00	48.03	2.89
d_A, Approach Delay [s/veh]	0.66		0.00		20.90	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	3.43					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 3: Alliance Rd/Foster Ave

Control Type:	All-way stop	Delay (sec / veh):	14.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.567

Intersection Setup

Name	Alliance Ave			Alliance Rd			Foster Ave			Foster Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	70.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alliance Ave			Alliance Rd			Foster Ave			Foster Ave		
Base Volume Input [veh/h]	3	237	116	121	290	3	5	11	8	185	5	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	6	0	0	0	0	0	0	32	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	237	122	121	290	3	5	11	8	217	5	70
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	66	34	34	81	1	1	3	2	60	1	19
Total Analysis Volume [veh/h]	3	263	136	134	322	3	6	12	9	241	6	78
Pedestrian Volume [ped/h]	14			7			15			10		

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Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	563	633	530	573	457	509	494	587
Degree of Utilization, x	0.47	0.22	0.25	0.57	0.01	0.04	0.49	0.14

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.52	0.81	0.99	3.53	0.04	0.13	2.64	0.50
95th-Percentile Queue Length [ft]	63.03	20.28	24.87	88.20	1.00	3.22	66.04	12.43
Approach Delay [s/veh]	13.10		15.39		10.21		14.97	
Approach LOS	B		C		B		B	
Intersection Delay [s/veh]	14.41							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 4: Foster Ave-Jay St/Sunset Ave

Control Type:	Roundabout	Delay (sec / veh):	5.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Sunset Ave			Sunset Ave			Foster Ave			Jay St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sunset Ave			Sunset Ave			Foster Ave			Jay St		
Base Volume Input [veh/h]	187	160	5	0	170	10	26	0	177	24	5	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	32	0	0	0	0	0	0	0	6	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	219	160	5	0	170	10	26	0	183	24	5	1
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	61	44	1	0	47	3	7	0	51	7	1	0
Total Analysis Volume [veh/h]	243	178	6	0	189	11	29	0	203	27	6	1
Pedestrian Volume [ped/h]	16			1			42			1		

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Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	30			282			220			459		
Exiting Flow Rate [veh/h]	427			212			265			6		
Demand Flow Rate [veh/h]	219	160	5	0	170	10	26	0	183	24	5	1
Adjusted Demand Flow Rate [veh/h]	243	178	6	0	189	11	29	0	203	27	6	1

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	436	204	237	35
Capacity of Entry and Bypass Lanes [veh/h]	1339	1036	1103	865
Pedestrian Impedance	1.00	1.00	0.99	1.00
Capacity per Entry Lane [veh/h]	1310	1016	1075	848
X, volume / capacity	0.33	0.20	0.22	0.04

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	1.43	0.73	0.82	0.13
95th-Percentile Queue Length [ft]	35.81	18.27	20.50	3.13
Approach Delay [s/veh]	5.70	5.40	5.35	4.63
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	5.50			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 5: Sunset Ave/US 101 Ramps-G St-H St

Control Type:	All-way stop	Delay (sec / veh):	14.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.653

Intersection Setup

Name	G St			US 101 Ramps			Sunset Ave			Sunset Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	50.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	G St			US 101 Ramps			Sunset Ave			Sunset Ave		
Base Volume Input [veh/h]	35	7	11	311	391	192	129	201	46	90	125	112
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	13	3	3	0	0	19	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	35	7	11	311	391	205	132	204	46	90	144	112
Peak Hour Factor	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	2	3	85	107	56	36	56	13	25	39	31
Total Analysis Volume [veh/h]	38	8	12	340	427	224	144	223	50	98	157	122
Pedestrian Volume [ped/h]	60			0			0			0		

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Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	623	521	559	559	624	479	509	559	466	494	542
Degree of Utilization, x	0.09	0.65	0.38	0.38	0.36	0.30	0.44	0.09	0.21	0.32	0.23

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.31	4.68	1.78	1.78	1.63	1.25	2.20	0.29	0.79	1.35	0.86
95th-Percentile Queue Length [ft]	7.66	116.8	44.48	44.48	40.68	31.34	55.08	7.34	19.67	33.80	21.44
Approach Delay [s/veh]	9.37	15.70				13.92			12.44		
Approach LOS	A	C				B			B		
Intersection Delay [s/veh]	14.43										
Intersection LOS	B										

Intersection Level Of Service Report
Intersection 6: Sunset Ave/US 101 North Ramps

Control Type:	Two-way stop	Delay (sec / veh):	59.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.643

Intersection Setup

Name	US 101 NB Off-Ramp			US 101 NB On-Ramp			Sunset Ave			Sunset Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	320.00	100.00	320.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	US 101 NB Off-Ramp			US 101 NB On-Ramp			Sunset Ave			Sunset Ave		
Base Volume Input [veh/h]	76	0	118	0	0	0	93	430	0	0	251	67
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	19	0	0	0	0	0	3	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	95	0	118	0	0	0	96	430	0	0	251	67
Peak Hour Factor	0.9000	0.9000	0.9000	1.0000	1.0000	1.0000	0.9000	0.9000	1.0000	1.0000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	0	33	0	0	0	27	119	0	0	70	19
Total Analysis Volume [veh/h]	106	0	131	0	0	0	107	478	0	0	279	74
Pedestrian Volume [ped/h]	75			0			0			0		

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Version 7.00-06

Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane												
Storage Area [veh]	0			0			0			0		
Two-Stage Gap Acceptance	No											
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.64	0.00	0.22	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	59.56	26.37	11.90	0.00	0.00	0.00	8.28	0.00	0.00	0.00	0.00	0.00
Movement LOS	F	D	B				A	A			A	A
95th-Percentile Queue Length [veh/ln]	3.62	0.37	0.37	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	90.57	9.36	9.36	0.00	0.00	0.00	7.29	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	33.21			0.00			1.51			0.00		
Approach LOS	D			A			A			A		
d_I, Intersection Delay [s/veh]	7.45											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 7: 11th St/Janes Rd

Control Type:	Two-way stop	Delay (sec / veh):	12.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

Intersection Setup

Name	Janes Rd			Janes Rd			11th St			11th St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Janes Rd			Janes Rd			11th St			11th St		
Base Volume Input [veh/h]	2	56	54	63	61	2	4	23	6	52	18	45
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	16	0	3	3	0	0	0	0	0	0	13
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	72	54	66	64	2	4	23	6	52	18	58
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	20	15	18	18	1	1	6	2	14	5	16
Total Analysis Volume [veh/h]	2	80	60	73	71	2	4	26	7	58	20	64
Pedestrian Volume [ped/h]	0			0			4			0		

Intersection Settings

Priority Scheme	Free		Free		Stop		Stop	
Flared Lane					Yes		Yes	
Storage Area [veh]	0		0		1		1	
Two-Stage Gap Acceptance					No		No	
Number of Storage Spaces in Median	0		0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.05	0.00	0.00	0.01	0.05	0.01	0.10	0.04	0.07
d_M, Delay for Movement [s/veh]	7.38	0.00	0.00	7.63	0.00	0.00	12.51	12.13	9.00	12.07	12.13	9.40
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.16	0.16	0.16	0.18	0.18	0.18	0.49	0.49	0.49
95th-Percentile Queue Length [ft/ln]	0.10	0.10	0.10	3.99	3.99	3.99	4.53	4.53	4.53	12.23	12.23	12.23
d_A, Approach Delay [s/veh]	0.10			3.81			11.58			10.87		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	5.45											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 8: SR-255/Jackson Ranch Rd

Control Type:	Two-way stop	Delay (sec / veh):	14.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

Intersection Setup

Name	Old Samoa Rd			Jackson Ranch Rd			SR-255			SR-255		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	400.00	100.00	100.00	400.00	100.00	100.00
Speed [mph]	25.00			25.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Old Samoa Rd			Jackson Ranch Rd			SR-255			SR-255		
Base Volume Input [veh/h]	0	1	1	3	0	6	3	247	0	0	322	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	1	3	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1	1	3	0	7	6	247	0	0	322	1
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	1	0	2	2	69	0	0	89	0
Total Analysis Volume [veh/h]	0	1	1	3	0	8	7	274	0	0	358	1
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	Yes	No		
Storage Area [veh]	2	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.59	14.30	9.72	14.57	14.41	10.38	8.02	0.00	0.00	7.79	0.00	0.00
Movement LOS	B	B	A	B	B	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.06	0.06	0.06	0.02	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.19	0.19	0.19	1.49	1.49	1.49	0.44	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.01			11.52			0.20			0.00		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	0.32											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 9: SR-255/V St

Control Type:	Two-way stop	Delay (sec / veh):	14.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Old Samoa Rd			V St			SR-255			SR-255		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	25.00			25.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Old Samoa Rd			V St			SR-255			SR-255		
Base Volume Input [veh/h]	0	0	0	34	1	112	68	184	0	3	204	25
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	3	0	0	0	0	0	0	0	16
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	37	1	112	68	184	0	3	204	41
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	10	0	31	19	51	0	1	57	11
Total Analysis Volume [veh/h]	0	0	0	41	1	124	76	204	0	3	227	46
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Stop		Stop		Free		Free	
Flared Lane	Yes		Yes					
Storage Area [veh]	1		1		0		0	
Two-Stage Gap Acceptance	No		No					
Number of Storage Spaces in Median	0		0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.10	0.00	0.14	0.06	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.32	14.72	8.86	13.95	14.92	9.55	7.97	0.00	0.00	7.64	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.49	0.49	0.49	0.19	0.00	0.00	0.01	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	12.14	12.14	12.14	4.70	0.00	0.00	0.17	0.00	0.00
d_A, Approach Delay [s/veh]	12.63			10.67			2.16			0.08		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	3.32											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 1: Janes Rd/Foster Ave

Control Type:	Two-way stop	Delay (sec / veh):	9.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.024

Intersection Setup

Name	Janes Rd		Foster Ave		Foster Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Janes Rd		Foster Ave		Foster Ave	
Base Volume Input [veh/h]	11	26	9	3	28	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	0	28	25	0	8
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	26	37	28	28	18
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	7	10	8	8	5
Total Analysis Volume [veh/h]	20	29	41	31	31	20
Pedestrian Volume [ped/h]	0		0		0	

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Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.03	0.00	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	9.51	8.78	0.00	0.00	7.40	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.17	0.17	0.00	0.00	0.06	0.06
95th-Percentile Queue Length [ft/ln]	4.16	4.16	0.00	0.00	1.55	1.55
d_A, Approach Delay [s/veh]	9.08		0.00		4.50	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	3.92					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Alliance Rd/17th St

Control Type:	Two-way stop	Delay (sec / veh):	20.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.315

Intersection Setup

Name	Alliance Rd		Alliance Rd		17th St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	20.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Alliance Rd		Alliance Rd		17th St	
Base Volume Input [veh/h]	18	340	318	69	68	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	8	28	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	340	318	77	96	11
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	94	88	21	27	3
Total Analysis Volume [veh/h]	20	378	353	86	107	12
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free		Free		Stop	
Flared Lane						
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.32	0.02
d_M, Delay for Movement [s/veh]	8.27	0.00	0.00	0.00	20.40	10.61
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.00	0.00	1.32	0.06
95th-Percentile Queue Length [ft/ln]	1.36	1.36	0.00	0.00	33.00	1.40
d_A, Approach Delay [s/veh]	0.42		0.00		19.41	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	2.59					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 3: Alliance Rd/Foster Ave

Control Type:	All-way stop	Delay (sec / veh):	17.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.705

Intersection Setup

Name	Alliance Ave			Alliance Rd			Foster Ave			Foster Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	70.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alliance Ave			Alliance Rd			Foster Ave			Foster Ave		
Base Volume Input [veh/h]	13	354	127	108	328	6	5	16	12	113	20	126
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	28	0	0	0	0	0	0	8	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	354	155	108	328	6	5	16	12	121	20	126
Peak Hour Factor	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	96	42	29	89	2	1	4	3	33	5	34
Total Analysis Volume [veh/h]	14	386	169	118	357	7	5	17	13	132	22	137
Pedestrian Volume [ped/h]	14			7			15			10		

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Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	568	640	521	563	439	486	467	545
Degree of Utilization, x	0.71	0.26	0.23	0.65	0.01	0.06	0.28	0.29

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	5.65	1.06	0.86	4.63	0.03	0.20	1.15	1.20
95th-Percentile Queue Length [ft]	141.16	26.43	21.60	115.67	0.86	4.92	28.80	30.11
Approach Delay [s/veh]	19.09		17.98		10.65		12.65	
Approach LOS	C		C		B		B	
Intersection Delay [s/veh]	17.12							
Intersection LOS	C							

Intersection Level Of Service Report
Intersection 4: Foster Ave-Jay St/Sunset Ave

Control Type:	Roundabout	Delay (sec / veh):	4.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Sunset Ave			Sunset Ave			Foster Ave			Jay St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sunset Ave			Sunset Ave			Foster Ave			Jay St		
Base Volume Input [veh/h]	185	113	33	1	96	11	8	9	174	33	10	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	0	0	0	0	0	0	0	28	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	193	113	33	1	96	11	8	9	202	33	10	2
Peak Hour Factor	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	29	8	0	25	3	2	2	52	8	3	1
Total Analysis Volume [veh/h]	199	116	34	1	99	11	8	9	208	34	10	2
Pedestrian Volume [ped/h]	16			1			42			1		

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Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	18			248			137			329		
Exiting Flow Rate [veh/h]	348			129			224			45		
Demand Flow Rate [veh/h]	193	113	33	1	96	11	8	9	202	33	10	2
Adjusted Demand Flow Rate [veh/h]	199	116	34	1	99	11	8	9	208	34	10	2

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	356	114	230	47
Capacity of Entry and Bypass Lanes [veh/h]	1355	1072	1201	987
Pedestrian Impedance	1.00	1.00	0.99	1.00
Capacity per Entry Lane [veh/h]	1325	1051	1171	967
X, volume / capacity	0.26	0.11	0.19	0.05

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	1.06	0.35	0.71	0.15
95th-Percentile Queue Length [ft]	26.59	8.83	17.75	3.74
Approach Delay [s/veh]	5.00	4.36	4.77	4.15
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	4.78			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 5: Sunset Ave/US 101 Ramps-G St-H St

Control Type:	All-way stop	Delay (sec / veh):	11.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.364

Intersection Setup

Name	G St			US 101 Ramps			Sunset Ave			Sunset Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	50.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	G St			US 101 Ramps			Sunset Ave			Sunset Ave		
Base Volume Input [veh/h]	75	30	26	149	279	101	69	177	60	111	153	116
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	3	17	11	0	0	5	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	75	30	26	149	279	104	86	188	60	111	158	116
Peak Hour Factor	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	8	7	39	73	27	22	49	16	29	41	30
Total Analysis Volume [veh/h]	78	31	27	155	290	108	89	196	62	116	164	121
Pedestrian Volume [ped/h]	60			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	599	522	562	562	627	504	539	597	500	534	593
Degree of Utilization, x	0.23	0.30	0.26	0.26	0.17	0.18	0.36	0.10	0.23	0.31	0.20

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.87	1.23	1.02	1.02	0.62	0.64	1.65	0.35	0.89	1.29	0.76
95th-Percentile Queue Length [ft]	21.70	30.81	25.61	25.61	15.46	15.91	41.35	8.66	22.24	32.26	18.99
Approach Delay [s/veh]	10.76	11.32				12.04			11.67		
Approach LOS	B	B				B			B		
Intersection Delay [s/veh]	11.54										
Intersection LOS	B										

Intersection Level Of Service Report
Intersection 6: Sunset Ave/US 101 North Ramps

Control Type:	Two-way stop	Delay (sec / veh):	58.5
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.659

Intersection Setup

Name	US 101 NB Off-Ramp			US 101 NB On-Ramp			Sunset Ave			Sunset Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	320.00	100.00	320.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	US 101 NB Off-Ramp			US 101 NB On-Ramp			Sunset Ave			Sunset Ave		
Base Volume Input [veh/h]	104	4	254	0	0	0	116	236	0	0	282	241
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	0	0	0	0	0	11	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	109	4	254	0	0	0	127	236	0	0	282	241
Peak Hour Factor	0.9490	0.9490	0.9490	1.0000	1.0000	1.0000	0.9490	0.9490	1.0000	1.0000	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	1	67	0	0	0	33	62	0	0	74	63
Total Analysis Volume [veh/h]	115	4	268	0	0	0	134	249	0	0	297	254
Pedestrian Volume [ped/h]	75			0			0			0		

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Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane												
Storage Area [veh]	0			0			0			0		
Two-Stage Gap Acceptance	No											
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.66	0.02	0.34	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	58.47	28.51	10.63	0.00	0.00	0.00	9.07	0.00	0.00	0.00	0.00	0.00
Movement LOS	F	D	B				A	A			A	A
95th-Percentile Queue Length [veh/ln]	3.83	0.71	0.66	0.00	0.00	0.00	0.45	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	95.70	17.64	16.56	0.00	0.00	0.00	11.31	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	25.03			0.00			3.17			0.00		
Approach LOS	D			A			A			A		
d_I, Intersection Delay [s/veh]	8.25											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 7: 11th St/Janes Rd

Control Type:	Two-way stop	Delay (sec / veh):	11.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Janes Rd			Janes Rd			11th St			11th St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Janes Rd			Janes Rd			11th St			11th St		
Base Volume Input [veh/h]	4	49	49	29	24	1	1	25	7	47	29	58
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	11	14	0	0	0	0	0	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	53	49	40	38	1	1	25	7	47	29	61
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	15	14	11	11	0	0	7	2	13	8	17
Total Analysis Volume [veh/h]	4	59	54	44	42	1	1	28	8	52	32	68
Pedestrian Volume [ped/h]	0			0			4			0		

Intersection Settings

Priority Scheme	Free			Free			Stop			Stop		
Flared Lane							Yes			Yes		
Storage Area [veh]	0			0			1			1		
Two-Stage Gap Acceptance							No			No		
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.04	0.01	0.08	0.05	0.07
d_M, Delay for Movement [s/veh]	7.32	0.00	0.00	7.51	0.00	0.00	11.37	10.99	8.75	10.86	11.02	9.14
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.09	0.09	0.09	0.15	0.15	0.15	0.44	0.44	0.44
95th-Percentile Queue Length [ft/ln]	0.19	0.19	0.19	2.30	2.30	2.30	3.66	3.66	3.66	10.95	10.95	10.95
d_A, Approach Delay [s/veh]	0.25			3.80			10.51			10.13		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	5.82											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 8: SR-255/Jackson Ranch Rd

Control Type:	Two-way stop	Delay (sec / veh):	17.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.007

Intersection Setup

Name	Old Samoa Rd			Jackson Ranch Rd			SR-255			SR-255		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	400.00	100.00	100.00	400.00	100.00	100.00
Speed [mph]	25.00			25.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Old Samoa Rd			Jackson Ranch Rd			SR-255			SR-255		
Base Volume Input [veh/h]	2	1	1	2	0	16	12	325	3	0	366	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	3	1	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	1	1	2	0	19	13	325	3	0	366	3
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	0	1	0	5	4	90	1	0	102	1
Total Analysis Volume [veh/h]	2	1	1	2	0	21	14	361	3	0	407	3
Pedestrian Volume [ped/h]	0			0			0			0		

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Version 7.00-06

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	Yes	No		
Storage Area [veh]	2	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	17.67	16.56	10.37	17.28	16.72	10.85	8.17	0.00	0.00	8.01	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.03	0.12	0.12	0.12	0.04	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.77	0.77	0.77	3.07	3.07	3.07	0.93	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	15.57			11.41			0.30			0.00		
Approach LOS	C			B			A			A		
d_I, Intersection Delay [s/veh]	0.54											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 9: SR-255/V St

Control Type:	Two-way stop	Delay (sec / veh):	17.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Old Samoa Rd			V St			SR-255			SR-255		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	25.00			25.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Old Samoa Rd			V St			SR-255			SR-255		
Base Volume Input [veh/h]	0	1	1	17	0	65	67	246	1	1	299	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	14	0	0	0	0	0	0	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1	1	31	0	65	67	246	1	1	299	50
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	9	0	18	19	68	0	0	83	14
Total Analysis Volume [veh/h]	0	1	1	34	0	72	74	273	1	1	332	56
Pedestrian Volume [ped/h]	0			0			0			0		

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Version 7.00-06

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	Yes	Yes		
Storage Area [veh]	1	1	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.10	0.00	0.09	0.06	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	15.63	17.36	9.08	16.06	17.28	9.80	8.29	0.00	0.00	7.80	0.00	0.00
Movement LOS	C	C	A	C	C	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.34	0.34	0.34	0.20	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.26	0.26	0.26	8.39	8.39	8.39	5.07	0.00	0.00	0.06	0.00	0.00
d_A, Approach Delay [s/veh]	13.22			11.81			1.76			0.02		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	2.25											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 1: Janes Rd/Foster Ave

Control Type:	Two-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.029

Intersection Setup

Name	Janes Rd		Foster Ave		Foster Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Janes Rd		Foster Ave		Foster Ave	
Base Volume Input [veh/h]	4	53	5	3	75	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	15	0	4	3	0	16
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	72	11	7	101	23
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	18	3	2	25	6
Total Analysis Volume [veh/h]	20	72	11	7	101	23
Pedestrian Volume [ped/h]	0		0		0	

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Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.07	0.00	0.00	0.06	0.00
d_M, Delay for Movement [s/veh]	10.54	8.78	0.00	0.00	7.40	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.32	0.32	0.00	0.00	0.20	0.20
95th-Percentile Queue Length [ft/ln]	7.95	7.95	0.00	0.00	5.05	5.05
d_A, Approach Delay [s/veh]	9.16		0.00		6.03	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	6.80					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 2: Alliance Rd/17th St

Control Type:	Two-way stop	Delay (sec / veh):	35.5
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.599

Intersection Setup

Name	Alliance Rd		Alliance Rd		17th St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	20.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Alliance Rd		Alliance Rd		17th St	
Base Volume Input [veh/h]	21	247	321	173	121	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	16	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	333	433	250	167	27
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	83	108	63	42	7
Total Analysis Volume [veh/h]	28	333	433	250	167	27
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free		Free		Stop	
Flared Lane						
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.00	0.00	0.60	0.05
d_M, Delay for Movement [s/veh]	9.08	0.00	0.00	0.00	35.47	12.17
Movement LOS	A	A	A	A	E	B
95th-Percentile Queue Length [veh/ln]	0.10	0.10	0.00	0.00	3.57	0.16
95th-Percentile Queue Length [ft/ln]	2.38	2.38	0.00	0.00	89.20	4.02
d_A, Approach Delay [s/veh]	0.70		0.00		32.23	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	5.26					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 3: Alliance Rd/Foster Ave

Control Type:	All-way stop	Delay (sec / veh):	19.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.735

Intersection Setup

Name	Alliance Ave			Alliance Rd			Foster Ave			Foster Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	70.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alliance Ave			Alliance Rd			Foster Ave			Foster Ave		
Base Volume Input [veh/h]	3	232	116	120	290	3	5	11	8	185	5	65
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	4	0	0	0	0	0	0	16	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	313	161	162	392	4	7	15	11	266	7	88
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	78	40	41	98	1	2	4	3	67	2	22
Total Analysis Volume [veh/h]	4	313	161	162	392	4	7	15	11	266	7	88
Pedestrian Volume [ped/h]	14			7			15			10		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	526	586	500	539	423	466	462	544
Degree of Utilization, x	0.60	0.27	0.32	0.74	0.02	0.06	0.58	0.17

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	3.96	1.11	1.39	6.18	0.05	0.18	3.55	0.63
95th-Percentile Queue Length [ft]	99.06	27.80	34.76	154.53	1.26	4.41	88.77	15.72
Approach Delay [s/veh]	16.64		22.09		10.98		17.93	
Approach LOS	C		C		B		C	
Intersection Delay [s/veh]	18.96							
Intersection LOS	C							

Intersection Level Of Service Report
Intersection 4: Foster Ave-Jay St/Sunset Ave

Control Type:	Roundabout	Delay (sec / veh):	6.1
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Sunset Ave			Sunset Ave			Foster Ave			Jay St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sunset Ave			Sunset Ave			Foster Ave			Jay St		
Base Volume Input [veh/h]	183	160	5	0	170	10	26	0	176	24	5	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	16	0	0	0	0	0	0	0	4	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	263	216	7	0	230	14	35	0	242	32	7	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	54	2	0	58	4	9	0	61	8	2	0
Total Analysis Volume [veh/h]	263	216	7	0	230	14	35	0	242	32	7	1
Pedestrian Volume [ped/h]	16			1			42			1		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	36			308			267			524		
Exiting Flow Rate [veh/h]	514			257			290			7		
Demand Flow Rate [veh/h]	263	216	7	0	230	14	35	0	242	32	7	1
Adjusted Demand Flow Rate [veh/h]	263	216	7	0	230	14	35	0	242	32	7	1

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	496	249	283	41
Capacity of Entry and Bypass Lanes [veh/h]	1331	1008	1051	809
Pedestrian Impedance	1.00	1.00	0.99	1.00
Capacity per Entry Lane [veh/h]	1302	989	1025	793
X, volume / capacity	0.37	0.25	0.27	0.05

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	1.76	0.97	1.10	0.16
95th-Percentile Queue Length [ft]	43.93	24.34	27.48	3.98
Approach Delay [s/veh]	6.27	6.07	6.17	5.04
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	6.15			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 5: Sunset Ave/US 101 Ramps-G St-H St

Control Type:	All-way stop	Delay (sec / veh):	20.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.853

Intersection Setup

Name	G St			US 101 Ramps			Sunset Ave			Sunset Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	50.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	G St			US 101 Ramps			Sunset Ave			Sunset Ave		
Base Volume Input [veh/h]	35	7	11	311	391	190	128	201	46	90	123	112
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	7	3	1	0	0	9	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	47	9	15	420	528	264	176	272	62	122	175	151
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	2	4	105	132	66	44	68	16	31	44	38
Total Analysis Volume [veh/h]	47	9	15	420	528	264	176	272	62	122	175	151
Pedestrian Volume [ped/h]	60			0			0			0		

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Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	632	493	526	526	582	434	458	498	418	442	479
Degree of Utilization, x	0.11	0.85	0.50	0.50	0.45	0.41	0.59	0.12	0.29	0.40	0.32

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.38	8.82	2.78	2.78	2.35	1.93	3.76	0.42	1.20	1.86	1.34
95th-Percentile Queue Length [ft]	9.45	220.5	69.62	69.62	58.77	48.27	94.11	10.58	29.89	46.60	33.44
Approach Delay [s/veh]	9.42	23.76				18.43			14.91		
Approach LOS	A	C				C			B		
Intersection Delay [s/veh]	20.33										
Intersection LOS	C										

Intersection Level Of Service Report
Intersection 6: Sunset Ave/US 101 North Ramps

Control Type:	Two-way stop	Delay (sec / veh):	140.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.948

Intersection Setup

Name	US 101 NB Off-Ramp			US 101 NB On-Ramp			Sunset Ave			Sunset Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	320.00	100.00	320.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	US 101 NB Off-Ramp			US 101 NB On-Ramp			Sunset Ave			Sunset Ave		
Base Volume Input [veh/h]	74	0	118	0	0	0	93	430	0	0	251	67
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.3500	1.3500	1.3500	1.0000	1.0000	1.0000	1.3500	1.3500	1.0000	1.0000	1.3500	1.3500
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	0	0	0	0	0	1	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	109	0	159	0	0	0	127	581	0	0	339	90
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	0	40	0	0	0	32	145	0	0	85	23
Total Analysis Volume [veh/h]	109	0	159	0	0	0	127	581	0	0	339	90
Pedestrian Volume [ped/h]	75			0			0			0		

Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane												
Storage Area [veh]	0			0			0			0		
Two-Stage Gap Acceptance	No											
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.95	0.00	0.31	0.00	0.00	0.00	0.11	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	140.79	34.88	13.29	0.00	0.00	0.00	8.59	0.00	0.00	0.00	0.00	0.00
Movement LOS	F	D	B				A	A			A	A
95th-Percentile Queue Length [veh/ln]	6.03	0.54	0.54	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	150.77	13.60	13.60	0.00	0.00	0.00	9.46	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	65.15			0.00			1.54			0.00		
Approach LOS	F			A			A			A		
d_I, Intersection Delay [s/veh]	13.20											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 7: 11th St/Janes Rd

Control Type:	Two-way stop	Delay (sec / veh):	13.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.011

Intersection Setup

Name	Janes Rd			Janes Rd			11th St			11th St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Janes Rd			Janes Rd			11th St			11th St		
Base Volume Input [veh/h]	2	56	54	63	61	2	4	23	6	52	18	45
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	8	0	1	2	0	0	0	0	0	0	7
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	84	73	86	84	3	5	31	8	70	24	68
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	21	18	22	21	1	1	8	2	18	6	17
Total Analysis Volume [veh/h]	3	84	73	86	84	3	5	31	8	70	24	68
Pedestrian Volume [ped/h]	0			0			4			0		

Intersection Settings

Priority Scheme	Free		Free		Stop		Stop	
Flared Lane					Yes		Yes	
Storage Area [veh]	0		0		1		1	
Two-Stage Gap Acceptance					No		No	
Number of Storage Spaces in Median	0		0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.06	0.00	0.00	0.01	0.06	0.01	0.14	0.05	0.07
d_M, Delay for Movement [s/veh]	7.41	0.00	0.00	7.69	0.00	0.00	13.49	12.91	9.23	13.16	13.04	9.82
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.19	0.19	0.19	0.24	0.24	0.24	0.69	0.69	0.69
95th-Percentile Queue Length [ft/ln]	0.15	0.15	0.15	4.82	4.82	4.82	6.06	6.06	6.06	17.15	17.15	17.15
d_A, Approach Delay [s/veh]	0.14			3.82			12.31			11.74		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	5.80											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 8: SR-255/Jackson Ranch Rd

Control Type:	Two-way stop	Delay (sec / veh):	16.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.012

Intersection Setup

Name	Old Samoa Rd			Jackson Ranch Rd			SR-255			SR-255		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	400.00	100.00	100.00	400.00	100.00	100.00
Speed [mph]	25.00			25.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Old Samoa Rd			Jackson Ranch Rd			SR-255			SR-255		
Base Volume Input [veh/h]	0	1	1	3	0	6	3	247	0	0	322	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	2	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1	1	4	0	8	6	319	0	0	415	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	1	0	2	2	80	0	0	104	0
Total Analysis Volume [veh/h]	0	1	1	4	0	8	6	319	0	0	415	1
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	Yes	No		
Storage Area [veh]	2	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	16.20	15.62	10.00	16.21	15.78	10.84	8.17	0.00	0.00	7.90	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.08	0.08	0.08	0.02	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.22	0.22	0.22	1.91	1.91	1.91	0.40	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.81			12.63			0.15			0.00		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	0.30											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 9: SR-255/V St

Control Type:	Two-way stop	Delay (sec / veh):	16.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Old Samoa Rd			V St			SR-255			SR-255		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	25.00			25.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Old Samoa Rd			V St			SR-255			SR-255		
Base Volume Input [veh/h]	0	0	0	34	1	112	68	184	0	3	204	25
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	2	0	0	0	0	0	0	0	8
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	46	1	144	88	237	0	4	263	40
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	12	0	36	22	59	0	1	66	10
Total Analysis Volume [veh/h]	0	0	0	46	1	144	88	237	0	4	263	40
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane	Yes			Yes								
Storage Area [veh]	1			1			0			0		
Two-Stage Gap Acceptance	No			No								
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.12	0.00	0.17	0.07	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	16.02	16.08	8.95	15.30	16.41	9.77	8.09	0.00	0.00	7.72	0.00	0.00
Movement LOS	C	C	A	C	C	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.59	0.59	0.59	0.23	0.00	0.00	0.01	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	14.85	14.85	14.85	5.65	0.00	0.00	0.23	0.00	0.00
d_A, Approach Delay [s/veh]	13.68			11.14			2.19			0.10		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	3.49											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 1: Janes Rd/Foster Ave

Control Type:	Two-way stop	Delay (sec / veh):	9.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.023

Intersection Setup

Name	Janes Rd		Foster Ave		Foster Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Janes Rd		Foster Ave		Foster Ave	
Base Volume Input [veh/h]	11	26	9	3	28	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	15	13	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	35	27	17	38	18
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	9	7	4	10	5
Total Analysis Volume [veh/h]	19	35	27	17	38	18
Pedestrian Volume [ped/h]	0		0		0	

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Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.03	0.00	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	9.49	8.69	0.00	0.00	7.36	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.18	0.18	0.00	0.00	0.07	0.07
95th-Percentile Queue Length [ft/ln]	4.46	4.46	0.00	0.00	1.87	1.87
d_A, Approach Delay [s/veh]	8.97		0.00		4.99	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.96					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Alliance Rd/17th St

Control Type:	Two-way stop	Delay (sec / veh):	27.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.399

Intersection Setup

Name	Alliance Rd		Alliance Rd		17th St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	20.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Alliance Rd		Alliance Rd		17th St	
Base Volume Input [veh/h]	18	340	315	69	68	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	4	15	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	459	425	97	107	15
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	115	106	24	27	4
Total Analysis Volume [veh/h]	24	459	425	97	107	15
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free		Free		Stop	
Flared Lane						
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.40	0.03
d_M, Delay for Movement [s/veh]	8.53	0.00	0.00	0.00	27.05	11.25
Movement LOS	A	A	A	A	D	B
95th-Percentile Queue Length [veh/ln]	0.07	0.07	0.00	0.00	1.83	0.08
95th-Percentile Queue Length [ft/ln]	1.76	1.76	0.00	0.00	45.63	1.95
d_A, Approach Delay [s/veh]	0.42		0.00		25.10	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	2.90					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 3: Alliance Rd/Foster Ave

Control Type:	All-way stop	Delay (sec / veh):	33.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.953

Intersection Setup

Name	Alliance Ave			Alliance Rd			Foster Ave			Foster Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	70.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alliance Ave			Alliance Rd			Foster Ave			Foster Ave		
Base Volume Input [veh/h]	13	354	113	100	322	6	5	16	12	109	20	124
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	15	0	0	0	0	0	0	4	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	478	168	135	435	8	7	22	16	151	27	167
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	120	42	34	109	2	2	6	4	38	7	42
Total Analysis Volume [veh/h]	18	478	168	135	435	8	7	22	16	151	27	167
Pedestrian Volume [ped/h]	14			7			15			10		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	520	581	479	514	395	434	428	496
Degree of Utilization, x	0.95	0.29	0.28	0.86	0.02	0.09	0.35	0.39

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	12.21	1.19	1.15	9.19	0.05	0.29	1.56	1.84
95th-Percentile Queue Length [ft]	305.24	29.81	28.71	229.77	1.35	7.17	39.03	46.02
Approach Delay [s/veh]	43.70		33.18		11.83		15.02	
Approach LOS	E		D		B		C	
Intersection Delay [s/veh]	33.03							
Intersection LOS	D							

Intersection Level Of Service Report
Intersection 4: Foster Ave-Jay St/Sunset Ave

Control Type:	Roundabout	Delay (sec / veh):	5.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Sunset Ave			Sunset Ave			Foster Ave			Jay St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sunset Ave			Sunset Ave			Foster Ave			Jay St		
Base Volume Input [veh/h]	184	113	33	1	96	11	8	9	170	33	10	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	0	0	0	0	0	0	15	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	252	153	45	1	130	15	11	12	245	45	14	3
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	63	38	11	0	33	4	3	3	61	11	4	1
Total Analysis Volume [veh/h]	252	153	45	1	130	15	11	12	245	45	14	3
Pedestrian Volume [ped/h]	16			1			42			1		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	24			317			180			424		
Exiting Flow Rate [veh/h]	428			170			287			59		
Demand Flow Rate [veh/h]	252	153	45	1	130	15	11	12	245	45	14	3
Adjusted Demand Flow Rate [veh/h]	252	153	45	1	130	15	11	12	245	45	14	3

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	459	149	274	64
Capacity of Entry and Bypass Lanes [veh/h]	1346	999	1150	896
Pedestrian Impedance	1.00	1.00	0.99	1.00
Capacity per Entry Lane [veh/h]	1317	979	1121	878
X, volume / capacity	0.34	0.15	0.24	0.07

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	1.54	0.52	0.94	0.23
95th-Percentile Queue Length [ft]	38.40	13.08	23.38	5.69
Approach Delay [s/veh]	5.86	5.07	5.42	4.77
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	5.53			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 5: Sunset Ave/US 101 Ramps-G St-H St

Control Type:	All-way stop	Delay (sec / veh):	13.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.468

Intersection Setup

Name	G St			US 101 Ramps			Sunset Ave			Sunset Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	50.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	G St			US 101 Ramps			Sunset Ave			Sunset Ave		
Base Volume Input [veh/h]	75	30	26	149	279	101	67	175	60	111	152	116
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	2	9	6	0	0	2	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	101	41	35	201	377	138	99	242	81	150	207	157
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	10	9	50	94	35	25	61	20	38	52	39
Total Analysis Volume [veh/h]	101	41	35	201	377	138	99	242	81	150	207	157
Pedestrian Volume [ped/h]	60			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	669	496	530	530	588	487	517	568	480	511	561
Degree of Utilization, x	0.26	0.41	0.36	0.36	0.24	0.20	0.47	0.14	0.31	0.41	0.28

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.06	1.94	1.60	1.60	0.91	0.76	2.46	0.50	1.32	1.95	1.14
95th-Percentile Queue Length [ft]	26.53	48.62	39.91	39.91	22.68	18.89	61.60	12.39	33.05	48.63	28.49
Approach Delay [s/veh]	10.31	13.18				13.72			13.33		
Approach LOS	B	B				B			B		
Intersection Delay [s/veh]	13.07										
Intersection LOS	B										

Intersection Level Of Service Report
Intersection 6: Sunset Ave/US 101 North Ramps

Control Type:	Two-way stop	Delay (sec / veh):	357.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.511

Intersection Setup

Name	US 101 NB Off-Ramp			US 101 NB On-Ramp			Sunset Ave			Sunset Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	320.00	100.00	320.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	US 101 NB Off-Ramp			US 101 NB On-Ramp			Sunset Ave			Sunset Ave		
Base Volume Input [veh/h]	103	4	254	0	0	0	114	236	0	0	282	241
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.3500	1.3500	1.3500	1.0000	1.0000	1.0000	1.3500	1.3500	1.0000	1.0000	1.3500	1.3500
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	0	0	0	0	0	6	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	141	5	343	0	0	0	160	319	0	0	381	325
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	1	86	0	0	0	40	80	0	0	95	81
Total Analysis Volume [veh/h]	141	5	343	0	0	0	160	319	0	0	381	325
Pedestrian Volume [ped/h]	146			0			0			0		

Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane												
Storage Area [veh]	0			0			0			0		
Two-Stage Gap Acceptance	No											
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	1.51	0.06	0.48	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	357.29	48.70	12.00	0.00	0.00	0.00	9.91	0.00	0.00	0.00	0.00	0.00
Movement LOS	F	E	B				A	A			A	A
95th-Percentile Queue Length [veh/ln]	10.84	1.21	1.07	0.00	0.00	0.00	0.65	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	271.00	30.16	26.83	0.00	0.00	0.00	16.27	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	111.94			0.00			3.31			0.00		
Approach LOS	F			A			A			A		
d_I, Intersection Delay [s/veh]	33.65											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 7: 11th St/Janes Rd

Control Type:	Two-way stop	Delay (sec / veh):	11.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Janes Rd			Janes Rd			11th St			11th St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Janes Rd			Janes Rd			11th St			11th St		
Base Volume Input [veh/h]	4	49	49	29	24	1	1	25	7	47	29	58
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	6	7	0	0	0	0	0	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	68	66	45	39	1	1	34	9	63	39	80
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	17	17	11	10	0	0	9	2	16	10	20
Total Analysis Volume [veh/h]	5	68	66	45	39	1	1	34	9	63	39	80
Pedestrian Volume [ped/h]	0			0			4			0		

Intersection Settings

Priority Scheme	Free			Free			Stop			Stop		
Flared Lane							Yes			Yes		
Storage Area [veh]	0			0			1			1		
Two-Stage Gap Acceptance							No			No		
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.06	0.01	0.10	0.06	0.08
d_M, Delay for Movement [s/veh]	7.32	0.00	0.00	7.56	0.00	0.00	11.85	11.23	8.81	11.25	11.31	9.38
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.10	0.10	0.10	0.18	0.18	0.18	0.57	0.57	0.57
95th-Percentile Queue Length [ft/ln]	0.24	0.24	0.24	2.40	2.40	2.40	4.60	4.60	4.60	14.27	14.27	14.27
d_A, Approach Delay [s/veh]	0.26			4.00			10.75			10.44		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	6.11											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 8: SR-255/Jackson Ranch Rd

Control Type:	Two-way stop	Delay (sec / veh):	20.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.013

Intersection Setup

Name	Old Samoa Rd			Jackson Ranch Rd			SR-255			SR-255		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	400.00	100.00	100.00	400.00	100.00	100.00
Speed [mph]	25.00			25.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Old Samoa Rd			Jackson Ranch Rd			SR-255			SR-255		
Base Volume Input [veh/h]	2	1	1	2	0	16	12	325	3	0	366	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	1	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	1	1	3	0	22	15	419	4	0	472	4
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	0	1	0	6	4	105	1	0	118	1
Total Analysis Volume [veh/h]	3	1	1	3	0	22	15	419	4	0	472	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	Yes	No		
Storage Area [veh]	2	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	20.61	18.81	10.89	20.03	18.98	11.47	8.36	0.00	0.00	8.17	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.05	0.16	0.16	0.16	0.04	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.27	1.27	1.27	3.89	3.89	3.89	1.05	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	18.31			12.50			0.29			0.00		
Approach LOS	C			B			A			A		
d_I, Intersection Delay [s/veh]	0.56											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 9: SR-255/V St

Control Type:	Two-way stop	Delay (sec / veh):	19.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

Intersection Setup

Name	Old Samoa Rd			V St			SR-255			SR-255		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	25.00			25.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Old Samoa Rd			V St			SR-255			SR-255		
Base Volume Input [veh/h]	0	1	1	17	0	65	67	246	1	1	299	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900	1.2900
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	7	0	0	0	0	0	0	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1	1	29	0	84	86	317	1	1	386	61
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	7	0	21	22	79	0	0	97	15
Total Analysis Volume [veh/h]	0	1	1	29	0	84	86	317	1	1	386	61
Pedestrian Volume [ped/h]	0			0			0			0		

Generated with PTV VISTRO
Version 7.00-06

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	Yes	Yes		
Storage Area [veh]	1	1	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.10	0.00	0.11	0.08	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	17.86	19.90	9.23	18.22	19.69	10.03	8.52	0.00	0.00	7.91	0.00	0.00
Movement LOS	C	C	A	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.36	0.36	0.36	0.25	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.31	0.31	0.31	9.03	9.03	9.03	6.29	0.00	0.00	0.06	0.00	0.00
d_A, Approach Delay [s/veh]	14.56			12.13			1.81			0.02		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	2.21											
Intersection LOS	C											

MOVEMENT SUMMARY

Site: Alliance Rd/Foster Ave - AM Future

New Site
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Alliance Rd											
3	L2	4	2.0	0.406	7.2	LOS A	2.5	62.7	0.46	0.31	22.6
8	T1	313	2.0	0.406	7.2	LOS A	2.5	62.7	0.46	0.31	22.7
18	R2	157	2.0	0.406	7.2	LOS A	2.5	62.7	0.46	0.31	22.4
Approach		474	2.0	0.406	7.2	LOS A	2.5	62.7	0.46	0.31	22.6
East: Foster Ave											
1	L2	250	2.0	0.341	7.1	LOS A	1.8	45.4	0.54	0.45	22.2
6	T1	7	2.0	0.341	7.1	LOS A	1.8	45.4	0.54	0.45	22.2
16	R2	88	2.0	0.341	7.1	LOS A	1.8	45.4	0.54	0.45	22.0
Approach		345	2.0	0.341	7.1	LOS A	1.8	45.4	0.54	0.45	22.2
North: Alliance Rd											
7	L2	162	2.0	0.548	10.5	LOS B	3.5	89.4	0.61	0.49	21.8
4	T1	392	2.0	0.548	10.5	LOS B	3.5	89.4	0.61	0.49	21.8
14	R2	4	2.0	0.548	10.5	LOS B	3.5	89.4	0.61	0.49	21.6
Approach		558	2.0	0.548	10.5	LOS B	3.5	89.4	0.61	0.49	21.8
West: Foster Ave											
5	L2	7	2.0	0.053	6.4	LOS A	0.2	5.1	0.62	0.57	22.7
2	T1	15	2.0	0.053	6.4	LOS A	0.2	5.1	0.62	0.57	22.7
12	R2	11	2.0	0.053	6.4	LOS A	0.2	5.1	0.62	0.57	22.4
Approach		33	2.0	0.053	6.4	LOS A	0.2	5.1	0.62	0.57	22.6
All Vehicles		1410	2.0	0.548	8.4	LOS A	3.5	89.4	0.54	0.42	22.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Intersection 3-4 AM Future

5-Leg Roundabout with northbound right-turn slip lane

Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
SouthEast: NB LK Wood Blvd											
3ax	L1	101	2.0	0.284	7.0	LOS A	1.4	34.4	0.58	0.52	32.3
8x	T1	27	2.0	0.284	7.0	LOS A	1.4	34.4	0.58	0.52	32.7
18x	R2	128	2.0	0.284	7.0	LOS A	1.4	34.4	0.58	0.52	31.9
Approach		256	2.0	0.284	7.0	LOS A	1.4	34.4	0.58	0.52	32.2
NorthEast: SB LK Wood Blvd											
1x	L2	247	2.0	0.558	11.0	LOS B	4.1	104.0	0.70	0.65	30.6
16ax	R1	240	2.0	0.558	11.0	LOS B	4.1	104.0	0.70	0.65	30.5
16x	R2	63	2.0	0.558	11.0	LOS B	4.1	104.0	0.70	0.65	30.0
Approach		550	2.0	0.558	11.0	LOS B	4.1	104.0	0.70	0.65	30.5
West: EB Sunset Ave											
5b	L3	124	2.0	0.641	12.1	LOS B	5.8	146.6	0.70	0.59	30.5
5a	L1	168	2.0	0.641	12.1	LOS B	5.8	146.6	0.70	0.59	30.0
12a	R1	411	2.0	0.641	12.1	LOS B	5.8	146.6	0.70	0.59	30.1
Approach		703	2.0	0.641	12.1	LOS B	5.8	146.6	0.70	0.59	30.2
SouthWest: NB US 101 Off											
5bx	L3	100	2.0	0.274	10.6	LOS B	1.1	28.0	0.71	0.71	30.3
5x	L2	1	2.0	0.274	10.6	LOS B	1.1	28.0	0.71	0.71	30.0
2x	T1	46	2.0	0.274	10.6	LOS B	1.1	28.0	0.71	0.71	30.1
12x	R2	113	2.0	0.157	6.7	LOS A	0.6	16.3	0.61	0.59	32.8
Approach		260	2.0	0.274	8.9	LOS A	1.1	28.0	0.67	0.66	31.2
All Vehicles		1769	2.0	0.641	10.6	LOS B	5.8	146.6	0.68	0.61	30.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Alliance Rd/Foster Ave - PM Future

New Site
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Alliance Rd											
3	L2	18	2.0	0.545	9.3	LOS A	4.1	103.1	0.53	0.35	22.1
8	T1	478	2.0	0.545	9.3	LOS A	4.1	103.1	0.53	0.35	22.2
18	R2	153	2.0	0.545	9.3	LOS A	4.1	103.1	0.53	0.35	21.9
Approach		649	2.0	0.545	9.3	LOS A	4.1	103.1	0.53	0.35	22.1
East: Foster Ave											
1	L2	147	2.0	0.404	9.1	LOS A	2.1	54.1	0.66	0.66	21.9
6	T1	27	2.0	0.404	9.1	LOS A	2.1	54.1	0.66	0.66	21.9
16	R2	167	2.0	0.404	9.1	LOS A	2.1	54.1	0.66	0.66	21.7
Approach		341	2.0	0.404	9.1	LOS A	2.1	54.1	0.66	0.66	21.8
North: Alliance Rd											
7	L2	135	2.0	0.499	8.7	LOS A	3.4	86.3	0.53	0.37	22.2
4	T1	435	2.0	0.499	8.7	LOS A	3.4	86.3	0.53	0.37	22.2
14	R2	8	2.0	0.499	8.7	LOS A	3.4	86.3	0.53	0.37	22.0
Approach		578	2.0	0.499	8.7	LOS A	3.4	86.3	0.53	0.37	22.2
West: Foster Ave											
5	L2	7	2.0	0.066	6.0	LOS A	0.3	6.5	0.60	0.55	22.8
2	T1	22	2.0	0.066	6.0	LOS A	0.3	6.5	0.60	0.55	22.8
12	R2	16	2.0	0.066	6.0	LOS A	0.3	6.5	0.60	0.55	22.6
Approach		45	2.0	0.066	6.0	LOS A	0.3	6.5	0.60	0.55	22.7
All Vehicles		1613	2.0	0.545	9.0	LOS A	4.1	103.1	0.56	0.43	22.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Intersection 3-4 PM Future

5-Leg Roundabout with northbound right-turn slip lane

Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
SouthEast: NB LK Wood Blvd											
3ax	L1	203	2.0	0.854	32.3	LOS D	10.0	253.0	0.97	1.31	23.7
8x	T1	171	2.0	0.854	32.3	LOS D	10.0	253.0	0.97	1.31	23.9
18x	R2	209	2.0	0.854	32.3	LOS D	10.0	253.0	0.97	1.31	23.5
Approach		583	2.0	0.854	32.3	LOS D	10.0	253.0	0.97	1.31	23.7
NorthEast: SB LK Wood Blvd											
1x	L2	230	2.0	0.781	24.5	LOS C	7.7	194.7	0.92	1.15	25.9
16ax	R1	177	2.0	0.781	24.5	LOS C	7.7	194.7	0.92	1.15	25.8
16x	R2	151	2.0	0.781	24.5	LOS C	7.7	194.7	0.92	1.15	25.5
Approach		558	2.0	0.781	24.5	LOS C	7.7	194.7	0.92	1.15	25.8
West: EB Sunset Ave											
5b	L3	154	2.0	0.423	7.7	LOS A	2.6	64.9	0.52	0.38	31.7
5a	L1	201	2.0	0.423	7.7	LOS A	2.6	64.9	0.52	0.38	31.2
12a	R1	117	2.0	0.423	7.7	LOS A	2.6	64.9	0.52	0.38	31.3
Approach		473	2.0	0.423	7.7	LOS A	2.6	64.9	0.52	0.38	31.4
SouthWest: NB US 101 Off											
5bx	L3	139	2.0	0.517	13.2	LOS B	3.1	78.0	0.77	0.84	29.8
5x	L2	1	2.0	0.517	13.2	LOS B	3.1	78.0	0.77	0.84	29.6
2x	T1	216	2.0	0.517	13.2	LOS B	3.1	78.0	0.77	0.84	29.7
12x	R2	127	2.0	0.128	4.8	LOS A	0.6	14.2	0.47	0.36	33.7
Approach		483	2.0	0.517	11.0	LOS B	3.1	78.0	0.69	0.71	30.7
All Vehicles		2097	2.0	0.854	19.8	LOS C	10.0	253.0	0.79	0.92	27.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [Alliance Rd/Foster Ave - AM Future+P]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Alliance Rd												
3	L2	4	2.0	0.409	7.2	LOS A	2.5	63.5	0.46	0.31	0.46	22.6
8	T1	313	2.0	0.409	7.2	LOS A	2.5	63.5	0.46	0.31	0.46	22.6
18	R2	161	2.0	0.409	7.2	LOS A	2.5	63.5	0.46	0.31	0.46	22.4
Approach		478	2.0	0.409	7.2	LOS A	2.5	63.5	0.46	0.31	0.46	22.6
East: Foster Ave												
1	L2	266	2.0	0.356	7.3	LOS A	1.9	48.2	0.55	0.45	0.55	22.2
6	T1	7	2.0	0.356	7.3	LOS A	1.9	48.2	0.55	0.45	0.55	22.2
16	R2	88	2.0	0.356	7.3	LOS A	1.9	48.2	0.55	0.45	0.55	21.9
Approach		361	2.0	0.356	7.3	LOS A	1.9	48.2	0.55	0.45	0.55	22.1
North: Alliance Rd												
7	L2	162	2.0	0.556	10.8	LOS B	4.3	109.4	0.62	0.58	0.74	21.7
4	T1	392	2.0	0.556	10.8	LOS B	4.3	109.4	0.62	0.58	0.74	21.7
14	R2	4	2.0	0.556	10.8	LOS B	4.3	109.4	0.62	0.58	0.74	21.5
Approach		558	2.0	0.556	10.8	LOS B	4.3	109.4	0.62	0.58	0.74	21.7
West: Foster Ave												
5	L2	7	2.0	0.054	6.5	LOS A	0.2	5.2	0.62	0.58	0.62	22.7
2	T1	15	2.0	0.054	6.5	LOS A	0.2	5.2	0.62	0.58	0.62	22.7
12	R2	11	2.0	0.054	6.5	LOS A	0.2	5.2	0.62	0.58	0.62	22.4
Approach		33	2.0	0.054	6.5	LOS A	0.2	5.2	0.62	0.58	0.62	22.6
All Vehicles		1430	2.0	0.556	8.6	LOS A	4.3	109.4	0.55	0.46	0.60	22.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [Sunset-101-LK Wood AM Future+P]

5-Leg Roundabout with northbound right-turn slip lane

Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
SouthEast: NB LK Wood Blvd												
3ax	L1	101	2.0	0.287	7.1	LOS A	1.4	34.7	0.58	0.53	0.58	32.3
8x	T1	27	2.0	0.287	7.1	LOS A	1.4	34.7	0.58	0.53	0.58	32.6
18x	R2	128	2.0	0.287	7.1	LOS A	1.4	34.7	0.58	0.53	0.58	31.9
Approach		256	2.0	0.287	7.1	LOS A	1.4	34.7	0.58	0.53	0.58	32.1
NorthEast: SB LK Wood Blvd												
1x	L2	247	2.0	0.564	11.2	LOS B	5.2	131.3	0.71	0.74	0.97	30.5
16ax	R1	240	2.0	0.564	11.2	LOS B	5.2	131.3	0.71	0.74	0.97	30.4
16x	R2	63	2.0	0.564	11.2	LOS B	5.2	131.3	0.71	0.74	0.97	29.9
Approach		550	2.0	0.564	11.2	LOS B	5.2	131.3	0.71	0.74	0.97	30.4
West: EB Sunset Ave												
5b	L3	125	2.0	0.642	12.2	LOS B	7.8	197.7	0.71	0.68	0.94	30.5
5a	L1	168	2.0	0.642	12.2	LOS B	7.8	197.7	0.71	0.68	0.94	30.0
12a	R1	411	2.0	0.642	12.2	LOS B	7.8	197.7	0.71	0.68	0.94	30.1
Approach		704	2.0	0.642	12.2	LOS B	7.8	197.7	0.71	0.68	0.94	30.1
SouthWest: NB US 101 Off												
5bx	L3	109	2.0	0.291	10.9	LOS B	1.2	30.7	0.71	0.73	0.76	30.1
5x	L2	1	2.0	0.291	10.9	LOS B	1.2	30.7	0.71	0.73	0.76	29.9
2x	T1	46	2.0	0.291	10.9	LOS B	1.2	30.7	0.71	0.73	0.76	29.9
12x	R2	113	2.0	0.157	6.7	LOS A	0.6	16.3	0.61	0.59	0.61	32.8
Approach		269	2.0	0.291	9.2	LOS A	1.2	30.7	0.67	0.67	0.70	31.1
All Vehicles		1779	2.0	0.642	10.7	LOS B	7.8	197.7	0.68	0.67	0.86	30.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [Alliance Rd/Foster Ave - PM Future+P]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Alliance Rd												
3	L2	18	2.0	0.558	9.6	LOS A	4.2	107.5	0.54	0.36	0.54	22.1
8	T1	478	2.0	0.558	9.6	LOS A	4.2	107.5	0.54	0.36	0.54	22.1
18	R2	168	2.0	0.558	9.6	LOS A	4.2	107.5	0.54	0.36	0.54	21.9
Approach		664	2.0	0.558	9.6	LOS A	4.2	107.5	0.54	0.36	0.54	22.1
East: Foster Ave												
1	L2	151	2.0	0.409	9.2	LOS A	2.3	58.0	0.66	0.69	0.74	21.9
6	T1	27	2.0	0.409	9.2	LOS A	2.3	58.0	0.66	0.69	0.74	21.9
16	R2	167	2.0	0.409	9.2	LOS A	2.3	58.0	0.66	0.69	0.74	21.7
Approach		345	2.0	0.409	9.2	LOS A	2.3	58.0	0.66	0.69	0.74	21.8
North: Alliance Rd												
7	L2	135	2.0	0.501	8.7	LOS A	3.4	86.6	0.53	0.38	0.53	22.2
4	T1	435	2.0	0.501	8.7	LOS A	3.4	86.6	0.53	0.38	0.53	22.2
14	R2	8	2.0	0.501	8.7	LOS A	3.4	86.6	0.53	0.38	0.53	22.0
Approach		578	2.0	0.501	8.7	LOS A	3.4	86.6	0.53	0.38	0.53	22.2
West: Foster Ave												
5	L2	7	2.0	0.067	6.0	LOS A	0.3	6.5	0.60	0.55	0.60	22.8
2	T1	22	2.0	0.067	6.0	LOS A	0.3	6.5	0.60	0.55	0.60	22.8
12	R2	16	2.0	0.067	6.0	LOS A	0.3	6.5	0.60	0.55	0.60	22.6
Approach		45	2.0	0.067	6.0	LOS A	0.3	6.5	0.60	0.55	0.60	22.7
All Vehicles		1632	2.0	0.558	9.1	LOS A	4.2	107.5	0.57	0.44	0.58	22.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 1 [Sunset-101-LK Wood PM Future+P]

5-Leg Roundabout with northbound right-turn slip lane

Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
SouthEast: NB LK Wood Blvd												
3ax	L1	203	2.0	0.863	33.8	LOS D	13.2	334.9	0.98	1.54	2.66	23.4
8x	T1	171	2.0	0.863	33.8	LOS D	13.2	334.9	0.98	1.54	2.66	23.6
18x	R2	209	2.0	0.863	33.8	LOS D	13.2	334.9	0.98	1.54	2.66	23.2
Approach		583	2.0	0.863	33.8	LOS D	13.2	334.9	0.98	1.54	2.66	23.3
NorthEast: SB LK Wood Blvd												
1x	L2	230	2.0	0.789	25.4	LOS D	10.0	254.5	0.93	1.33	2.11	25.6
16ax	R1	177	2.0	0.789	25.4	LOS D	10.0	254.5	0.93	1.33	2.11	25.6
16x	R2	151	2.0	0.789	25.4	LOS D	10.0	254.5	0.93	1.33	2.11	25.2
Approach		558	2.0	0.789	25.4	LOS D	10.0	254.5	0.93	1.33	2.11	25.5
West: EB Sunset Ave												
5b	L3	162	2.0	0.430	7.8	LOS A	2.6	66.6	0.52	0.39	0.52	31.6
5a	L1	201	2.0	0.430	7.8	LOS A	2.6	66.6	0.52	0.39	0.52	31.1
12a	R1	117	2.0	0.430	7.8	LOS A	2.6	66.6	0.52	0.39	0.52	31.3
Approach		481	2.0	0.430	7.8	LOS A	2.6	66.6	0.52	0.39	0.52	31.3
SouthWest: NB US 101 Off												
5bx	L3	142	2.0	0.525	13.5	LOS B	3.5	89.7	0.77	0.90	1.17	29.7
5x	L2	1	2.0	0.525	13.5	LOS B	3.5	89.7	0.77	0.90	1.17	29.5
2x	T1	216	2.0	0.525	13.5	LOS B	3.5	89.7	0.77	0.90	1.17	29.6
12x	R2	127	2.0	0.128	4.8	LOS A	0.6	14.2	0.47	0.36	0.47	33.7
Approach		486	2.0	0.525	11.3	LOS B	3.5	89.7	0.69	0.76	0.98	30.6
All Vehicles		2107	2.0	0.863	20.4	LOS C	13.2	334.9	0.80	1.04	1.64	27.0

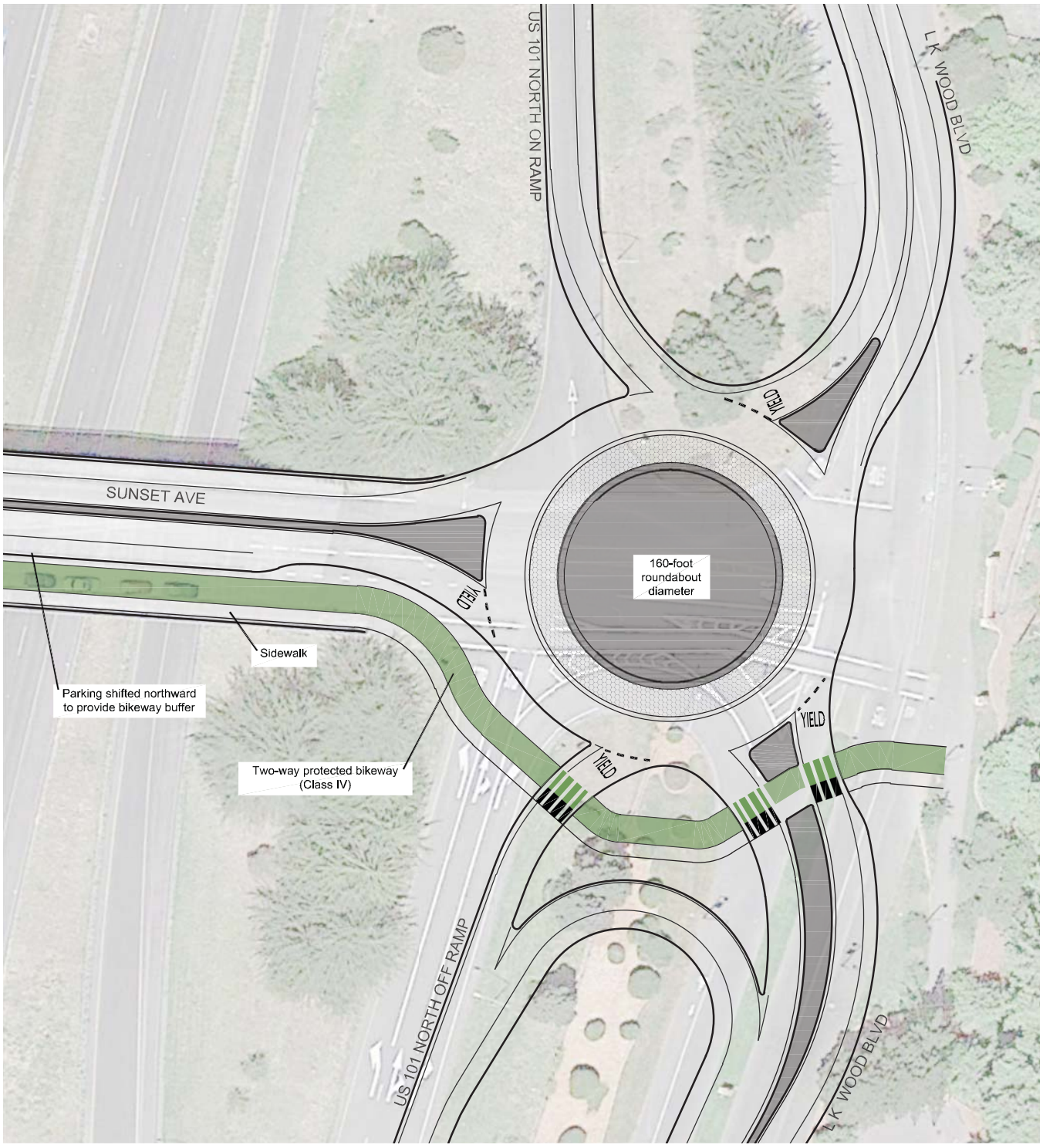
Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Appendix C

Concept Layouts for Improvements

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North

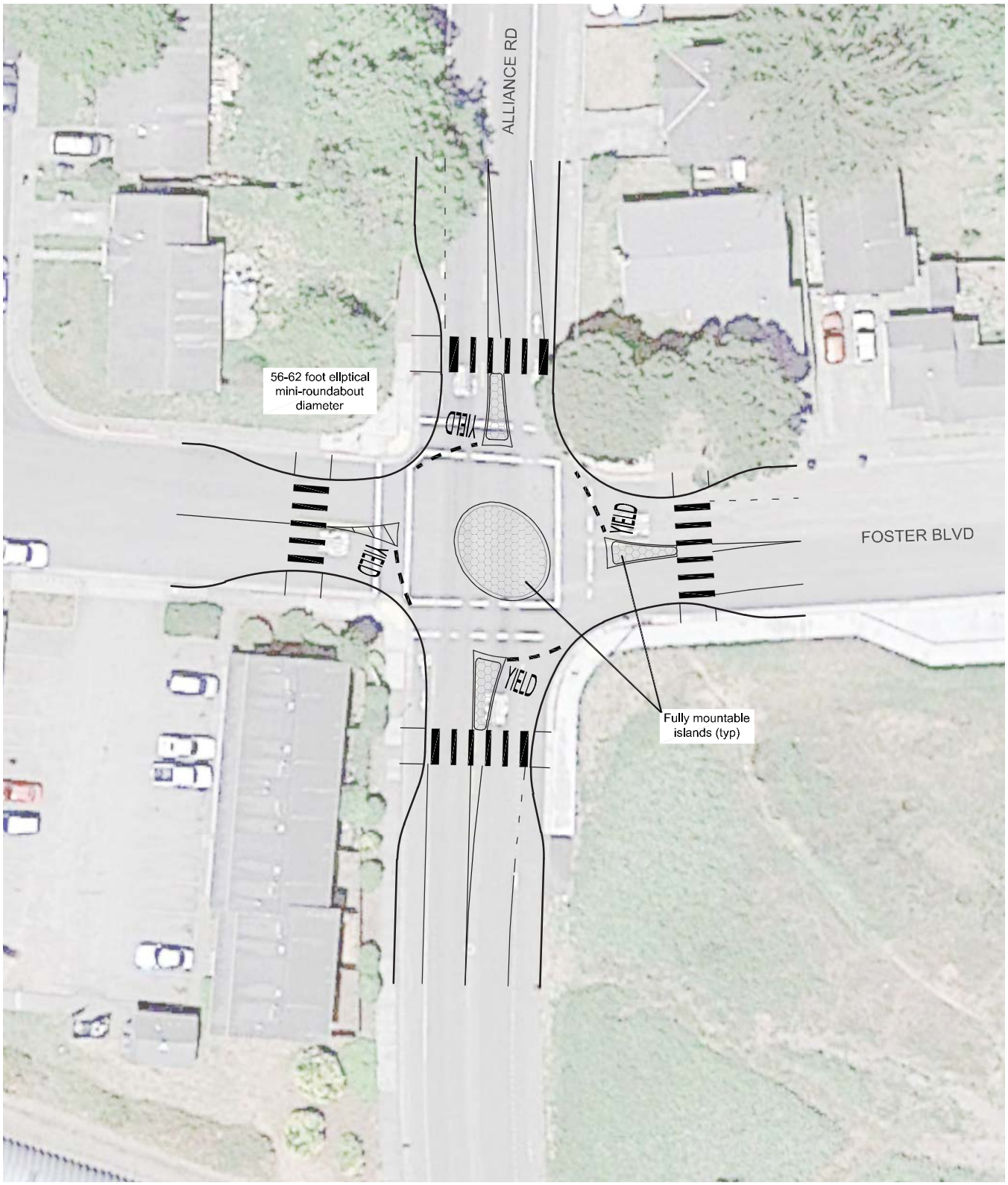
Not to Scale

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Central Arcata Areawide Traffic Impact Study

Figure 6 – Conceptual Roundabout at Sunset Avenue/US 101N Ramps/LK Wood Boulevard

W-Trans



North

Not to Scale

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Central Arcata Areawide Traffic Impact Study

Figure 7 – Conceptual Mini-Roundabout at Foster Avenue/Alliance Road

W-Trans

Appendix D

Proportional Share Fee Calculations

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Equitable Share Calculations
Arcata Land Company Commercial Cannabis Project

	PM	Total Volume Entering the Intersection of Foster Ave/Alliance Rd	PM
		Existing	1194
Project Trips (T)	19	Future Year	1651

Description of Project Improvement:
Install mini-roundabout.

Calculation of Project Share

P = T / (TB - TE)
where:
P = Equitable Share
T = Project trips during the affected peak hour
TB = Build-out volumes
TE = Existing volumes

T	19
TB	1651
TE	1194
P	**4.2%**

Total Estimated Cost of Improvements $325,000

Equitable Share Contribution **$13,512**

Source: *Caltrans Guide for the Preparation of Traffic Impact Studies*

Equitable Share Calculations
Arcata Land Company Commercial Cannabis Project

	PM	Total Volume Entering the Intersection of Sunset Ave/US 101 North	PM
		Existing	1234
Project Trips (T)	8	Future Year	1674

Description of Project Improvement:
Install five-leg roundabout with LK Wood Boulevard.

Calculation of Project Share

P = T / (TB - TE)
where:
P = Equitable Share
T = Project trips during the affected peak hour
TB = Build-out volumes
TE = Existing volumes

T	8
TB	1674
TE	1234
P	**1.8%**

Total Estimated Cost of Improvements $479,250

Equitable Share Contribution **$8,714**

Source: *Caltrans Guide for the Preparation of Traffic Impact Studies*

Appendix E

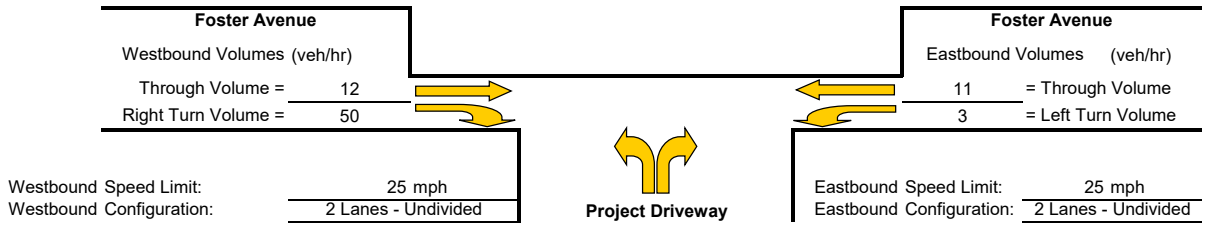
Turn Lane Warrants Analysis Sheets

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Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Foster Avenue/Project Driveway
Study Scenario: AM Future + Project

Direction of Analysis Street: East/West
Cross Street Intersects: From the North



Westbound Speed Limit: 25 mph
Westbound Configuration: 2 Lanes - Undivided

Eastbound Speed Limit: 25 mph
Eastbound Configuration: 2 Lanes - Undivided

Westbound Right Turn Lane Warrants

1. Check for right turn volume criteria

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold	AV =	675
Advancing Volume	Va =	62
If AV<Va then warrant is met		No

Right Turn Lane Warranted: **NO**

Westbound Right Turn Taper Warrants
(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold	AV =	400
Advancing Volume	Va =	62
If AV<Va then warrant is met		No

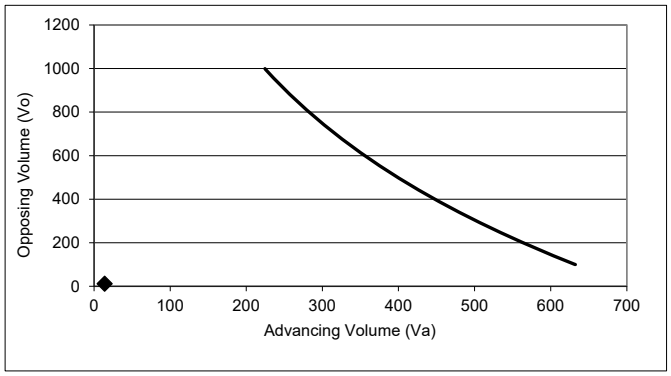
Right Turn Taper Warranted: **NO**

Eastbound Left Turn Lane Warrants

Percentage Left Turns %lt 21.4 %

Advancing Volume Threshold AV 700 veh/hr

If AV<Va then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 25 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: **NO**

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.
The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.
The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Foster Avenue/Project Driveway
Study Scenario: PM Future + Project

Direction of Analysis Street: East/West
Cross Street Intersects: From the North

Foster Avenue

Westbound Volumes (veh/hr)
Through Volume = 29
Right Turn Volume = 12

Westbound Speed Limit: 25 mph
Westbound Configuration: 2 Lanes - Undivided

Project Driveway

Foster Avenue

Eastbound Volumes (veh/hr)
16 = Through Volume
1 = Left Turn Volume

Eastbound Speed Limit: 25 mph
Eastbound Configuration: 2 Lanes - Undivided

Westbound Right Turn Lane Warrants

1. Check for right turn volume criteria

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold	AV =	960.1
Advancing Volume	Va =	41
If AV<Va then warrant is met		No

Right Turn Lane Warranted: **NO**

Westbound Right Turn Taper Warrants
(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

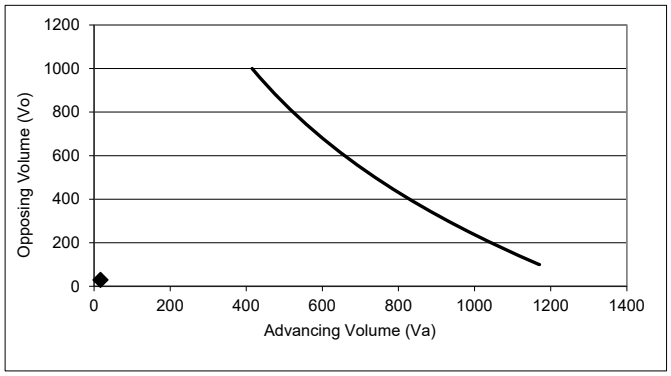
2. Check advance volume threshold criteria for taper

Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	41
If AV<Va then warrant is met		-

Right Turn Taper Warranted: **NO**

Eastbound Left Turn Lane Warrants

Percentage Left Turns %lt 5.9 %
Advancing Volume Threshold AV 1270 veh/hr
If AV<Va then warrant is met



◆ Study Intersection
Two lane roadway warrant threshold for: 25 mph
Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: **NO**

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.
The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.
The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.